**HVAC Preventive Maintenance**

The following represents the guidelines to be used to meet the minimum mandatory maintenance standard.

The Company is responsible for complying with the contents of this section as it relates to the mechanical equipment of the subject developments, including but not necessarily limited to the following:

* + Boilers and associated equipment
	+ Pumps and motors
	+ Valves
	+ Storage tanks
	+ Central air conditioning units (where such exist)
	+ Sump pumps
	+ Central exhaust fans and associated energy conservation controls
	+ Corridor ventilation units (gas fired and electric) and associated energy conservation controls
	+ Thermowheels
	+ Exhaust fans (e.g. garage, utility rooms, etc.)
	+ Tracing lines and associated equipment
	+ Garbage compactors
	+ Hydraulic motors and pumps
* All such equipment is to be thoroughly inspected, repaired and calibrated at a minimum once per year or more frequently if recommended by the manufacturer. The Company must establish and maintain an historical record of all preventative maintenance work performed on all required equipment and systems as per the manufacturer recommendations. Records of preventative maintenance inspections and repairs are to be maintained by the Company at the management office in a file system or preferably in a computer database using approved software for access and viewing by Toronto Community Housing. It shall be the responsibility of the Company to obtain and keep at the site the appropriate manuals and specifications from the manufacturer for each item or type of equipment.  The Company shall be responsible for ensuring that all the mechanical equipment is maintained to the highest standard on a seven day a week basis. All malfunctions or breakdowns will be immediately repaired with the minimum of down time. All mechanical rooms are to be properly identified, and maintained in a clean and tidy manner.

**Booster Pumps Systems Services**

The Company is required to perform the preventative maintenance needed to maintain water pressure throughout the buildings.

Service includes maintenance for all equipment from the isolation valves of the inlet to the isolation valve of the outlet including the isolation valves themselves and all the equipment in- between. Includes the disconnect switch and controls.

**Services required:**

* Inspecting and setting incoming and outgoing required water pressures by the booster pump system.
* Recalibrate/replace pressure gauges.
* Testing/repair PRVs for required operating pressure.
* Check/repair motor, impeller and pump alignment.
* Re-calibrating and resetting pressure-regulating valves.
* Providing a written report.

The Company must provide a yearly inspection and service of the equipment as outlined above. Complete replacement of the unit is a last resort or option.

**Combination Ventilation and Exhaust Systems Services**

The Company is required to perform preventative maintenance for combination ventilation/heating/air conditioning fresh air and exhaust units that supply more than one outlet.

**Services required:**

* Inspecting and lubricating bearings of all combination units.
* Inspecting and lubricating garage and other exhaust fans.
* Inspecting heat exchanger.
* Cleaning burners and trays.
* Tightening belts, testing operation of thermostat and all safeties including electrical controls.
* Changing filter yearly and aligning fan and motor.
* Testing operation of motorized fire damper.
* Inspecting canvas connection.
* Checking operation of the air conditioning unit.
* Providing a written report yearly.
* Complete replacement of the unit is a last resort or option.

**Chiller/Ventilation Systems Services**

The Company is required to perform a yearly preventative maintenance routine to keep your chiller ventilation systems working at their best. The Company must keep equipment operational, meet manufacturers’ standards and comply with all TSSA requirements.

Service includes maintenance for all components from the isolation valves of the inlet to the isolation valve of the outlet including the isolation valves themselves and all the equipment in- between.

**Services required:**

**CHILLERS**

* Chiller start up and shut down.
* Inspecting and lubricating all bearings, motorized dampers, and louvers.
* Checking all chiller, safeties and controllers.
* Tightening belts and testing operation of thermostat.
* Checking and maintain required chemicals in chiller system.
* Changing filter yearly, aligning fan/motor.
* Inspecting evaporator coil and unplug condenser drain lines.
* Washing down evaporator coil.
* Testing motorized damper.
* Inspecting/repair canvas connection.

**AIR CONDITIONING**

* Checking operation of the air conditioning unit.
* Changing filter yearly, align motor/fan.
* Inspecting evaporator coil and unplug condenser drain lines.
* Lubricating all bearings, motorized dampers, and louvers.
* Tightening belts and testing operation of thermostat.
* Providing a written report.

**VENTILATION UNITS**

* Changing filter yearly, align motor/ fan.
* Lubricating all bearings, motorized dampers, and louvers.
* Tightening belts, check/repair canvas connection and minor duct insulation.
* Providing a written report.

**EXHAUST FANS**

* Lubricating all bearings, motorized dampers, and louvers.
* Tightening belts, check/repair canvas connection.
* Providing a written report.
* Complete replacement of the unit is a last resort or option.

**Drains and Sump Pump Systems Services**

The Company is required to perform yearly preventative maintenance for all building sump pumps to keep pumps operational and reduce drain line blockage.

Service includes maintenance for all equipment from the isolation valves of the inlet to the isolation valve of the outlet including the isolation valves themselves and all the equipment in-between.

**Services required:**

* Yearly clean all sump pits.
* Operate float, testing controls and high level water alarm (if applicable).
* Restoring water seals.
* Cleaning elevator sump pit, test float, and high water alarm (if applicable).
* Secure sump pit cover/replace damaged electrical outlet (if applicable).
* Supply a written report.

The Company will perform a building bacterial application to remove grease build ups from sanitary kitchen stacks and horizontal drains once every three years. Buildings will be scheduled one third every year.

**Service required:**

* Kitchen stack inspection before and after.
* Chemical formulation tailored to stack condition.
* Apply tailored chemical to all units on specified floors.
* Labour to apply product.

**Individual Heating Systems Services**

The Company is required to provide yearly preventative maintenance for all your Individual heating systems (hydronics and forced air), gas-fired or electrical including call-backs.

**Services required:**

**HYDRONICS**

Service includes yearly gas boiler preventative maintenance for all components, excluding heat exchanger and expansion tanks, from the isolation valves of the inlet to the isolation valve of the boiler's outlet, including the isolation valves themselves, electrical up to customer switch, gas supply components up to the gas shut off to the boiler.

**FORCED AIR**

Service includes yearly gas furnace preventative maintenance for all components, excluding heat exchanger and duct heaters, between the supply air duct and the return air duct, including electrical up to customer switch, gas supply components up to the gas shut off to the furnace.

**ELECTRICAL FURNACES**

Service includes yearly electrical furnace preventative maintenance for all components, excluding heat exchanger and duct heaters, between the supply air duct and the return air duct, including electrical up to customer switch and disconnect of furnace, including disconnect.

**Heating and Domestic Hot Water Systems Services (Multi-Residential Units) including chemical treatment**

The Company is required to provide yearly preventative maintenance for all your heating and domestic hot water system boilers

Service includes maintenance for all equipment from the isolation valves of the inlet to the isolation valve of the outlet including the isolation valves themselves of system's components such as (boiler, DHW storage tank, mixing valves, low water cut-off, heating and circulating pumps, expansion tanks, water chemicals pot feeder, check valves and pressure regulator for heating system).

**Services include:**

* Call backs.
* Heating system start up and shut down.
* Inspecting/repair/replace refractory and heat exchangers.
* Cleaning/repair/replace burners and trays.
* Checking all boiler, safeties and indoor/outdoor controllers.
* Lubricating all pumps; testing low water cut-off and relief valves.
* Inspecting stacks and update fire log books.
* Checking heating expansions tank and operating the pressure regulating valve.
* Check chemical feed equipment.
* Open, inspect, clean, and obtain inspection certificate for hot water tank as required by TSSA.
* Re-line hot water tanks that have failed inspections as required by TSSA.
* Replacing manhole gasket as required.
* Inspecting main electrical disconnect/distribution panel for electric heating.
* Leaving boiler room clean.
* Chemically treat the system and maintain chemical effectiveness including testing, adding/supplying chemical and operating the corrosion coupon program.
* Complete replacement of the unit is a last resort or option.

**Individual Fan Coil Heating/Cooling Systems Service**

The Company is required to provide yearly preventative maintenance for all individual fan coil systems including call backs.

Service includes yearly preventative maintenance for all components from the isolation valves of the inlet to the isolation valve of the fan coil unit's outlet. The isolation valves themselves are not included.