

MAINTENANCE GUIDEBOOK I - MAINTENANCE PROGRAM

APPENDIX C

SAMPLE PREVENTIVE MAINTENANCE PROCEDURES

The Housing Authority of: _____

P reventive Maintenance **P** rocedure

Electrical Systems

TASK DESCRIPTION	D	W	M	Q	S	A
<p>Electric Motors</p> <ol style="list-style-type: none"> Lubricate non-sealed bearings per manufacturer's recommendations. Check motor alignment, motor mounts, bearing wear, amperage draw and voltage. <p>Lighting Fixtures and Switches</p> <ol style="list-style-type: none"> Check operation of light fixtures and switches by turning lights on and off. Check for broken light globes, diffusers and reflectors and replace. Check for broken or missing light switch covers and replace. <p>Outlets</p> <p>Use test light to check outlets. If test light does not glow, identify and correct problem. Check polarity.</p> <p>Electrical Panel, Meters and Motor Starters</p> <ol style="list-style-type: none"> Check electrical equipment rooms: <ol style="list-style-type: none"> Be sure they are clean and properly ventilated. Make sure they are properly SECURED. For safety reason, NEVER leave an electrical room unlocked. Check electrical panel for signs of heating and tighten all connectors. Test circuit breaker operation. Tighten all connectors on electrical panels, meters and motor starters. Check contacts for pitting, corrosion and wear. Check load with amp. probe. Check HA owned meters for proper operation. Tighten main power switch gear completely. Clean contactors, tighten lugs, replace springs where required, etc. Check all electrical bus ducts and connections for hot spots. <p>TRANSFORMERS</p> <ol style="list-style-type: none"> Monitor peak electrical load on transformer. Keep trash off transformers. DO NOT stack anything whatsoever on the transformers. Clean transformer surfaces. Tighten all connections and visually inspect entire unit. Check unit, check all connectors, check transformer protection, and conduct electrical test. 			x		x x x x	x x x x

- D -> Daily
- W -> Weekly
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- Q -> Quarterly
- S -> Semi-Annually
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The Housing Authority of: _____

P reventive **M**aintenance **P** rocedure
Electric Space Heaters

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check operation: a. Turn thermostat to highest and lowest settings and check response of unit. b. Listen for any unusual noises or vibration as an indication of fan misalignment. 2. Clean and inspect fan motor and blades. 3. Lubricate non-sealed motor bearings. 4. Check electrical heating element and clean. 5. Check electrical cord. Replace or repair as necessary. 6. Check for any code violations: a. Electrical plug arrangement - no octopus plugs. b. Extension cord violation - broken insulation. c. Overloaded circuits.				x		
				x		
				x		
						x
				x		

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The Housing Authority of: _____

P reventive M aintenance P rocedure
Electric Wall Heaters

TASK DESCRIPTION	D	W	M	Q	S	A
1. If radiant heat, check for proper operation, including thermostat.						x
2. Units with blowers:						x
a. Check fan for proper operation.						
b. Check fan for vibration and proper speed.						
c. Clean fan motor and blades, if required.						
3. Vacuum out dust.						x

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The Housing Authority of: _____

P revenue M aintenance P rocedure
Electrical Ranges

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check voltage to unit. Notify Maintenance Supervisor of any abnormal readings.						x
2. Check unit for proper operation. Check oven and surface heating elements at various temperatures.						x
3. Check oven door operation.						x
4. Check oven light and replace as required.						x
5. Clean grease from all electrical connections.						x
6. Inspect power supply cord and plug. Replace if insulation is broken						x
7. Clean unit.						x

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The Housing Authority of: _____

P Preventive M Maintenance P Procedure

Electrical Motors

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check motor alignment.						x
2. Check motor mounts.						x
3. Check amperage draws and voltage on all electric motors. Compare with nameplate and/or engineering data.						x
4. Check bearing wear. (Lubricate motor bearing as specified in manufacturer's literature).						x

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P reventive Maintenance **P** rocedure
Emergency Generator

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check batteries and charger. Maintain proper level in batteries with distilled water.		x				
2. Check engine coolant and inspect unit for coolant leaks.		x				
3. Check engine crankcase oil. If low, add oil per manufacturer's recommendation.		x				
4. Check converter oil (if not direct hookup).		x				
5. If connected as a diesel unit, check fuel level and reorder if low.		x				
6. Perform operational check under load and document.		x				
7. Inspect and clean and/or replace air filter.		x				
8. Brush or vacuum clean radiator core.			x			
9. Check all control operations.			x			
10. Change engine crankcase oil and oil filters.				x		
11. Drain and flush coolant system. Replace coolant.					x	
12. Inspect all belts and hoses and replace as required.						x
13. Complete engine tune-up and check and change converter oil as required.						x
14. Annual inspection and operational checks:						x
a. Test operation under load.						x
b. Test all controls and switch gear.						x
c. Take voltage/ampere readings.						x
d. Check generator bearings.						x
e. Review log kept by HVAC Mechanic.						x

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P reventive **M**aintenance **P** rocedure

Battery Emergency Lighting

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check for proper operation during a power outage - Disconnect AC power by unplugging unit or using the test switch.			x			
2. Change battery and/or light bulbs as required.			x			

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P reventive Maintenance **P** rocedure
Large Exhaust Fans

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check to see if units are operating properly. Listen for any unusual noises or vibrations and correct.			X			
2. Lubricate all non-sealed bearings.			X			
3. Inspect belt condition, alignment and condition on belt driven units. Replace, align and adjust tension as required.			X			
4. Inspect exhaust fan superstructure.			X			
5. Check motor and fan bearings.				X		
6. Clean fan or blower blades (where applicable).				X		
7. Inspect general condition of exterior and interior of unit. Treat and paint corroded areas.						X
8. Check operation of all controls. Clean contactors on larger units.						X
9. Check amperage and compare with amperage on motor nameplate and manufacturer's recommendations.						X
10. Clean exhaust grill.			X			

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P reventive **M**aintenance **P** rocedure

Small Bathroom Exhaust Fans

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check switch operation.						x
2. Check operation of fans: <ul style="list-style-type: none"> a. Listen for any unusual noises or vibrations for indication of misaligned fan. b. Check fan for proper speed. 						x
3. Open housing and clean fan motor and blades if required.						x

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P reventive **M**aintenance **P** rocedure
 Exterior Building Surfaces

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check for graffiti and remove.	x					
2. Make sure foundation vents are open in the summer and closed in the winter.					x	
3. Inspect walls for cracks, painting requirements and condition of grout on brick walls.					x	
4. Check building numbers and signs - repaint and tighten as required.					x	
5. Check condition of entrance steps, handrails, porches and patios - make the necessary repairs.					x	

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P reventive M aintenance P rocedure

Roof

TASK DESCRIPTION	D	W	M	Q	S	A
1. Remove any trash or debris from roof.			x			
2. Note areas of standing water on flat roofs and check condition of drains.			x			
3. Thoroughly inspect roof for damage and deterioration before each rainy season. Check for the following items: a. Blisters, wrinkles, cracks or loose seams. b. Punctures. c. Raised fasteners. d. Bare felt. e. Lack of aggregate. g. Loose or damaged gravel guards. h. Loose or cracked flashing. i. Cracked or loose expansion joints. j. Damaged scuppers and hatches. k. Leaking pitch pans. l. Caulking and solder joints. m. Gutters and downspouts (check to see if they are clean; clean when necessary). n. Ridge and saddle condition.				x		
4. Perform minor roof repairs, as needed.					x	
5. Clean gutters and downspouts. Some buildings with gutters are shaded by trees and, therefore, the gutters may require cleaning two or more times a year, including one after trees lose their leaves.						x

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P reventive Maintenance **P** rocedure

Doors and Door Hardware

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check door latching and locking operation: a. Open and close door - check for any difficulties or problems and correct. b. Make sure panic bars, door knobs and door pulls work and are not loose. c. Lock and unlock door - check for any problems.					x	
2. Check, adjust and lubricate door closures.					x	
3. Lubricate door hinges - using door hinge lubrication.					x	
4. Inspect door and door frame for general condition and alignment and make necessary repairs. Check door glass, kick plates, push plates, weather stripping, etc..					x	

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P reventive Maintenance **P** rocedure
Windows and Window Hardware

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check general condition of windows and window frames. Make any necessary repairs. a. Replace broken or cracked panes. b. Replace rotten wooden sills or frames. c. Prime pitted metal frames. d. Recaulk missing or cracked caulking.					x	
2. Check window lock operation.					x	
3. Open and close windows to check operation.					x	
4. Check window screens and replace torn screens.					x	

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P reventive **M**aintenance **P** rocedure
Interior Building Surfaces

TASK DESCRIPTION	D	W	M	Q	S	A
<p>Walls and Ceilings</p> <ol style="list-style-type: none"> 1. Check for general condition. Patch all cracks and holes. 2. Look for water stains as an indication of roof or plumbing leaks. 3. Check ceramic tile walls for grouting condition, and cracked or missing tiles. Replace as required. 4. Check bathroom mirrors and cabinets. Replace broken glass. 					<p>x x x x</p>	
<p>FLOORS</p> <ol style="list-style-type: none"> 1. Inspect concrete floors for cracks and pitting. Patch as required. 2. Check tile floors for missing, cracked or loose tiles. Replace as required. 3. Check carpeted floor for wear, loose seams, tears and condition. Repair as required. 4. Check for loose baseboards and reattach. 					<p>x x x x</p>	
<p>Cabinets, Desks, Bookshelves and other Furniture</p> <ol style="list-style-type: none"> 1. Check for general condition. Look for warping, missing panels, missing hardware and loose formica. 2. Tighten latches and hinges. 3. Lubricate hinges. 					<p>x x x</p>	
<p>Stairs</p> <ol style="list-style-type: none"> 1. Look for loose stair treads and reattach. 2. Tighten loose handrails. 			<p>x x</p>			

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P reventive **M** aintenance **P** rocedure

Garbage Disposal Unit

TASK DESCRIPTION	D	W	M	Q	S	A
<p>1. Check for proper operation:</p> <ul style="list-style-type: none"> a. Turn on and make sure it rotates. b. Check for vibration. 						X
<p>2. Look down with light into the surface of the unit to check the condition of blades. Remove any foreign material.</p>						X
<p>3. Clean with cleaner/disinfectant.</p>						X

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P reventive **M**aintenance **P** rocedure
Refrigerators

TASK DESCRIPTION	D	W	M	Q	S	A
<ol style="list-style-type: none"> 1. Check operation by turning thermostat to highest and lowest setting and listen to hear if the compressor responds. 2. Clean compressor and compressor compartment. Inspect for any refrigerant oil leaks. Notify Maintenance Supervisor of any leaks. 3. Clean condensor coils. 4. Check condition of door gasket and adjust or replace it if necessary. 5. Inspect cord and plug. Replace if insulation is broken. 6. Lubricate door hinges. 7. Inspect interior of unit for interior wall cracks. 8. If refrigerator has fan: <ol style="list-style-type: none"> a. Check operation of fan motor. b. Lubricate non-sealed bearings. c. Clean fan motor and blades. 					X	
					X	
					X	
					X	
					X	
					X	
					X	
					X	

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P reventive **M**aintenance **P** rocedure

Water Coolers

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check operation of water valve.				X		
2. Inspect for water leaks.				X		
3. Check drains for clogging. Clean drains.				X		
4. Check water temperature.				X		
5. Inspect the water bowl for scale buildup.						X
6. Clean compressor, compressor compartment, fan motor, fan blades, and condenser coils. Straighten any bent fins.						X
7. Inspect cord and plug (or wiring) for breaks in insulation.						X

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P reventive **M**aintenance **P** rocedure

Gas Range

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check surface and oven burners for proper operation: a. Check auto pilot operation. b. Check color of flame.						X
2. Clean and adjust burners.						X
3. Check for any gas leaks.						X
4. Check oven door operation.						X
5. Check oven light and replace as required (if oven has a light, be sure to check to electrical cord and plug to the unit).						X
6. Clean range.	X					

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Preventive Maintenance Procedure

Domestic Hot Water Heaters (NG & Elec)

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check operation, including controls.						x
2. Inspect unit and piping for leaks.						x
3. Drain water from heater until it clears to remove sediment.						x
4. Natural gas fired units: a. Inspect and clean burners. b. Check auto pilot operation. c. Inspect condition of flue and clean.						x
5. On electrical units, conduct amp/volt test.						
6. Set temperature control no higher than 120 degrees F.						x
7. Check temperature/pressure valve for proper operation, and check that drain pipe has a length sufficient to satisfy code requirements.						x

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P reventive Maintenance **P** rocedure

Fire Pumps

TASK DESCRIPTION	D	W	M	Q	S	A
1. Operate pump at rated speed with water discharging to exercise pump and to check pump operation.		X				X
2. Check conditions of pump seals, stuffing boxes, suction piping, strainers, pump drive and control equipment. Record in log.		X				X
3. On centrifugal pumps, water level in the casing must be checked by opening the air vent cock to assure sufficient water for lubrication and cooling before starting.		X				X
4. Test fire pump system under full rated load. Operate pump at full rated capacity to make sure entire system is performing properly.						X
5. Where applicable, check reservoirs and remove foreign material.						X
6. Repack pumps without mechanical seals.						X
7. Check motor amps and voltage. Make sure pump motors are not drawing more running amps than specified on motor nameplate or manufacturer's recommendations.						X
8. All gauges and instruments should be tested and recalibrated if required.						X

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The Housing Authority of: _____

P reventive **M**aintenance **P** rocedure
Sump Pumps

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check to see if unit is operating properly.	x					
2. Lubricate all non-sealed bearings.			x			
3. Clean as needed.			x			
4. Check all controls.			x			

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P reventive **M**aintenance **P** rocedure

Trash Compactors

TASK DESCRIPTION	D	W	M	Q	S	A
<p>1. Check to see if unit is operating properly:</p> <ul style="list-style-type: none"> a. Check limit switch operation b. Check ram operation. c. Check electric eye and clean reflector. d. Check hopper door for proper closing. e. Check if fire system (water and electric) is on - test by heating. f. Check last bag switch for proper operation. 		x				
<p>2. Check hydraulic fluid level (if used) and add, if required. Inspect for oil leaks.</p>						x
<p>3. Check sanitizing spray system (be sure fluid concentrate is being injected).</p>						x
<p>4. Remove debris from back of machine if there is any.</p>		x				

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The Housing Authority of: _____

P reventive Maintenance **P** rocedure
Mowers and Edgers - Gasoline Powered

TASK DESCRIPTION	D	W	M	Q	S	A
1. Clean; use radiator brush to remove any dirt or grass that has accumulated on unit, including blades and the cylinder fins of the engine. Wipe dry cloth (except the engine).	X					
2. Visually check entire machine for any damage.	X					
3. Check blades to see if they are dented pitted, bent or dull. Sharpen blades if necessary. Replace with new blades if they cannot be sharpened to a like new condition.	X					
4. Check engine crank case oil. If oil is low, add HD 30 paraffin based oil to bring up to proper level.	X					
5. Check or replace air and fuel filters.	X					
6. Check for loose fasteners and tighten.	X					
7. Check spark plugs, clean, regap or replace as necessary.		X				
8. Lubricate all pivot points and controls.		X				
9. When engine is hot, drain crank case oil and refill with HD 30 paraffin based engine oil.		X				
10. Thoroughly check unit for proper operation and care. Make any necessary repairs. Record condition of the equipment.			X			
11. Check points, replace if pitted or burned.			X			
12. Spot paint any scrapes or scratches on existing paint on the machines. When necessary, completely repair painted surfaces of equipment to protect from rust and corrosion.						X
13. Store all grass cutting machines in a clean dry well ventilated area.						
14. Check operation of mowers and edgers and inspect condition of units. Make recommendations to the Grounds Supervisor for future operation and maintenance.					X	X

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P reventive Maintenance **P** rocedure

Hedge Trimmers and Weed Eaters - Gasoline Powered

TASK DESCRIPTION	D	W	M	Q	S	A
1. Clean with brush to remove any dirt, grass or leaves. Wipe with dry cloth.		x				
2. Oil hedge trimmer blades.		x				
3. Check nylon cord supply on weed eater.		x				
4. Inspect equipment for damage. Check blades on hedge trimmers for dents, damage and sharpness. Sharpen blades as required.		x				
5. Clean the air cleaner every four (4) running hours.		x				
6. Clean the fuel filter.		x				
7. Clean regap or replace the spark plugs.		x				
8. Thoroughly check unit for proper operation and care. Make any necessary repairs. Record condition of the equipment.			x			
Maintenance for Storage						
1. Drain fuel/oil mixture from fuel tank.						x
2. Remove spark plug and pour two tablespoons of SAE 30 oil into cylinder through spark plug hole. Crank engine for 12 revolutions, then replace spark plug.						x
3. Cover motor housing, blades and other metal with a light coat of oil to prevent corrosion.						x
4. Inspect equipment to see that it has been properly prepared for storage.					x	

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P reventive **M**aintenance **P** rocedure

Gasoline Engine Starting

TASK DESCRIPTION	D	W	M	Q	R	A
<p>1. Engine starting procedures for push mowers, edgers, trimmers and "weed-eaters" and blowers:</p> <ul style="list-style-type: none"> a. Open gasoline shut-off valve located near bottom of gas tank. b. Open gasoline throttle slightly. c. Close choke on carburetor. d. Crank engine with starter or rope starter. e. When engine starts, gradually open choke valve until engine runs smoothly. f. NOTE: when engine is difficult to start, operator should check the following: <ul style="list-style-type: none"> (1) Check to see if fuel line stopped up. (2) Check to see if choke is on. (3) Throttle valve stuck or improperly adjusted. (4) Throttle rod loose. (5) Cracked spark plug. (6) Loose or defective wiring. (7) If operator cannot get engine started, notify the Grounds Supervisor. <p>2. Remember - SAFETY FIRST:</p> <ul style="list-style-type: none"> a. Be sure to pick up large rocks and other debris in the path of the mower before starting. b. Always stop engine before cleaning or working near the reel or rotating blade. c. Be careful to avoid letting foot slip under guard of rotating blade while blade is in motion. d. Check oil, filter and gasoline every four (4) hours. e. Wear leather constructed shoes and safety glasses. 					x	
					x	

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P reventive **M**aintenance **P** rocedure

Gasoline Engine Starting

Gasoline Engine Starting cont'd

TASK DESCRIPTION	D	W	M	Q	R	A
<p>f. No smoking or open flames while filling engine with gas.</p> <p>g. Do not run engine in the building (this includes the automotive shop area).</p> <p>h. Do not operate the engine powered equipment without the proper guards.</p> <p>i. Be sure to remove wire from spark plug before attempting to make adjustments or haul the lawn mower.</p> <p>3. It is the responsibility of the equipment operator to dress for the weather and dress for personal safety:</p> <p>a. Wear long pants (work pants).</p> <p>b. Wear a shirt.</p> <p>c. Wear socks.</p> <p>d. Wear leather constructed shoes - tennis shoes are NOT permitted.</p> <p>e. Wear safety glasses.</p> <p>f. Wear a hat (optional).</p>					x	

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P reventive **M**aintenance **P** rocedure

Plumbing Systems

TASK DESCRIPTION	D	W	M	Q	S	A
<p><u>Kitchens and Rest Rooms</u></p> <ol style="list-style-type: none"> 1. Check kitchen sink, bathroom lavatory, commode and urinal: <ol style="list-style-type: none"> a. Inspect fixtures for cracks. b. Inspect for plumbing leaks and repair. Check operation of all water valves and faucets. c. Check commode seat and hardware. Tighten if loose and replace as required. d. Check commode flush valve operation. e. Check drains to see if they are clear. f. Check commode base for leak. 2. Check hot water heater (refer to domestic hot water heater P.M. procedure). 					x	
<p><u>Other Areas</u></p> <ol style="list-style-type: none"> 1. Check floor drains to see if they are clear. Replace covers if broken. 2. Check mechanical equipment room plumbing system. Check for leaks, proper hangers and possibility of water hammer. 3. Open and close valves (slowly). Check all valves for leaks and repack as required. 					x	x

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P reventive Maintenance **P** rocedure

Space Heater (NG)

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check operation: a. Listen for any unusual noises or vibrations. b. Turn thermostat to highest and lowest settings and check to see if furnace responds. 2. Clean blower blades. 3. Vacuum interior of unit. 4. Check auto pilot operation. 5. Clean burners and adjust. 6. Lubricate non-sealed bearings. 7. Check for any gas leaks. 8. Inspect flue and condition and clean.					X	

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P reventive **M**aintenance **P** rocedure
Fan **C**oil and **S**mall **A**ir **H**andling **U**nits

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check air filters and clean and/or replace.				X		
2. Inspect all piping for leaks and repair.				X		
3. Vacuum interior of unit and clean blower blades (some units do not have blowers).				X		
4. Clean coils and straighten bent fins.				X		
5. Lubricate all non-sealed blower motor bearings.				X		
6. Check operation of all controls.				X		
7. If the blower is belt driven, check condition of belt, alignment and tension. Replace, adjust tension and realign as required.				X		
8. Clean condensate pan and make sure drain is clear of obstruction.				X		

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P reventive Maintenance **P** rocedure
Split DX Air Conditioning Units and Air to Air Heat Pumps

TASK DESCRIPTION	D	W	M	Q	S	A
Interior Evaporator 1. Listen for any unusual noises or vibrations and check to make sure the unit is cooling properly. Report any problems to Supervisor. 2. Replace filters. 3. Check unit for proper operation: a. Check operation of all controls - cycle unit on and off. b. Listen for any unusual noises or vibrations and make sure the fan motor is properly aligned. 4. Remove cover and clean all coils, fan blades, condensate pans, and make sure condensate drain line is clear of obstruction. Straighten any bent fans. 5. Lubricate all non-sealed bearings. 6. Check for refrigerant and oil leaks. 7. Inspect all wiring and clean all controls. 8. Check operation of supplemental electric heat strips on air-to-air heat pumps.	x		x x	x x x x x		
Exterior Compressor and Air Cooled Condenser 1. Check unit to make sure no trash, debris or vegetation is blocking proper air flow. 2. Listen for any unusual noises or for "short-cycling". 3. Check and complete inlet and outlet air temperatures. 4. For units with variable outlet sections - check and oil linkage and inspect conditions of the baffles. 5. Thoroughly clean condenser coils and fan blades, and straighten bent fins or fan blades. 6. Lubricate all non-sealed bearings. 7. Check for refrigerant and oil leaks. 8. Inspect all wiring and clean all controls. Check contactors and tighten electrical connections. 9. Thoroughly inspect both the interior and exterior of the unit for corrosion. Remove corrosion with sandpaper and/or naval jelly and repaint with a rust inhibitor paint.	x		x x		x x x x x x	

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The Housing Authority of: _____

P reventive Maintenance **P** rocedure

Window & Through-the-Wall Air Conditioning Units

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check to be sure air conditioning unit is functioning properly.		x				
2. Listen for unusual knocks or noises.		x				
3. Inspect unit for condensate leaks.		x				
4. Clean filter if reusable; change filter if throwaway type.			x			
5. Remove unit for cleaning:						x
a. Blow out condenser and evaporator coils.						
b. Wash coils if they become sticky or clogged.						
6. Inspect all wiring and clean all controls.						x

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P reventive Maintenance **P** rocedure

Elevator

TASK DESCRIPTION	D	W	M	Q	S	A
1. Check cables for deterioration.					X	
2. Listen for unusual knocks or noises.					X	
3. Inspect break shoes for deterioration.					X	
4. Check all panel buttons in car(s) and on each floor for proper functioning.					X	
5. Check operation of elevator car doors, including electric eye safety devices.					X	
6. Test emergency communication system.					X	

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P reventive Maintenance **P** rocedure

Gas Boilers - Hot Water/Steam

TASK DESCRIPTION	D	W	M	Q	S	A
<p>1. Check unit for proper operation and fill in daily operating log (provided by the boiler manufacturer):</p> <ul style="list-style-type: none"> a. Blow down water column. b. Check water level in boilers and expansion tanks. c. Check water pressures and temperatures. d. Check pressures and condensate return temperatures. e. Check ignition or pilot light operation and flame failure detection system. f. Check operation of the gas valve. g. Look at the color and distribution of the flame and check flue temperature. h. Check the suction and discharge pressure of each circulating or condensate pump. i. Listen for any unusual noises or vibration and correct. j. Inspect all piping, valves and connectors for leaks. k. Inspect handholes and manholes for leakage. 	x					
<p>2. Review operating log for any marked changes in recorded water level, temperatures and pressures. These are signals to analyze and correct the developing condition.</p>	x					
<p>3. Notify Maintenance Supervisor of any unusual noises, vibration, temperature, pressures or water level changes.</p>	x					
<p>4. Oil blower motors.</p>			x			
<p>5. Clean exterior of equipment.</p>				x		
<p>6. Treat corroded areas of exterior surfaces and repaint.</p>						x

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P reventive M aintenance P rocedure

Gas Boilers - Hot Water/Steam

TASK DESCRIPTION	D	W	M	Q	S	A
7. Perform combustion efficiency tests and adjust dampers and burners for proper fuel/air ratio (CO2 test).			x			
8. Test all safety controls and valves.			x			
9. Sequence test all operating and safety controls and check.			x			
10. Check and clean pilot, igniters and burners.					x	
11. Clean blower blades.						x
12. Clean flues, dampers and water tubes.						x
13. Inspect flues, dampers and water tubes.						x
14. Perform operational check of all safety controls.						x
15. Inspect condition of refractory.						x
16. Drain and flush boiler.						x
17. Perform hydrostatic test pressure parts as required by insurance carrier or after tube repair or replacement.						x
18. Check general condition of boiler and make necessary repairs.						x
19. Conduct inspection of boiler with insurance carrier.						x

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