MARIHUANA GROW OPERATION REPAIR, REHABILITATION, AND REMEDIATION REQUIREMENTS

Background

Marihuana Grow Operations (MGOs) have been found to operate with little or no regard to the immediate or future safety of the occupants or neighbours. Buildings that have been used as MGOs may contain significant health and safety hazards. Substantial damage and hazardous conditions found in these buildings can include structural problems, electrical tampering, chemical contamination, increased levels of combustion gases, and abundant growth of visible and hidden moulds. An MGO premises is usually subject to an order and a Notice of Health Hazard registration on the land title pertaining to the property.

Alberta Health Services (AHS) Environmental Public Health, in partnership with the Alberta Green Teams, local law enforcement, and local Safety Codes Officers, is actively involved in the assessment and remediation of these marihuana grow operations.

Purpose

The purpose of this guideline is to provide information on the current best practices for repair, rehabilitation, and remediation of an MGO property.

Summary of Actions by Environmental Health Officer

An Environmental Health Officer (EHO), appointed as an Executive Officer of AHS, after determination of any nuisance conditions or building deficiencies, in conjunction with police confirmation of the building's use as a marihuana grow operation, may find these conditions sufficient to issue an Executive Officer's Order against the property. Once an order is issued, an EHO will initiate the registration of a Notice of Health Hazard on the land title pertaining to the property.

An EHO will review documents pertaining to all repair, rehabilitation, and remediation work and will make the decision to rescind any orders and discharge a Notice of Health Hazard.

Executive Officer's Order

An Executive Officer's Order will provide a list of deficiencies as appropriate under categories that include, but are not limited to, the following:

- Building Deficiencies (Structural, Materials, and Finishes)
- Electrical Deficiencies

- Heating and Ventilation Deficiencies
- Plumbing and Drainage System Deficiencies
- Gas Deficiencies
- Nuisance Conditions (detailed items that may not fall under the preceding categories)

The order will include a requirement to correct the aforementioned conditions to the satisfaction of AHS and may require the premises to be vacated or remain vacant.

These buildings, whether they are commercial premises, housing premises, or other structures, will be referred to the municipality in which they are located as necessary for reconstruction or demolition in accordance with codes, regulations, and/or bylaws.

Hazards within Marihuana Grow Operations

The property is assessed for physical damage and hazards. People who live in or visit a MGO may be subject to physical and chemical dangers and any of the safety hazards listed here.

1. **Access deterrents:**
   - Anti-personnel devices may be encountered by first-entry crews. Weapons, animals or booby traps may be intentionally set, or there may be attempts by grow operators to deter invasion and crop theft.
2. **Fire and explosion hazard:**
   - Electrical hazards (altered, modified, or tampered systems) may trigger fire or explosions.
   - Explosion risk, chemical presence and any combination of these or other factors increase the potential for fires to occur in altered buildings.
   - The use of propane tanks and their flexible gas lines for fuelling carbon dioxide generators or other equipment can create explosion risks.
3. **Entrapment: hanging hazards and limited access:**
   - Bundles of wires, hanging wires and enclosed spaces may result in entanglement and entrapment as well as electrocution hazards.
4. **Reduced oxygen atmosphere:**
   - Tampering of heating, ventilation, and air conditioning (HVAC) systems may result in an oxygen-depleted indoor environment.
   - Elevated carbon monoxide and carbon dioxide levels potentially reduce the oxygen atmospheres of enclosed rooms.
5. **Elevated levels of CO and/or CO_2 and other gases:**
   - Disconnected exhaust ducts from HVAC systems and other gas appliances are often used to redirect combustion gases into the building and allow for the collection of carbon dioxide for absorption by plants.
   - Tampering of HVAC systems and hot water heaters can result in a build-up of carbon dioxide with pockets of carbon monoxide and other by-products of combustion.
6. **Shock and electrocution:**
   - Electrical by-pass, power lines, secondary distribution panels and transformers may create shock or electrocution hazards.
   - Illegal and dangerous bypasses at the electrical junction are used for increased demand by equipment like light, humidifiers, air conditioning, and cooling systems.
7. **High-intensity ultraviolet grow lights:**
   - Electrical shock and serious eye damage are potential hazards when high-voltage lamps are used for growing plants.

8. **Structural problems and/or building impairment:**
   - Holed areas of foundation or building used for electrical by-pass and installation of modified ductwork result in building deficiencies and damage to the structure.
   - Addition of building materials and any non-code-conformant installations may be inadequate and hazardous.
9. **Water damage and mould:**
   - The accumulation of untreated and improperly vented moisture in wall cavities, attic spaces, and basement crawl spaces creates ideal conditions for mould growth and poor indoor air quality.
   - Water-damaged building materials may present a structural hazard.
10. **Chemical contamination and hazards:**
   - Chemical contamination of surfaces may result from mixing and spraying fertilizers and pesticides in and around crop areas.
   - Hazardous liquids and gases may result from the large amounts of chemicals used in a grow operation such as fertilizers, nutrients, and other unknown chemical mixtures.
11. **Plumbing modifications and cross-connections:**
   - Modified plumbing systems, unapproved connections and/or tapping in before the meter may create water supply problems and cross connections.
12. **Other hazards:**
   - Activities by "operators" may introduce hazardous substances such as asbestos-containing materials, lead-containing paints, or mercury from thermostats into buildings.

Typical Requirements for Assessment and Repair, Rehabilitation and Remediation

All of these requirements for assessment, repair, and inspection will be necessary unless there is sufficient observation or evidence to preclude any one of them.

1. Repair and restore damaged building materials, finishes, and windows, ensuring that the building is windproof, weatherproof, and waterproof.
2. Remove extraneous building materials and plastic sheeting; examine materials beneath for evidence of water damage and/or mould growth; clean, repair, or replace materials in accordance with a professional environmental assessment and remediation plan.
3. Remove and properly dispose of any chemicals.
4. Reduce interior clutter, and properly dispose of waste materials.
5. Repair and restore electrical systems to proper operating condition.
6. Repair and restore heating, ducting and ventilation systems to proper operating condition.
7. Repair and restore plumbing systems to proper operating condition.
8. Repair and restore any gas lines and connections to proper operating condition.
9. Have air quality testing completed for confirmation of mould remediation.

Objective: To ensure that the building is safe for re-use or re-occupancy

Project Coordination and Documentation

1) For building assessment and development of a remediation plan, the owner must obtain the services of an Environmental Consultant or Industrial/ Occupational Health Consultant with experience, training, and knowledge in hazard assessment and remediation and create an Assessment Report.

2) Documentation of all assessment, remediation, and repair work must be provided by the qualified consultant and contractors; and copies of documentation (including the "Assessment Report") must be provided to Alberta Health Services.
3) Conduct building assessment and remediation under consultation with an environmental consultant and/or by hiring an Environmental Consultant or Industrial/Occupational Health Consultant to identify and delineate the presence of biological hazards such as mould and insect infestation, contamination of surfaces, hazardous materials and products that include but are not limited to pesticides, fertilizers, lead, asbestos, mercury, and polychlorinated biphenyls (PCBs).
    i. Where water damage has occurred, the area(s) must be assessed to determine the extent of damage and mould contamination. This assessment must include insulation and any other absorbent material in wall and ceiling cavities, including the attic, where applicable. All mouldy material must be removed and the area cleaned and dried before repairs and refinishing are completed.
    ii. Where mould growth is extensive, mould remediation must be consistent with procedures in these or similar documents:
        - Mould Remediation in Schools and Commercial Buildings (EPA, 2001)
        - Guidelines on Assessment and Remediation of Fungi in Indoor Environments (New York City Department of Health, 2008)
        - Mould Guidelines for the Canadian Construction Agency (CCA, 2004)
        - Mould in Indoor Environments Risk Assessment and Management Program Handbook (Alberta Research Council / Alberta Infrastructure and Transportation, 2006).
    iii. Where chemical or hazardous material contamination has occurred, the area(s) must be assessed to determine the extent of contamination. Remediation and disposal must be conducted in accordance with industry standards, hazardous materials handling protocols, and/or executive officer's direction.
    iv. Where hazardous materials and products have been identified, these materials and products are to be handled in accordance with industry standards, hazardous materials handling protocols, and/or executive officer's direction.

Documentation of all assessment, delineation and remediation work must be provided by the qualified consultant, and a copy must be provided to this office.

Building Permits and Repairs

4) Permits from the municipality or accredited agency will be required for all remediation and repair work to major building systems, including but not limited to:
    i) Restoration (building permit for restoration – MGO)
    ii) Any demolition work (building permit)
    iii) Foundation and structural repair (building permit)
    iv) Electrical systems (electrical permit)
    v) Heating, ventilation, and air conditioning (HVAC permit)
    vi) Plumbing systems (plumbing permit

5) Repair, restoration, and remediation work shall occur in an order and sequence that is protective of all workers.

6) Assess and repair any structural concerns related to building or water damage.

7) Correct all fire and electrical hazards.

8) Remove and properly discard all materials associated with the MGO.

9) Remove and properly discard all waste matter or food which may decay.
10) Remove and properly dispose of all mouldy materials, including potentially contaminated materials, in accordance with the remediation plan. Have the affected areas cleaned and dried before further repairs and refinishing are undertaken.

11) Repair the electrical system, and ensure that it is in a good and safe operating condition.

12) Perform basic repairs for electrical, gas and water lines so that preliminary inspections may be completed, allowing all services to be reinstated to the building. This will enable proper cleaning and conditions for air sampling. To facilitate proper cleaning and air sampling, all furniture should be removed, and all surfaces should be thoroughly cleaned.

13) Repair the foundation wall so that it is structurally sound, in good repair, and prevents water infiltration. Such assessment and repair work is to be completed by or under the direction of experienced foundation contractors.

14) As necessitated by the environmental consultant, clean the interior air using HEPA air scrubbers in all areas of the building to remove airborne spores. This should be done after all surface removal and/or cleaning has been completed.

15) Repair the heating and ventilation systems including any air conditioning appliances and connections, and ensure that equipment is properly installed and in good working condition. This must include replacement of filters and a thorough, professional cleaning of any forced-air equipment and ductwork, vents, and grills by a furnace- and duct-cleaning company.

16) Repair the plumbing system, and ensure that it is in a good and safe operating condition.

Water Sampling

17) Facilitate water sampling as needed. For the water supply:
    a) If the potable water in the building has been disconnected for some time, particularly in large buildings, the building distribution system should be flushed to move all stagnant water, microorganisms, and any leachates/particulates from pipes.
    b) The cold water supply should exhibit measurable chlorine residual.
    c) Cold water samples should be submitted for microbiological/bacteriological testing at the Environmental Health Officer's discretion. Ideally two consecutive samples, each sample having been taken one week apart, must have satisfactory microbiological test results.

Air Sampling

18) Conduct air monitoring to ensure all reservoirs have been identified and removed. Air sampling is to be carried out in accordance with Alberta Health Services *Fungal Air Testing, Investigation and Reporting Requirements for Mould Remediation.*

19) Submit the air sample report, as prepared by a qualified laboratory, to Alberta Health Services for review.

Inspections

20) Provide copies of all records and reports pertaining to work carried out on the premises by the owner/operator of the premises.
21) Submit documentation/confirmation related to complete assessments, repairs and any upgrades by qualified contractors of these building systems:
    i) Electrical
    ii) Heating
    iii) Plumbing (and wastewater/sewage)
    iv) Gas and associated appliances (which may include the heating system)

22) Ensure that final inspections are obtained from these officers:
    i) Safety Codes Officer – Building Discipline: demolition and restoration
    ii) Safety Codes Officer – Electrical Discipline
    iii) Safety Codes Officer – Heating, Ventilation and Air Conditioning Discipline
    iv) Safety Codes Officer – Plumbing and Gas Discipline
    v) Executive Officer – Environmental Public Health
    vi) Any other inspector or utility technician as required by the Executive Officer

23) All assessments and upgrades or modifications must be in compliance with the latest codes (Alberta Building Code).

24) All records and reports will be reviewed by an Executive Officer of Alberta Health Services to determine if work has been carried out in a proper and appropriate manner.