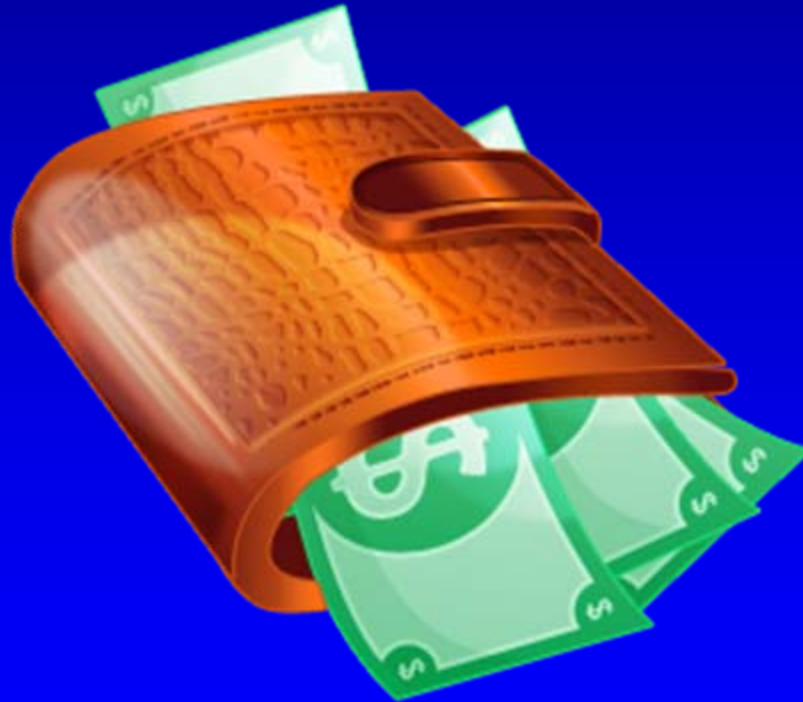


Bed Bug Control in Multi-unit Facilities



Let's address the Pest Management Professionals first!!!

PMP: What People Want

- **Clients want you to come in with a magic potion.**
- **Apply it once and bed bugs are gone forever**
- **They pay you \$60 dollars.**
- **Then both of you pretend this never happened.**
- **What they get is multiple treatments, multiple visits, a huge bill and no promise that the bed bugs are gone.**

PMP: Time Is Money

- **Bed bug control is expensive**
- **Bed bug control can take two technicians several hours and multiple visits for a single unit**
 - **How long does it take to inspect surrounding units?**
 - **If someone has to open the door for you how long does that take?**
 - **If a unit is cluttered how much longer does it take to complete a treatment?**
- **Are you getting paid for your time?**

What is your Break-Even Cost?

- If your break-even cost is \$60 per hour then each minute counts!
- If a salesman sells a job for what amounts to \$45.00 per unit how long can the technician spend working and still make money?
- Amazingly, many companies are not aware of their own costs!
 - Is your sales force aware of your costs?
 - Are your technicians aware of your per minute costs?

Keeping your Costs in Mind...

- **Do you have the time to take on bed bug jobs?**
 - **Two technicians, 4-5 hours per home, minimum three visits spaced two weeks apart**
 - **Do you have the time to take on a 90% infested apartment complex with 300 units?**
 - **How do you price this job?**
 - **What if your GHP account develops bed bugs, do you want to take that on?**
 - **Should you sub-out bed bug work?**

Liability Considerations

- **Both bed bugs are a sensitive issue with great potential for litigation**
- **Is your company prepared to develop a detailed bed bug contract?**
- **Is you company willing to train dedicated staff to deal with these sensitive accounts?**
- **Is your staff willing to do all of the labor required for treating bed bug infestations?**
- **What if one of your employees develops bed bug allergies?**

Pricing Bed Bug Jobs

- Do you have a method?
- BedBug Central (Cooper Pest Solutions) in New Jersey scores apartment **units** on several factors
 - Size of the unit (square feet)
 - Accessibility
 - Clutter
 - Infestation level
 - Amount of furniture
 - Ranked as low, moderate and high
- Ranking is used to make the estimate



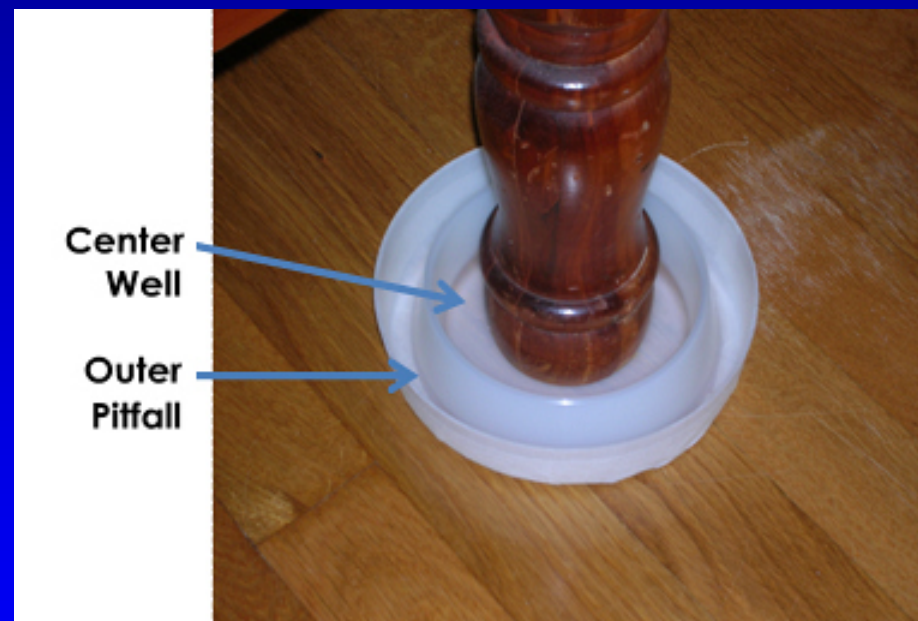
BedBug Central



- **7 step process**
 - **Estimate**
 - **Verification (bed bugs present?)**
 - **Intensive treatment**
 - **Follow-up visits (charged individually; charged 40% if no access on day of appointment)**
 - **Control (a 14 day period of no bugs, no bites)**
 - **Elimination (45 days of control)**
 - **Services plan (90 service after elimination is achieved)**
- **Dedicated administrator who keep the files on each unit and handle all appointments**

Do You Walk Away?

- Some of the people who need suppression the most cannot afford control.
- What do you do?
- You must not give your services away.
- What can you do for them?
- Climb-Up is the best for trapping and early detection (surrounding units).



Apartments and Hotels: Choosing a Pest Management Company

- Remember time is money
- If someone offers you're a GHP job treating 240 units every month for \$14,000 that equal \$4.80 per visit to a unit.
- If the pest management company's break even cost is \$60.00/hour (\$1.00 per minute) then they have to treat that unit in less than 5 minutes to make any money at all.
- Bed bug work takes time.



Choosing a Pest Management Company

- Investigate your current company.
- How much bed bug experience do they have?
- Do you need to hire a bed bug company in addition to your current GHP company?
- Can you get recommendations from your current company?
- Do they have a dedicated bed bug team?
- How detailed is their bed bug contract?



Action Plan for Hotels

- There is no way to stop bed bugs from being brought into a hotel.
- To facilitate this early bed bug detection, **all** hotel employees should receive some bed bug identification training.
- Have a documented in-house inspection program
- Canine scent detection on a schedule
- Protocol for what to do and say when a guest complains



Action Plan for Hotels



- **After you receive a complaint:**
 - **Take the room out of service, record the complaint**
 - **Call a professional! A certified professional.**
 - **Inspect and /or treat; inspect again at 48 hours**
 - **Discard of infested furniture (mark it)**
 - **Inspect and /or treat again at 14 and 28 days**
 - **Inspect and monitor adjacent rooms**
 - **Record all actions taken**
- **Develop a method for employee to report bed bugs in employee areas**

Action Plan for Apartments

- **Bed bugs are spreading in apartments because unit by unit treatment is failing.**
- **Bed bug training for your staff so you know what is going on in your buildings**
- **Develop a community awareness program**
 - **Discuss bed bugs when they sign the lease**
 - **Give an action plan to each resident**
 - **Signs at the dumpster**
 - **Signs in the laundry room**



Action Plan for Apartments

- **When an infestation is reported:**
 - **PMP inspects to assess size of unit, size of infestation and level of clutter.**
 - **Unit preparation expectations**
 - **They will not be moved to another units**
 - **Two PMPs will apply chemical and non-chemical treatments**



Moving away from having all belongings bagged-only those in the way.

Action Plan for Apartments

- Addressing adjacent units
- Expectations of control
 - Suppression
 - Control
 - Elimination
- Vacant units- a particular problem
- Expectations of control
 - Are you being realistic?



Action Plan for Apartments Summary

- A bed bug action plan for apartments should include employee education, a community wide awareness program, a bed bug reporting procedure that the resident agrees to upon signing the lease.**
- The action plan should also include the hiring of an experienced pest management company and the provision of two follow-up inspections/treatments for each infested unit and adjacent units.**

Fumigation

- **Fumigation is generally considered the “last resort”. This is primarily due to the price.**
- **However in sensitive, multi-unit situations fumigation may be more reasonable than repeated applications with conventional insecticides.**
 - **Local politics and publicity**
 - **Health of the residents**
 - **Environmental complexity hinders conventional treatment**

The Site: Reading, PA

- **Samuel J. Hubert Apartments built in 1970s**
- **8 floors, 10 units / floor**
- **Low-income and elderly housing**
- **History of bed bug problems**
- **~40 units had been treated using conventional methods**



Community Living Favors Bed bugs

- Residents moving to and from different units
- Resident visiting each other
- Sharing of belongings
- Large communal areas



Why Conventional Treatments Fail



Why Conventional Treatments Fail



The Bed Bug Problems



The Bed Bug Problems



The Preparation

- Working with Marc Fisher of Dow AgroSciences
- Building was a single concrete pour
- Allowed for a “tape and seal” type fumigation
- Doors, windows, and air conditioning units had to be sealed



Efficacy Testing

- Live bed bug samples were transported from VT to the site for efficacy testing
 - Adults
 - Nymphs
 - **Eggs**
- Bed bugs were also collected at the site.
- Controls made the trip but were not fumigated.



Sample Placement

- Site opened at 1:00pm
- Fumigation was starting at 6:00 pm
- 5 floors were selected for testing
- Five rooms per floor were provided with bed bug samples
- Air conditioning was off and surface temperatures inside the hall measured between 80 and 90° F.



Effects on Eggs

9 days to hatch at 23°C



Eggs 6 d post-fume



Controls 6 d post-fume

100% egg mortality after 9 days.

Containerized Fumigation



100% mortality of all life stages.

Fumigation Conclusions

- **Fumigation was expensive but it was 100% effective at killing bed bugs and their eggs.**
- **Fumigation was an economical option for multi-unit housing where sensitive residents had complained to the press.**
- **Fumigation has no residual activity but is worth the expense because you can say for sure the bed bugs were completely gone, if only for 1 day.**

Heat Treatment

- **TEMP-AIR**
 - Heater temperature brought up to 135°F then fans are turned on to heat everything in the room to 120°F.
 - Position of fans are changed every hour for at least 4 hours, pushing hot air into all cracks and crevices.
 - Maintains temperature for the period of time required to penetrate all belongings.
 - No residual



Containerized Heat

- **Heat chamber can be constructed in a trailer.**
- **Unlike chemical fumigation, heat does not have to be applied by a certified pest management professional.**
- **Heat chambers and even apartment heating packages can be purchased by the apartment management company and applied by trained employees in their buildings.**

Fumigation and Heat Summary

- **Fumigation with Vikane® fumigant is the only method that will kill 100% of the bed bugs and their eggs in an entire building.**
- **Heat is about 98% effective for killing bed bugs in a room or floor. Construction issues can cause cold spots.**
- **Both methods can be used in containers.**
- **Fumigation requires a certified applicator, but heat does not.**