

**Operations and Maintenance Plan
For Mold and Moisture Control**

**Loyola University New Orleans
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New Orleans, Louisiana**

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1.0 INTRODUCTION

Mold is a microorganism belonging to the kingdom Fungi, with over 20,000 known species. Individual mold spores are extremely small (only 2-20 microns in diameter). Many molds can grow on wood products, carpet, carpet padding, insulation, food, and a number of other related materials. Molds reproduce by releasing spores, which may remain able to grow for many years after they are produced.

Mold is naturally present outdoors and indoors. Under certain conditions, when excess moisture accumulates in buildings or on building materials, mold growth is likely to occur unless it is discovered and addressed. Excessive humidity, plumbing leaks, condensation, flooding and defective construction are among the potential causes of moisture problems that may lead to health effects, structural damage and costly repairs. The keys to mold prevention are moisture control and timely response to incidents of water intrusion or mold.

This Operations and Maintenance Plan for Mold and Moisture Control (“the Plan”) is intended to assist Loyola University with the prevention, recognition and management of mold growth and moisture control within its facilities. The roles and responsibilities of faculty, staff and resident students are outlined. The Plan provides procedures for inspecting and maintaining buildings to reduce the potential for mold growth and to manage water intrusion events and mold remediation. Essential guidelines for communication, documentation and training are also detailed.

Definitions

Condensation - moisture that collects on surfaces that are cooler than the surrounding warmer, moisture-laden air. See also Excessive Moisture.

Excessive Moisture - a condition where the presence of water leads to microbial growth. As used in the Plan, the term includes water intrusion (i.e. leaks, floods, etc.) and condensation.

Physical Plant Staff - employees and contracted vendors responsible for conducting routine maintenance, repair, and custodial activities at Loyola University New Orleans campuses.

Microbial Growth - or Mold Growth, the obvious (by visual observation or odor) presence of mold and/or bacteria on building materials, see Mold.

Mold - molds are defined as microscopic organisms (fungi) that absorb organic material and recycle nutrients in the environment. For molds to grow and reproduce, they need a food source (any organic material – such as leaves, wood,

paper, dirt, etc.) and moisture. Mold growth often appears as a spot in a variety of colors including green, gray, brown, black or white. It frequently appears as a powdery, fuzzy, or hairline material. Actively growing molds can produce odors described as earthy, moldy, like mildew, old socks, and/or ammonia. Molds can release spores that are lightweight and can easily become airborne and be transported by air currents.

Plan – or “the Plan”, this document entitled, *Operations and Maintenance Plan For Mold and Moisture Control*.

Resident – a full-time occupant, typically identified as a Loyola University New Orleans student, who resides in an on-campus residence hall.

University Safety Officer – the employee designated by Loyola University New Orleans responsible for maintaining and implementing the Plan.

Assistant Vice President for Administration– responsibilities include direction of Loyola University New Orleans’ Physical Plant. The Assistant Vice President for Administration may also delegate responsibilities to Assistant Director(s) or Central Plant staff.

Water Intrusion - or Water Intrusion Event, see Excessive Moisture

2.0 POLICY STATEMENT

It is the policy of Loyola University New Orleans to control excessive moisture, water intrusion and subsequent mold growth within its buildings by implementing a comprehensive maintenance, inspection and response program designed to prevent, identify and mitigate moisture conditions conducive to property damage and mold growth.

3.0 ROLES AND RESPONSIBILITIES

Effective preventative maintenance and response to incidents requires coordination, planning, and university-wide effort. Being prepared for major water intrusion events can prevent escalations of costs related to repair of damaged materials and mold remediation.

This plan relies on the leadership of the Assistant Vice President for Administration and the University Safety Officer, proactive implementation by Physical Plant Staff, and the cooperation of all employees and students of the University. All parties must clearly know their role and duties as defined in the Plan. General roles and responsibilities are outlined below.

3.1 Assistant Vice President for Administration

The Assistant Vice President for Administration, or designee, is responsible for oversight of the Plan as administered by the University Safety Officer. The Assistant Vice President for Administration will have the authority to commit resources needed for compliance with the Plan and will provide guidance and approval of response actions as indicated by the Plan. No modifications to the policies and procedures in the Plan may be made unless authorized by the Assistant Vice President for Administration, or his designee.

3.2 University Safety Officer

The University Safety Officer, or his designee, has the primary responsibility for administration and implementation of the Plan. The University Safety Officer is responsible for coordinating and supervising activities related to the Plan. University Safety Officer responsibilities include, but are not limited to, the following:

- Communicating the objectives and policies of the Plan to Physical Plant Staff.
- Ensuring that contractors working in university buildings are informed on the procedures in the Plan as it may impact their work.
- Ensuring that inspections and routine maintenance procedures are conducted per the Plan.
- Investigating resident, staff and occupant complaints or reports of water intrusion or mold growth.
- Coordinating response actions in the event of water intrusion or mold growth and providing appropriate communications with impacted residents and/or Physical Plant Staff.
- Pre-qualifying consultants and contractors to assist in implementation of the Plan.
- Monitoring mold remediation to ensure implementation of required procedures and engineering controls and effective completion.

- Maintaining documentation per the Plan.
- Ensuring that the training requirements of the Plan are met.

3.3 Physical Plant Staff

Physical Plant staff (including contracted personnel) must be capable of recognizing potential water damage and mold growth conditions and be familiar with applicable policies and reporting procedures under this Plan.

Physical Plant staff shall:

- Investigate occupant, resident or staff reports of water intrusion events, visible mold growth, or general indoor air quality complaints (e.g. odors) in a timely manner.
- Conduct routine maintenance and scheduled inspections to identify and control moisture problems and mold growth.
- Follow procedures and utilize controls during construction, renovation or remediation work to prevent moisture problems and mold growth.
- Effectively communicate with Assistant Vice President for Administration, management staff and affected occupants and/or residents.
- Properly document inspections, communications, remediation, training and other Plan activities.

3.4 Residents/University Personnel

Residents and university personnel shall report water intrusion events such as floods, leaks, condensation, or other instances of excess moisture on building materials to the Physical Plant as soon as possible. Residents shall report obvious water intrusions and unusual odors or other signs of suspect mold growth or indoor air quality concerns to the Physical Plant for appropriate investigation.

Residents and occupants shall control activities that may contribute to conditions that promote mold growth. Such activities include, but are not limited to:

- Activities in resident halls and offices such as excess watering of plants, resulting in water damage to carpets underneath or mold growth in the plant soil.
- Use of area humidifiers. Loyola discourages the use of humidifiers by residents or university employees. Humidifiers not properly maintained can be a source of airborne microorganisms and excess moisture levels that are

conducive to promoting mold growth or can result in condensation on cool surfaces.

- Adjusting thermostats, blocking vents or otherwise tampering with the routine operation of heating and cooling equipment in University buildings such that the temperature and relative humidity may contribute to excess moisture or mold growth.
- Allowing excess standing water on floors around bathtubs, showers, sinks, countertops and sills in the resident halls or dormitories.
- Failing to use exhaust fans in bathrooms and kitchen in the resident halls and dormitories.
- Overloading or obstructing sewer drains in bathrooms, kitchens and dining areas.
- Inadequate cleaning and dusting of the resident rooms.

4.0 COMMUNICATIONS

Communication about mold and moisture control prevention and response is critical to fostering good intra-University personnel relationships, as well as supporting Physical Plant staff response actions. The University Safety Officer is responsible for generating factual and timely responses to complaints. All questions and complaints regarding mold, water damage and indoor air quality should be directed to the University Safety Officer, or his designee. Physical Plant Staff should quickly relay such observations or complaints to the University Safety Officer. Efforts should be made to respond promptly and thoroughly in order to minimize unfounded rumors and speculation by residents and university personnel.

4.1 Assistant Vice President for Administration

The Assistant Vice President for Administration is responsible for assuring that Plan activities are appropriately communicated to the appropriate personnel and students who may be significantly impacted by mold and moisture control events.

4.2 University Safety Officer

The University Safety Officer has the primary responsibility for communicating Plan activities with the Assistant Vice President for Administration, Physical Plant Staff, contractors, vendors, university personnel and residents. The University Safety Officer shall manage the distribution and execution of any correspondence regarding their role and responsibilities for preventing moisture conditions and mold growth.

4.3 Physical Plant Staff

Physical Plant Staff must document and report the results of inspections, service requests, maintenance activities, execution of work orders or tickets and remediation involving moisture control or mold to the University Safety Officer. A sample checklist and tracking log are provided in Appendix A.

4.4 Residents/University Personnel

Residents and university personnel shall report water intrusion events such as floods, leaks, condensation, or other instances of excess moisture to the Physical Plant as soon as possible. Residents and university personnel shall report unusual odors or other signs of suspect mold growth or indoor air quality concerns to the Physical Plant for appropriate investigation.

5.0 TRAINING

All University personnel with responsibilities for implementing the Plan shall be adequately trained in recognition, prevention and basic remediation work for water intrusion and mold on building materials. Training curricula shall be consistent with the Plan and include the topics listed below. The University Safety Officer shall maintain a file with documentation of training completion. New hire orientation shall include appropriate awareness of the Plan and/or initial training based on the guidelines below. A Mold Awareness Update meeting to review the Plan requirements, attended by all appropriate Physical Plant Staff, shall be conducted annually and attendance shall be documented.

5.1 University Safety Officer

The University Safety Officer shall complete training that includes the following topics:

- Introduction to mold
- Health effects of mold
- Basic mold assessment and identification techniques
- Water intrusion recognition, prevention and response
- Preventive maintenance inspection procedures
- Physical plant work order request procedures
- Emergency response
- Handling mold complaints
- Construction and renovation issues
- Drying equipment and procedures
- Mold remediation equipment and procedures
- Communication and documentation
- University personnel resident awareness issues
- Using consultants and contractors

5.2 Physical Plant Staff

Physical Plant Staff who will be responding to water intrusion events and mold remediation (see Section 11) shall complete training that includes the following topics:

- Introduction to mold
- Health effects of mold
- Basic mold assessment and identification techniques
- Water intrusion recognition, prevention and response
- Preventive maintenance inspection procedures
- Physical Plant work order request procedures

- Emergency response
- Construction and renovation issues
- Drying equipment and procedures
- Mold remediation equipment and procedures
- Communication and documentation

5.3 Mold Awareness Update Meeting

Appropriate Physical Plant Staff shall annually attend a Mold Awareness Update meeting conducted by the University Safety Officer, or his designee, that includes a review and update of the following Plan information:

- Plan roles and responsibilities
- Communication protocol and procedures
- Physical Plant work order procedures
- Response to water intrusion events
- General mold remediation procedures
- Key contacts

Mold awareness and general Plan information shall be included as part of the training of newly hired Physical Plant staff.

6.0 DOCUMENTATION

Maintaining appropriate records and documenting responses to resident and occupant concerns are responsibilities shared by both the University Safety Officer and Physical Plant Staff. The Plan requires documentation of water intrusions events, University personnel and resident complaints, response actions and follow-up. The sample documents in Appendix A are templates for these records and can be tailored as needed. All original documents shall be maintained in the Physical Plant Department. Documentation shall be retained for at least five years or as required by law, whatever period is longer. When responding to a request or complaint, the responding individual may not be able to determine from the complaint what the precise nature of the problem is (water related, thermal comfort or chemical), thus the logs are not specific to mold.

Documentation shall include:

- Records of resident complaints, investigations conducted, and response actions (Incident Tracking Log)
- HVAC maintenance records
- Drying, restoration and remediation project records
- List of qualified staff, consultants and/or contractors for restoration and mold remediation
- List of emergency numbers including the Assistant Vice President for Administration, University Safety Officer, insurance carrier and legal counsel
- A map of the locations of water supply shut-offs, sewer clean-out traps, storm sewer inlets and roof drains.
- Written communications regarding mold or excessive moisture between the involved Physical Plant Staff and the affected University personnel or resident

7.0 INSPECTIONS AND PREVENTATIVE MAINTENANCE

Preventative maintenance and routine inspection of HVAC system components and other building systems (e.g. roof, building envelope) are keys to identifying and preventing chronic moisture conditions and leaks that can lead to water damage and mold growth. As indicated below, periodic inspections and maintenance activities shall be conducted in conjunction with other routine preventative maintenance or inspection protocols.

7.1 General Procedures for Physical Plant Staff

- Visually inspect each resident room and campus building at least once annually and document your findings.
- Identify the source and fix plumbing leaks, condensation problems, wet spots and other moisture problems as soon as possible within 48 hours.
- Prevent moisture due to condensation by increasing surface temperature or reducing moisture level in the air (humidity). To increase surface temperature, insulate or increase air circulation. To reduce the moisture level in air, repair leaks, increase ventilation (if outside air is cool and dry), or dehumidify (if outdoor air is warm and humid).
- Vent moisture-generating appliances, such as clothes dryers, to the outside where possible and ensure that the vents are unobstructed.
- Maintain relative humidity below 60%, ideally 30% to 50% if possible.
- Do not let foundations stay wet. Provide drainage and slope the ground away from the foundation.
- Inspect and fix landscape sprinkler and irrigating systems to ensure that the water is properly directed away from the building. Sprinklers should not direct water onto unit exterior walls and foundations.
- Check rain gutters, downspouts, diverters and storm drains to ensure they are free of debris.
- Visually inspect ceilings for stained ceiling tiles or delaminated paint surfaces

7.2 HVAC System Maintenance and Inspections

Integrate the inspection for mold and moisture conditions into ongoing HVAC preventative maintenance (PM) to ensure continued and efficient operation of the system. For the purposes of the Plan, the existing PM program will include the following:

- Inspection of condensate drain pans and drains to ensure proper operation (e.g., drains properly trapped, drain lines sloped for proper drainage)

- Inspection of insulation for evidence of physical damage, water damage, or mold growth
- Check cleanliness of coils and fans
- Check ducts for tears and gaps
- Inspection and scheduled replacement of filters to ensure proper fit and desired efficiency
- Inspection of cool surfaces (e.g., cold water pipes, uninsulated ducts in plenum space) for evidence of condensation.
- Inspection of outside air intakes for intact bird screens, evidence of freestanding water or mold growth proximate to the intake.
- Inspection of kitchen and bathroom exhaust fans and any other exhausts utilized to remove airborne moisture from the dining areas and resident rooms.

Visual inspection indicated above should be conducted per manufacturer's recommendations and more frequently during the cooling season.

7.3 Building Envelope Inspections

Building envelope components that are commonly involved in water intrusion events include roofing (e.g., roof penetration leaks, clogged roof drains, excessive ponding, snow buildup over skylights and other flashed components), exterior caulking (e.g., windows, doors, expansion joints), and poor drainage away from foundations. Condensation may form on cold surfaces such as poorly insulated roof drains, windows, and concrete slab on grade.

A visual roof inspection shall be conducted every six months. Physical Plant Staff may conduct these inspections. Depending on the age of the roof or other factors, Physical Plant may conduct more comprehensive inspections performed by a certified roof inspector, and/or may conduct infrared moisture testing of roofing systems. The Physical Plant Department will maintain documentation of roofing inspections.

Physical Plant will also conduct and document visual inspections of exterior and interior surfaces of perimeter walls and foundations, and on-grade slabs for evidence of water intrusion. These inspections will include the following:

- Condition of exterior caulking
- General condition of exterior façade (cracks, water stains below windows, moss growth or other suspect discoloration)
- Evidence of water intrusion or condensation on interior surfaces of the perimeter wall
- Evidence of water ponding against foundation walls
- Evidence of water intrusion through foundation wall or slab
- Evidence of finished floor damage (e.g., stained carpeting, lifting floor tiles, suspect odors)

All inspections shall be documented.

8.0 CONSTRUCTION AND RENOVATION ACTIVITIES

Construction and renovation activities can result in floods, leaks, excessive humidity and other moisture control problems. Demolition activities may disturb concealed reservoirs of mold growth in areas such as walls, ceilings and floors, resulting in the generation of airborne mold contaminants. Even when no water intrusion has occurred, residents and University personnel are likely to be concerned about dust and odors from the construction process and may confuse them with mold contaminants. It is therefore useful to consider methods to control moisture and minimize exposure to construction related contaminants. The following guidelines are to be implemented during all construction and renovation activities on the property.

- All renovations adjoining occupied areas should be conducted according to Sheet Metal and Air Conditioning Contractors National Association (SMACNA see References) and applicable state and local guidelines. These include taking measures to minimize the entry of water from construction areas into occupied areas, the maintenance of appropriate construction barriers, selection of low-toxicity materials, selecting work times to avoid generating contaminants (dust and toxic volatile organic compounds when the building is occupied), air cleaning (if needed) and negative air pressure when feasible.
- All porous materials such as insulation, carpet, lumber and gypsum board must be supplied dry and maintained dry during the construction process.
- Demolition of areas that may have been water damaged or where mold is observed shall be conducted with precautions (see Section 11) in place to prevent release of mold contaminants into occupied areas.
- Renovations to gypsum board walls should leave a ½ inch gap between concrete floor and wall, to prevent moisture from wicking into gypsum board if a future water intrusion occurs.
- Air handlers that have return air from a construction area may also supply occupied areas. Efforts to isolate return air registers from construction contaminants should be employed. Turn off the HVAC system when possible.

9.0 PROCEDURES FOR MAINTENANCE SERVICE REQUESTS

The University Safety Officer and Physical Plant Staff shall use the following procedures when responding to a water intrusion incident or a potential mold condition.

At the Physical Plant Office (before response)

- Fill out a Job Request Form, enter it on the Incident Tracking Log and record the observations of the resident, occupant or other reporting person regarding the incident or condition: whether or not they believe mold growth is present, and if they expressed a health concern or symptoms that they attribute to the condition. Do not question the reporting person regarding mold or health effects; only record what they tell you. If health concerns or property damage are reported, then immediately notify the University Safety Officer or Assistant Vice President for Administration.
- Treat the job request as a priority. When possible, two Physical Plant staff members should visit the affected area together.

At the service location (initial response)

- Observe the nature and extent of the condition and check for the source of any water infiltration or excessive moisture sources – interior and exterior. In multi-story buildings, adjoining rooms (including above and below as the case may dictate) shall also be checked for impact from excessive moisture.
 - If a source of water or excessive moisture is found: Stop the leak or cause of moisture and dry affected areas completely as soon as possible within 24 hours of notification. Consult the procedures for drying various surfaces in Section 10 of the Plan.
 - If no mold is found: If no indications of mold growth are observed, then the University Safety Officer shall send the Affected Person(s) Follow-up Letter (Appendix A) indicating the results of the investigation.
 - If mold is found: Follow the procedures outlined in Section 11. Physical Plant Staff may only conduct remediation of small areas of mold impact. Inform the affected person on the service request (or use Affected Person Follow-up Letter) of the corrective action completed and additional steps to be taken, if any.
- Take photographs to show that the area has been dried, cleaned and repaired. Label and file all photographs with the Incident Tracking Log for future reference.

Back at the Physical Plant Office (after initial response)

- Before determining that a condition will require the use of outside consultants or contractors consult with the University Safety Officer for guidance. If a decision is made to relocate the resident, contact your Risk Manager for a release of liability letter. If a health concern is expressed at any time or

property damage is observed or suspected immediately contact the University Safety Officer and the Risk Management Director.

- Complete the Incident Tracking Log to reflect what action was taken.
- If mold remediation is conducted, create a project file with records of the clean up.

Within 7 – 10 days (follow-up)

- When a condition involved repair, drying and/or clean-up of mold, conduct a follow-up visit to the location (preferred) or contact the resident or affected University personnel and confirm that the response was effective and there has been no re-occurrence of the condition and there are no complaints. If no further response is indicated, then send the Affected Person(s) Follow-up Letter to document the follow-up. If further response is indicated, repeat the service request procedure.
- Log the follow-up action on the Incident Tracking Log.
- Maintain a file of all written communications with affected persons regarding mold and/or water intrusion.

10.0 PROCEDURES FOR WATER INTRUSION

Immediate response to water intrusion events (flood, leaks, etc.) will minimize the potential for mold growth. Physical Plant Staff responding to a water intrusion event should initially identify the source of the water. If the source of the water is “clean” (e.g. potable), complete drying of porous materials within a 48-hour period may prevent significant mold growth. Water intrusion from broken potable water pipes, rainwater or storm drains usually does not require personal protective equipment, at least initially. Conversely, sewer backups may carry harmful bacteria and generally result in the removal and disposal of porous materials and should be treated with caution, with remediation workers wearing appropriate personal protection equipment and employing engineering controls.

A pre-qualified remediation/drying restoration contractor shall be identified for rapid response to water damage situations prior to water intrusions. Restoration contractors shall perform work according to IICRC standards (see References).

- When a water intrusion occurs, identifying the source of the water and stopping the water entry as soon as possible is important. If the source of the water intrusion is from the sanitary sewer system then drying is not an effective solution and removal of porous material (carpets, insulation and gypsum board) is required.
- Clean and dry wet or damp spots within 48 hours. Otherwise mold growth may become established.
- Clean carpets with high temperature dry steam and clean with a HEPA filtered vacuum.
- Water damaged gypsum board and insulation that has not been dried effectively and quickly (within 48 hours) should be removed. Clean up personnel should wear appropriated personal protection (Section 11).
- Clean up of the affected area should be conducted when the area is unoccupied.
- Conduct appropriate post water-intrusion event investigation to ensure that mold growth has not been established on impacted building materials. Depending on the nature of the water intrusion event and the materials impacted, post event investigation can range from simple visual inspections to extensive inspection and testing by a qualified consultant.

The following table summarizes the methods for responding to clean water damage events.

Table 1: Water Damage – Cleanup and Mold Prevention*	
<i>Guidelines for Response to Clean Water Damage within 24-48 hours to Prevent Mold Growth</i>	
Water Damaged Material	Actions
Carpet and backing – dry within 24-48 hours **	<ul style="list-style-type: none"> • Remove water with water extraction vacuum • Reduce ambient humidity levels with dehumidifier • Accelerate drying process with fans
Ceiling tile	<ul style="list-style-type: none"> • Discard and replace
Cellulose insulation	<ul style="list-style-type: none"> • Discard and replace
Concrete or cinder block surfaces	<ul style="list-style-type: none"> • Remove water with water extraction vacuum • Accelerate drying process with dehumidifier, fans and/or heaters
Fiberglass insulation	<ul style="list-style-type: none"> • Discard and replace
Hard surface, porous flooring** (linoleum, ceramic tile, vinyl)	<ul style="list-style-type: none"> • Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary • Check to make sure underflooring is dry; dry underflooring if necessary
Non-porous, hard surfaces (plastics, metals)	<ul style="list-style-type: none"> • Vacuum or damp wipe with water and mild detergent and allow to dry; scrub if necessary
Upholstered furniture	<ul style="list-style-type: none"> • Remove water with water extraction vacuum • Accelerate drying process with dehumidifier, fans and/or heaters • May be difficult to complete within 48 hours. If the piece is valuable, you may wish to consult a restoration/water damage professional who specializes in furniture
Wallboard (drywall and gypsum board)	<ul style="list-style-type: none"> • May be dried in place if there is no obvious swelling and the seams are intact. If not, remove, discard, and replace • Open and ventilate the wall cavity, if possible
Window drapes	<ul style="list-style-type: none"> • Follow laundering or cleaning instructions recommended by the manufacturer
Wood surfaces	<ul style="list-style-type: none"> • Remove moisture immediately and use dehumidifiers, gentle heat and fans for drying. (Use caution when applying heat to hardwood floors.) • Treated or finished wood surfaces may be cleaned with mild detergent and clean water and allowed to dry • Wet paneling should be pried away from wall for drying

* this table is adapted from the U.S. EPA “Mold Remediation in Schools and Commercial Buildings” (March 2001, updated June 2001)

** The subfloor under the carpet or other flooring material must be cleaned and dried. This may involve removing the carpet when practicable. See the appropriate section of this table for recommended actions depending on the composition of the subfloor.

11.0 PROCEDURES FOR MOLD REMEDIATION

Remediation of established mold growth, or of water intrusion events involving sewage, shall be conducted utilizing procedures and engineering controls that will not result in further contamination of the building, or result in adverse exposure to remediation workers and building occupants. Physical Plant Staff, when properly trained, may conduct clean up of small, localized mold conditions. For larger, more complex conditions, the University Safety Officer will utilize the services of a qualified consultant and/or a remediation contractor to develop appropriate work procedures on a case-by-case basis. Procedures and engineering controls used shall be based on published generally accepted guidelines (see References) as outlined below.

11.1 Inspection Procedures

- **Visual Inspection** – A thorough visual inspection is an important initial step towards identifying mold growth. Ceiling tiles, gypsum wallboard, cardboard, duct liner, wood, carpet paper and other cellulose-containing surfaces should be given particular attention during a visual inspection. The extent of any water damage and mold growth should be evaluated, as this will be important in determining remedial strategies. If the source of moisture has been present over a long period of time, mold may be hidden behind walls and the University Safety Officer or Assistant Vice President for Administration shall determine if a qualified consultant is needed to determine the extent of mold. The use of equipment such as a borescope, to view spaces in ductwork or behind walls, or a moisture meter, to detect moisture in building materials, may be helpful in identifying hidden sources of mold and the extent of water damage. Ventilation systems should also be visually checked, particularly for damp filters. The maintenance checklist in Appendix A may be used as a guideline for inspections when the location of mold is not obvious or to assure that mold has not spread to multiple locations in the impacted area.
- **Pre-remediation Assessment** – Sampling and analyses are not required to undertake most remediation. In some cases it may assist the design of remediation protocols and restoration criteria and may be used as a baseline to evaluate the effectiveness of the remediation. According to various governmental agencies, when the size of the affected areas is small (Level 1 or 2), decisions about appropriate remediation strategies can be made on the basis of a visual review. Physical Plant Staff (if properly trained, see Section 5) shall only perform small areas of remediation. Larger areas or more complex remediation generally requires the use of a qualified consultant and/or contractor and they will advise the University Safety Officer or the Assistant Vice President for Administration to determine if pre-remediation sampling and analyses is needed.

- Affected Person(s) Notification – The person(s) in the affected room(s) or work area should always be notified of what you have done, what you have found and what you intend to do (see Section 4). Open communication is a key to claim control.

11.2 Levels of Remediation

- Level 1: Small Isolated Areas (10 sq. ft. or less, example: a ceiling tile or small wall area)
 - Clean up can be conducted by trained Physical Plant Staff following the General Remediation Procedures outlined below.
 - Containment of the work area is not required. Dust suppression methods, such as misting (not soaking) surfaces prior to remediation are recommended.
- Level 2: Larger Isolated Areas (10 – 30 sq. ft., example: a dry wall panel)
 - Clean up shall be conducted by a qualified contractor following the General Remediation Procedures outlined below if the mold is localized.
 - Containment of the work area may be warranted. Dust suppression methods, such as misting (not soaking) surfaces prior to remediation are recommended.
- Level 3: Large Scale Remediation (more than 30 square feet)
 - Clean up shall be conducted by a qualified contractor.
 - Contact the University Safety Officer regarding the need for a qualified consultant to assist with remedial design, monitor the remediation and provide post-remediation observation and/or testing.
- Level 4: Remediation of HVAC Systems
 - If the remediation simply involves cleaning of coils or condensation pans then follow the guidelines recommended by the HVAC manufacturers and the cleaning chemical manufacturer for proper methods. Follow the applicable general remediation guidelines in the General Remediation Procedures.
 - A qualified HVAC cleaning contractor shall conduct remediation of ductwork and/or insulation.

11.3 General Remediation Procedures

These procedures are applicable to Level 1 and in some cases Level 2 or 4 remediation. A qualified consultant and/or contractor shall determine remediation protocols for larger, more complex projects (Level 3 and sometimes 2 or 4). While cleaning any area that has mold on the surface, follow these procedures:

- The work area should be unoccupied at the time of the work. Small projects can usually be completed quickly enough that relocation of the residents will not be necessary. Vacating residents or University personnel from spaces adjoining the work area is usually not necessary but is recommended in the presence of persons recovering from recent surgery, immune suppressed people, or people with chronic inflammatory lung diseases (asthma, hypersensitivity pneumonitis and severe allergies).
- Wear rubber or vinyl gloves, appropriate clothing and shoes, eye protection and tight fitting N95 disposable respirator during clean up of the area. Note: the use of a dust mask/disposable paper type respirator such as the N95 may trigger compliance measures per the federal respiratory protection standard (1910.134) including a written respiratory protection program with worksite-specific procedures and medical evaluation of employees.
- Turn off all HVAC Equipment and cover vents with plastic sheeting if near work area.
- Exercise caution around any electrical equipment or fixtures.
- Make sure the area is well ventilated at all times during the removal process. Do not use a standard fan in an area where mold is present or suspected. Use a HEPA filtered fan when needed.
- Read and follow the instructions and safety data sheets (MSDS) of all chemicals used.
- Wipe all surfaces with a non-ammonia soap or detergent in water to remove surface molds.
- Use a stiff brush or cleaning pads with detergent and water on all uneven (rough) surfaces.
- If sanding or a dry wire brush is used to remove visible mold or water damage on hard surfaces, then a vacuum cleaner with HEPA filters should be used to capture dust released by the process.
- Upon completion, damp wipe all surfaces clean with water. Use a wet/dry vacuum if necessary.
- The use of biocides is not recommended, but over-the-counter disinfectants may be used (never mix ammonia with bleach).
- Let all materials dry overnight (until thoroughly dry)
- Remove and discard all porous or cellulose materials (e.g. wallboard) that appear to have mold on them. Before cutting out drywall, tape plastic sheeting six inches beyond the wet or moldy area and tape down to limit the release of mold or dust into the area. Contaminated absorbent material should be sealed in plastic sheets that are taped closed before removing from the area for disposal.
- HEPA vacuum clean the entire work area and areas used by workers as a means of egress at completion (HEPA vacuums are available at local home center stores.)
- Wipe clean all surfaces in the work area and, if warranted, areas used by workers as a means of egress at completion of the cleaning and removal process.

- Wash hands and face thoroughly. HEPA vacuum all clothes and shoes during any break and at completion of the remediation. Dispose of respirator and wash other personal protective equipment.

If you have any questions, contact the University Safety Officer immediately before starting work.

11.4 Contractor and Consultant Requirements

Remediation/restoration contractors – contractors must have specialized experience in remediation of microbial contamination of building materials and HVAC systems. Contractor’s personnel should be able to provide evidence of specialized training in mold remediation. Contractors are required to demonstrate normal insurance coverage but also must provide evidence that their policy does not carry a mold exclusion or limitation. Obtain written confirmation from the contractor stating that the remediation was completed.

Project design, monitoring and testing consultants – consultants must be appropriately trained in mold assessment and sampling methodology and be experienced with environmental sampling, data analysis, and writing mold remediation protocol. Preferably, a Certified Industrial Hygienist (CIH), Certified Microbial Consultant, or Certified Safety Professional (CSP) with experience in microbiology or toxicology should supervise work. The company should use a microbial lab that currently participates in the American Industrial Hygiene Association’s Environmental Microbiology Lab Proficiency Test program. Standard contract procedures should be followed. Consultants are required to demonstrate normal insurance coverage but also must show evidence that their policy does not carry a mold exclusion or limitation.

12.0 KEY CONTACTS

The Property Manager shall develop and maintain records that at a minimum contain information for the list of key contacts below.

Assistant Vice President for Administration

Name	Paul Fleming
Title	Assistant Vice President for Administration Loyola University New Orleans
Office Phone	504-864-7354
Fax	504-864-7099
E-mail	pcflemin@loyno.edu

University Safety Officer

Name	Robert Oehlke
Title	Assistant Director, Physical Plant and University Safety Officer Loyola University New Orleans
Office Phone	504-864-7351
Fax	504-864-7099
E-mail	roehlke@loyno.edu

Consultant

Name	Steve Verret, CIH
Title	Certified Industrial Hygienist
Company	Environmental Measurements Corporation
Office Phone	225-767-7820
Fax	225-767-8015
E-mail	

Contractor

Name	Keith Adams
Title	Project Coordinator
Company	Nationwide Restoration
Office Phone	1-866-417-1769
Fax	885-3290
E-mail	keith@nationwiderestorationllc.com

Risk Manager

Name	Ric Bell
Title	Risk Management
Company	Loyola University New Orleans
Office Phone	504 864-3141
Mobile Phone	504 250-2264
Fax	504 865-3136
E-mail	bell@loyno.edu

13.0 REFERENCES

1. USEPA, Mold Remediation in Schools and Commercial Buildings, EPA402-K-01-001, March 2001
2. USEPA, Building Air Quality, A guide for Building Owners and Facility Managers, December 1991
3. Sheet Metal and Air Conditioning Contractors National Association (SMACNA), Chantilly, VA, IAQ Guidelines for Occupied buildings Under Construction, November 1995
4. New York City Department of Health, Guidelines and Assessment of Remediation of Fungi in Indoor Environments, New York, NY, 1998 (Updated 2000)
5. Institute of Inspection Cleaning and Restoration (IICRC), Standard and Reference Guide for Professional Water Damage Restoration, S500, 2nd Edition, Institute of Inspection, Cleaning, and Restoration Certification, Vancouver, Washington, 1999
6. National Multi Housing Council (NMHC), Operations and Maintenance (O&M) Plan for Mold and Moisture Control, January 15, 2002

APPENDIX A - SAMPLE DOCUMENTS

Affected Person(s) Follow-up Letter

SAMPLE

[Name]
[Address]
[Phone Number]

Date: [DATE]

To: [Affected Person(s) Name]

From: [University Safety Officer's Name]

Re: Follow-up, [Resident Hall, Building Name]

Dear [Affected Person],

It has been approximately XX days since we responded to the complaint in your affected area. We hope that all of your concerns have been addressed to your satisfaction.

Please refer to the attached information, which contains useful tips for preventing mold growth and excessive moisture in your occupied space.

If you notice any evidence of mold growth or excessive moisture in your occupied space, please immediately notify the Physical Plant Department.

Sincerely,

[Signature]
[Name]

Attachment: Tip Sheet on Mold

Mold and Moisture Control Program

Tip Sheet on Mold

Loyola University New Orleans seeks to maintain a high quality living and working environment for University personnel and residents. To help achieve this goal, it is important to work together to minimize the potential for conditions that could lead to indoor growth of naturally-occurring mold.

Tips for Residents

Residents can help minimize mold growth in their living areas by taking the following actions:

- Open windows during good weather conditions. Proper ventilation is essential. If it is not possible to open windows, run the fan on the apartment air-handling unit to circulate fresh air throughout your living space.
- In damp or rainy weather conditions, keep windows and doors closed.
- If possible, maintain a temperature of between 50° and 80° Fahrenheit within your living space at all times.
- Clean and dust your living space on a regular basis as needed. Regular vacuuming, mopping and use of household cleaners is important to remove household dirt and debris that may contribute to mold growth.
- Periodically clean and dry the walls and floors around the sink, bathtub, shower, toilets, windows and patio doors using a common household disinfecting cleaner.
- On a regular basis, wipe down and dry areas where moisture sometimes accumulates, like countertop, windows and windowsills.
- Use the pre-installed bathroom fan or alternative ventilation when bathing or showering and allow the fan to run until all excess moisture has vented from the bathroom.
- Use the exhaust fans in your kitchen when cooking or while the dishwasher is running and allow the fan to run until all excess moisture has vented from the kitchen.
- Use care when watering houseplants. If spills occur, dry up excess water immediately.
- Ensure that your clothes dryer vent is operating properly and clean the lint screen after every use.
- When washing clothes in warm or hot water, watch to make sure condensation does not build up within the washer and dryer closet. If condensation does accumulate, dry with a fan or towel.
- Thoroughly clean and dry any spills on carpeting.
- Do not overfill closets or storage areas. Ventilation is important in these spaces.
- Do not allow damp or moist stacks of clothes or other cloth materials to lie in piles for an extended period of time.

- Immediately report to the Physical Plant staff any evidence of a water leak or excessive moisture in your living space, residence hall common areas, dining areas, classrooms, hallways or other campus-maintained facilities.
- Immediately report to the Physical Plant staff any evidence of mold growth that cannot be removed by simply applying a common household cleaner and wiping the area. Also report any area of mold that reappears despite regular cleaning.
- Immediately report to the Physical Plant staff any failure or malfunction of your heating, ventilation, air-conditioning system or laundry system. Do not block or cover any of the heating, ventilation, or air-conditioning ducts in your living space.
- Immediately report to the Physical Plant staff any inoperable windows or doors.
- Immediately report to the Physical Plant staff any musty odors that you notice in your living space, residence hall, classrooms, dining areas or other campus-maintained facilities.

Mold and Moisture Control Incident Tracking Log

Mold and Moisture Control Program Incident Tracking Log

Affected Area	Reported By	Date	Condition Reported	Action Taken	Follow-up Date	Follow-up Action	Resolved (yes/no)

Property:

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Mold and Moisture Control Program

Maintenance/Inspection Checklist

Enter the condition(s) for each area. For each condition note the date it was corrected. Sign, date and place the form in the residence hall maintenance files.

Legend: W = wet M = moldy O = odor D = dirty B = blockage WD = water damage WS = water stain

Exterior	Condition	Corrected
Roof		
Gutters		
Downspouts		
Landscape		
Storage/Utility Closet		
Irrigation System		
Entry Foyer	Condition	Corrected
Door/Frame		
Closet		
Walls/Ceiling		
Flooring/Carpet		
Baseboards		
Windows		
Living & Dining Room	Condition	Corrected
Doors		
Closet		
Walls/Ceiling		
Flooring/Carpet		
Baseboards		
Windows		
Fireplace		
Porch/Deck/Patio	Condition	Corrected
Sliding Door/Frame		
Exterior Walls/Gate		
Roof/Overhang/Ceiling		
Surface/Floor		
Storage/Utility Closet		
Powder Room (½ bath)	Condition	Corrected
Walls/Ceiling		
Flooring/Carpet		
Windows		
Toilet		
Sink/Faucets		
Cabinets (inside)		
Baseboards		

Kitchen & Laundry	Condition	Corrected
Walls/Ceiling		
Flooring/Carpet		
Baseboards		
Windows		
Doors		
Cabinets/Pantry (inside)		
Refrigerator		
Icemaker connection		
Dishwasher (underneath)		
Waste disposal		
Sink/Faucets (wall/below)		
Washing machine area		
Washer hoses		
Dryer area		
Dryer vent		
Master		
Master Bedroom	Condition	Corrected
Doors		
Closet		
Walls/Ceiling		
Flooring/Carpet		
Baseboards		
Bedroom #2	Condition	Corrected
Doors		
Closet		
Walls/Ceiling		
Flooring/Carpet		
Baseboards		
Bedroom #3	Condition	Corrected
Doors		
Closet		
Walls/Ceiling		
Flooring/Carpet		
Baseboards		

Heat/Vent/Air Cond.	Condition	Corrected
Operation		
Air Circulation		
Thermostat		
Evaporator Coil		
Condensation Pan		
Condenser Coil		
Condenser fan/motor		
Furnace		
Baseboard Heating		
Vents		
Filters		
Water Heater		
Master Bathroom	Condition	Corrected
Sinks/Faucets		
Bathtub/Shower		
Toilet		
Cabinets (inside)		
Walls/Ceiling		
Flooring/Carpet		
Windows		
Exhaust Fan		
Doors		
Baseboards		
Bathroom #2	Condition	Corrected
Sink/Faucets		
Bathtub/Shower		
Toilet		
Cabinets (inside)		
Walls/Ceiling		
Flooring/Carpet		
Windows		
Exhaust Fan		
Doors		
Baseboards		

Door								
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Additional comments: _____

Inspected By: _____ Date: _____