

- City of Chicago Energy Benchmarking Ordinance
- LEED Building Standards (general description)
- 90% Energy Efficient HVAC for condominium units (postponed)



## Energy Benchmarking – Section 18-14-101

**Main Point** – Seeks to raise awareness of excessive energy consumption by Chicago's larger buildings (residential and non-residential) and in doing so, encourage reductions in energy consumption. Only mandates reporting of energy use annually to the City – **improvements and retrofits are not mandated** (though the hope is that owners will see their consumption and seek retrofits on their own).

**Who must comply?** – All buildings (including residential) over 50,000 square feet are required to comply by June of 2016 (buildings greater than 250,000 square feet were required to have submitted a report as of August 1, 2015)



**Requirements** “Benchmark, Verify and Report” – The first year, the benchmarking requires a reporting and a verification of the report. After the first year, the verification need not be done – only the reporting (but the verification must be done thereafter every third year).

- The buildings must use an online submission tool to report 2015 usage by June 1, 2016.
- Your management company (some of which do the work for free), an outsourced third-party company that specializes in the work, or a volunteer
- Submit the report annually by the deadline
- Electricity and natural gas must be reported
- Have a third-party verify for accuracy the first year and then every three years going forward (verifiers must hold city-approved licenses).





**LEED**, or Leadership in Energy & Environmental Design, is a green building certification program that recognizes best-in-class building strategies and practices.

To receive LEED certification, building projects satisfy prerequisites and earn points to achieve different levels of certification. Prerequisites and credits differ for each rating system, and teams choose the best fit for their project.





## U.S. Green Building Council (USGBC)

- + Non-Profit Organization
- + Founded in 1993
- + Dedicated to sustainable building
- + National and local membership
- + [www.usgbc.org](http://www.usgbc.org)





## LEED is flexible enough to apply to all project types.

Each rating system groups requirements that address the unique needs of building and project types on their path towards LEED certification. Once a project team chooses a rating system, they'll use the appropriate credits to guide design and operational decisions.

There are five rating systems that address multiple project types:



Building Design  
and Construction

Interior Design  
and Construction

Building Operations  
and Maintenance

Neighborhood  
Development

Homes

Building Design + Construction



Interior Design + Construction



Building Operations + Maintenance



Neighborhood Development



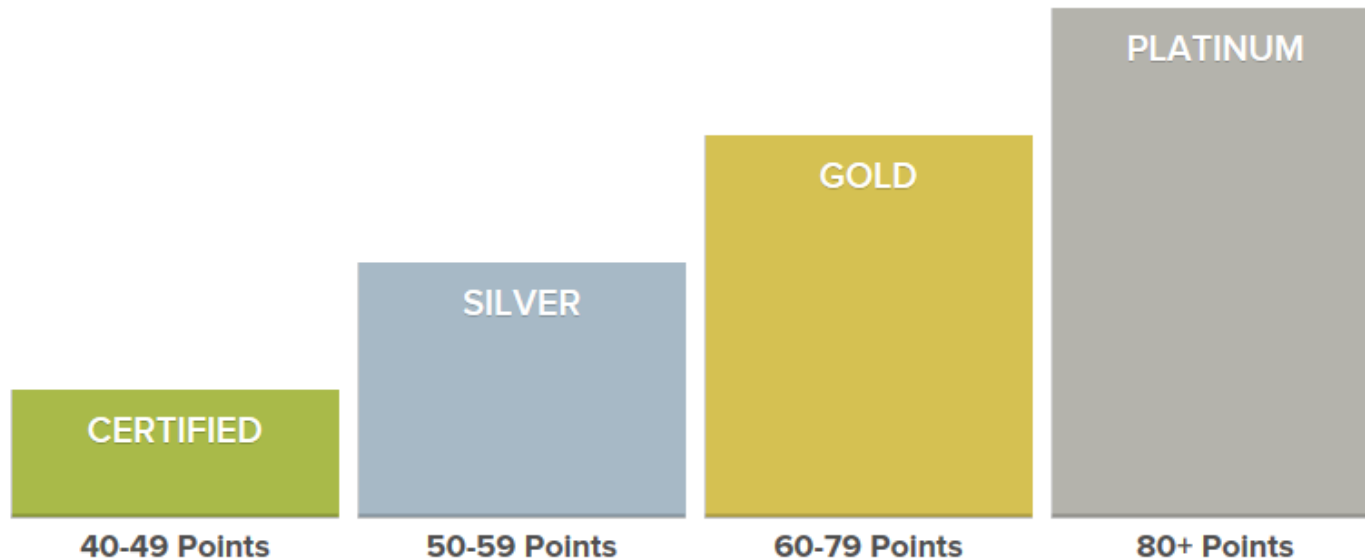
Homes





The number of points a project earns determines the level of LEED certification.

There are four levels of certification - the number of points a project earns determines the level of LEED certification that the project will receive. Typical certification thresholds are:



## Common Green Rules or Policies in Condominiums focused on Energy Reduction

- Required insulation standard when replacing drywall along exterior walls;
- Required green window replacement standards;







- Green Reserve Studies;
- Policies to use Green certified material suppliers for Common Element Maintenance;
- Construction rules/architectural guidelines incorporating energy reducing standards;
- Electric car charging station issues.



## Board Remedies when owners do not comply with Green Policies or Rules

- Fines;
- Lawsuit for injunctive relief;
- Abate violations of allowed by governing documents and assess cost back to unit owner.



# What is Sustainability



# What is Sustainability



- Sustainability
  - Responsible use and management of resources
  - Integrates Life Cycle Costs and long-term business profitability
  - Stewardship – meeting present needs without compromising future



- Typical Reserve Studies
  - Look at replacements of major systems and components in like kind
  - Do not account for life cycle costs (LCC) of the component or system being replaced
  - Consider least cost alternatives to minimize assessments not overall impact on the maintenance, energy, etc
  - Compare with **Green Reserve Studies...**



## ● Green Reserve Studies

- Replace aging equipment and controls with state of the art components
- Consider the LCC costs (maintenance, energy savings) of the system or component
- Considered sustainability impact on the community and environmental impact as well as economic impact

# Green Building



- Green Buildings
  - Efficient use of Resources
  - Environmentally Responsible
  - USGBC – 2% upfront cost reduce LCC 3.8% to 4% (Green Quotient)

# Green Building



## ● Benefits of Green Buildings

### ● Tenant benefits

- Improved comfortability, lighting, and decreased utilities

### ● Management benefits

- Increased occupancy, decreased utilities

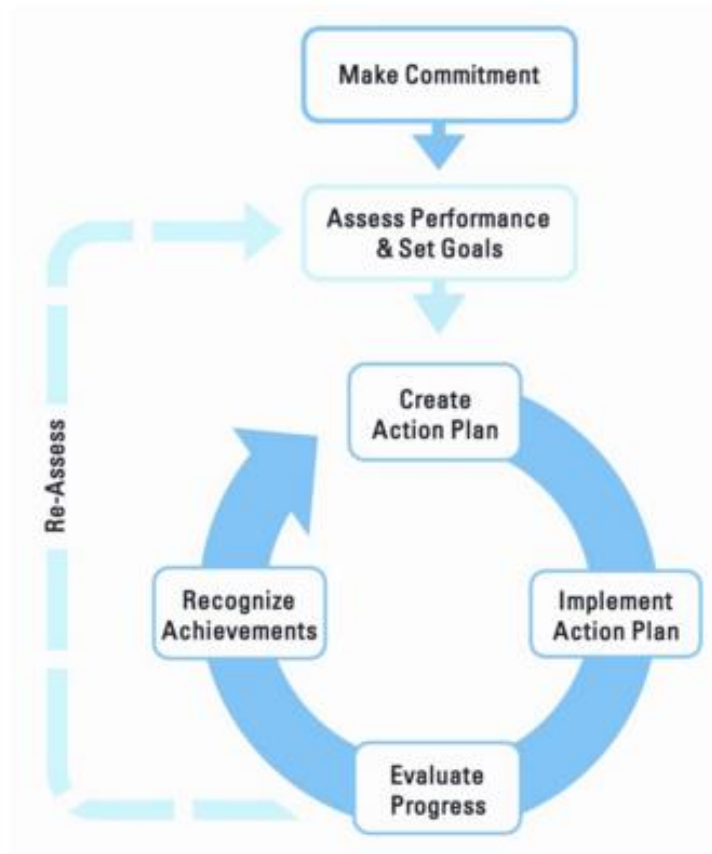
### ● Community Benefits

- High functioning integrated designs are safe, secure, and sustainable
- ROI on average for Green Projects is 19.2% (EB) 9.9% (NB)



# Strategy for Improvement

- Movement towards sustainability
  - First step is **benchmarking**



# Green Solutions and Alternatives

- Weatherization Improvements & Building Envelope Improvements
  - Caulking
  - Insulation
  - Windows
  - Green Roofs

# Green Solutions and Alternatives

## ● Caulking

- According to [energy.gov](http://energy.gov) caulking windows has:
  - 5 - 10% energy savings
  - A cost of \$3 - \$30
  - And takes 1 – 2 hours to complete in a single-family home

# Green Solutions and Alternatives

## ● Insulation

Attic



Flat Roof



# Green Solutions and Alternatives

## ● Insulation

Attic



Flat Roof





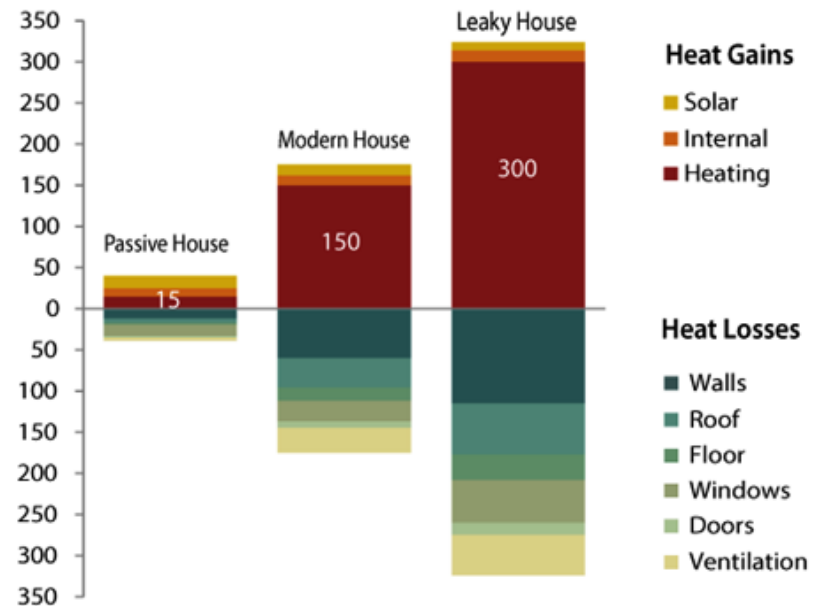
# Green Solutions and Alternatives

## ● Insulation

- Passive house (best insulated)
- Modern house (middle)
- Leaky house (worst)
- Avg annual heating costs
  - Passive: \$100
  - Modern: \$750
  - Leaky: \$1,500

### The Value of a Well Insulated Home

Average heating gains and losses by house type in kWh/m<sup>2</sup>a



Data: typical values for Northern European climates

shrinkthatfootprint.com

# Green Solutions and Alternatives

- Mechanical Efficiency Improvements
  - Heating & Cooling
  - Appliances
  - Domestic Hot Water
  - Control Systems & Building Automation
    - VAV
    - Thermostats and other control systems

# Green Solutions and Alternatives

- Hot Water Systems





# Green Solutions and Alternatives

- Lighting



# Green Solutions and Alternatives

## ● Lighting

- According to the US Department of Energy:
  - LED Lamps are rated for 25,000 hours (~23 years)
  - Incandescent lamps are only rated for 1,000 hours and CFLs for 6,000 – 10,000 hours
- LED bulbs save 75% to 80% on energy costs when substituting for incandescent for halogen bulbs

	Incandescent	CFL	LED
<b>Life Span</b>	1,000 Hours	6,000	50,000
<b>Watts</b>	40W	9W	6W
<b>Lumens</b>	400	320	300
<b>CO2 Emissions</b>	3000 lbs/yr	701 lbs/yr	301 lbs/yr
<b>Annual Operating Cost</b>	\$219.06	\$53.06	\$22.76
<b>Months to Recover Initial Cost</b>	N/A	<1 month	1.5 months

# Green Solutions and Alternatives

- Mechanical: Old Pumps





# Green Solutions and Alternatives

- Mechanical: New Pump



# Green Solutions and Alternatives

- Mechanical: Old Boiler





# Green Solutions and Alternatives

- Mechanical: New Boiler



# Green Solutions and Alternatives

- Mechanical: Old Controls





# Green Solutions and Alternatives

- Mechanical: New Controls





# Renewable Energy



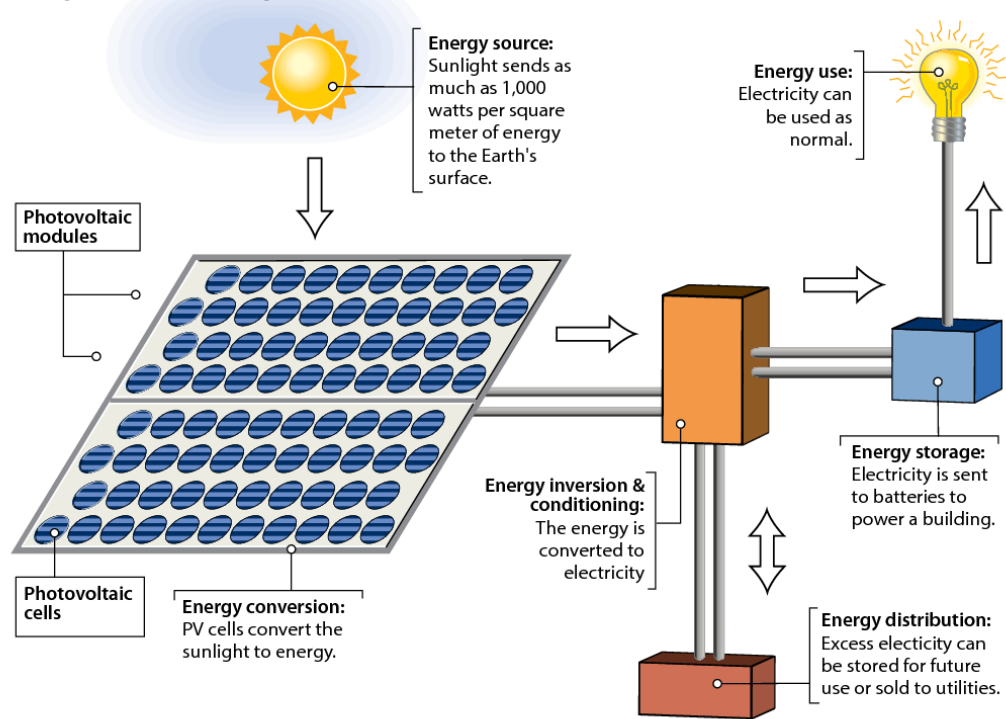
## ● Solar



# Renewable Energy

## Solar

### How photovoltaic solar panels work



# Renewable Energy



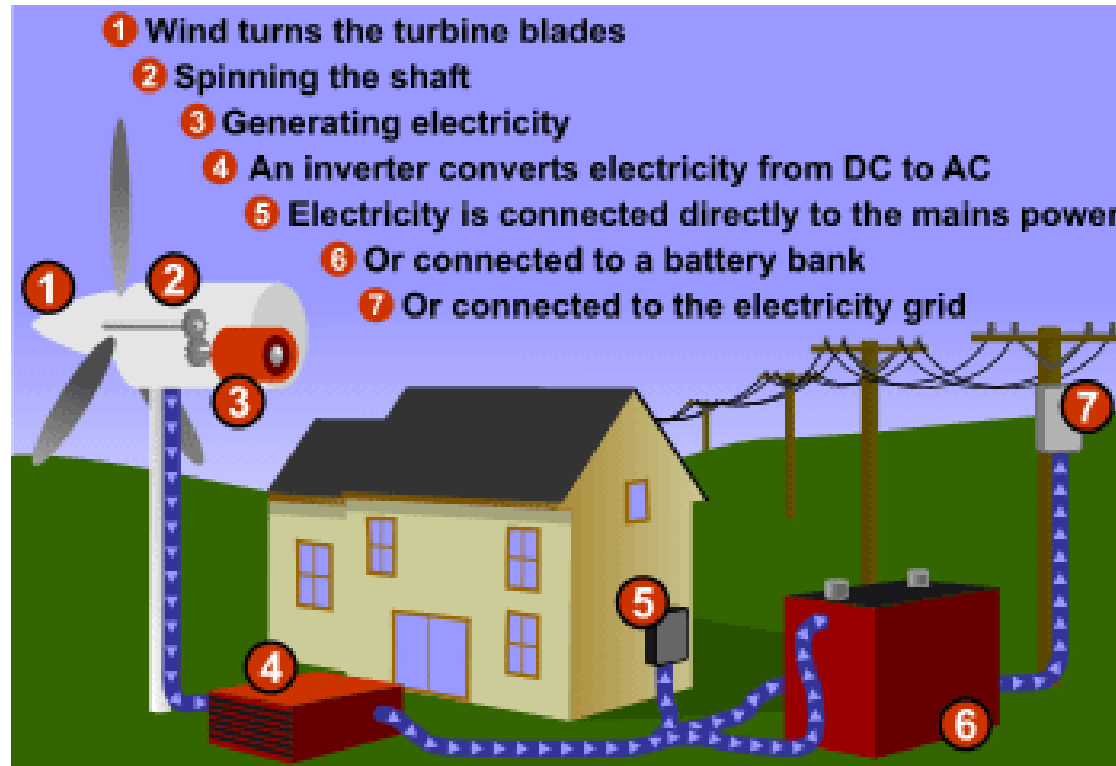
## ● Wind



# Renewable Energy



## ● Wind



# Water Conservation



- Water

***“Water is the new Oil “***

- Conserve - low flow fixtures
- Capture - rain water collection
- Reuse - grey water systems

## ● Fixtures



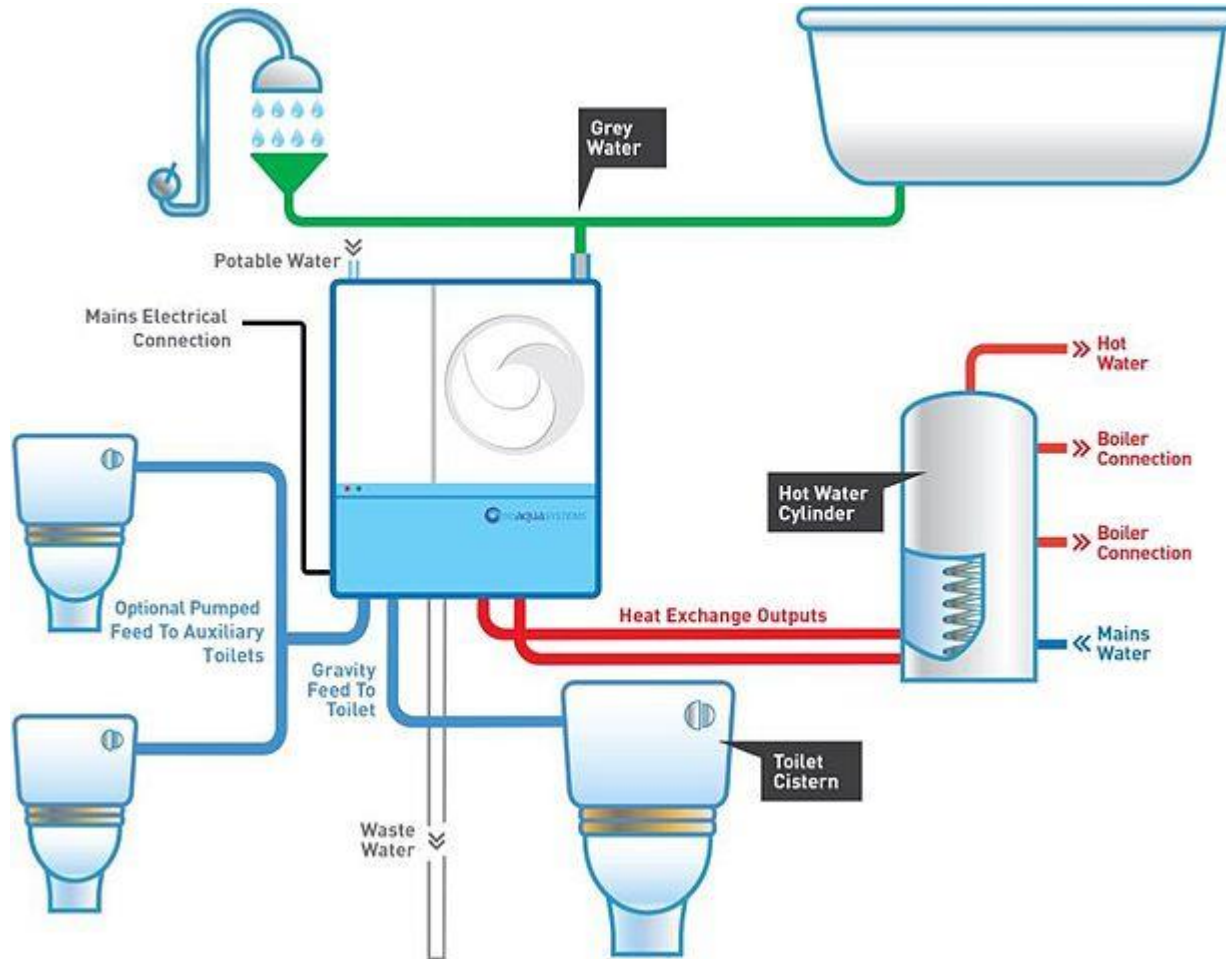


# Water – Rain water collection



# Water -

## ● Grey Water Reuse





# Green Solutions and Alternatives

## ● References and Useful Resources

- [Energy.Gov](http://Energy.Gov)
- [EPA.Gov](http://EPA.Gov)
- [NicorGasRebates.com](http://NicorGasRebates.com)
- [EnergyStart.Gov](http://EnergyStart.Gov)
- [ACEEE.org](http://ACEEE.org) – American Council for an Energy Efficient Economy



# INNOVATION for a STRONGER COMMUNITY

2016 Condo-HOA Conference & Expo February 26 & 27 | Rosemont, IL

## Going GREEN: Pest Control for Managed Properties

**Rebecca Fyffe**

ABC Humane Wildlife & Pest Control, Inc.  
research-based pest management  
Arlington Heights, Illinois

## What is IPM? **It's Green!**

IPM allows for safer pest control that first utilizes barriers, traps, vacuuming, and preventive practices, such as sanitization and the removal of food and harborage.

The use of pesticides is also part of IPM, but the safest available pesticide must be selected and applied in the lowest effective dosage using the most targeted application method.

Pesticides should be one of many tools, rather than the default tool.



# Want another reason?

Other than human health and environmental health...

- Insects evolve resistance to pesticides in just a few generations. This means that spraying pesticides as a preventative measure results in insect populations that are more difficult to control with milder pesticides.
- While few people have actual adverse responses from the responsible use of pesticides by professionals, people often become upset about the thought of being exposed to pesticides and become very fearful. This fear can cause psychosomatic symptoms, lost time from work, and a loss of productivity in your office as you field these concerns.



# INNOVATION for a STRONGER COMMUNITY

2016 Condo-HOA Conference & Expo February 26 & 27 | Rosemont, IL

## The 8-Legged Approach

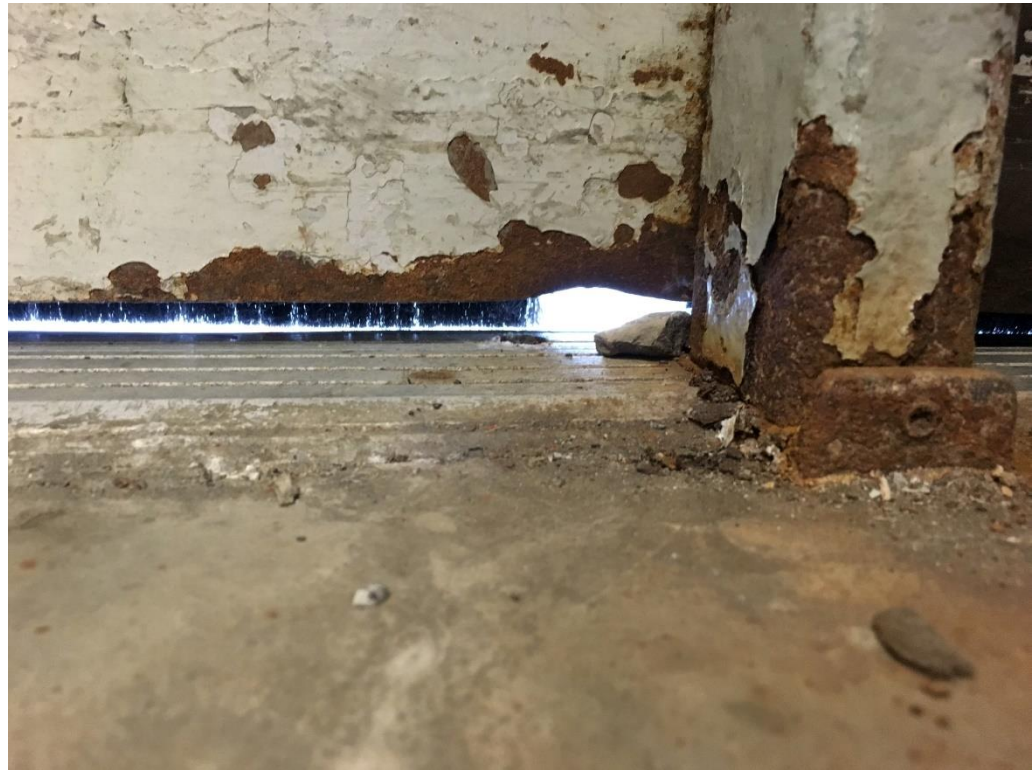






## Structural Exclusion:

- Make window screens fit tightly
- Install doorsweeps and seal gaps
- Clean drains to prevent flies
- Screen drains to exclude cockroaches





## Timely Response without delay

- Action threshold (number of specimens that warrant reporting and response) is one.
- Pre-negotiate the rates and discuss protocol with your pest control provider to avoid delay once you have bed bugs.
- Every day of delay decreases success of prompt and complete eradication.
- Advance planning is the key to success.







## Occasional invaders

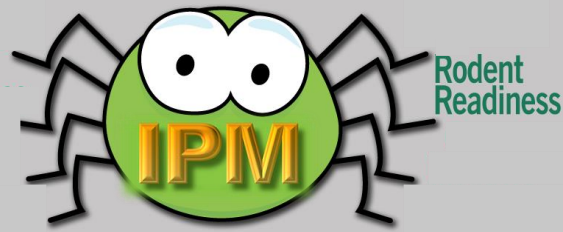
- Tell unit owners to “Suck it up!”  
Rather, suck it up with a vacuum—  
and prevent further intrusion.
- No need for pesticides here.



## Bats and Honeybees

- Avoid excluding bat colonies when flightless young could be present, usually May through September. Most bats leave in late fall, making winter an ideal time to implement exclusion techniques.
- Honeybees should be treated without the use of pesticides and taken alive whenever possible. A beekeeper should remove honeybee colonies instead of a pest control professional, or you can **select a pest control professional who is also a beekeeper, like me.**





3-pronged approach:  
1 Baiting 2 Trapping  
3 Exclusion

In multi-unit buildings, an infestation is almost never confined to a single unit.

It is impossible to eliminate a rodent problem without treating the structure as a whole.

Rodent treatment should never be ordered for just a single unit.



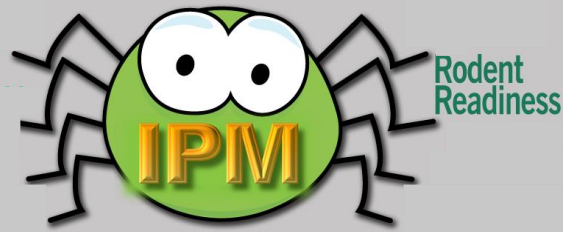


## Rodenticide Bait in Bait Stations

### The Benefits:

- Requires less frequent visits than monitoring rodent traps .
- Most effective and efficient method for knock-down of large populations.





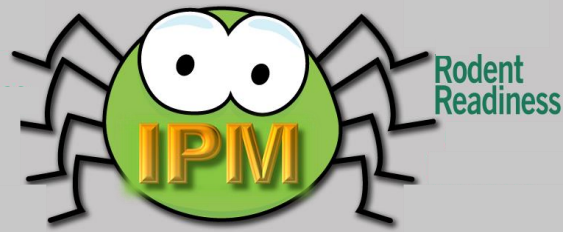
3-pronged approach:  
1 Baiting 2 Trapping  
3 Exclusion

## Rodenticide Bait Downside

- -Rodents may take 5 to 10 days of continuous feeding for anticoagulants to work.
- -Rodents die anywhere, in walls, in public spaces.
- -Rodents can develop resistance, allowing them to feed and breed freely without dying.
- -Animals that eat rodents include pets, birds of prey, foxes, coyotes, raccoons. They fall victim to secondary poisoning, aka non-target kills.
- -Tamper resistant bait stations are not impervious to pets, raccoons, or determined humans.







3-pronged approach:  
1 Baiting 2 Trapping  
3 Exclusion

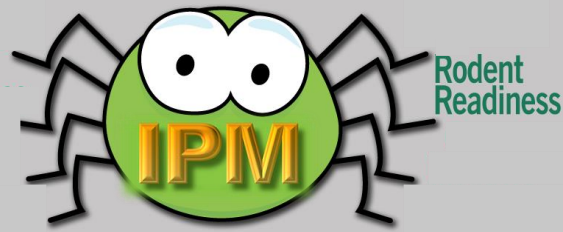
## Rodenticide Bait Downside (Part II)

- -Bait spoils and must be replaced and disposed of regularly, contributing to rodenticide in landfills that contaminate the environment and pose a further risk of additional secondary poisoning of pets and wildlife.
- -Bait without exclusion only stems the tide, it will not solve the problem.



## Multi-catch Rodent Traps

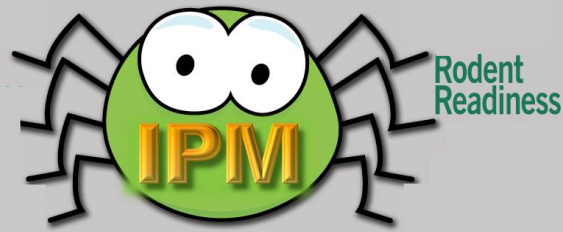




3-pronged approach:  
1 Baiting 2 Trapping  
3 Exclusion

## Rodent Trapping:

- + No chance of dead rodents in walls.
- + No impact to the environment; no poisoning threat to birds and other wildlife or disposal of rodenticide in landfills.
- + Reduces the need for rodenticide bait.
- - Generally less effective as a knock-down measure than baiting, so **should be used in conjunction with rodenticide bait for large populations.**



3-pronged approach:  
1 Baiting 2 Trapping  
3 Exclusion

## Structural Exclusion and Sanitation:

- Seal gaps and crevices. Install doorsweeps.
- Control Food Sources: Food, trash, bird seed, etc.
- Control Water Sources: Rats must drink 1 ounce of water every day to survive. They will live elsewhere if water is unavailable.
- Identify and control locations where living conditions are optimal, including shelter, nesting materials, and warmth.





# Structural Exclusion

**The most important part of a rodent control program:**





## Three-pronged approach

Employing **rodenticide bait stations** in conjunction with **rodent trapping** at the first sign of rodents, and most importantly, conducting extensive **structural exclusion** to reduce reliance on rodent baiting over time is the best **three-pronged approach** that property managers can utilize to maintain rodent-free facilities.





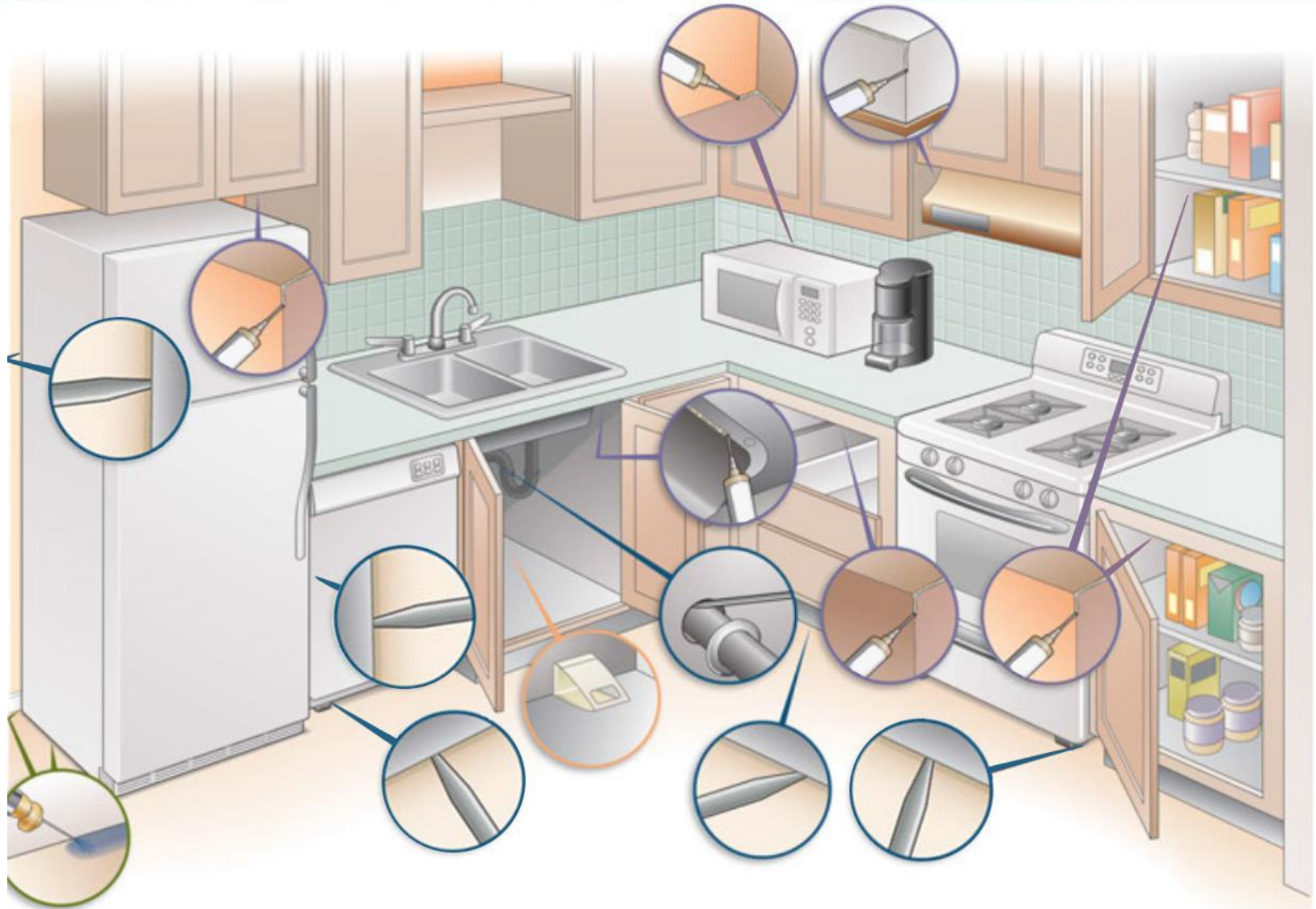
## Use Bait Gels instead of Broadcast Spray for Roaches and Ants Primarily:

- Monthly application of GREEN bait gels eliminates the need to broadcast spray.
- This means safer and less pesticide use.



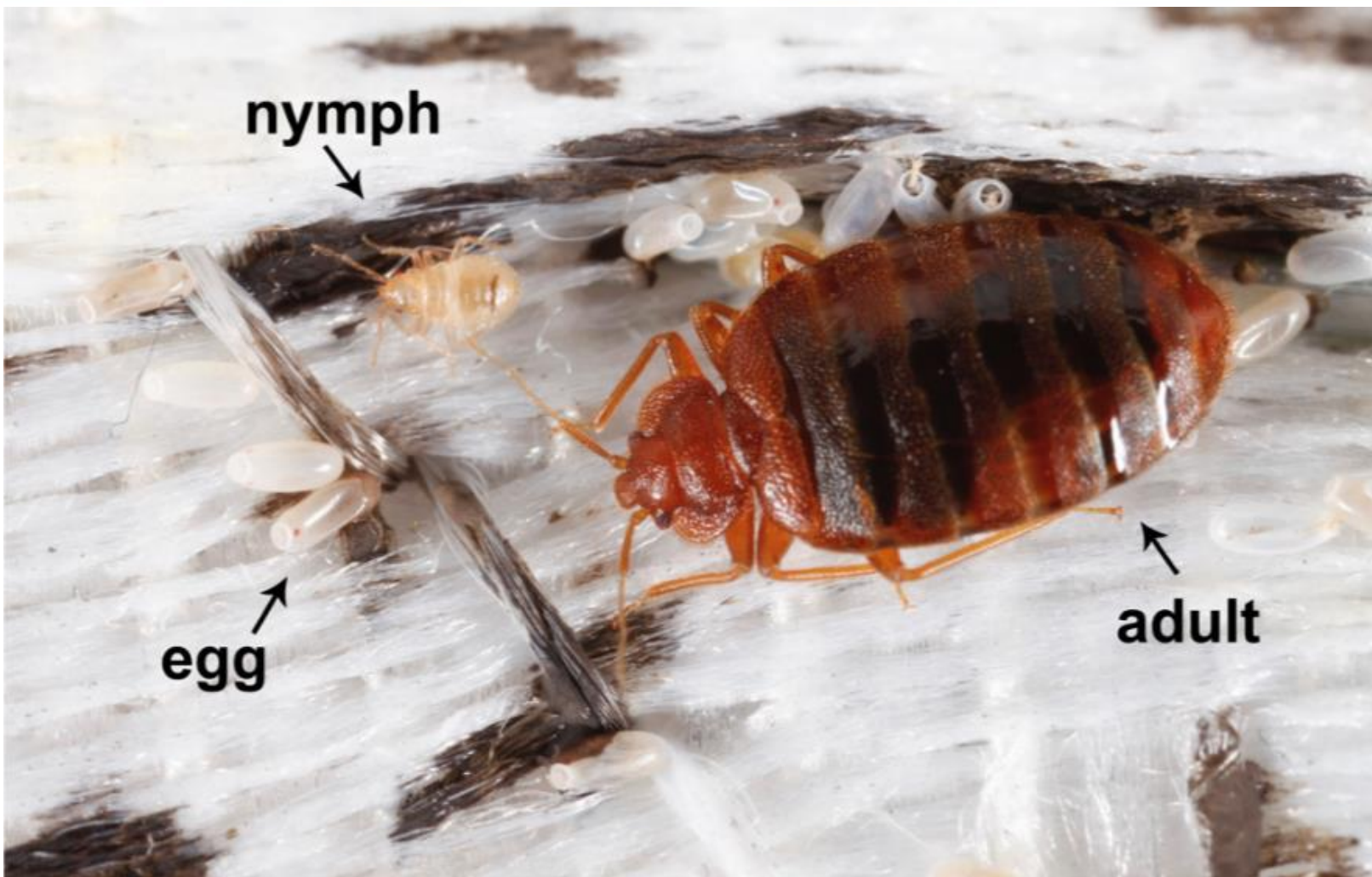


# Targeted Bait Gels





# Emerging threat: Huge Economic Impact





ILLINOIS CHAPTER  
**community**  
ASSOCIATIONS INSTITUTE

# Emerging threat: Huge Economic Impact







ILLINOIS CHAPTER  
**community**  
ASSOCIATIONS INSTITUTE

# Emerging threat: Huge Economic Impact





# Have a **BED BUG ADDENDUM** to leases or management agreements:

We will furnish you a  
template via email.

Have a **BED BUG ADDENDUM** to leases or management agreements that includes:

- **An introductory paragraph:** Stating management's goals in creating this addendum including maintaining a high quality living environment for all residents, working together to prevent the infestation of bed bugs, providing the community important information and understanding of good housekeeping that will help control the problem, and communicating responsibilities for both landlord and tenant.
- **Prior infestation:** States that management is not aware of any current infestation, and that any prior infestations have been professionally treated by a licensed pest control professional.
- **Infestation during tenancy:** States that the tenant must report any pest infestation and/or problems on premises as soon as they are noticed. It is useful to include pests beyond bed bugs including roaches, ants, carpenter ants, termites, mice or rats.
- **Current and Past Tenant Infestation:** States that the tenant is not aware of any bed bug infestation or presence in any of their furniture, clothing or personal property and possessions and have fully disclosed any previous bed bug infestations which they may have experienced.
- **Duty to report:** States that tenants must report any signs of bed bugs immediately and in writing and communicates the importance of reporting quickly so measures can be taken to protect the entire community by outlining how rapidly an infestation can bloom into a costly and disruptive problem. This section should outline consequences should the tenant fail to report an infestation as a violation of their lease agreement, grounds for eviction, etc.
- **Tenant Cooperation:** States that the tenant and their guests agree to cooperate with management in all efforts and course of actions required to erase and control any pest/bedbug infestation. This section will also outline what full cooperation entails including but not limited to immediately reporting any pest infestation, permitting entry to complete any inspections, pre-treatment and treatment to eliminate any pests, following all directions and performing any critical actions needed to comply with all requirements to keep the leased premises pest free, and potentially evacuating their premises should it be necessary.
- **Agreement to costs of treatment:** States that during their term of tenancy, should a pest control professional determine that the bedbugs originated in your unit, the tenant acknowledges and agrees that all necessary treatments for their apartment and other units that may be affected as a result, as well as any additional costs, expenses and losses will be at the tenant's expense.
- **Indemnification:** States that under no circumstances shall the management or its agents be held responsible for any of the tenant's losses, damages or expenses including special, consequential or punitive arising out of a bed bug infestation, inspection or treatment. Additionally, tenant agrees to indemnify and hold harmless the management, its agents and employees from any actions, claims, losses





## Minimize risk of an infestation

### Of those surveyed:

27 % inspected or washed clothing upon returning from a trip

25 % checked a hotel room for bed bugs

17 % inspected or vacuumed a suitcase upon returning from a trip

16 % inspected second-hand furniture they have brought into their homes

15 % checked dressing rooms when trying on clothing

29 % washed new clothing immediately upon bringing it home from a store

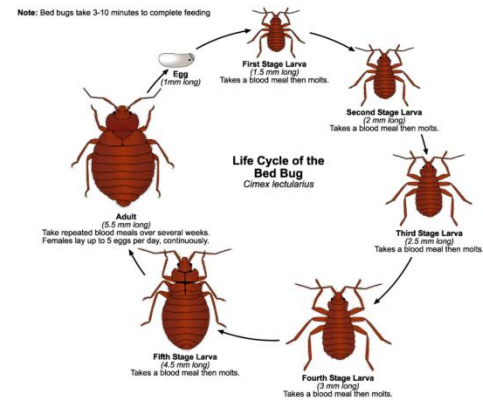




## Create a BED BUG Information Guide that includes information on:

- What they look like
- How to spot signs of an infestation
- Their lifespan and eating habits
- How they travel and hide
- How to prevent infestation
- How to control infestation
- How to prevent bed bug encounters when traveling
- Bed Bug *Dos and Don'ts*:

- ✓ Do not bring used furniture from unknown sources into your apartment.
- ✓ Do report bed bug sightings immediately.
- ✓ Do not attempt to treat bed bug infestations on your own.



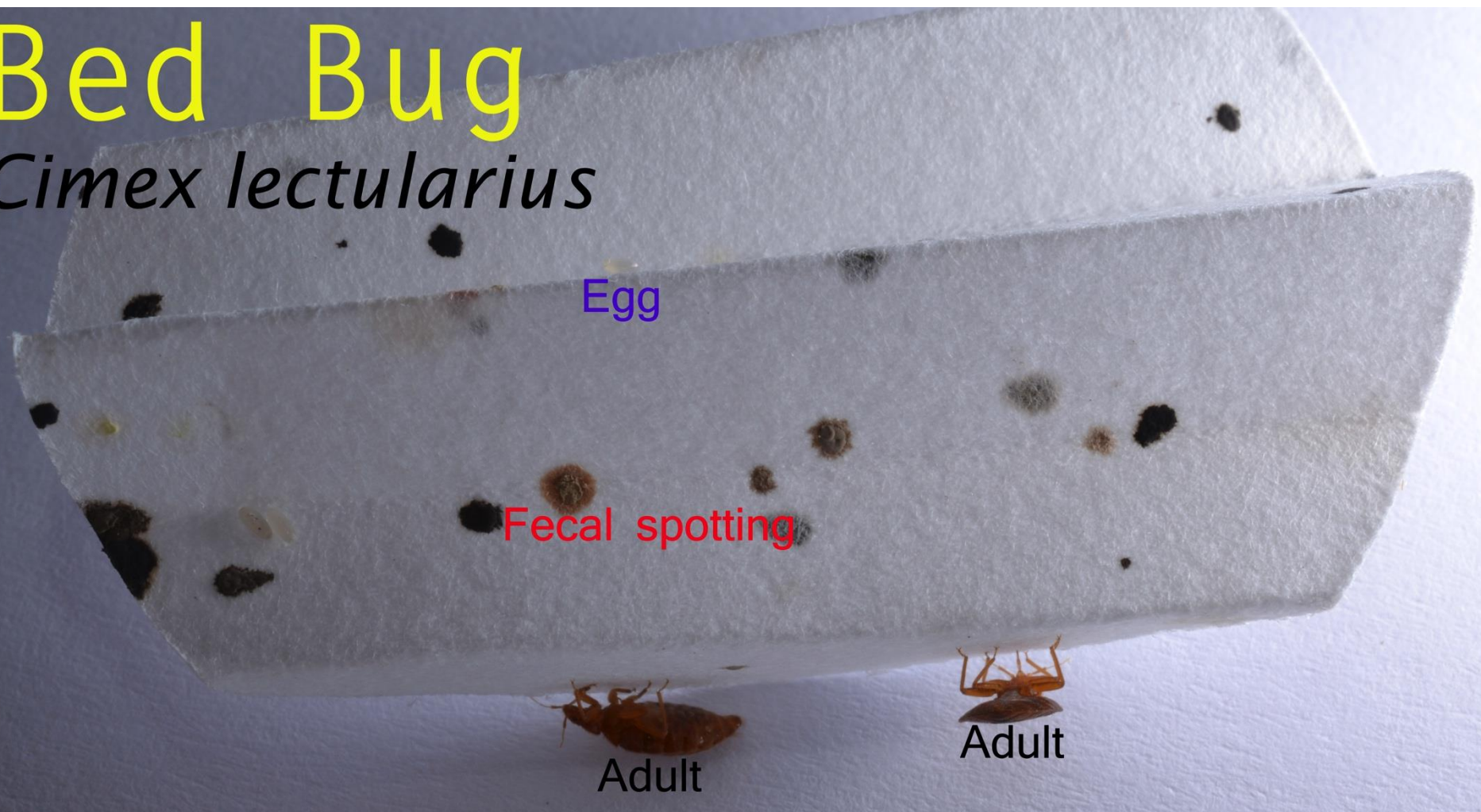
Life cycle of the bed bug, *Cimex lectularius* (Illustration by: Scott Charlesworth, Purdue University, based in part on Usinger, R. L. 1966, Monograph of the Cimicidae)

**We will furnish a  
template via email.**



# Science-Based Response

## Bed Bug *Cimex lectularius*



Egg

Fecal spotting

Adult

Adult

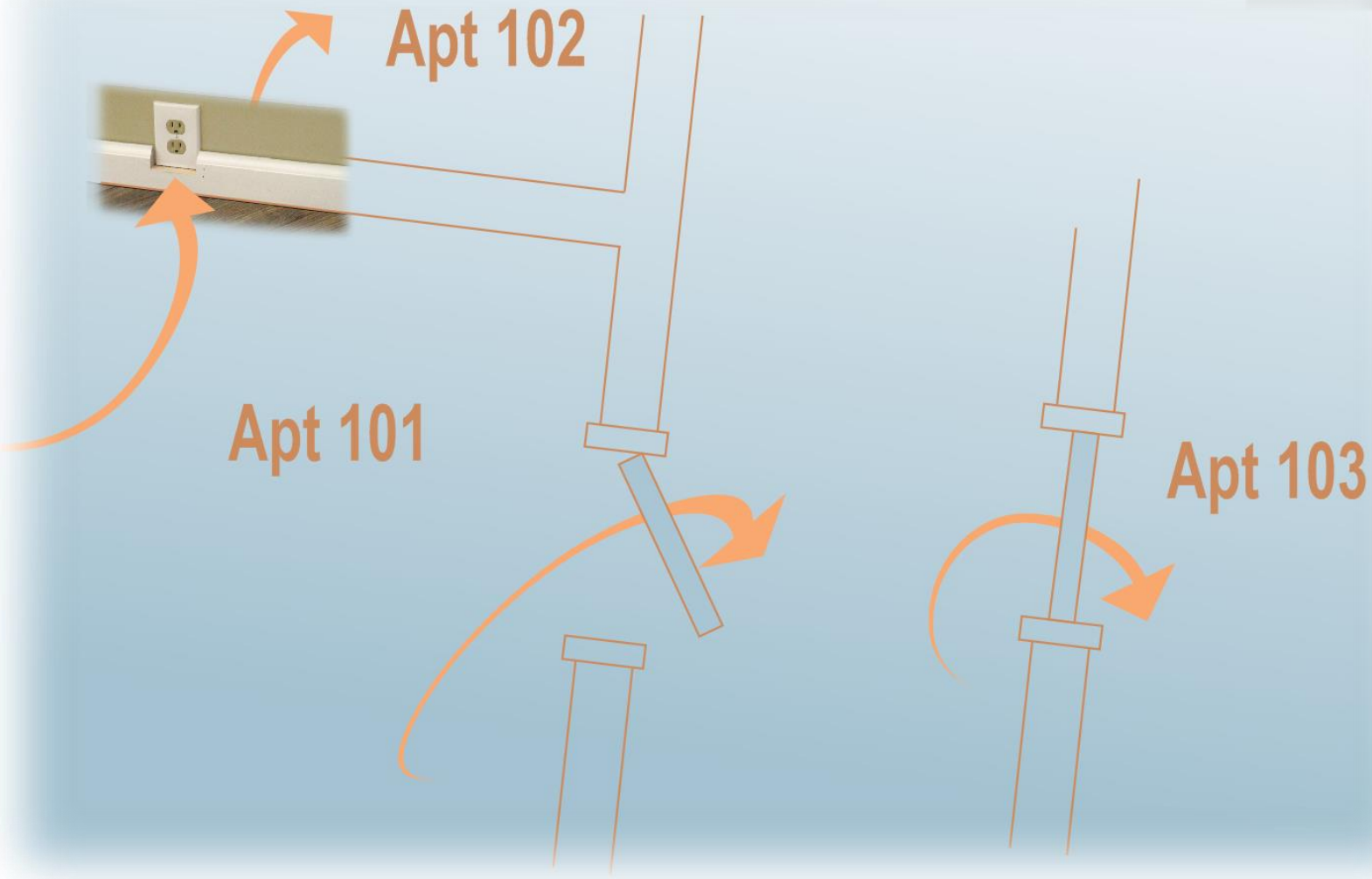


# Scientific Research

- A single unit in a 15-story building was infested in 2006. By 2009, 45% of units were infested.
- Only half of residents living in 101 infested units knew they had bed bugs.



# Bed Bug Dispersal





# Monitoring Devices

The use of monitoring devices proved 49 percent more effective than visual inspection alone. Visual inspections, even by highly skilled inspectors, are less reliable than the placement of monitors.



© Bed Bug Central







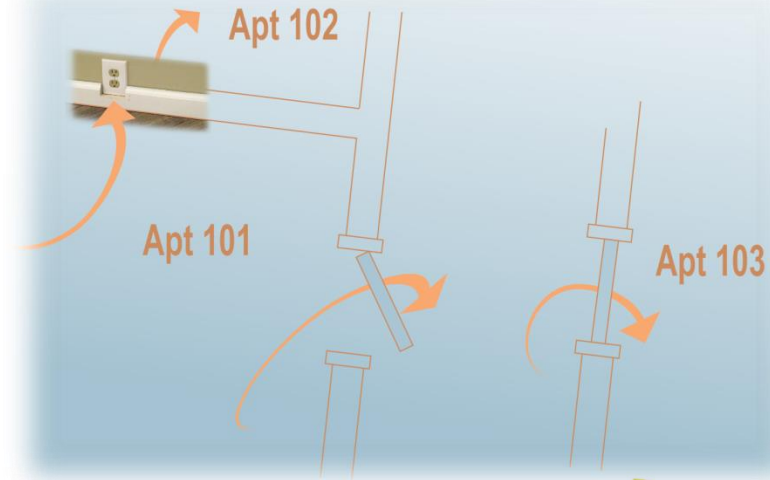
# Simultaneous Treatment



## MANAGEMENT IMPLICATIONS

### Simultaneous Treatment

- The presence of bed bugs in walls, behind baseboards and in electrical outlets indicates that **simultaneous treatment of the units bordering infested units will reduce bed bug dispersal and help achieve building-wide** bed bug elimination.
- Since a common mode of dispersal is out the **front door and across the hallway, an infestation of any unit should result in simultaneous** treatment of all hallways and thresholds to help curb the spread.





## MANAGEMENT IMPLICATIONS

Building-wide inspection and monitoring:

- Since 50 percent of the interviewed residents did not know of an existing infestation even though they were living with it, the discrepancy suggests the **necessity for professional inspection of all units in a building** once any bed bug infestations are found.
- Placing **monitoring devices in every unit in a building when one unit has a bed bug infestation is necessary, because up to half of residents may fail to notice or report a problem, and monitoring devices are more effective than visual inspection alone.**







Contact us:

Rebecca Fyffe

***ABC Humane Wildlife Control & Prevention, Inc.***

research-based urban pest management

1845 E. Rand Road, Suite 108

Arlington Heights, IL 60004

rebecca@abcwildlife.com

847-870-7175 office telephone

*We humanely manage urban wildlife and insects in the interest of human health and safety from an environmental sustainability perspective with a love of nature and a deep respect for all living things.*

