

Managing Mold and Indoor Air Quality in Buildings Proactively

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Topics

1. Factors affecting IAQ
2. The Traditional IAQ investigation
3. The Proactive IAQ Program
4. Moisture Management Program

FACTORS AFFECTING IAQ



Factors Affecting IAQ

- Physiological
- Psychological
- Environmental

Physiological Factors

- Individual susceptibility
- Individual's health status

Psychological Factors

- Stress
- Attitudes/opinions

Environmental Factors

- Outdoor air – volume and distribution
- Temperature and RH – “comfort factors”
- Chemical contaminants
- Biological contaminants
- Noise and lighting
- Ergonomics



THE TRADITIONAL IAQ INVESTIGATION



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The Traditional IAQ Investigation

- Tenant/Occupant complains
- Property Manager calls consultant to deal with one specific issue in one specific tenant space or handles themselves
- Scope of work developed, proposal written
- Investigation completed and report prepared
- Cost \approx \$2,000



THE PROACTIVE IAQ INVESTIGATION



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What is Pro-Active?

- Pro-active means ...
"acting in anticipation of future problems, needs or changes"

What is Pro-Active IAQ testing?

- It is the regular testing (every 6 months or year) of the indoor air quality before tenants or occupants complain
- May also include inspections of vital components of HVAC system
- Seasonal variations can be taken into account

Reasons for Implementing a Pro-active IAQ Program

- Addresses regulatory requirements
- Addresses a topic that is very important to tenants/occupants BEFORE they complain
- Improves tenant/occupant moral
- Very useful in lease negotiations



Reasons for Implementing a Pro-active IAQ Program

- Has become part of wording in lease documents Can diagnose an indoor air quality issue before it escalates into the real concern
- Very cost effective \approx \$2,000 for whole building

Reasons for Implementing a Pro-active IAQ Program – in New Construction

- If testing done of base building, a benchmark is developed.
- Future issues can be compared to benchmark
- Is issue related to Tenant Improvements?
- Case study – penthouse Coal Harbour

What Parameters are tested

- Carbon dioxide – to assess ventilation system performance
- Carbon monoxide – to determine potential infiltration of automobile exhaust or other combustion sources
- Temperature and relative humidity – comfort parameters



What Parameters are tested

- Respirable suspended particulate (RSP) – to assess filtration or potential source of indoor particulate
- Total volatile organic compounds (TVOC) – measurement of paints, solvents, chemicals
- Ozone, formaldehyde, mold, bacteria, individual VOCs, etc.

How should these parameters be tested?

- Datalogging versus instantaneous
- Pros and cons to each
- Instantaneous measurements allow testing of whole building in a cost effective manner but does not provide trend
- Datalogging restricts number of locations tested due to limitation of equipment and \$\$\$\$



How TSA suggests these parameters be tested?

- Instantaneous measurements in EVERY tenanted space of building – each tenant sees the testing being conducted
- One set of measurements in morning and one in afternoon
- PDA configured database to log results
- Report prepared comparing results to guidelines

Inspections

- During the testing in each tenant space, visual inspections are made for
 - Condition of HVAV system
 - Water stains
 - Odours
 - Office equipment proximity to thermostats

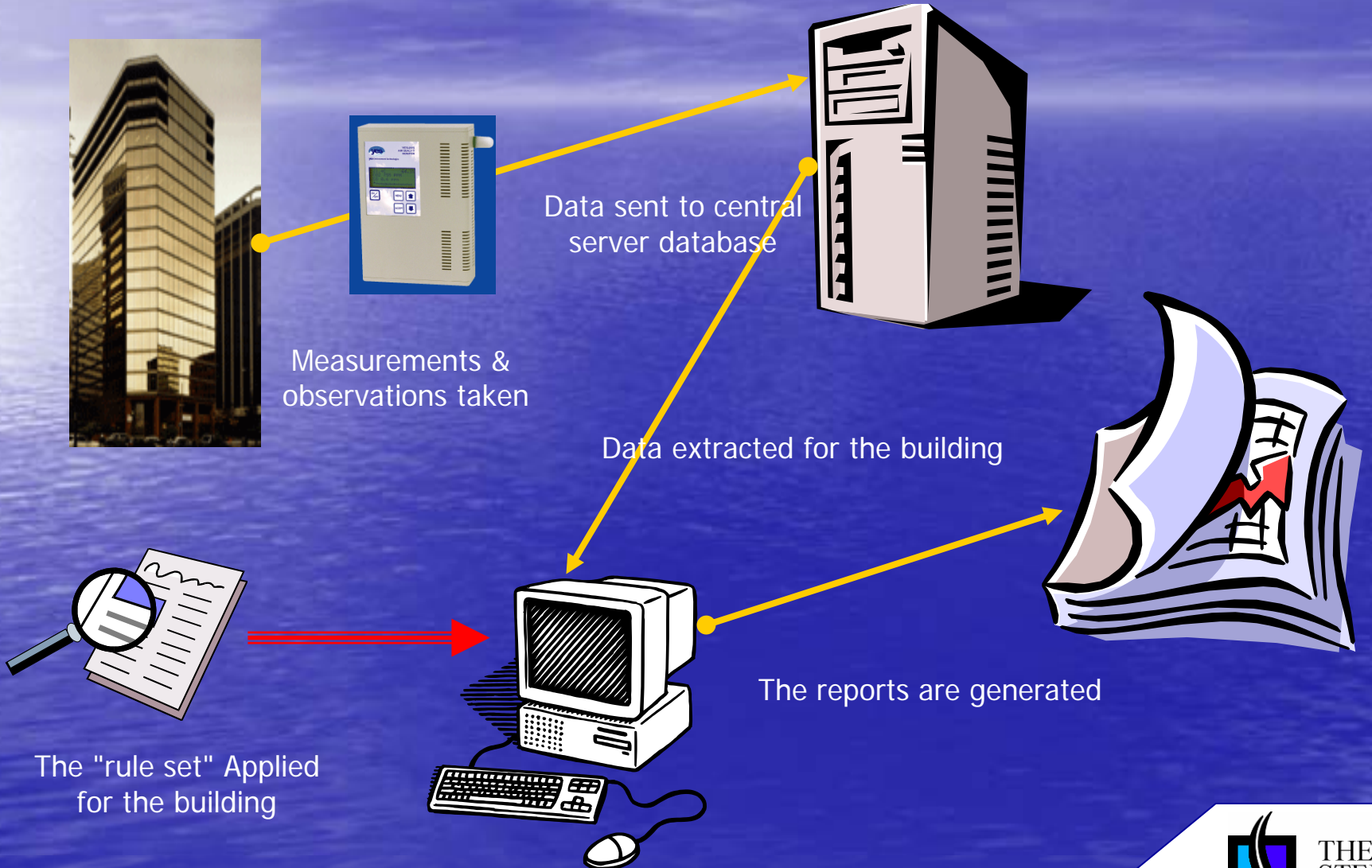
Inspections

- An extra level of inspections may be included to address mold/moisture issues
- Air intakes, coils, drip pans, insulation, rooftop HVAC units, etc.

New Technologies

- iaqsoftware.com
- Data can be uploaded and report automatically generated
- Reports are customized and not just a table of numbers

IAQ Software System



MOISTURE MANAGEMENT PROGRAM



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What is Pro-active Moisture/Mould Management?

- It is the implementation of inspections, procedures and policies to minimize the likelihood of moisture infiltration into a building
- It is also the expeditious handling of a moisture incident ... get it dry quick!
- Pro-actively collecting airborne mold spore samples not always the best idea



How to implement mould/moisture management?

- Educate workers about mould, the causes and the remedies
- Schedule regular inspections of the building and its HVAC systems – use checklists
- Link mold/moisture management with Pro-active IAQ program



How to implement mould/moisture management?

- Inspections, where to look
 - HVAC units, coils, drains, etc.
 - Washrooms
 - Janitor closets
 - Exterior walls – envelope?
 - Roof drains – leaves, other blockage
 - Flashing on roof
 - Water stained ceiling tiles



What to do in case of water ingress?

- Educate workers on how to handle a water issue
 - get it dry quick (24-48 hours)!
 - Correct water issue
 - Move furniture from walls and/or off carpet
 - Pull back baseboards
 - Cut out bottom 2 feet of drywall
 - Replace carpet?
 - Use dehumidifiers and/or fans

