

HILLSBOROUGH

Community College 

FACILITIES OPERATION AND MAINTENANCE MANUAL

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FACILITIES OPERATION AND MAINTENANCE MANUAL
HILLSBOROUGH COMMUNITY COLLEGE

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INTRODUCTION

The purpose of the procedures outlined in this manual is to provide an update of acceptable and effective maintenance and operations management “best” practices and current standards for HCC facilities. The procedures are modeled from the Maintenance and Operations Administrative Guidelines for School Districts and Community Colleges (Florida Department of Education) and a Texas community college system maintenance program and adapted to Hillsborough Community College. It is also intended to provide a comprehensive framework for delivering beneficial and cost-effective services at each Campus and Center. The procedures will provide HCC Facilities Maintenance Staff with a set of clearly defined, yet flexible guidelines that are intended to complement sound facilities management practices already in use and offer new ones where necessary. The procedures will be used in coordination with the future Computerized Maintenance Management System – CMMS. The Facilities Operations and Maintenance Procedures were reviewed and approved by the members of the Facilities Process Team in August, 2005.

GOALS AND OBJECTIVES

1. Provide guidelines, recommendations and standards for maintenance and operations managers responsible for each Campus or Center.
2. Provide a definitive, yet flexible organizational and administrative structure for maintenance and operations of educational facilities.
3. Provide organizational structures with the ability to deal effectively with multifaceted and diverse problems that pertain to the maintenance and operations of educational facilities.
4. Provide maintenance and operations structures capable of dealing with challenges and problems of new technologies in building construction, materials, and equipment.
5. Provide maintenance and operation structures capable of formulating strategies to effectively and efficiently deal with changing State and Federal environmental regulations.
6. Provide administrative structures capable of handling day-to-day maintenance and operations tasks common to all maintenance and operations directors, coordinators, and supervisors.

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7. Provide insights into the legal, technical, and environmental requirements that affect the funding and service required for maintenance and operations at educational facilities.

DIVISION I – ADMINISTRATION

- A. **Training** Provide employee training opportunities for each group in the disciplines of health and safety, operation, emergency conditions and system upgrades.
- B. **Coordination of Work** Coordination of work between seasonal timing, employees work load, college functions and outside contractors to operate in a cohesive manner.
- C. **Verification of Contractors Work** Verify the quality and quantity of work accomplished by outside contractors during the time they are on campus.
- D. **Scheduling of Renovation Projects** Coordinate between renovation and maintenance to schedule re-occupying spaces by faculty and staff once complete and tested.
- E. **Deferred Maintenance Project** Verify that equipment and/or materials are of high quality and that work that is done meets requirements.
- F. **Assistance to Facilities Management** Identify and justify long-term deferred maintenance projects required to prevent major equipment failure.

Provide assistance to Facilities Planner to maintain accurate and up to date Auto-CAD drawings for all buildings.

Provide assistances to Director of Facilities to prepare budget proposals for Capital Improvement Projects.

- G. **Uniform Requirement**
To provide a professional team image and to assist in staff identification for campus safety, all campus facility personnel will be required to wear a standard college facilities uniform shirt.
- H. Adhere to Florida Building Code, SREF, OSHA and Administrative Code 69A-58.
- I. Monthly report to the Safety Committee.

DIVISION II – GROUNDS – CONTRACTUAL GROUNDS

A., B., C. ROADWAYS, PARKING LOTS, SIDEWALKS

- Daily: 1. Pick up trash and debris, perform normal grounds maintenance tasks.
 2. Survey entire site for recent unsafe conditions.
- Weekly: 1. Repair or replace outside signs as needed.
 2. Clean on site roadways and parking lots.
 3. Check placement of wheel stops; realign and secure.
 4. Clean and inspect sidewalks and exterior steps.
- Monthly: 1. Inspect paving for cracks or potholes.
 a. Repair major defects immediately or barricade as appropriate.
 b. Schedule repair of remaining defects.
- Annually: 1. Repair and fill asphalt cracks.
 2. Stripe parking lots, paint directional signs, fire lanes, and crosswalks.
 3. Complete landscaping projects to enhance overall appearance of campus.

D. IRRIGATION SYSTEMS & WELLS

1. Systems Main Jockey Pumps
 - a. Monthly inspect units for unusual noise, vibration or leakage. With pump running, the package gland should be adjusted to allow 5 to 6 drops per minute leakage. If the packing gland cannot be adjusted, then all of the old packing must be removed and the pump repacked. Pumps with mechanical seals require no adjustment and should not be leaking.
 - b. Monthly check oil level and add oil if necessary.
 - c. Quarterly check oil for contamination and change if necessary.
 - d. Semi-annually change oil.
 - e. Annually inspect pump inlet and suction line. Remove any debris.
2. Test all automated systems monthly. Make repairs and/or adjustments as necessary.
3. Test all quick connect areas as needed. Make repairs and/or adjustments as required.
4. Repair all breaks in lines, fittings, and spray heads as they occur.
5. Upgrade systems as time and funds permit.
6. Wells Comply with Southwest Florida Water Management District requirements outline below:

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- a. Provide assistance to Southwest Florida Water Management District authorized staff for inspection of each well. Correct defects to comply with Florida Statutes, Administrative Codes and The Florida Building Code.
- b. Repair or replace leaking or inoperative well casings, valves or controls to make the system fully operational. If below grade, the work must be done by Florida Licensed Water Well Contractor.
- c. Check if the District issued Identification Tags on all wells.
- d. Check if there is a backflow prevention device on all wells.
- e. Check if there is a rain sensor over-ride on all wells.

E. LANDSCAPING AND ATHLETIC AREAS - CONTRACTUAL

1. Trim trees and shrubs as needed.
2. Cut grass and edge as needed.
3. Apply fertilizers in Spring and Fall.
4. Exercise weed control in turf beds using approved treatment.
5. Aerate high maintenance turf areas semi-annually.
6. Inspect all areas for undesirable insects weekly and treat with approved methods by a certified applicator.
7. Stripe baseball and softball fields annually prior to beginning of the season or and/or as needed prior to games and practice activities.
8. Add trees and shrubs as funds allow.
9. Remove dead or diseased trees, shrubs or plants as needed.
10. Schedule and complete two plantings of annuals each year.
11. Upgrade planted areas as funds and time allow.
12. Maintain strict inventory control of all chemicals in accordance with governing regulations.
13. Convert lawn areas to xeriscape where practical to minimize need for irrigation.

F. STORM DRAINS (including open and closed)

1. Observe drainage during major rain event. Correct any problems.
2. Keep open ditches clear of weeds and brush growth by using approved weed and brush control methods. Verify that outsourced pond maintenance contractor is adequately effective.
3. Repair erosion problems as they occur.

G. EQUIPMENT

- Daily:
1. At the end of the shift, each operator of power equipment is responsible for cleaning, servicing and inspecting the equipment to which he is assigned. He/She will follow the checklist prepared for that piece of equipment from the manufacturer's operations handbook. Some of the more obvious items appearing on the checklist should include the following:

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- a. Check all fluid levels adding proper amount of fluids as required.
 - b. Add grease as required to all lubricated points.
 - c. Check all blades for sharpness, nicks, cracks and attachments.
 - d. Check all belts for tension wear and cracks.
 - e. Check all attachment points for lubrication, excessive wear and proper locking pin or device.
2. The operator will certify his completion of the checklist by signing off on a sheet provided for that purpose.
 3. Major repairs or adjustments will be referred to the mechanic for action.

H. VEHICLES (General Maintenance, as per specific maintenance with Manufacturer's recommendations.)

1. Servicing (Contract service)

- a. Check fluid levels.
- b. Check belts for wear and cracks; replace as needed.
- c. Check bearings for lubrication and excessive wear. Replace as required.
- d. Service vehicles every 4,000 miles
 - a) Change oil, filters and grease.
 - b) Check all fluid levels.
 - c) Check tires for wear and change as needed.
 - d) Inspect brakes and repair as required.
 - e) Inspect belts and hoses for wear and cracks. Replace as required.

2. As Needed Inspections (Operator)

- a. Check all fluid levels. Add as necessary.
- b. Check all lights and turn signals.
- c. Check tires for proper inflation and wear.
- d. Check wipers
- e. Check exhaust systems
- f. Check brakes
- g. Check horn

3. Tune-up as per manufacturer's recommended schedule of check-ups.

DIVISION III – CONCRETE STRUCTURES (Annual Inspections)

A. INTERIOR SLABS AND FOUNDATIONS - Visually inspect all slabs and foundations for cracks, movement, spalling and other obvious defects. Make necessary repairs. Record locations and magnitude of all major defects and monitor status monthly.

B. BASEMENTS – BELOW GRADE EQUIPMENT ROOM – Visually inspect floors and walls for cracks, movement, spalling, water infiltration and other obvious defects. Make necessary repairs. Record location and magnitude of all major defects and monitor status monthly.

- C. STAIRS AND STEPS (EXTERIOR AND INTERIOR)** – Visually inspect stairs and steps for cracks, chips, loose nosing, standing water and other obvious defects. Make necessary repairs.

DIVISION IV – MASONRY (Annual Inspections)

A. B. EXTERIOR WALLS/INTERIOR WALLS

1. Visually inspect exterior walls for cracks, loose brick or masonry units, major displacement vertically or horizontally and other obvious defects. Make necessary repairs. Be sure to obtain matching masonry materials such as campus approved brick, approved sealant and Type S mortar in the approved color. Contact HCC Facilities Management for assistance and/or to verify need for structural assessment. Record location and magnitude of all major defects and monitor status monthly.

Visually inspect interior walls for cracks, and loose masonry units, major displacement vertically or horizontally and other obvious defects. Make necessary repairs. Record location and magnitude of all major defects and monitor status monthly. Contact HCC Facilities Management for assistance and/or verify need for structural assessment.

2. Low pressure wash walls to remove mold, mildew and accumulated dirt. Use appropriate chemicals to ensure good results without damaging exterior finish.

DIVISION V – METALS

A. STRUCTURAL STEEL

1. Where exposed to exterior and/or moist locations, inspect annually for rust and corrosion. Clean, prime and paint as required. Contact Facilities Planning and Construction to verify need for structural assessment if corrosion is beyond surface penetration.
2. If evidence of deterioration of structural members is displayed in some form in other components of the building such as roof, floor, exterior and interior walls. Contact Facilities Planning and Construction to verify need for structural assessment.

B. HANDRAILS AND METAL STAIRS

Visually inspect handrails annually for loose attachment to walls, rough, splintered and marred surfaces, worn and chipped paint, varnish or other finishes. Make necessary repairs. Visually inspect metal stairs annually for loose tread, cracked welds, loose and cracked concrete in pan type tread, chipped paint or other finishes. Make necessary repairs.

B. BLEACHERS

College Safety Officer to inspect annually document findings in report.

DIVISION VI – WOOD AND PLASTIC

- A. **BENCHES AND TABLES** – (Semi-Annually) Inspect for loose boards or loose metal tops and repair if needed. Check legs and seating area to ensure safety.
- B. **FLOORING** – (Semi-Annually) Visual inspection of slabs or tile for hairline cracks. Check for loose tile and repair. Check carpet for any stretching or separating at carpet joints.
- C. **CABINETS** – (Semi-Annually) Visually and physically inspect to ensure all drawers are securely in proper working order. Check doors to ensure all hinges are secure. Tighten any loose screws or replace any screws that are missing.

DIVISION VII – THERMAL AND MOISTURE PROTECTION

A. ROOFING AND FIXTURES

Visually inspect the roof every two months. Remove all organic materials and other debris as needed to maintain a clean roof. Visually inspect the roof surface for cuts (remove any screws or other metal objects that could puncture the roof membrane), abrasions, bubbles, open seams, absence of aggregate on built-up roofs, soft, spongy feel or substrate material, loose or missing traffic pads.

B. WATERPROOFING AT WALLS – BELOW GRADE

Visually inspect walls below grade for moisture as evidence of breakdown of waterproofing. Take appropriate corrective action.

C. FLASHING, DOWNSPOUTS, SCUPPERS AND GUTTERS

Visually inspect flashing, downspouts, scuppers and gutters for evidence of leaking and that they are properly secured. Take appropriate action. Make sure downspouts, scuppers and gutters are clean and free flowing at all times.

D. JOINT SEALANT – CAULKING – (Semi-Annually)

Visually inspect joint sealant and caulking at walls, floors, flashings, penetrations, windows, and door frames for shrinking, cracking and other signs of deterioration. Remove all loose caulk and replace with proper type for the application. Determining the expected life of all caulking and replace as needed with an ongoing

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maintenance program in accordance with manufacturer's recommendations. Inspect annually for drooping, shrinkage or failure of exterior sealant products in wall expansion and control joints, floor or slab expansion and control joints, and previous crack repairs and penetration repairs. Remove all sealants which are in failure, to old or appear suspect, with hand tools such as scrapers, picks and putty knives. Remove all debris and scrape opening out to largest natural void space possible. Contact the HCC Facilities Management Department for assistance in selection of Campus Standard sealant products for reapplication.

E. GENERAL

Correlate all interior leaks, and water damage with exterior source. Repair as required to eliminate water infiltration.

DIVISION VIII – DOORS AND HARDWARE (Semi-Annual Inspection)

- A. STEEL FRAMES EXTERIOR** – Inspect for movement, separation and corrosion.
- B. EXTERIOR DOORS AND HARDWARE** – Inspect for proper operation, loose hinges, screws, weather-proofing, locksets, closures and vision panels.
- C. HANDICAPPED AUTOMATIC OPENERS** – Check for proper operation, alignment and closure.
- D. OVERHEAD ROLLING DOORS** – Inspect for proper operation, wear, alignment and locking mechanism.
- E. ALUMINUM FRAMES AND JOINTS** – Inspect for loose joints and separation of frames.
- F. GLAZING** – Check for cracks, proper sealant and clean as appropriate.
- G. INTERIOR DOOR SYSTEMS** – inspect for proper operation, loose hinges, screws and weather-proofing, locksets, closures and vision panels.
- H. KEYS AND LOCKS** – Check for proper operation. Clean and lubricate annually.
- I. DOOR HARDWARE** – Inspect all door hardware for proper operation. Clean and lubricate all moving parts with recommended solvent and lubricate. Replace broken, missing, and excessively worn parts and adjust for smooth operation. Door hardware includes hinges, locksets, panic devices, closures, push bars, handles, wall bumpers, floor stops, and LD open devices.
- J. WINDOWS** - Inspect for proper operation, loose hinges, handles, screws, weather-proofing, and condition of applied tinting. Replace where necessary. Also inspect sealant at intersection of window frame and exterior finish. Verify that entire window system is functioning properly to prevent the infiltration of water and/or outside air.

DIVISION IX – FINISHES (Annual Inspection)

- A. EXTERIOR STUCCO, BRICK, AND CONCRETE** – Check for cracks, water damage, and condition of paint finish. Repair damaged areas and repaint as required. At external stucco ceilings inspect for sagging, loose hangers, rust around edges and structural frame damage.
- B. DRYWALL** – Check for cracks, water damage, excessive damage due to chairs and tables rubbing the wall and graffiti; repair/replace as required.
- C. PAINTING -**
1. Inspect all painted surfaces for condition and repaint as required.
 2. Determine condition and remaining life of exterior painted surfaces and perform repainting at appropriate time to prevent water and moisture infiltration and to maintain a good aesthetic condition.
- D. ACOUSTICAL CEILINGS** – Semi-annually or as needed, inspect lay in ceiling tiles for water stain, excessive dirt, and physical damage. Replace tiles as needed. Locate non-standard dimension ceiling systems and schedule replacement with standard 2 x 2 lay in tile and grid system.
- E. EXTERNAL INSULATION FINISH SYSTEM (EIFS)**
1. Semi-annually inspect all EIFS areas for defective and/or aged finish and sealant systems. Initiate corrective measures immediately to eliminate potential water infiltration.
 2. General Cleaning – Annually or as needed clean all EIFS surface with a solution of warm water, household bleach and trisodium phosphate per manufacture recommendations.
 3. Refinishing – When needed, recoat finish in accordance with manufacture recommendations. Refinishing may be required after 6 to 10 years of services.

DIVISION X – SPECIAL USE

- A. GREENHOUSE** – Semi-annually check operations of all systems and make necessary repair or adjustments. The systems to be checked include: watering, misting, humidity control, light and airflow. Check framing for excessive corrosion and check glass or plastic for cracks and breakage. Check floor deck for *water tie-hinges* if located above grade.

DIVISION XI – CONVEYING SYSTEMS (Passenger & Freight)

- A. Hydraulic and Traction Passenger & Freight Elevator**– Maintain in compliance with Code ASME A17.1; CHAPTER 399, FS; CHAPTER 30, FLORIDA BUILDING CODE, AS ADOPTED BY RULE 9B-3.047, FAC; NEC; ADA. For service contact Otis Elevator @ 1-800-233-6847. Have systems inspected annually; Contact Mike Calderon @ 813-253-7177.

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Elevators are intended to have full and complete maintenance, adjustment and repair covering all vertical transportation, at all located premises.

The performance of elevators shall be in full compliance with all related laws and regulations. All required maintenance and up-grades are intended to keep equipment operating safely and trouble-free in accordance with ASME- 17.1.2000, Safety Code for Elevators, associated addenda and related codes.

DIVISION XII – MECHANICAL SYSTEM

A. AIR HANDLING UNITS (verify specific procedures with equipment manufacturers' recommendations)

Daily: Inspect unit for unusual vibration, leakage and/or presence of moss or mildew.

Weekly: Inspect condensate pan. Ensure that the pan drain is not plugged and that the pan is not in danger of overflowing.

Monthly: Read Magnehelic gauge and inspect filters, change if pressure drop exceeds recommended reading.

Quarterly: Inspect and clean Mechanical Rooms. Remove all non-essential equipment, parts and tools. Keep floor free of oil, water, and dust. Paint or seal floor as required to maintain a neat and orderly appearance.

Bearings with grease line extensions should be re-lubricated with the unit in operation. If the unit does not have grease line extensions, lubricate the bearing while slowly rotating the fan by hand. Add grease until a slight bead appears at the seal. Check bearing races to be sure that they are tight. If motor bearings are not sealed, lubricate motor bearings.

Semi-Annually: Inspect the unit coil and clean the fins if necessary by hosing with water or an air jet.

Annually: Inspect entire unit and accessories for paint chipping or corrosion. If damage is found, clean and repaint with good grade of rust-resistant paint. Clean the fan wheels and fan shaft. If rust is found on the fan shaft, remove with emery cloth and re-coat the shaft. Inspect the drain pan for sludge or other foreign material. Clean all debris from the pan. Insert algae tablet or drain pan treatment to inhibit future build-up.

B. EXHAUST FANS – (Verify specific procedures with manufacturer's recommendations)

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Daily Inspect unit for unusual noise or vibration.

Monthly: Open cover and inspect belt tension, pulley alignment, and bearing play.

Semi Annually:Lubricate fan and motor bearings if bearings are not sealed. Check

C. CHILLERS – (Verify specific procedures with manufacturer’s recommendations.) If procedures are out sourced to a sub-contractor, verify completion of items below:

1. Chiller – General and Air Cooled

Daily: Inspect unit for unusual noise, vibration, or leakage. Inspect condensing unit for obstructions (papers, plastic bags, etc.). Check compressor sight glass for proper oil level. With unit operating, check refrigerant sight glass for bubbles. Chemically test the chilled water and treat as required.

Monthly: Inspect interior of electrical cabinet for loose and/or overheated wiring and damaged contacts.

Semi Annually: 1. Inspect and clean Mechanical Rooms. Remove all non-essential equipment, parts and tools. Keep floor free of oil, water and dust. Paint or seal floor as required to maintain a neat and orderly appearance.

2. Check condensers for excessive dirt and clean if necessary. Check amperage draw of compressors. Check for proper superheat and sub-cooling. Start unit if weather conditions permit and observe and record all operational readings. Record ambient conditions at the time of operation. Check that all condenser fans operate and cycle as required. If unit is multicompressor, load the system to insure that the compressors cycle on and off as required. Check for proper oil levels and pressure differential. Check high pressure, low pressure, water flow, freeze stat and low oil pressure safeties for proper operation. Check entire system for refrigerant leaks. Lubricate all fans and motors.

Annually: Inspect all electrical connections for overheating and tightness. Clean condenser with coil cleaner. Meg all compressor motors and record results. Test refrigerant oil for acid content. Change filter dryer cores if applicable.

2. Chiller - Centrifugal

Daily: 1. Check the unit operating condition against those given in manufacturer’s requirement.

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2. Check oil pump level by sight glasses. The oil level should be in the manufacturer's required range.

Weekly: Check the purge drum sight glass for evidence of condensate.

Quarterly: 1. Check the purge compressor drive belt tension and adjust as necessary following the manufacturer's recommendation.

2. Lubricate the purge compressor drive motor bearings.

3. Check the purge compressor crankcase oil level through the crankcase sight glass.

4. Clean all water strainers.

Semi-Annually: 1. Lubricate the vane control linkage bearings, ball joints, pivot points, the actuator motor bearings and the vane operator shaft by following the manufacturer's recommendations.

2. Inspect and clean the inside of the purge drum.

WARNING To prevent injury due to frostbite, do not allow refrigerant to contact skin. To prevent injury or death due to electrical shock, open and lock out and tag out all electrical disconnects.

OTHER PERIODIC MAINTENANCE

Perform Eddy Current Test every five years. Replace/repair if necessary.

D. CHILLED WATER PUMPS – (Verify specific procedures with manufacturer's recommendations)

Daily: Inspect unit for unusual noise, vibration, or leakage. With pump running, the packing gland should be adjusted 5 to 6 drops per minute leakage. If the packing gland cannot be adjusted, then all of the old packing must be removed and the pump repacked. Pumps with mechanical seals require no adjustment and should not be leaking.

Quarterly: Lubricate pump. To lubricate re-greaseable bearings, remove grease drain plug (if any) and filter plug. Add new lubricant until grease appears at drain hole or along shaft. *Do not over grease!* If bearing are sealed, lubrication is not required.

Annually: All electrical connections from the motor disconnect or starter should be checked for tightness and indications of overheating. If the motor is large enough, Megger readings should be taken and recorded.

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E. COOLING TOWERS (Verify specific procedures with manufacturer's recommendation)

Before entering a cooling tower, all personnel must wear protective "Tyvek" suit, respirator, rubber gloves and boots, as well as all necessary safety materials to protect themselves.

- Daily: Inspect unit for unusual noise, vibration or leakage. Perform chemical analysis and treat as necessary.
- Monthly: Inspect fan belts, adjust or replace as needed.
- Quarterly: Check fan belts, adjust or replace as needed.
- Annually: Drain water from cooling tower. Open all inspection hatches. Inspect interior and exterior of cooling tower for deterioration of protective coatings. Remove all spray branches and clean out. Replace any broken or missing spray nozzles. Flush main spray headers and entire tower. Replace any worn spray branch seals. Replace the spray branches making sure they are aligned properly. Adjust water fill float lever so that the tower does not run dry or overflow. Replace all inspection covers and operate tower and check for proper operation and that there are not leaks.

F. CONDENSER WATER PUMPS

- Daily: Inspect unit for unusual noise, vibration or leakage. With pump running, the packing gland should be adjusted to allow 5 to 6 drops per minute leakage. If the packing gland cannot be adjusted, then all of the old packing must be removed and the pump repacked. Pumps with mechanical seals require no adjustment and should not be leaking.
- Quarterly: Lubricate pump. To lubricate re-greaseable bearings, remove grease drain plug (if any) and filler plug. Add new lubricant until grease appears at drain hold or along shaft. *Do not over grease!* If bearings are sealed, lubrication is not required.
- Annually: All electrical connections from the motor disconnect or starter should be checked for tightness and indications of overheating. If the motor is large enough, Megger reading should be taken and recorded.

G. HOT WATER BOILERS

1. BOILERS

- Daily: Inspect unit for unusual noise, vibration or leakage. Observe the water temperature and pressure under normal operating conditions. Chemically test water and treat as needed.

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- Weekly: Inspect the boiler for gasket and piping leaks. Check particularly for handhold leaks. Neglected handhold leaks can cause severe corrosion and costly damage to the boiler shell. They should be promptly eliminated. Manually test the low water cut off safety for proper operation.
- Monthly: Blow down boiler. Boiler blow-down valve should be opened wide until the water runs clear, then promptly close. Check the pressure relief valve manually. Manually open the relief valve momentarily to make certain that it is in working order. Make certain that the valve closes tightly after being opened.
- Semi Annually: Check all controls. Carefully check all operating controls for proper operation, raise or lower the settings where necessary to make certain the control is in working order. Restore the settings on each control to the original position after checking for operation.
- Annually: Check the Low water Cut-Off Control Electrode Assembly. Remove the electrode assembly from the boiler. Clean and inspect porcelain insulator and electrode rod. Check condensation drain at rear of boiler. Remove accumulated sediment. Wire brush and repaint exhaust chamber with corrosion resistant paint.
- Examine exhaust gas duct and chimney. Make certain the gas passage is open and free from leakage. Inspect Main Burner Assembly. Expose firing end of boiler by swinging out hinged burner assembly. Clean runner pilot burner ports and spring wire or #53-twist drill. Check condition and location of spark electrode and flame rod.
- Lubricate blower motor if grease fittings are provided. Inspect the boiler tubes. Check the tubes for cleanliness. If any dirt or sediment is present, clean the tubes with a free fitting round wire flue brush.

TESTING AND CERTIFICATION:

Maintain to compliance with Chapter 4A-51 BOILER SAFETY, 554.103 FS. Correct all deficiencies on the Boiler Inspection Checklist. Hartford Steam Boiler to certify annually. Contact Roy H. Williams at phone number 800-333-4677. Certificate to be posted on boilers.

2. Heating Water Pumps

- Daily: Inspect unit for unusual noise, vibration or leakage. With pump running, the packing gland should be adjusted to allow 5 to 6 drops per minute leakage. If the packing gland cannot be adjusted, then all of the old packing must be removed and the pump repacked. Pumps with mechanical seals require no adjustment and should not be leaking.

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- Quarterly: Lubricate pump. To lubricate re-greaseable bearings, remove grease drain plug (if any) and filler plug. Add new lubricant until grease appears at drain hole or along shaft. *Do not over grease!* If bearings are sealed, lubrication is not required.
- Annually: All Electrical connections from the motor disconnect or starter should be checked for tightness and indications of over heating. If the motor is large enough, Megger should be taken and recorded.

3. Condensate Return Systems

- Daily: Check indicating lamps on generator controls and replace as necessary. Check all fittings for leaks. Check all condensate tanks for leaking in weep hole. Check all electrolytic corrosion inhibitors as necessary.
- Monthly: Test high and low level alarms. Check operation of solenoid for proper operation. Check strainer in pump suction line. Clean or replace as necessary.
- Annually: Check all electrical connectors for corrosion and tightness. Calibrate pressure gauges. Clean sight glasses. Replace if necessary.

4. Gas Fired Furnace

- Daily: Inspect unit for unusual noise, vibration or leakage.
- Monthly: Inspect filter for unusual noise, vibration or leakage.
- Annually: Remove blower unit, clean and inspect for damage. Lubricate motor and/or fan bearings if required. Vacuum return air grille and plenum. Remove burner unit, clean and inspect for damage. Brush and vacuum fireside of heat exchanger. Inspect heat exchanger and/or holes and cracks. Inspect flue and chimney for obstructions and/or leakage.

Re-install all components and perform an operational check as follows:

Check gas pressure at the burner manifold with a water manometer. Natural gas should not exceed three and one half (3.5) inches Water Column (WC). Liquefied Petroleum should not exceed eleven (11) inches WC. A properly trained technician may adjust the manifold pressure on a Natural Gas fired furnace. *He must not attempt to adjust the manifold pressure on a LP fired furnace. If the pressure on a LP fired furnace exceeds 11" WC shut the furnace down and notify the LP supplier. The supplier is the only one authorized to adjust this pressure.*

Check high temperature limit for proper operation. Check fan switch for proper operation. Inspect flame to insure proper combustion and that no impingement is occurring. Also check that the blower starts to insure that there is no blowing flame, indicating a cracked heat exchanger that was not found during the visual inspection. Check the operation of the electronic ignition if so equipped. After the stack is heated properly, check the draft hood over its entire length for proper draw.

5. Electric Heaters

- Daily: Inspect unit for unusual noise, vibration.
- Quarterly: Lubricate fan motor if bearings are not sealed.
- Annually: Prior to the heating season, perform ampere check on all heater legs to insure that all heaters are performing as designed. Check all thermostatic controls for proper operation. Check fan or sail switch for proper operation.

6. Domestic Hot Water Heater

- Daily: Inspect unit for unusual noise, vibration or leakage. Chemically test boiler water and treat as needed.
- Weekly: Blow down. Open blow down valve full open and let heater drain until water runs clear.
- Semi Annually: Check all controls. Raise or lower as required, settings on temperature controls, high limit switch, safety gas valves, air switches, etc., to be sure they work. Return each control after check to its original setting. Check and clean low water probe.
- Annually Clean the water heater thoroughly. Remove the handhold plates and flush out the interior with a stream of water to remove any accumulated sludge and loose scale. If a scale buildup of over 1/16 inch is found, remove by mechanical or chemical means. Inspect magnesium anodes, if installed. Replace deteriorated anodes when necessary.
- Check and clean blower.
- Check condensate drain at rear of heater for stoppage. Remove debris. Wire brush and repaint rear chamber with aluminum paint. Examine flue and chimney to determine that there is not stoppage or leakage. Open burner manifold to check and/or clean pilot holes for stoppage. Lubricate motor if oil cups or grease fittings are present.

7. Testing and Certification

Maintain to compliance with Chapter 4A-51 BOILER SAFETY, 554.103 FS.
Correct all deficiencies on the Inspection Checklist.

H. CONTROLS

1. Building Air Compressor

- Daily: Inspect unit for unusual noise, vibration or leakage. Check oil level. Drain condensate manually.
- Weekly: Inspect and clean air inlet filter. Clean exterior of inter-cooler and after-cooler if installed. Clean cylinder cooling fins. Operate safety valves on compressor manually. Check water flow on after cooler if so equipped.
- Monthly: Check belt tension and adjust if necessary. Inspect oil for contamination and change if necessary. Inspect belt for wear and tension. Adjust/replace as needed. Operate safety valve on receiver manually. Tighten or check all bolts. Inspect systems for air leaks.
- Quarterly: Check operation of low level or pressure switch if so equipped. Lubricate motor bearings if so equipped.

I. PLUMBING

1. **Restroom Equipment** – Daily visual check of all urinals, closet and lavatories for leaks, drips, slow drainage, chips and cracks and loose mounting. Check operation of all flush valves and faucets. Adjust or repair as necessary.
2. **Water Coolers** – Semi monthly check operation of all coolers for water pressure, cooling, drainage and exterior damage to cabinet.
3. **Kitchen Equipment** – Semi-monthly check operation of ovens, ranges, grills, fryers, warmers, conveyors, dishwashers, freezers, and coolers. Exhaust hoods are inspected for operation and certified by an independent contractor. Sanitation of hoods is performed by an independent contractor.
4. **Piping** – Semi-annually inspect all piping for leakage and correct as needed. Manually check all valves for proper operation.
5. **Laboratory Connections** – Monthly, check all faucets and drain connections for leaks. Check hoods for proper exhaust operations.
6. **Sump Pump** - Weekly, inspect sumps to assure level is being maintained by the pump. Monthly, manually start pump and check for proper operation including checking valves and piping.

J. FIRE EXTINGUISHERS AND ALARM SYSTEMS

1. **Sprinkler System** – Annual inspection and certification by independent contractor in compliance with local, county, and state fire codes.
2. **Stand Pipes and Hoses** – Visually inspect stand pipes monthly. Hoses are inspected and certified semi-annually by independent contractor. Stand pipes and fire plugs are blown off annually and checked for flow and operation.
3. **Portable Extinguishers** – Monthly, check all extinguishers for proper pressure, retaining bands on actuating handles, physical condition of enclosure and proper identification. Semi-annually inspection and certification to be performed by independent contractor in compliance with fire codes.
4. **Alarm and Smoke Detection** – Visually check control panels and individual sensing units on a monthly basis. Semi-annually, when classes are dismissed, simulate fire or smoke conditions to test alarm system reliability.
5. **Special Systems (Halon/Kitchens)** – Kitchen Halon systems inspected and certified semi-annually by an independent contractor.

TESTING AND COORDINATION:

Maintain compliance with local Fire Extinguisher Code as Determined by local Fire Marshall. Provide assistances to fire alarm test contractor. All fire alarm tests and inspection shall be performed in accordance with NFPA 72 and local codes for each type of detection/suppression system.

DIVISION XIII – ELECTRICAL SYSTEMS

A. High Voltage System - Conduct biannual inspections of the transformers, switch gear and clean any debris from the vault.

B. Electrical Distribution

1. Panels – Annually inspect, test, clean and tighten all panels. Check for proper breaker installation. Ensure switches are in place and install blanks if required.
2. Wiring and Disconnections – Annually, visually inspect wiring and entering and leaving panels, junction boxes and circuit disconnects for discoloration, nicks and abrasions.
3. Switches, Plugs and Receptacles – Annually inspect and check operations of all switches, plugs and receptacles, looking for faulty contacts, loose connections, and open grounds. Check operation of all *ground fault interrupter devices*.

C. Lighting

1. Fluorescent and Incandescent – Continually monitor all buildings for burned out tubes and bulbs replacing as necessary.

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2. Outdoor Lighting – Weekly, check control circuits introducing photocells, timers, and manual by-pass switches for proper operations. Repair or replace any malfunctioning components. Continually replace all burned out bulbs as needed. Contact TECO when appropriate.
3. Special (Theatre and Athletic) – Semi-annually check operation of theatre stage and house control systems. Replace burned out house lights. Check operation of gym and pool lights and tennis court lights. Replace or repair any malfunctioning components.

D. Emergency Generator Power

There is no back up or emergency power system for operation of all or any part of the campus in the event of a total power failure. Generators are available for emergency use providing power for operation of elevators, sump pumps, and to make repairs if possible. The generators are serviced and ready for operation on demand. They are started and operated under load quarterly. UPS systems will also be inspected quarterly. Exercise emergency generator monthly.

E. Fire Alarm Systems

Provide assistances to fire alarm contractor. All fire alarm tests and inspection shall be performed in accordance with NFPA 72 and local codes for each type of detection/suppression system.

DIVISION XIV - HOUSEKEEPING

A. Seating – Theatre, Meeting Rooms, Cafeteria, Gym

1. Depending on frequency of use, weekly vacuum and check seats in the theatre and meeting rooms. Repair damaged or malfunctioning chairs.
2. Daily clean and check chairs in the Cafeteria. Repair damaged chairs as required.
3. Depending on the frequency of use, daily clean and dust bleacher seating in gymnasium and outdoor spectator areas. Pull out telescoping bleachers and clean behind them. At the beginning of each semester, pull out telescoping bleachers and inspect for damage. Repair defect as required. Contact vendor to repair.

B. Corridors, Classrooms, Offices and Entrances

- 1 Clean and buff vinyl floors daily or as needed.
- 2 Strip and wash all vinyl floors annually or as needed.
- 3 Spot clean walls daily.

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- 4 Clean all walls weekly or as needed.
- 5 Inspect and repair broken and loose floor tiles.
- 6 Vacuum carpets daily or as needed.
- 7 Spot clean carpets as needed.
- 8 Shampoo carpet in all public areas each semester or as needed.
- 9 Inspect for and repair torn, frayed and badly worn carpeted areas.
- 10 Dust, wet mop and buff all terrazzo surfaces annually or as needed.
- 11 Strip and wash all terrazzo surfaces annually or as needed.
- 12 Clean all windows and entrance glass daily or as needed.
- 13 Empty all wastebaskets, damp wipe clean and replace plastic liner daily.
- 14 Clean and wash all furniture as needed.
- 15 Clean all chalkboards, marker boards and erasers daily or as needed.

C. Restrooms and Locker Rooms

1. Clean and disinfect all fixtures and showers daily or as needed.
2. Wet mop and buff floors daily or as needed.
3. Wash down all ceramic tile walls and ceilings and treat with mildew retardant solution daily or as needed.
4. Clean and flush all floor drains and treat with drain cleaner daily or as needed.
5. Dust all ledges, picture molding, picture frames, Venetian blinds, walls, ceiling vents and air diffuses as needed.
6. Clean and reorganize all custodial closets at the beginning of each semester or as needed.

D. Cleaning Machines and Equipment

1. Floor cleaning machines are to be cleaned as needed. The power cord, brush attachments and brush plate are to be checked for wear and damage. All machines with excessive wear and/or unsafe conditions are to be repaired.
2. Shampoo machines are to be drained and flushed; making certain the drain plug is replaced and securely tightened. Clean and inspect power cord for damage. Store machine in proper position. All malfunctions to be corrected as required.

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3. After each use, all vacuum cleaners are to be emptied. The belts, brush rollers and fan chambers are to be checked and cleaned of all debris.

E. Gymnasiums/Fitness Centers

1. Wooden gym floors are to be dust mopped and spot cleaned using a waterless cleaner as needed.
2. Check finish for wear areas annually.
3. Refinish wood floors to prevent excessive wear that exposes wood to view.

F. Hazardous Materials

1. Check that hazardous materials are stored in appropriate storage container/facility monthly.
2. Provide appropriate ventilation for all stored hazardous materials.

G. Pest Control

1. Check monthly for appropriate pest control bait is properly applied or located

APPENDIX A

RECOMMENDATION FORM

As you use these procedures during the year you may encounter situations, procedures, activities, etc., which should be included in this booklet or which should be modified. In the space provided below please provide a description of the change you are recommending/suggesting along with an explanation of the reason for the change. This document should then be forwarded to your supervisor who will insure it flows through channels to be considered when the plan is subject to its annual evaluation.
Thank you.

DIVISION/SECTION:

PAGE NUMBER: _____

**Description of the change you are
recommending/suggesting:**

Reason change is needed:

Name and Title: _____

Supervisor:

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APPENDIX B
PERIODIC MAINTENANCE SCHEDULE/CHECKLIST:

ROOM/BUILDING:

DATE:

CAMPUS/CENTER:

TASK/EQUIP	DUE DATE	D	W	M	Q	S	A	OTHER SCHEDULE	WITHIN TOLERANCE Y/N	FOLLOW UP TEST Y/N	COMP. DATE	COMMENTS
Roadway												
Parking Lot												
Sidewalk												
Irrigation Pump												
Horticulture												
Athletic Field												
Storm Drain												
Equipment												
Vehicle 1												
Vehicle 2												
Interior Slab												
Foundation												
Stair & Steps												
Exterior Wall												
Interior Wall												
Floor												
Structural Steel												
Handrail												
Metal Stair												
Exercise Station												
Bench												
Table												
Cabinetry												

KEY:
 D – DAILY
 W – WEEKLY
 M – MONTHLY
 Q – QUARTERLY
 S – SEMI-ANNUALLY

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APPENDIX B (Con't)
PERIODIC MAINTENANCE SCHEDULE/CHECKLIST:

ROOM/BUILDING:

DATE:

CAMPUS/CENTER:

TASK/EQUIP	DUE DATE	D	W	M	Q	S	A	OTHER SCHEDULE	WITHIN TOLERANCE Y/N	FOLLOW UP TEST Y/N	COMP. DATE	COMMENTS
Roofing & Fix												
Waterproofing At Wall												
Flashing & Gutter												
Joint Sealant Caulking												
Door												
Window												
Stucco												
Drywall												
Painting												
Ceiling												
Greenhouse												
Swim. Pool												
Air Handler												
Exhaust Fan												
Chiller												
CHW Pump												
Cooling Tower												
Condenser Water Pump												
HV Boiler												
HW Pump												
Con. Return System												
Gas Furnace												
Elec. Heater												

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APPENDIX B (Con't)
PERIODIC MAINTENANCE SCHEDULE/CHECKLIST:

ROOM/BUILDING:

DATE:

CAMPUS/CENTER:

TASK/EQUIP	DUE DATE	D	W	M	Q	S	A	OTHER SCHEDULE	WITHIN TOLERANCE Y/N	FOLLOW UP TEST Y/N	COMP. DATE	COMMENTS
Domestic HW Heater												
Building Air Compressor												
Cont. Air Compressor												
Men's Room Equipment												
Women's Rm Equipment												
Water Cooler												
Kitchen Equipment												
Piping												
Lab Connect.												
Sump Pump												
Fire Sprinklers												
Stand Pipes & Hoses												
Portable Extinguishers												
Alarm & Smoke Detection												
Kitchen Halon System												
Electric Panels												
Electric Wiring & Disconnects												
Switch, Plug & Recept.												

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APPENDIX B (Con't)
PERIODIC MAINTENANCE SCHEDULE/CHECKLIST:

ROOM/BUILDING:

DATE:

CAMPUS/CENTER:

TASK/EQUIP	DUE DATE	D	W	M	Q	S	A	OTHER SCHEDULE	WITHIN TOLERANCE Y/N	FOLLOW UP TEST Y/N	COMP. DATE	COMMENTS
Indoor Lighting												
Outdoor Lighting												
Special Lighting												
Theatre Seating												
Cafeteria Seating												
Gym Seating												
Corridor Housekeeping												
Classroom Housekeeping												
Office Housekeeping												
Entrance Housekeeping												
Men' Room Housekeeping												
Women's RM Housekeeping												
Locker Housekeeping												
Gym Housekeeping												
Machine & Equipment Cleaning												
Generators & UPS Systems												
Hazmat Materials												
Pest Control												
Exit Signs												
Emergency Lights												

KEY:

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Work Order Numbering System

Ybor City - will use: YB001, etc
Plant City - will use: PC001, etc
Dale Mabry - will use: DM001, etc
Brandon - will use: BR001, etc
SouthShore – will use: SS001, etc
DAO - will use: DAO001, etc

APPENDIX C
Physical Facilities Department Work Request Form

Work Order Number	Building	Room/Space
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Briefly describe work to be completed. Attach a drawing if necessary.
Note: Only one item per Work Request.

Originator (Please Print)	Extension	Date
Unit Administrator Approval	Extension	Date
Vice President Approval	Extension	Date

Vice President: Submit work request to the District Physical Facilities Office for review and disposition.

Physical Plant Use Only

Assigned To: _____

Department: _____ Equipment Tag #: _____

Trade: _____

Closing Status: U() F() C()

Completed By: _____

Employee #/Initials	Labor Hours	Date
---------------------	-------------	------

View By: _____

Employee #/ Initials	Labor Hours	Date
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EMERGENCY ELEVATOR EVACUATION

Emergency evacuation of passengers from stalled elevators should only be attempted by trained personnel and only under extenuating circumstances by those recognized as possessing the appropriate training:

LEVEL I

Sequence of Events in Actual Emergency Situation:

- ' Calls from trapped Elevator Passengers are received by Security.
- ' Security Personnel contacts Maintenance Personnel and Elevator Maintenance Co. during normal working hours
- ' Security Personnel to contact Elevator Maintenance Co. during off hours (Elevator maintenance to respond within 30 to 60 minutes)
- ' HCC Personnel to maintain communications with trapped passenger(s) at all times.

LEVEL II (Discretionary Steps)

While awaiting the arrival of Elevator Personnel College Personnel who have received the College's Elevator Training may perform the following:

1. Attempt to operate the elevator with the hall call button.
2. Have the elevator passengers push the door open button.
3. Attempt to recall the elevator using the keyed Fireman's Service switch.
4. Turn the mainline disconnect in the elevator machine room to the OFF Position and then back to the ON position, then again attempt #1 and #2 above.

HCC Maintenance/Security Personnel are to assist Elevator Maintenance Personnel upon arrival.

LEVEL III (Emergency Evacuation Required)

HCC Personnel are *not* to attempt Emergency Evacuation unless:

- ' The elevator firm cannot respond in a timely fashion, and/or:
- ' Person(s) in the stalled elevator have a emergency medical condition
- ' The building is under an emergency evacuation (fire, bomb threat, etc.)
- ' Power outage is expected to exceed two hours

If emergency evacuation is required as determined by The Campus President, District Vice President or his or her Designee to make such decisions:

- * Contact Fire Rescue

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FOLLOW ASME A17.4 – GUIDE FOR EMERGENCY PERSONNEL

The following is a summary to use as an abbreviated reference guide:

1. TURN MAIN DISCONNECT IN ELEVATOR MACHINE ROOM TO THE OFF POSITION
– Lock out/tag out or station a person to monitor the disconnect to ensure that it remains in the open (off) position.
2. MANUAL LOWERING – ONLY TO BE USED IN DIRE EMERGENCIES!!!!
 - a) Ensure power is locked out/tagged out or monitored OFF.
 - b) Ensure that all elevator doors (inside and out) are fully closed.
 - c) Open manual lowering valve, listen as the elevator lowers. When the sound of lowering stops, re-close the valve.
 - d) Open the lowest landing hall door, open the car door, and assist the passengers out. Use caution as the elevator will be 3-12 inches below floor level.

After evacuation, leave all outer doors closed, and leave the elevator disconnect switch in the OFF position.

NOTE: The emergency evacuation of elevator passengers is a potentially hazardous operation that should be performed by trained personnel authorized by the College to perform such operations.