

REST, INC.

98-1277 Kaahumanu Street, Suite 377, Aiea, HI 96701 +1 (888) 847-5639 rthomas@wwdb.org

May 29, 2006

Joanna Kim

1088 Bishop Street, # 202

Honolulu Hawaii

Ms. Kim,

A site visit was conducted on May 5, 2006 of your condominium (1088 Bishop Street, Unit # 202, Honolulu, Hawaii). Ms. Young Kim was present to deliver the original 2nd floor plan used for the construction of Executive Center. Access to the unit was provided by Mr. Xavier Alanis. The weather was rainy at the time of the site visit.

Other information provided by you and your consultants included:

- Mold sample screening at 1088 Bishop St. # 202, Mr. Barry Wong, Building Specs Inc., dated April 20, 2006.
- Mold Lab Report, Project: Kim 1088 Bishop Street, American Home Laboratories, Inc., Dated April 19, 2006.
- Photographs of building materials, paint, and personal items subject to water damage and mold infestation.

Mr. Wong identified several areas of mold and moisture concern, including the interior floor and wall covers, failure of seals around the bedroom windows, exterior water ponding and water proofing measures, existing provisions for drainage of collected rainwater, and potential for mold distribution in

the building HVAC system. The laboratory report indicated a high hazard level for airborne mold spores associated with extremely high spore counts. Ms. Kim also reported that her physician has diagnosed her with medical conditions associated with mold exposure.

During our site visit, Mr. Wong's observations were confirmed and rain water was observed to be ponding on the exterior concrete deck area, with no movement towards the pipes, assumed to be drain inlets, on either end of the deck. Additional efforts for water proofing and drainage in this area need to be completed prior to any mold remediation effort within this unit, or the existing moisture damage and mold conditions will likely reoccur.

References

This letter addresses the remediation plan and some health concerns associated with mold infestation as described in such government documents as:

- New York City Department of Health & Mental Hygiene Bureau of Environmental & Occupational Disease Epidemiology 2002. Guidelines on Assessment and Remediation of Fungi in Indoor Environments.
- U.S. Department of Labor, Occupational Safety and Health Administration, Directorate of Science, Technology and Medicine, Office of Science and Technology Assessment, A Brief Guide to Mold in the Workplace, Safety and Health Information Bulletin, SHIB 03-10-10

General

Building materials supporting fungal growth must be remediated *as rapidly as possible* in order to ensure a healthy environment. Repair of the defects that led to water accumulation (or elevated humidity) should be conducted in conjunction with or prior to fungal remediation. Specific methods of assessing and remediating fungal contamination should be based on the extent of visible contamination and underlying damage. The simplest and most expedient remediation that is reasonable, and properly and safely removes fungal contamination, should be used.

The use of respiratory protection, gloves, and eye protection is recommended. Extensive contamination, particularly if heating, ventilating, air conditioning (HVAC) systems or large occupied spaces are involved, should be assessed by an experienced health and safety professional and remediated by personnel with training and experience handling environmentally contaminated materials. Lesser areas of contamination can usually be assessed and remediated by building maintenance personnel. In order to

prevent contamination from recurring, underlying defects causing moisture buildup and water damage must be addressed. Effective communication with building occupants is an essential component of all remedial efforts.

Fungi in buildings may cause or exacerbate symptoms of allergies (such as wheezing, chest tightness, shortness of breath, nasal congestion, and eye irritation), especially in persons who have a history of allergic diseases (such as asthma and rhinitis). Individuals with persistent health problems that appear to be related to fungi or other bioaerosol exposure should see their physicians for a referral to practitioners who are trained in occupational/environmental medicine or related specialties and are knowledgeable about these types of exposures. Decisions about removing individuals from an affected area must be based on the results of such medical evaluation, and be made on a case-by-case basis. Except in cases of widespread fungal contamination that are linked to illnesses throughout a building, building-wide evacuation is not indicated.

In summary, prompt remediation of contaminated material and infrastructure repair is the primary response to fungal contamination in buildings. Emphasis should be placed on preventing contamination through proper building and HVAC system maintenance and prompt repair of water damage.

Remediation Plan

Remediation includes both the identification and correction of the conditions that permit mold growth, as well as the steps to safely and effectively remove mold damaged materials.

Before planning the remediation assess the extent of the mold or moisture problem and the type of damaged materials. If you choose to hire outside assistance to do the cleanup, make sure the contractor has experience with mold remediation. Check references and ask the contractor to follow the recommendations in EPA's publication, "Mold Remediation in Schools and Commercial Buildings," or other guidelines developed by professional or governmental organizations.

The remediation plan should include steps to permanently correct the water or moisture problem. The plan should cover the use of appropriate personal protective equipment (PPE). It also should include steps to carefully contain and remove moldy building materials in a manner that will prevent further contamination. Remediation plans may vary greatly depending on the size and complexity of the job, and may require revision if circumstances change or new facts are discovered.

If you suspect that the HVAC system is contaminated with mold, or if mold is present near the intake to the system, contact the National Air Duct Cleaners Association (NADCA), or consult EPA's guide, "Should You Have the Air Ducts in Your Home Cleaned?" before taking further action. Do not run the HVAC system if you know or suspect that it is contaminated with mold, as it could spread contamination throughout the building. If the water or mold damage was caused by sewage or other

contaminated water, consult a professional who has experience cleaning and repairing buildings damaged by contaminated water.

The remediation manager's highest priority must be to protect the health and safety of the building occupants and remediators. Remediators should avoid exposing themselves and others to mold-laden dusts as they conduct their cleanup activities. Caution should be used to prevent mold and mold spores from being dispersed throughout the air where they can be inhaled by building occupants. In some cases, especially those involving large areas of contamination, the remediation plan may include temporary relocation of some or all of the building occupants.

Applicable Mold Remediation Procedure

Level IV: Extensive Contamination (greater than 100 contiguous square feet in an area).

Industrial hygienists or other environmental health and safety professionals with experience performing microbial investigations and/or mold remediation should be consulted prior to remediation activities to provide oversight for the project.

The following procedures may be implemented depending upon the severity of the contamination:

- Personnel trained in the handling of hazardous materials and equipped with:
 - Full face piece respirators with HEPA cartridges;
 - Disposable protective clothing covering entire body including both head and shoes; and
 - Gloves.
- Containment of the affected area:
 - Complete isolation of work area from occupied spaces using plastic sheeting sealed with duct tape (including ventilation ducts/grills, fixtures, and other openings);
 - The use of an exhaust fan with a HEPA filter to generate negative pressurization; and
 - Airlocks and decontamination room.
- If contaminant practices effectively prevent mold from migrating from affected areas, it may not be necessary to remove people from surrounding work areas. However, removal is still recommended for infants, persons having undergone recent surgery, immune-suppressed people, or people with chronic inflammatory lung diseases. (e.g., asthma, hypersensitivity pneumonitis, and severe allergies).
- Contaminated materials that cannot be cleaned should be removed from the building in sealed impermeable plastic bags. The outside of the bags should be cleaned with a damp cloth and a detergent solution or HEPA vacuumed in the decontamination chamber prior to their transport to uncontaminated areas of the building. These materials may be disposed of as ordinary waste.
- The contained area and decontamination room should be HEPA vacuumed and cleaned with a damp cloth or mopped with a detergent solution and be visibly clean prior to the removal of

isolation barriers.

Remediation Completion Check List

- You must have identified and completely corrected the source of the water or moisture problem.
- Mold removal should be complete. Visible mold, mold-damaged materials, and moldy odors should no longer be present.
- Sampling, if conducted, should show that the level and types of mold and mold spores inside the building are similar to those found outside.
- You should revisit the site(s) after remediation, and it should show no signs of moldy or musty odors, water damage, or mold growth.

Conclusion

After correcting water or moisture infiltration, the prompt removal of contaminated material and structural repair is the primary response to mold contamination in buildings. In all situations, the underlying cause of water accumulation must be rectified or the mold growth will reoccur. Emphasis should be placed on preventing contamination through proper building and HVAC system maintenance and prompt repair of water damaged areas.

Effective communication with building occupants is an essential component of all large-scale remediation efforts. The building owner, management, and/or employer should notify occupants in the affected area(s) of the presence of mold. Notification should include a description of the remedial measures to be taken and a timetable for completion. Group meetings held before and after remediation with full disclosure of plans and results can be an effective communication mechanism. Individuals with persistent health problems that appear to be related to mold exposure should see their physicians for a referral to practitioners who are trained in occupational/environmental medicine or related specialties and are knowledgeable about these types of exposures.

Thank you for this opportunity to be of service.

REST, Inc.

Robert J Thomas, Jr., P.E.

Principal Environmental Engineer