2 varieties of mold identified at Hilton

One type is potentially nastier than the other, according to experts

By Tim Ruel

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Two types of mold -- one potentially nastier than the other -- have been identified in larger-than-normal concentrations at Hilton Hawaiian Village, officials said yesterday.

Mold investigators hired by Waikiki's largest hotel said they found evidence of Eurotium mold in rooms at the now-closed 453-room Kalia Tower. The investigators have also found Cladosporium mold in corridors at the 264-room Lagoon Tower. The rooms at the Lagoon Tower and other towers appear to have normal amounts of mold.

Mold spores are commonplace and continually pass through the air, but can grow to unhealthy levels in buildings that have improper air systems.

The exact species of either mold genus has yet to be pinpointed.

Eurotium mold is closely related to Aspergillus mold, which is potentially toxic, said Ken Beal, executive vice president of air quality firm MoldPro International LLC in Kailua.

"Aspergillus can be one of the nastier ones," Beal said, citing research materials from Environmental Microbiology Laboratory Inc. of Daly City, Calif.

Basically, the same mold organism can be Eurotium in one part of its life cycle and Aspergillus in the other, said George Wong, a University of Hawaii associate professor who specializes in fungi.

The Kalia Tower, where the Eurotium mold was discovered, was recently built by Hilton for $95 million and opened in May 2001. A Hilton housekeeper discovered mold in a room in June of this year.

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Officials addressing the Hilton Hawaiian Village's mold problem yesterday were, from left, Bryan K. Ligman, W. Elliott Horner and Hilton executive Peter Schall.

The Eurotium mold has mainly been found on room furniture, particularly the bottoms of drawers, and would not have been noticed by guests. The hotel began closing down individual rooms in the Kalia Tower as it discovered more mold.

As of a week ago, more than 200 rooms had been cleared of people, said Peter Schall, senior vice president and managing director of Hilton Hawaiian Village. Hilton went public with the mold on Wednesday, and said it had emptied all 453 guest rooms at the tower. It's not clear exactly how many rooms have mold, since Hilton has not yet checked all rooms, Schall said.

Allergic reactions to mold have been documented in other buildings that have had similar levels of mold as Kalia Tower, said Dr. Joseph Q. Jarvis, an occupational and environmental health consultant who will arrive in Honolulu in a week to examine employees.

Cladosporium, found in the corridors of the Lagoon Tower, is a common type of building mold, and can cause a variety of allergic reactions in people who have asthma or hay fever, or who have strong allergies, Beal said. Hilton has not closed off any parts of the Lagoon Tower, which was recently renovated and reopened last year as the Hilton Grand Vacations Club time-share resort.

Cladosporium and Aspergillus were among the types of molds found in a two-story Maui building where 80 county employees were evacuated last year because of concerns over health. Cleaning up cost $450,000, including the removal of mold from ceilings and the installation of a new air-conditioning system.

High humidity appears to be the cause of the Kalia Tower's mold problem, said W. Elliott Horner, microbial laboratory director for Atlanta-based Air Quality Sciences Inc., which was hired by Hilton to investigate the mold. The firm's investigators arrived in Waikiki

on Saturday and knew almost immediately what type of mold they were dealing with, but the experts did not know how widespread the mold was.

The cause of the high humidity is still unknown, said Bryan K. Ligman, director of the building consulting national office for Air Quality Sciences. It's not clear how long the inquiry will take.

To fix the problem, Hilton will first need to tackle the cause of the moisture, then see if it can salvage the affected furniture, Horner said.

Hilton's workers would be more at risk than guests for mold-related disease, which could potentially qualify for workers' compensation, said Jarvis. About 50 employees regularly work in Kalia Tower's guest rooms.

Hilton is not the only hotel in Waikiki to open a new million-dollar tower and find that it had a mold problem. Next door, the Hale Koa Hotel opened its new 396-room Maile Tower in 1995 and almost immediately had mold trouble. Regular housekeeping didn't solve the problem, and mildew was starting to smell in the rooms.

A forensic expert was brought in and blamed the mold on poor construction and design.

The hotel spent about $5.5 million to fix the problem and reached a settlement with builders and designers. The general contractor, Hawaiian Dredging Construction Co., is the same firm that was general contractor for Hilton's Kalia Tower. Hawaiian Dredging, a major local construction firm, has blamed the Hale Koa's problems on bad design.

Second firm hired to tackle Hilton mold

By Andrew Gomes
Honolulu Advertiser Staff Writer

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Three weeks after Hilton Hawaiian Village closed its Kalia Tower, another team of specialists has been hired to step up the search for the cause of mold growing in guest rooms.

An executive of CH2M Hill, a multinational engineering, construction and consulting firm based in Colorado, said a team from the company is scheduled to arrive today to start the complex process of identifying and correcting the fungi problem.

All of the 453 Kalia guest rooms remain closed. A team of mold investigators from Atlanta-based Air Quality Sciences Inc. has been sampling the tower's air quality, analyzing the mold and performing a preliminary inquiry into possible causes.

Although Hilton Hotels Corp. has estimated it will cost $10 million to find the source of the mold in Kalia Tower and remove it, the timetable and scope of the project still remain largely uncertain

because of the complexities of the engineering, construction and mechanics that are enabling the mold to thrive.

David Odom, vice president of CH2M's building services group, said yesterday that his team, which has been studying Kalia Tower blueprints and Air Quality Sciences' findings, has some ideas about the cause, but not enough to speculate.

"We really need to take (the investigation) further," he said. "At this point, we've ruled nothing out."

Hilton Hawai'i spokeswoman Karen Winpenny said yesterday she was not able to characterize progress of the investigation or anticipate how long it might take.

Based on similar CH2M mold investigations at high-rise hotels, Odom said diagnosing the cause of mold at Kalia Tower could take two to four months but more likely will take several weeks given 24-hour access to rooms and the resources Hilton has dedicated to the project.

Still, identifying the humidity source is difficult because mold investigation experts say the problem could be from an architectural or engineering design fault, construction defect, malfunctioning equipment or any combination. "It's almost never a single cause," Odom said.

With a mold problem at a new 12-story addition to the U.S. Army's Hale Koa Hotel in 1995, the cause was attributed to underpowered room dehumidifiers and misplaced vapor retarders that created and trapped moisture behind walls.

CH2M was involved in the investigation of the mold at the Hale Koa, and has investigated mold in hotel complexes with an estimated 50,000 rooms, mostly in Florida during the past 15 years.

Odom said typical causes of mold in those cases have been most often linked to deficient air conditioning systems and air or water penetrating building walls.

Some problems, he said, have been as extensive as those at Kalia Tower. Other mold-related repair work in which CH2M has been involved cost $15 million to $20 million.

Such extensive problems are not uncommon, Odom said, adding that in most cases hotel owners have been private companies able to keep much of the trouble out of the public spotlight. A disproportionate share of mold problems are found in new hotels, he added, saying, "It happens a lot more than you would expect."

Charlie Wiles, executive director of the nonprofit American Indoor Air Quality Council, said avoiding air pressure, condensation or water-leak problems in constructing or operating a high-rise hotel is difficult.

Typically, buildings in humid climates such as Hawai'i are designed to be slightly pressurized to keep warm outside air out.

"In the case of Hawai'i, keeping the indoor temperature above the dew point may prove to be extremely challenging," he said.

Jason Princenthal, president and chief indoor air quality consultant for Honolulu-based AirCare Environmental Services, said many hotels are built with features that make them more susceptible to mold, such as vinyl wall coverings and oversized air conditioners.

Vinyl prevents walls from breathing and aids moisture buildup, while oversized air conditioning systems cool air quickly without adequately removing moisture.

Odom said hotels also are challenged because they usually have a greater density of people per square foot than office or apartment buildings, and cannot control environmental conditions in rooms.

In the case of the mold at the Hale Koa, it took three to four months to diagnose the problem. Odom said the company spent several more months studying corrective measures set up in test rooms before deciding on a $5.5 million fix.

Unlike the Hale Koa, which was able to keep most of its affected rooms in service during repair work, Hilton is under pressure to find a solution as fast as possible while ensuring the problem is properly corrected so the mold does not return.

Hilton sues 18 companies over mold remediation costs at a Hawaiian hotel

Honolulu Advisor

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Hilton Hotels Corp. filed a lawsuit against 18 contractors, architects, engineers, inspection companies and at least one product manufacturer and one building material supplier. The suit is seeking to recover $55 million in mold remediation costs as well as business interruption costs after mold contamination forced the 453 room hotel to close in July 2002. The suit alleges various construction and design defects contributed to mold growth including defects in the exterior finish, air intake and exhaust systems, door framing, fireproofing, linen chutes, drywall joints, lanai doors and orienting the building towards the prevailing winds.

Defendants include:

- Wimberly Allison Tong & Goo (architect)
- Group Builders Inc.
- Brewer Environmental Industries LLC.
- Ferris & Hamig Hawaii Inc. (mechanical engineer)
- Frank Lum (mechanical engineer)
- Notkin Hawaii Inc. (mechanical engineer)
- Douglas V. McMahon (electrical engineering consultant)
- Dorvin D. Leis Co. Inc. (subcontractor)
- Air Balance Hawaii Inc. (air testing firm)
- Caulking Hawaii Inc. (performed sealing work)

- Dryvit Systems Inc. (exterior wall finish)
- The Erection Co. (steel stairways)
- A-1-A Lectricians Inc. (electrical installations)
- International Environmental Corp. (manufacturer of fan coil units)
- HVAC Hawaii (worked on fan coil units and chilled water valves)
- Kawneer Co. Inc., (supplier of glass doors).

Hilton had touted its $95 million Kalia Tower, replete with exterior waterfalls and bronze sculptures, as "an exciting addition to the entrance of our 22-acre resort." The tower is part of the beachfront Hilton Hawaiian Village, a fixture of the Waikiki beach scene, and, with more than 3,000 rooms, is the world's largest Hilton.

But in a lawsuit filed last week, Hilton offered a darker look at what lurks behind the curtain. The devastating mold, the suit claims, grew from the negligence of the 18 contractors. The suit, filed in Circuit Court last Monday alleges breach of contract and defective planning, construction, design, and inspection of the tower. Hilton did not specify the amount of damages it is seeking, saying in the complaint that the amount will be determined at trial.

So instead of offering shiny new guest quarters to paradise seekers, the hotel conglomerate was left to empty the rooms of not only people, but beds, dressers, wallpaper, and carpeting.

Officials at the architectural firm of Wimberly Allison Tong & Goo, named as a major defendant in the suit, did not return calls seeking comment. Hilton's case is not unique. Litigation across the country has resulted in settlements and judgments against builders, insurers, and building owners, including an $11 million award last year to the University of California for construction defects in student housing at UC Irvine.

High humidity caused the mold to grow in the year following the Kalia Tower's May 2001 opening, the suit says. The hotel conglomerate blames the contractors for problems ranging from inadequate moisture sealant on the outside, to faulty air conditioning and *air pressure* systems, and an improper "toilet exhaust system" that leaked and overwhelmed fan coils that were supposed to pressurize the rooms and keep humid air out.

The mold saga became public last July when Hilton announced closure of the tower's guest rooms because of extensive mold discovered by cleaners. The company launched a massive dumping — carpets, drapes, and wallpaper were ripped out and thrown away along with bedding, furniture, and towels.

The extent of that effort surprised University of Hawaii botany professor and mold specialist George Wong, especially because Hilton had reported no mold-induced illness. Hilton had a physician survey employees, and Wong concluded that there had been a few cases of eye, nose, throat, or skin irritation but no evidence of allergic respiratory illness.

Mold growing on a surface usually can be removed but poses more of a problem once embedded inside furniture or fibrous items, Wong said. Hilton spokesmen and attorneys refused to discuss the suit. "We don't comment on litigation," said Marc Grossman, Hilton vice president for corporate communications. Most of the other contractors also declined comment or didn't return calls. But some said they shouldn't be included in the suit.

Kevin Chong, who provided fan coil units for the tower, said he shouldn't be named in the suit because he merely represented the coil manufacturer, International Environmental Corp., supplying what engineers from Ferris & Hamig Hawaii Inc. wanted. That engineering firm went out of business and its attorney Derek Tomita said he had no comment. "It looks like they dragged everybody into it regardless," Chong said of the lawsuit. Kathy Higham, representing A-1 A-Lectricians, said her clients were blameless as well. "All of the electrical conduits installed by A-1 A-Lectricians entered the guest rooms through the concrete floor slabs," thus eliminating moisture issues, she said. Molds are part of the natural environment, their reproductive spores floating invisibly in the air. To grow, they need moisture, and Hilton says its building was not adequately pressurized to keep out the humid Honolulu air.

Warm air often forms condensation where it encounters air-conditioned, cooler air, thus creating a habitat for mold, said Wong. "Air conditioning by definition lowers the temperature and the humidity. It should cut down on the molds that are in the building. But if you do it wrong, it's not going to do the job."

Many Hawaii buildings have mold, including many Waikiki hotels, said Randy Herold, president of *MoldPro*, a mold consulting firm. Specialists attribute some of the problems to a trend toward tighter energy-efficient buildings that can retain moisture and lack proper pressurization to push air out rather than suck it in. But, Herold said, "new construction if properly designed and built should not have amplified mold."

Mold can cause allergic reactions in sensitive people, as well as irritation of the skin, eyes, nose, and throat, and asthma attacks, according to the Environmental Protection Agency. Eliminating moisture can mitigate it.