Healthcare Disaster Recovery: Surrounded by Mayhem...Disaster Clean Up and Environmental Testing

Presented by:
Safetech Environmental Limited
Al-care Disaster Kleen-up
Who Am I

• I am well known throughout the Medical Industry.
• When I wake up, I like to change into something more comfortable depending on the weather.
• I Love flying.
• I like warm climates
• I frequent trashy establishments
• I enjoy spending time with the sick and elderly in my spare time.
Surrounded by Mayhem
Flood Timeline (48 Hours)

1. Flood
2. Mitigate Source of Water Infiltration
3. Initial Clean-Up
4. Pre-Restoration Evaluation
5. Scope of Work Developed
6. Initiate Drying – Accessible Locations
7. Site Meeting
8. All Affected Areas Vacated and Drying Initiated
9. Evaluation of Drying Activities
Multidisciplinary Team

- Environmental Services
- Facility Management (bldg. maintenance & operations)
- Infection Prevention & Control Personnel
- Medical & Nursing Staff
- Restoration Contractors
- Environmental Consultants
- Security
Surrounded by Mayhem
Engineering
Relocation/Logistics
Initial Clean-Up

Water Extraction
Surrounded by Mayhem
Initial Clean-Up – Just the Beginning
Initial Clean-Up
Environmental Consultant

• Act as an independent third party to provide professional advice and quality assurance for the project

• Reduces liability of:
  – Remediation Contractor
  – Property Owner/Manager of Insurer
Pre-Restoration Evaluation

• Scope of Work Determination
  • Category
  • Class
  • Construction of impacted materials
  • Degree of impact
  • Full extent of migration
  • Presence of hazardous materials
  • Areas of the building impacted (occupant sensitivity)
  • Time from date of loss

  – Use results of pre-restoration evaluation to produce a comprehensive scope of work
Guidelines and Standards for Health Care Facilities

Construction-related Nosocomial Infections in Patients in Health Care Facilities

Decreasing the Risk of Aspergillus, Legionella and Other Infections

Infection control during construction, renovation, and maintenance of health care facilities
• Performance based standards (not health based)
• Extent of precautionary measures are based on quantity of mould (not type)
• Objective is to remove mould growth (not to kill or to encapsulate)
Pre-Restoration Evaluation

• Scope of Work Floor Plan

Observations: Some drywall walls are insulated with fibreglass bat insulation. Moisture has penetrated the vapour barrier in some areas.

Recommendations: Remove all baseboards in affected area. Walls indicated as insulated are recommended to be removed (one side as a minimum) to a 2 ft height and further drying performed. Un-insulated drywall walls are recommended to cut core holes and conduct further drying.

Show Cases: Show cases are to be removed to allow for drying.

Further investigate this wall.
Pre-Restoration Evaluation

• Scope of Work Floor Plan

Observations: The majority of drywall walls are insulated with fibreglass bat insulation. Moisture has penetrated the vapour barrier in some areas.

Recommendations: Remove all baseboards in affected area. Walls indicated as insulated are recommended to be removed to a 2ft height and further drying performed. Un-insulated drywall walls are recommended to cut core holes and conduct further drying.

Walk-in Fridge: Remove fridge panels for further investigation.

Drywall on Concrete Block

<table>
<thead>
<tr>
<th>Basement</th>
<th>Moisture Tracking</th>
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<tbody>
<tr>
<td></td>
<td>Lower drywall walls and isolated areas of upper drywall walls affected.</td>
</tr>
<tr>
<td></td>
<td>Approximate Un-insulated drywall walls indicating elevated moisture (25% to 100% MC)</td>
</tr>
<tr>
<td></td>
<td>Approximate Insulated drywall walls indicating elevated moisture (25% to 100% MC)</td>
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<tr>
<td></td>
<td>Approximate areas of water ceiling or bulkheads.</td>
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</tbody>
</table>
Site Meeting – “In the Know”

• Critical to have site meeting with all parties involved
Work Area Isolation
Work Area Isolation
Negative Pressure
Initiate Full Scale Specialized Drying
Initiate Full Scale Specialized Drying
Case Study

Sometimes, no matter what you do....

Initial assessment for water damage in Level 2/3 Neonatal
Case Study
Sometimes, no matter what you do....

Initiation of infection control measures and accelerated drying
Case Study

Sometimes, no matter what you do....

Evaluation of drying success and assessing for mould growth
Case Study

Sometimes, no matter what you do....

Remediation of mould-contaminated areas
Case Study

Sometimes, no matter what you do....

Final visual inspection and post-remediation verification sampling

Area was successfully restored to pre-loss conditions prior to reoccupancy
Questions?
Who Am I?

- **Aspergillus fumigatus**

- I am well known throughout the Medical Industry. The most common pathogen is *Aspergillus fumigatus* (Bennett 1994)
- When I wake up I like to change into something more comfortable depending on the weather. These conidia emerge from dormancy and make a morphological switch to hyphae by germinating in the warm, moist, nutrient-rich environment of the pulmonary alveoli.[7]
- I Love flying. Colonies of the fungus produce from *conidiophores* thousands of minute grey-green *conidia* (2–3 μm) that readily become airborne.
- I like warm climates. The fungus is capable of growth at 37 °C or 99 °F (*normal human body temperature*), and can grow at temperatures up to 50 °C or 122 °F, with conidia surviving at 70 °C or 158 °F—conditions
- I frequent trashy establishments. *A. fumigatus*, a *saprotroph* widespread in nature, is typically found in soil and decaying organic matter, such as compost heaps, where it plays an essential role in *carbon* and *nitrogen* recycling.
- I enjoy spending time with the sick and elderly in my spare time. In *immunocompromised* individuals, such as organ transplant recipients and people with *AIDS* or *leukemia*, the fungus is more likely to become *pathogenic*, over-running the host's weakened defenses and causing a range of diseases generally termed *aspergillosis*. 