



Preventative Maintenance (PM) Guidelines

A. Introduction

All buildings weaken and deteriorate in time unless they are properly maintained. The maintenance of Archdiocesan buildings, therefore, is a priority that requires consistent attention.

Building maintenance may be neglected for a variety of reasons:

- a. The staff is too busy on other things;
- b. The parish “cannot afford expensive maintenance”;
- c. The parish buildings are fairly new and do not require inspection.

Sometimes this neglect leads to major problems and major expense with church buildings. The best and most cost effective solution is to have a stable program for consistent maintenance of Archdiocesan buildings.

B. Maintenance of Facilities

Every church and school should establish a Maintenance Committee. The Committee members should consist of parishioners or school parents who possess construction or engineering and/or architectural knowledge and experience.

This committee should compile all building plans from the Architect or Municipal Hall and “As-built” drawings and have access to all technical manuals and service contracts, etc. and store in a safe and handy place. The committee should become familiar with the location of all key maintenance equipment in the parish or school buildings.

An organized PM system and effective communication are both critical to proper facility maintenance. Communication between the Maintenance Committee and the maintenance personnel, secretary, teachers, students, parishioners and contractors is absolutely imperative. The observed problems should be immediately addressed and repaired or replaced. Facility maintenance is time sensitive and must be approached aggressively by professionals, tradesmen, maintenance personnel and qualified volunteers.

The Maintenance Committee Chairperson must communicate and inform the pastor, the Parish Education Committee (PEC) in case of an elementary school and the Regional Education Committee (REC) of a secondary school, of the committee’s findings and cost of the maintenance issues and obtain the Pastor’s approval prior to further action.

Prioritizing the preventive maintenance procedure may be required if there is shortage of maintenance staff or the lack of funds. In these cases the least critical task that poses the least threat to life safety can be deferred. It is recommended that the PM tasks should follow the order as listed below:

- a. Life Safety: Items that, if not addressed immediately, will have potential threats to the lives of the students or parishioners or the public.



- b. Regulatory Requirements: Items that are not in compliance with the Building Code or other regulations.
- c. Equipment Life Cycle: Items that requires routine life cycle maintenance such as mechanical system, roofing, alarm system security, lights, etc.
- d. Building Maintenance: Items such as painting, caulking, cleaning, and so on.
- e. Long-term maintenance items.

- i. Asbestos

Asbestos has been found in many products around old buildings built prior to 1980. It has been used in shingles and felt for roofing, exterior siding, pipe and boiler coverings, compounds and cements such as caulking, putty, roof patching, internal cement in the furnace, wall boards, textured ceilings, acoustical ceiling tiles, plaster, and vinyl floor tiles.

Asbestos poses health risks when the fibres are in the air that people breathe. Asbestos poses health risks only when the fibres are in the air. When people breathe in the fibre, the fibre will lodge in their lungs, causing scarring that can ultimately lead to severely impaired lungs function (asbestosis) and cancer of the lungs.

If it is suspected asbestos may be present in a building, an environmental consultant should be brought in to look into the matter. If asbestos is found, the Pastor or principal should authorize the consultant to draw up specifications and invite qualified restoration environmental contractors to bid on the removal of the hazardous material.

- ii. PCB in Fluorescent Light Ballasts

All fluorescent lamps manufactured prior to 1978 contained PCB (polychlorinated biphenyls) in their ballasts. PCB ballasts were available until 1980. As they age, these ballasts become more likely to leak or drip.

The common health effect of PCB contacting the skin are skin conditions such as acne and rashes, liver effects and damage, impaired reproduction, affected motor skills, and cancer.

It is recommended that parishes and schools hire a professional electrician to check their ballasts and replace them if PCBs are found in them.

- iii. Seismic Upgrade of Churches and Schools

Buildings built prior to 1985 were not constructed to resist earthquake ground motion. Seismic upgrade to these buildings may be required. Parishes and schools may wish to hire a structural engineer to assess the seismic resistance of the building and the cost in rectifying the problem.

General and Preventative maintenance cannot be by permanent parish and school maintenance personnel alone. Some items should be/must be performed by certified professionals who are familiar with that particular trade, such as elevators, HVAC equipment, boilers, electrical, etc.



C. Preventative Maintenance Audit and Estimated Cost

Preventive Maintenance utilizes a planned and controlled program of periodic testing, inspection, and replacement of components to prevent potential failures from occurring and to permanently preserve the building or equipment. Preventive Maintenance activities are performed at regular intervals (i.e. daily, weekly, monthly, semi-annually, annually, two years, five years, etc.) to prevent unnecessary expenditures and to extend the life of each element.

In order to establish an annual maintenance budget, it is essential to develop a facility audit system. The facility audit is a system for thoroughly assessing the existing physical conditions and performance of the buildings, grounds, equipment, and so on. It is necessary to predict the frequency, scope and the cost of the maintenance work to be performed during the year.

Auditing the facility is absolutely essential if the churches and schools are to develop a Preventive Maintenance Program. The audit procedures and forms shown here are for the purpose of identifying the condition of the building(s) and equipment and assessing the cost and priority of their repair or replacement. This guideline demonstrates examples of some items; it is up to the Maintenance Committee to develop its own complete maintenance audit list and costs.

In summary, the maintenance audit will result in the parish or the school having the following information:

- a. List of items to be inspected;
- b. Frequency with which inspections should be carried out;
- c. Cost of the repair or replacement;
- d. Proposed date of the repairs or replacement.

Other items such as plumbing, electrical, fire alarm systems, sprinkler system, etc., should be audited by a professional tradesmen or company and have not been listed in the example for the sake of brevity.

From the information provided, a work schedule can be developed and the maintenance cost can be included in the annual budget.

See Section G for an example of a format of a maintenance audit, cost, and frequency of maintenance items.

PM Audit and Estimated Cost

Church: ABC Parish
Facility: Rectory **Report Date:**

Description of Work	Inspection Frequency (Years)	Inspection Date	Inspected by	Quantity	Estimated Cost	Proposed Replacement or Repair Date	Comments
CONCRETE SLAB on GRADE							
Replace unfinished concrete floor	40	04-Nov-2006	Struct. Eng.	2,500 sf.	\$15,700	Dec-2009	Slab is cracking badly
METAL HAND RAIL							
Sand off rust and repaint	10	15-Dec-2006	Audit Team	20 ft	\$500	Jun-2007	Scaling and rusting badly
WINDOWS							
Recaulking windows	15	10-Sep-2006	Audit Team	16 windows	\$3,599	Jul-2007	Water is entering bedroom
Remove and replace all windows	40	15-Dec-2006	Mtnce Cmtee	16 windows	\$13,000	Jun-2009	Inefficient & wasting entry
ROOF							
Remove debris from around drains	0.5	05-Dec-2006	Mtnce Cmtee	2,500 sf.	\$118	Dec-2006	To be done spring and fall
Tar & gravel roof inspection	5	11-Dec-2006	Roof Inspector	3,000 sf.	\$165	n/a	Roof will only last 4 years
Replace T&G roof with SBS	5	11-Dec-2006	Roof Inspector	3,000 sf.	\$21,5000	Jun-2010	Replace with SBS roofing
PAINTING INTERIOR & EXTERIOR							
Interior Painting	10	15-Nov-2006	Mtnce Cmtee	9,000 sf.	\$18,000	Apr-2011	Surfaces appearing dull
Exterior Painting	10	15-Nov-2006	Mtnce Cmtee	3,000 sf.	\$8,000	Apr-2011	Weathered badly
WATERPROOF STUCCO WALLS							
Clean wall moss, algae & mildew	5	11-Dec-2006	Mtnce Cmtee	2,100 sf.	\$2,100	Aug-2009	Wash with 1-3 bleach-water
Fill all cracks	5	11-Dec-2006	Mtnce Cmtee	500 sf.	\$750	Aug-2009	Masonry grout
Apply waterproof to stucco walls	5	11-Dec-2006	Contractor	3,100 sf.	\$6,200	Aug-2009	Use Fabrikem
MECHANICAL							
Quarterly Service	.25	16-Dec-2006	Contractor	Htg system	\$800/annum	Mar-2007	All items as per the contract
Replace all filters					Filter cost		
Inspect operational & Safety controls							
Lubricate all equipment							
Annual service	1					Dec-2007	All items as per the contract
Testing of operating & Safety controls							
Fire alarms system	1					Dec-2007	All items as per the contract



D. Budgeting and Funding

The scope of a maintenance plan depends on the predetermined budgetary allotments. Maintaining facilities will minimize life safety hazards and sustain the life of the structure and equipment. Facilities have been known to crumble because of lack of budgetary allocation and inattentive maintenance.

A Maintenance Budget is derived from auditing the facility. The facility audit is a system for thoroughly assessing the existing physical condition and performance of the buildings, grounds, utilities, and equipment. The audit will determine the major and minor, urgent or long-term needs for corrective action and hence will determine the short- and/or long-term financial planning.

For example, refer to the schedules in Section G below and the item “Replace T&G roofing with SBS.” The estimated cost by a roofing Inspector was \$21,500 in December, 2006. The roofing inspector advised that the roof should be replaced in June, 2010 (three and a half years from the inspection date).

Using the assumption that the inflation index is 2 percent per annum, the cost in replacing the roof would be \$21,500 times 1.08 (the 1.08 being the simple formula of one plus the number of years times the inflation rate) which equals \$23,220. Dividing this number by the number of years when the work is to be performed, which is four in this case, equals \$5,805. Hence the parish must raise \$5,805 for the next four years in order to meet the budget to replace the roof.

Similarly, the building maintenance budget for other items, as listed in the sample Audit Report, is calculated.

Other costs such as maintenance of the heating system, the future painting of the interior and exterior walls, and replacement of the flooring system and so on should also be included in the budget. All these items should be found in the maintenance audit of estimate cost of the audited items.



Sample Maintenance Budget

Description of Work	Estimated Cost in 2006	Proposed Years Repair or Replace	Budget in 2007	Budget in 2008	Budget in 2009	Budget in 2010	Comments
CONCRETE SLAB on GRADE Replace unfinished concrete floor	\$15,000	3	\$5,652	\$5,652	\$5,652		
METAL HAND RAIL Sand off rust and repaint	\$500	1	\$500				
WINDOWS Recaulking windows	\$3,500	1	\$3,500				
Remove and replace all windows	\$13,000	3	\$4,680	\$4,680	\$4,680		
ROOF Remove debris from around drains	\$118	0					
Tar & gravel roof inspection	\$165	0					
Replace T&G roof with SBS	\$21,500	4	\$5,805	\$5,805	\$5,805	\$5,805	
PAINTING INTERIOR & EXTERIOR Interior Painting	\$18,000	5	\$3,888	\$3,888	\$3,888	\$3,888	\$3,888 in 2011 as well
Exterior Painting	\$8,000	5	\$1,728	\$1,728	\$1,728	\$1,728	\$1,728 in 2011 as well
WATERPROOF STUCCO WALLS Clean wall moss, algae & mildew	\$2,100	3	\$742	\$742	\$742		
Fill all cracks	\$750	3	\$265	\$265	\$265		
Apply waterproof to stucco walls	\$6,200	3	\$2,190	\$2,190	\$2,190		
MECHANICAL		Annual	\$800	\$800	\$800	\$800	\$800 in 2011
BUDGET TOTAL FOR YEAR SHOWN			\$29,750	\$25,750	\$25,750	\$12,221	



E. Maintenance Checklist

All parishes and schools should establish a Maintenance Checklist to ensure all components of the buildings and site are audited. An example of a checklist is shown below.

Maintenance Checklist ¹					
COMMUNICATION & SECURITY		ELECTRICAL SYSTEM		EQUIPMENT & CONVEYING SYSTEM	
Telephone system	PA System	Electrical distribution system	Illumination of lighting	Gas system for science laboratories	Refrigerator
Master clock system	Security alarm system	Transformer	Fluorescent lighting	Compressed air system	Elevator
TV cables	Annunciation panel	Emergency lighting system	Exterior lighting	Kitchen range	Wheel chair lift
Computer cables		Electric motors	Exit lighting	Dish washer	Dumbwaiter
		Light switches		Kitchen hood fan	Hoist & crane
EXTERIOR CLOSURES		EXTERIOR & INTERIOR DOORS		EXTERIOR WINDOWS	
Concrete block wall – waterproof	Wood shingles siding	Aluminum, steel, or wood doors	Weather-stripping	Steel frame	Glass blocks (fixed)
Clay brick wall – waterproof	Stucco finish-waterproof & painted	Bi-fold doors	Door closures	Aluminum frame	Aluminum shutters
Aluminum siding	Louvers – wood, aluminum, or steel	Roll-up doors	Deadbolts	Wood frame	Window screens
Masonry panels – sealed	Recaulking	Garage doors	Screen/storm windows	Storm windows	Window thermal glass
		Metal & wrought iron gates	Pedestrian gates		
		Hinges, locksets	Wrought iron gates		
FINISHES		FIRE PROTECTION SYSTEM		FLOOR FINISHES	
Wall coverings	Plywood panels	Alarm system	Sprinkler system	Concrete floors	Hardwood floors
Acoustic tiles	Kitchen cupboards	Smoke & heat detectors	Kitchen suppression system	Epoxy floors	Terrazzo floors
Drywall	Stainless steel			Vinyl sheet & tile floors	Carpet
Ceramic tiles					
FOUNDATIONS & SUPERSTRUCTURE		HEATING & COOLING SYSTEM		INTERIOR CONSTRUCTION	
Slab on grade	Wrought iron balustrade	Boilers, gas or oil	Control & radiator valves	Concrete block, painted	Toilet partitions
Concrete stairs	Steel decking	Ventilation system	Circulation pumps	Glazed interior wall	Interior stairs surface
Wood stairs	Metal grating	Electrical heating units	Expansion tank	Plaster or gypsum board	Rubber or metal nosing
Railings		Air conditioning system	Pipe insulation	Demountable partitions	Stair railings
		Exhaust fan	Heat pump		
		Exhaust ducts & chimneys	Residential furnace		
LANDSCAPING		OTHER PLUMBING SYSTEM		PLAYGROUND & EQUIPMENT	
Watering plants		Gas piping & fittings		Sidewalks	Roadway & driveway
Lawn mowing				Sports fields	Hard surface for playing
Weeding				Playground equipment	
PLUMBING		ROOFING		SANITARY/STORM SYSTEM	
Water closets & urinals	Emergency shower	Built-up roofing	Asphalt & cedar shingles	Pipe & fittings – PVC or CI	Gutters
Lavatories	Emergency eye wash	Modified bituminous system	Roll roofing	Storm drainage system	Roof drains
Bathtubs	Pipe & fittings	Metal steep roof	Attic ventilation	Cleanout	Sump pump
Showers	Water valves	Tile slope roof	Skylight		
Drinking fountain	Pipe insulation				
Water heater, gas or electric	Pipe meter				
	Water meter				
	Hose bibs				

¹ For guidance to the Maintenance Committee listed here (but not limited to) are items that should be examined for defects and possible deterioration.



F. Preventing Playground Injuries

Playgrounds have been identified as a significant setting for childhood injuries. Every year in Canada, an estimated 28,500 children are treated in emergency departments and hospitals for playground injuries. The majority of these injuries occur among pre-school and elementary school-aged children. The most common type of injury is falling from equipment, which is responsible for more than two-thirds of playground injuries. For children younger than five years of age, the head and face are most commonly injured. It is recommended that installation and maintenance of new and existing playgrounds be done according to CSA standards CAN/CSA-Z614-07, a copy of which is on file at the CISVA offices.

Public Playground Safety Checklist

- a. Make sure surfaces around playground equipment have at least 12 inches of wood chips, mulch, or sand or mats made of safety-tested rubber or rubber-like materials.
- b. Check that protective surfacing extends at least 6 feet in all directions from play equipment. For swings, be sure surfacing extends in back and front, twice the height of the suspending bar.
- c. Make sure play structures more than 30 inches high are spaced at least 9 feet apart.
- d. Check for dangerous hardware like open "S" hooks or protruding bolt ends.
- e. Make sure spaces that could trap children such as openings in guardrails or between ladder rungs measure less than 3.5 inches or more than 9 inches.
- f. Check for sharp points or edges in equipment.
- g. Look out for tripping hazards, like exposed concrete footings, tree stumps, and rocks.
- h. Make sure elevated surfaces, like platforms and ramps, have guardrails to prevent falls.
- i. Check playgrounds regularly to see that equipment and surfacing are in good condition.
- j. Carefully supervise children on playgrounds to ensure they are safe.