



***State of Hawaii – Department of Health  
Noise, Radiation and Indoor Air Quality Branch***

**Indoor Air Quality 101**

**Environmental Purchasing & Practices Conference**

**July 18, 2002**

**Jeff Eckerd, Environmental Health Specialist**



**The Department of Health's Role**

- The goal of the IAQ program is to minimize public exposure to indoor air pollutants.
- Program strategies are to develop an effective IAQ Tools for Schools program and networking plan, maintain a comprehensive public outreach and education program, continue to respond to public complaints and inquiries, provide assessment and monitoring capabilities, and regulatory authorities through the current air conditioning and ventilation program (HAR Chapter 11-39).



## Authority & Funding

- In 1994, Act 234 was adopted to establish an indoor air pollution program within the Department of Health. This act amended the current Chapter 321, Hawaii Revised Statutes, to add a new Part XXXIII on Indoor Air Quality, under Sections 321-411, 412 & 413.
- The State of Hawaii, NRIAQ Branch was awarded federal assistance under Section 103 Clean Air Act (CAA) to support the State's Indoor Air Quality (IAQ) program. This assistance agreement was effective January 27, 1997.
- Chapter 11-39, Hawaii Administrative Rules, Air Conditioning and Ventilating currently under revision.



EPA - Healthy Indoor Air  
for America's Homes  
Project

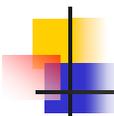
## Indoor Air Quality Concerns

- EPA studies of human exposure to air pollutants indicate that indoor air levels of many pollutants may be 2-5 times, and occasionally, more than 100 times higher than outdoor levels.
- These levels of indoor air pollutants are of particular concern because it is estimated that most people spend as much as 90% of their time indoors.
- People who may be exposed to indoor air pollutants for the longest periods of time are often those most susceptible to the effects of indoor air pollution. These groups include young children, the elderly and the chronically ill, especially those that suffer from respiratory or cardiovascular disease.



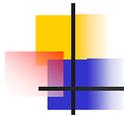
## Common Indoor Air Pollutants

- **Environmental Tobacco Smoke (ETS)** – Mixture of smoke that comes from the burning end of a cigarette, pipe or cigar and exhaled smoke that contains over 4000 compounds, 40 of which are known to be carcinogenic.
- **Biological Contaminants** – Include bacteria, molds, viruses, animal dander, dust mites, cockroaches and pollen to name a few. Some may trigger allergic reactions and cause infection.
- **Combustion Products** – Stoves, heaters, fireplaces and chimneys can produce unhealthy levels of carbon monoxide, nitrogen dioxide and particulates if not ventilated properly.
- **Radon** – Colorless, odorless gas released from Uranium which may cause lung cancer when exposed to elevated levels.
- **Volatile Organic Compounds (VOC)** – Organic chemicals are widely used in household products such as paints, wax, cleaning products and cosmetics. Symptoms of exposure may include respiratory irritation, headaches and dizziness.



## Types of Complaints We Handle

- All Public Buildings including shopping malls, offices, retail spaces, warehouses, restaurants, hospitals, etc. If the complaint is from one building to another it is the jurisdiction of the Clean Air Branch.
- All Government Buildings except Federal. Federal authorities should be notified of complaint.
- We **DO NOT** handle complaints pertaining to residential dwellings (i.e. single-family dwellings, townhouse, apartments, condominiums). General information can be provided to individuals to help them resolve the problem.



## What Can We Do to Help?

- Inspect and assess a facility to ensure compliance with Chapter 39, Air Conditioning and Ventilating rules and to identify potential sources of contaminants.
- Make requirements and recommendations as necessary to help mitigate any existing or potential indoor air quality issues.
- Provide information and documentation to help identify and remediate problems.
- We **DO NOT** provide any air quality testing. Businesses and individuals are referred to an environmental consultant if they request testing.



### HAWAII INDOOR AIR QUALITY CONSULTANT LIST

**AINA ENVIRONMENTAL GROUP INC.**  
3375 Koapaka, Suite 263  
Honolulu, Hawaii  
Phone: 833-0136

**AIRCARE ENVIRONMENTAL SERVICES**  
1020 Auahi Street  
Honolulu, Hawaii 96814  
Phone: 593-9600  
Fax: 589-1684  
Contact: Jason Princenthal, Pres.  
Jerome Yasuhara, Inv.

**CERTIFIED INDUSTRIAL HYGIENE & SAFETY  
PROFESSIONAL SERVICES**  
P. O. Box 1127  
Kaneohe, Hawaii 96744  
Phone: 235-2677  
Fax: 236-0645

**CALIFORNIA INDUSTRIAL HYGIENE SERVICES INC.**  
1303 Jefferson Street, Suite 300A  
Napa, California 94559  
Phone: 707-226-5899  
Fax: 707-226-9642  
Contact: Roxanne Fyrnboh, President

**CHELSEA GROUP**  
P.O. Box 131  
64 Okuma Place  
Maunaloa, Hawaii 96770  
Phone: 552-0225  
Toll Free: (800) 722-9023  
E-Mail: [qbenda@chelsea-grp.com](mailto:qbenda@chelsea-grp.com)  
Contact: George Benda, President

**CLAYTON ENVIRONMENTAL CONSULTANTS**  
970 N. Kalaheo Avenue, Suite C316  
Kailua, Hawaii 96734  
Phone: 531-6708  
Fax: 537-4084

**EMET - ENVIRONMETEO SERVICES INC.**  
94-515 Ukeke Street, Suite 304  
Waipahu, Hawaii 96797  
Phone: 671-8383  
Fax: 671-7979  
Contact: Clifford How

**ENVIRONMENTAL CONTROL SPECIALISTS INC.**  
94-515 Ukeke Street, Bay 204  
Waipahu, Hawaii 96797  
Phone: 676-9668  
Fax: 676-9666

**INALAB**  
3615 Harding Avenue, Suite 308  
Honolulu, Hawaii 96816  
Phone: 735-0422  
Fax: 735-0047  
Contact: Linda Klemm

**INDUSTRIAL SAFETY SOLUTIONS**  
1661 Ala Moana Boulevard  
Honolulu, Hawaii 96814  
Phone: 947-4101

**MOLDPRO International**  
673 Auwina Street  
Kailua, Hawaii 96734  
Phone: 262-0909  
Fax: 566-0078  
Contact: Randy Herold, President  
E-Mail: [randy@MoldProInternational.com](mailto:randy@MoldProInternational.com)

**MURANAKA ENVIRONMENTAL CONSULTANTS  
INC.**  
500 Alakawa Street, Unit 220  
Honolulu, Hawaii 96817  
Phone: 848-8866  
Fax: 847-5267

**NEXUS ENVIRONMENTAL GROUP**  
3259 Koapaka Street  
Honolulu, Hawaii 96819  
Phone: 836-0139  
Fax: 836-0563

**NODA, EDWARD K. AND ASSOCIATES INC.**  
615 Piikoi Street, Suite 300  
Honolulu, Hawaii 96814  
Phone: 591-8553  
Fax: 593-8551

**PENN AIR GROUP - HAWAII**  
99-899 Iwaena Street, Suite 101  
Aiea, Hawaii 96701  
Phone: 485-8880  
Fax: 485-8882  
Contact:

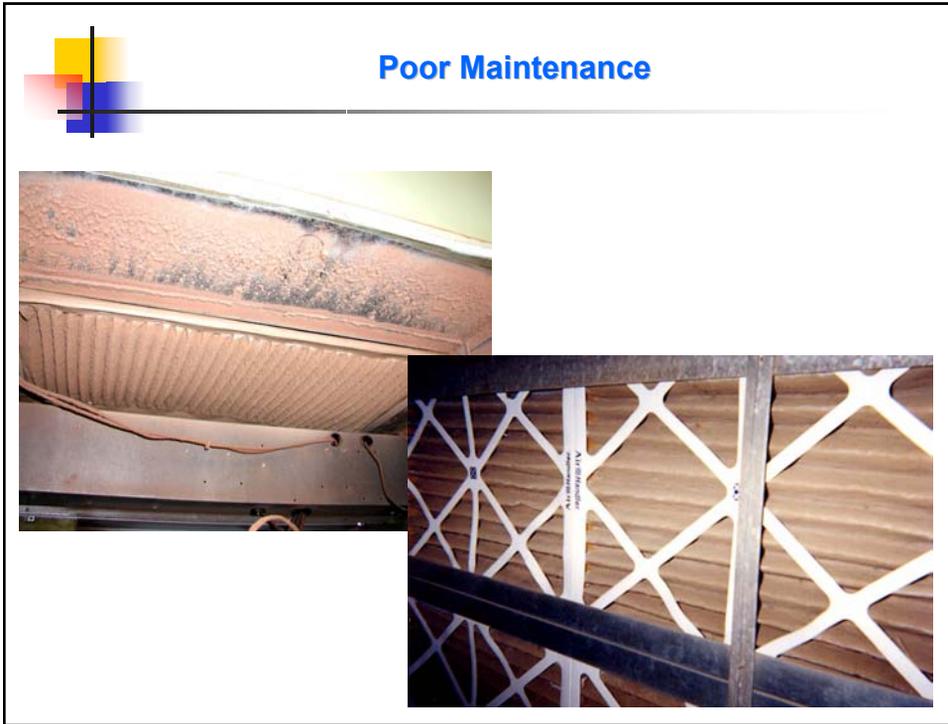
**SUZUKI, DENNIS YOSHIO**  
238 N. School Street  
Honolulu, Hawaii 96817-3166  
Phone and Fax: 533-1166  
E-Mail: [suzuki004@hawaii.rr.com](mailto:suzuki004@hawaii.rr.com)

The information contained in this document is for guidance. The implementation and use of the information contained in this document are at the discretion of the user. The implications from use of this document are solely the responsibility of the user.

The depiction of commercial products, their sources, or their use in connection with material reported herein is not to be construed as either an actual or implied endorsement of such products by the State of Hawaii Department of Health.

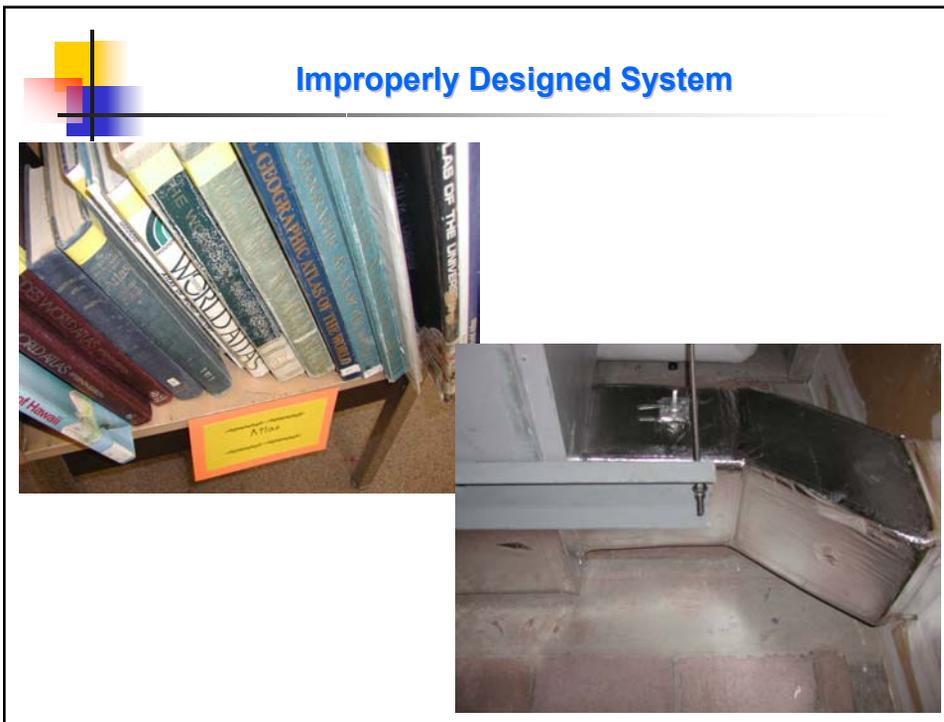
Produced: 02/25/2002











## News Articles on Maui County's IAQ Problems

### Building's air problem remains a mystery so far

*An inspector hopes to finish his report about the Old Courthouse in Wailuku this week*

By Gary T. Kubota  
 gkubota@hawaiiadvertiser.com

WAILUKU >> A state health inspector said he has been unable to determine the cause of bad air that forced the evacuation of a portion of the Old Courthouse building in Wailuku.

Jeff Eckerd said finding the source has been difficult since the bad-air problem occurred several weeks before his inspection and only happened once for a couple of hours.

"We don't know what it was," said Eckerd, who conducted the inspection on Thursday.

Some 12 employees with the County Prosecutor's Office complained of headaches and respiratory problems on June 20, prompting the evacuation of the top floor, occupied by some 32 employees.

Some described the smell as "metallic."

Eckerd said when he interviewed employees, their description of the smell varied widely.

"It could have been anything," he said.

County employees have been worried about indoor air quality ever since some 80 people were forced to evacuate the Kalana Pukui building in Wailuku in February and relocate to other facilities.

The county hopes to have the redesigning of the Kalana Pukui's ventilation system completed soon.

The Kalana Pukui building is also being cleaned of extensive mold and mildew under the ceiling tiles, after the discovery of an "active fertile colony" of fungus known to cause respiratory problems.

The fungus is called "stachybotrys sp." It was found on the surface of a water-stained ceiling in the building, but not in the air.

The fungus can be harmful, especially to the elderly, the young or those with autoimmune problems.

Eckerd said during an inspection of the Old Courthouse

building, he found spots near the air-conditioning vents that appeared to contain mold and mildew.

But he said the mold and mildew was not extensive, and he does not anticipate that the cleanup will require employees to vacate the building.

"It's something they can come in and clean up on the weekend," Eckerd said.

*County employees have been worried about indoor air quality ever since some 80 people were forced to evacuate the Kalana Pukui building in Wailuku in February.*

Eckerd, who is the only state inspector conducting indoor quality air checks in Hawaii, said he plans to work with the county on how to quicken the response time when bad-air problems occur on Maui.

He said he expects to complete his inspection report by the end of this week.

Asked to comment on the inspection, the prosecutor's administrative officer, Wayne Steel, said he was waiting to look at details in the report.



TIMOTHY HURLEY • The Honolulu Advertiser

Maui County building plans examiner Mac Aquide was diagnosed with asthma after being exposed to pollutants in the Kalana Pukui annex in February.

### Sick building stifles Maui planners

By Timothy Hurley

ADVISER MAUI COUNTY BUREAU

WAILUKU, Maui —

When land-use and building plans examiner Mac Aquide arrived at the Maui County Planning Department early Feb. 20, the air conditioner was turned off, having been serviced the day before. So naturally he turned it on.

What blew out at him changed his life.

Within 15 minutes, he was coughing, his eyes were red and watery and his head ached. Within an hour he went home, sleeping until the next day, when he went to his doctor with chest pains and a variety of respiratory problems. The doctor sent him to the emergency room, thinking he might be having a heart attack.

Aquide, a physically fit 53-year-old who lifted

weights and went to the gym often, eventually was examined by a pulmonary specialist in Honolulu and learned he had acquired asthma.

"I was very active," he said. "But now I don't go to the gym anymore. I get totally out of breath."

When the air conditioning was turned on in February after servicing, it not

See SICK, A2

## Who To Call If You Suspect a Problem

**State of Hawaii - Department of Health  
 Noise, Radiation and Indoor Air Quality Branch  
 Phone: (808) 586-5800**

Jeff Eckerd, Environmental Health Specialist  
 e-mail: [jeckerd@ehsdmail.health.state.hi.us](mailto:jeckerd@ehsdmail.health.state.hi.us)

OR

any qualified environmental consultant

