

DALHOUSIE UNIVERSITY

INTRODUCTION

- Rockingham United Church is a non-for-profit group, run from a historic building bordering the Bedford Basin, at 12 Flamingo Drive. □ The client is experiencing difficulties maintaining the building and premises, and they are lacking an overall maintenance plan and maintenance record keeping.
- The current maintenance strategy is reactive, meaning maintenance tasks are performed when maintenance issues are discovered by the members. □ The church community includes a group of volunteers, who are available to assist with maintenance tasks.



Process Flow: Current Reactive Maintenance

This Capstone Project will aim to shift the maintenance from reactive to preventive by:

- A. Improving maintenance
- scheduling and record keeping. B. Utilizing the church's volunteer
- base. C. Detailing task instructions for
- maintenance.

Project Objective



DESIGN PROCESS

- **Problem Definition:** A preventive maintenance plan is required to improve the maintenance operations and documentation done by the client. **Data Collection:** Site visits were conducted to collect records of historic maintenance tasks, photos of maintenance tasks, and floor plans. **Brainstorming, Evaluation, and Solution Choosing:** Ideas for prototypes were generated and demonstrated to the client, including (A) Excel VBA Scheduling
- Tool, (B) Volunteer Sign-Up Sheet, and (C) Maintenance Instructions/Bill of *Materials.* An overall implementation strategy was developed.
- **Prototype Development:** Prototypes for A,B and C were generated and frequently demonstrated to the client and academic advisor. Feedback for each prototype was implemented into subsequent versions.
- **Solution Testing:** Solutions were tested with peers and friends, before demonstrated to the client and administrator.
- **Solution Adjustments:** Improvements to functionality and user interface were implemented continuously.

#	Design Requirement
1	Back end of solution shall have appropriate user interface for administrator (A)
2	Front end of solution shall have appropriate user interface for volunteers (B)
3	Solution shall provide detailed schedule for one calendar year (A)
4	Solution shall be updateable (A),(C)
5	Solution shall provide visual cues and reminders (A)
6	Solution shall contain detailed instructions and user manuals (A),(C)

Interactive Preventive Maintenance Plan Rockingham United Church Abdul Abu | Ali Ahmed | Raashid Ramzeen | Warren Todd

FINAL PRODUCT - TOOLS

TOOL A – Interactive Maintenance Scheduler

									Task Status	¥= 1x		S.		
	Start	Date							Cancelled	Completed	SHOW A	ALL RECORDS	A	DD TASK
	End	Date							Overdue	Pending	Series:	STEREOR ST		
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	1 Annual check on a	alarm system		Annu	ally			2023-03-27	Pending	Contractors		2024-03	3-27	
	2 Painting the Parki	ing Lot Lines		Twic	e a year			2023-01-02	Overdue	Volunteers		2023-07	7-02	
	3 Monthly check on	fire extinguish	ners	Mont	hly			2024-03-12	Completed	Staff		2024-04	1-12	
	4 Inspection of eme	ergency lights		Wee	kly			2024-03-14	Overdue	Volunteers		2024-03	3-21	
	5 Landscaping Outo	loor Cleaning Y	early task	I WIC	e a year	Summer Fa		2024-03-13	Cancelled	Contractors		2024-09	9-13	
	6 Lawn maintenand	oilings		Fyor	niy (Spring	g, Summer, Fa	all)	2024-03-03	Completed	Volunteers		2024-04	2 20	
	8 Kitchen Clean and	Inspection		Twic	e a vear			2024-03-05	Cancelled	Volunteers		2020-03	9-05	
	9 Clean Elevator Fo	uipment Room	1	Anni	ially			2024-02-20	Completed	Volunteers		2025-02	2-20	
	10 Elevator Mainten	ance/Check		Ever	y second n	month		2024-03-18	Completed	Contractors		2024-05	5-18	
	11 Recreation Room	Floor		Ever	y 2 years			2024-03-11	Completed	Contractors		2026-03	3-11	
	12 Furnace Mainten	ance		Annu	ally			2023-12-12	Completed	Contractors		2024-12	2-12	
	13 Inspection and Re	eplacement of I	Lghts	Twic	e a year			2023-08-08	Overdue	Volunteers	v	2024-02	2-08	
	14 Landscapping/Out	tdoor Clean up		Twic	e a year			2024-03-18	Completed	Volunteers		2024-09	9-18	
	15 Mold in Bathroon	n		Twic	e a year			2024-03-12	Completed	Volunteers		2024-09)-12	
	16 Pull Station - Fire	Alarm Check		Mont	hly			2024-02-25	Pending	Staff		2024-03	3-25	
	17 Hire snow remova	al services		Annu	ally			2024-02-05	Completed	Admin		2025-02	2-05	
	18 Storage Room Or	ganization		Annu	ally			2023-09-13		Volunteers		2024-09	7-13	
	19 Window Washing	interest		Twic	e a year			2024-01-10	Overdue	Stall		2024-07	2 12	
	21 Paint washrooms	intenance		Ever	v 2 vears			2023-09-12	Completed	Volunteers		2024-03	2-12	
	22 Loose news to be	secured		Anni	ally			2023-03-30	Pendina	Volunteers		2024-12	3-30	
	23 Ceiling Tiles in Low	wer Level		Anni	ially			2023-11-08	Completed	Volunteers		2024-00	-08	
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TOOL B – Volunteer Sign-Up Board							
Rockingham Maintenance Sign Up Sheet 🦼							
	MAINTENANCE TASK	INSTRUCTION GUIDE REFERENCE #	DATE POSTED	VOLUNTEER NAM			
MAINTENANCE ACTIVITY 1	Painting the Parking Lot Lines	12	Apríl 15th - 2024				
MAINTENANCE ACTIVITY 2	Landscaping and Outdoor Clean Up	7	April 16th - 2024				
MAINTENANCE ACTIVITY 2	Ceiling Tiles in Lower Level, Paint/Replace	20	April 18th - 2024				
MAINTENANCE ACTIVITY 3	Kitchen Clean Out and Inspection	24	Apríl 18 - 2024				
			1	1			

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Summary of Tool B Features:

- Dry erase sign up sheet, posted in lobby of Rockingham United Church.
- Updateable by administrator, based on schedule provided in Tool A.
- **Corresponding** *maintenance task reference numbers* to Tool A and C.

TOOL C – Maintenance Task Instructions and Bill of Materials

mmary of Tool C Features:

- Detailed instructions of each maintenance task. Bill of materials for each maintenance task with cost estimations.
- Corresponding *maintenance task reference*
- *numbers* to Tool A and B.
- Booklet format, hanging up next to Tool B.





Step #	Step Description	Check	Check	Check	Check	Additional Notes/Comments
1	Turn off the power to the light fixture at the circuit breaker.					
2	Set up the ladder securely under the light fixture.					
3	Remove the light fixture cover using a screwdriver if necessary.					
4	Inspect the bulb. If it's darkened or broken, it needs replacement.					
5	Unscrew the old bulb by turning it counterclockwise. Wear gloves to protect your hands.					
6	Screw in the new bulb clockwise until snug. Do not overtighten.					
7	Replace the light fixture cover.					
8	Turn the power back on and test the new bulb.					

MATERIALS REQUIRED: 1. LADDER

- 2.SCREWDRIVER **3. LIGHT BULBS**
- **4. RUBBER GLOVES**

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VOLUNTEERS	
CONTRACTORS	
	Process Flo
	Improve
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Ac	knowledgements – Rockingham Unite Rockingham Unite Project Academic A





- on strategy allows for the optimal use of each tool solution.
- peen generated in collaboration with the client, less integration.
- on the administrators understanding of the nree tools. A reference guide of instructions for vas reviewed and provided to the administrator.

PACT/RESULTS



ed Documentation, Records and Communication

Major Repairs and Maintenance Costs

Junteer and Community Engagement

ES/ACKNOWLEDGEMENTS

PII Group 11 would like to extend our thanks to: ed Church Client: Colleen Rollings ed Church Administrator: Sylvia Thorne Advisor: Floris Goerlandt Academic Instructor: Sandra MacAulay Thompson References: Metcalfe, Z. (2024, February 28). A renovation and a prayer. Canada's National Observer,

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