3. Preventing Microbial Activity (Mold Growth)

The key to preventing mold growth is to "**KEEP IT DRY"**. Yes, it is that simple, however the process of keeping a facility dry is far more complicated. Below are some common prevention techniques.

PREVENTIO

STEP 1 - Facility Audit

Start your mold prevention program by conducting a self-audit of your facilities. Some areas that you should be looking at are any areas that contain clues that you had or currently have moisture issues.

Areas to pay special attention to are:

- Foundation walls- Signs of seepage, rust around metal objects that are mounted to the walls.
- Around windows – Is there evidence that the sills are rotting? Is there moisture on the windows when it is cold outside?
- Ceiling tiles- are there water show staining. (what?)
- HVAC drip pans, drains
- Standing water around the building, this could be in any area of the building or outside near the foundation walls.
- Roof drain penetrations- May need to be resealed
- Boiler rooms - around any fixture
- Bathrooms - Under the sinks or around the showers
- Kitchens – Under the sink, behind garbage disposal

Review drainage: Review your facility drainage system.

- Do you have skirt drains around the structure? Are they working correctly?

- Do you have an area where there is a sump system for water removal? Is it working? Does it need to be cleaned?
- Do you have areas around the structure that have high moisture content?
- Is the land in direct contact with the structure sloped in a manner to drain away from the building?
- **Roof Drains** – Do you have a preventative maintenance program for monthly inspections?
- Do you have roof drains (gutters) on your facilities? Are they clean and operating properly?

HUMIDITY

Humidity Levels: Humidity Levels higher than 45% will increase the ability of mold to grow. Some areas to check/monitor:

- HVAC air ducts
- Appliances direct venting into a space (clothes dryer)
- Green house
- Windows
- Boiler rooms
- Bathrooms
- Kitchens

NOTE: some simple and inexpensive humidity meters are available through Amazon or your local hardware store.
Amazon Mini Temperature and humidity meters

STEP 2- Resolve the water problem.

Now that you have a list of where you found evidence of moisture entering your facility you need to determine possible solutions. Below is a list of some common solutions.

Water Removal

- If you have ground water problems with your facility you should consult with an engineer about permanent water removal systems.

Some temporary solutions may include:

- Sump Pumps*(These will not remove the moisture from the interior of your facility)*
- Sloping the landscape away from the structure to assist with drainage
- Addingfoundation drains.

Structural Measures

Improve Insulation: Proper insulation can reduce condensation on surfaces. These situations commonly appear in the summer when you have high humidity in the air and the water flowing through the pipes is cold.

Proper Ventilation:

- Ensure adequate airflow in moisture-prone areas using exhaust fans or open windows*(caution should be used when installing fans into an area where microbial activity has been detected to prevent the spread).*
- Ensure that your HVAC system is working properly. Possibly consult with an Industrial Hygienist to determine if you have enough air flow for the building. Often when buildings are constructed they are designed to handle the air flow adequately. Over time we modify the floor plans by adding or moving walls and we neglect to modify the HVAC system to compensate for the changed spaces.
- Verify that all of your HVAC drain pans are draining correctly. These can get plugged and stop draining causing standing water.

Install Vapor Barriers: Prevent moisture from penetrating walls, floors, and ceilings.

Waterproofing:

- Seal any penetrations through the exterior walls
- Fix any structural cracking in the foundation or foundation walls
- Apply waterproofing materials to the walls (Liquid Rubber Foundation Sealant)

Windows:

- Replacing windows with Thermopane windows.
- Ensure that there is proper insulation around windows and door frames

ONGOING MAINTENANCE PRACTICES

Focus areas: Any area that was identified in your initial facility audit should be included in a preventative maintenance program. These areas should be included as part of your periodic checks and anytime the potential exists for moisture.

Some conditions to consider:

- Determine conditions that exacerbate the moisture potential (heavy rains, snow melt, leaf and fall debris, etc.)
- Determine times of the year (season)

HVAC – Preventative maintenance is critical to making sure that your facilities are maintaining the air flow that is required to maintain proper ventilation. Check all drain pans in the HVAC system in between maintenance cycles.

Housekeeping: Any area that is prone to moisture should be kept clear of any organic matter. You should not be storing materials such as paper, clothing, carpeting, cardboard, wood, etc.

Regular Cleaning: Clean and disinfect areas prone to moisture buildup. Keep these areas dry using processes mentioned above.

Monitor Indoor Plants: Overwatering can create moist environments favorable to mold. Local dehumidifying equipment might need to be considered for areas such as greenhouses or classrooms with a lot of plants.

Fix Leaks Promptly: Repair plumbing, roofing, and other sources of water intrusion immediately. This should be completed in the first 24 to 48 hours.

Use Dehumidifiers: Dehumidifiers are great for keeping an area dry, but, can also be used to help remove moisture after a leak or repair. Make sure to monitor the dehumidifiers and empty water daily or as often as possible.

Sudden Events (floods, pipe breaks, roof leaks etc.)

The first **24-48 hours** of a water event are critical in the prevention of mold.

Water penetration can happen for any number of reasons from a broken pipe, ground water, someone leaving a window open, overflowing waterway during a storm or a roof drain getting plugged and causing a backup.

It is critical for the prevention of mold to be able to quickly respond and take action before the mold has a chance to grow.

multi-line
Vermont School Boards Insurance Trust

1. **Cleaning Process**
    a. Remove standing water – remove using one or more of the following techniques
        i. Sump Pumps or suction pumps
        ii. Wet/Dry vacuums
        iii. Mops and buckets
    b. Remove any porous/organic materials that may absorb or hold water. These either have to be dried completely or disposed of if they can't be dried.

        Examples:

        1. Clothing
        2. Books, paperwork, files,
        3. Sheetrock – Might only need to remove the lower sections of sheetrock that have absorbed the water.
        4. Furniture
        5. Carpeting
2. **Dry/ Dehumidify the area**
    a. The area has to be dried completely.
        i. Dehumidification systems - these can be rented or you can contact a restoration company and contract with them to dry the space.
        ii. Air circulation – Use of large fans to circulate the air.