



Integrated Pest Management In Buildings



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Integrated Pest Management in Buildings

Introduction

Integrated Pest Management (IPM) is an environmentally friendly, common sense approach to controlling pests. This document serves to define IPM, describe proper IPM implementation in buildings, and outline the roles and responsibilities necessary for success. The following IPM principles apply to both new construction and existing commercial and residential structures and their landscaping.

This document will best serve individuals responsible for pest prevention and

management in buildings including, but not limited to, building managers, cleaning staff, maintenance staff, building occupants, and pest management professionals (PMPs). It may also serve as an informational resource for developers and state and local governmental officials.



Traditional pest control

involves the routine application of pesticides. IPM, in contrast, focuses on pest prevention and uses pesticides only as needed. This provides a more effective, environmentally sensitive approach.

The building-centric practices prescribed in this plan were developed in consultation with the U.S. Department of Housing and Urban Development, U.S. Centers for Disease Control and Prevention, as well as experts in the fields of pest management, facilities services, cleaning services, and healthy housing. This guidance allows for implementation in a variety of buildings and institutions, and will serve as a resource for standard-setting bodies such as the U.S. Green Building Council.

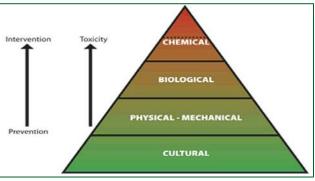
Explanation of IPM

IPM programs take advantage of all appropriate pest management strategies, including the judicious use of pesticides. Preventative pesticide application is limited because the risk of pesticide exposure may outweigh the benefits of control especially when non-chemical methods provide the same results.

IPM is not a single pest control method but rather involves integrating multiple control

methods based on site information obtained through inspection, monitoring, and reports. Consequently, every IPM program is designed based on the circumstantial pest prevention goals and eradication needs. Regardless, successful IPM programs use the same four-tiered implementation approach (below).

1. Identify Pest and Monitor Progress



(Pennsylvania State University, 2011)

Correct pest identification is required to determine the best preventative measures and reduce the unnecessary use of pesticides. Additionally, correct identification will prevent the elimination of beneficial organisms. When monitoring for pests:

- ✓ Maintain records for each building detailing monitor techniques, location, and inspection schedule
- ✓ Record monitoring results and inspection findings, including recommendations

Many monitoring techniques are available and often vary according to the pest. Successful IPM programs routinely monitor pest populations, pest vulnerable areas, and the efficacy of prevention and control methods. IPM plans should be updated in response to monitoring results.

2. Set Action Thresholds

An action threshold is the pest population level at which the pest's presence is a nuisance, health hazard, or economic threat. Setting an action threshold is critical to guiding pest control decisions. A defined threshold will focus the size, scope, and intensity of an IPM plan.

3. Prevent

IPM focuses on prevention by removing conditions that attract pests, such as food, water, and shelter. Preventative actions include:

- ✓ Reducing clutter
- ✓ Sealing areas where pests enter the building (weatherization)
- ✓ Removing trash and overgrown vegetation
- ✓ Maintaining clean dining and food storage areas
- ✓ Installing pest barriers
- ✓ Removing standing water
- ✓ Educating building occupants on IPM

4. Control

Pest control is required if action thresholds are exceeded. IPM programs use the most effective, lowest risk options considering the risks to the applicator, building occupants, and environment. Control methods include:

- ✓ Pest trapping
- ✓ Heat/cold treatment
- ✓ Physical removal
- ✓ Pesticide application

Documenting pest control actions is critical in evaluating success and should include:

- ✓ An on-site record of each pest control service, including all pesticide applications, in a searchable, organized system
- Evidence that non-chemical control methods were considered and implemented
- ✓ Recommendations for preventing future pest problems



Importance of IPM

Health Benefits

Adopting IPM reduces exposure to both pests and pesticides. Two health concerns faced throughout the country by children and adults are allergies and asthma. Rodents, cockroaches, and dust mites are often present in buildings and can cause, or inflame, serious allergic reactions and asthma attacks. A New York City Housing Authority study revealed a significant association between the prevalence of asthma among children



and adults, and the incidence of pests, allergens (high cockroach and mouse allergen levels), and pesticides found in public housing (Chew, et al., 2006).

While pesticides can play a key role in IPM programs by their very nature most pesticides pose some risk. They are powerful tools for controlling pests but need to be used carefully and judiciously. For more information on health and safety issues associated with pesticides, visit: www.epa.gov/pesticides/factsheets/health_fs.htm. For information on specific chemicals, visit: www.epa.gov/pesticides/chemicalsearch.

Economic Considerations

There are cost savings associated with using IPM. IPM may be more labor intensive than conventional pest control and may require more up front resources. However, costs are generally lower over time because the underlying cause of the pest problem has been addressed. IPM practices also provide financial benefits unrelated to pests. Weatherization of buildings not only excludes pests but also saves energy and reduces moisture problems.

Roles and Responsibilities for Pest Prevention and Management

All stakeholders should be involved in a decision to use pesticides, including the IPM coordinator, pest management professionals, building managers, residents, and cleaning staff.

Developers

- Educate the building management staff on IPM-based design changes
- Integrate IPM recommendations into the building design and construction
- Assess pests in vacant buildings and consult a third-party certified pest management professional for treatment and structural alteration options
- Use IPM strategies to prevent occupants from bringing pests into new or remodeled space

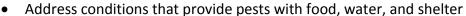
Pest Management Professionals

- Notify IPM Coordinator of scheduled visits
- Deliver pest management services that provide a variety of solutions, including non-pesticide options and recommendations for prevention-based improvements
- Stay current on pest management through continuing education
- Educate stakeholders on choices for non-chemical and chemical control methods
- Participate in periodic meetings on IPM implementation

- Keep a well-recorded physical log of pest management efforts (date, pest type, control method, result, etc.)
- Acquire certification through EcoWise, Green Shield, GreenPro, or a program with similar standards

Cleaning Staff

- Maintain a clean environment
- Monitor pest reports from occupants (pest pressures)
- Identify repairs that could alleviate pest problems



Participate in periodic meetings on IPM implementation

Building Management/Operations

- Establish key performance measures to determine success
- Ensure that the IPM Plan includes action thresholds for pests
- Keep a well-recorded physical log of pest management efforts (date, pest type, control method, result, etc.)
- Maintain an IPM budget and use contracts that require IPM methods
- Hold stakeholders accountable according to their roles and responsibilities
- Ensure communication between all stakeholders
- Use prevention measures first, especially those that have multiple benefits, such as weatherproofing (e.g. door sweeps and caulking)
- Provide training on IPM to all stakeholders
- Identify a building resident(s)/occupant(s) to serve as a volunteer liaison or council between the



- residents/occupants and building management on environmental matters
- Coordinate with landscapers to minimize pest-conducive conditions
- Provide occupant notices of pesticide applications in accordance with the pesticide label. Consider adopting the LEED (Leadership in Energy and Environmental Design) notification standard.

Landscaper (if applicable):

- Utilize landscape designs that eliminate pest-conducive conditions
- Assist the building managers in choosing native endemic plants that minimize potential pests
- Use IPM strategies that include proper watering, mowing, soil testing, and soil aeration
- Communicate with pest management professionals to ensure pest control techniques and pesticides are not harmful to the landscape
- Participate in periodic meetings that focus on implementing IPM
- Provide occupant notices of pesticide applications in accordance with the pesticide label. Consider adopting the LEED notification standard

Building Occupants

- Maintain a clean environment by keeping space free of crumbs, food scraps, standing water, and debris that could harbor pests
- Participate in IPM educational opportunities provided by building management
- Communicate pest and repair issues to building management
- Participate in IPM meetings with management through the building resident/occupant liaison
- Inspect your belongings to prevent introducing pests
- Prepare the area for pest control service, as detailed by the PMP
- Work with the IPM coordinator to get help if limitations make it impossible for the occupant to do his/her part
- Report the presence of pests immediately to building management
- Make all necessary preparation and accessibility for PMP appointments

Building Maintenance Staff

- Repair building deficiencies that may lead to pest problems
- Participate in regular meetings and special trainings on IPM
- Report problems to building management

Implementing IPM

Regular IPM Team Meetings

Regular IPM team meetings enable all parties to understand their roles and responsibilities. At the initial team meeting, set IPM goals and action thresholds and discuss a pesticide use plan. Use this information to develop an IPM plan that details responsibilities, action thresholds, and treatment methods. The IPM Program Review Form (Appendix A) serves as a checklist to support the design and implementation of your IPM program.

Education and Outreach

Education is of paramount importance to allow IPM stakeholders to execute their roles and responsibilities confidently and appropriately. IPM training and education should be recorded in your IPM Plan. Seek to partner with key stakeholders in your community. This is especially important in buildings in which the occupants are more susceptible to the health impact from pests (e.g., hospitals, schools, and daycares). Partnership suggestions include:

- 1. IPM professionals should be encouraged to participate in or become members of local environmental advisory/strategy committees or counsels.
- 2. Pest management professionals (PMPs) should join local environmental and community health organizations to promote the benefits of IPM.

 Building mangers and key stakeholders should use local laws / ordinances to leverage funding to support their IPM programs.

Mechanisms of this nature can also lead to generating an internal funding source that supports the programs existence.

Training Resources

EPA has IPM resources, particularly for schools and buildings, available at www.epa.gov/pestwise.



Every state and territory of the United States has an IPM coordinator (www.ipmcenters.org/contacts/IPMDirectory.cfm). These individuals are usually located at land grant universities and are aware of research and training opportunities for IPM in their university, state, and region.

Four Regional USDA IPM Centers (www.ipmcenters.org) train and communicate (http://www.northeastipm.org/ipm-in-action/ipmresources/). Recent projects led by IPM Centers include IPM in housing and schools.

Information on IPM in affordable housing is available at (www.stopPests.org). The project is managed by the Northeastern IPM Center at Cornell University with funding through an interagency agreement between U.S. Housing and Urban Development and U.S. Department of Agriculture.

The IPM Institute of North America promotes IPM use in all settings. It operates several IPM certification programs including IPM Star for schools (IPM Institute of North America, 2011) and GreenShield Certified for Pest Management Professionals (IPM Institute of North America, 2011). The Institute (www.ipminstitute.org) has a wealth of IPM standards and contacts for resource information.

The National Pest Management Association (www.pestworld.org) administers the Green Pro Certification program and has an array of educational and training materials (National Pest Management Association, 2011).

External Support

In addition to the stakeholders who use the building daily, state, tribal, and local housing departments are also interested in implementing IPM programs. These authorities are often concerned with minimizing resident exposure to chemicals as well as the health and environmental impacts of living with pests. IPM is a valuable tool for balancing these concerns. For additional assistance, contact your state IPM coordinator (www.ipmcenters.org/contacts/IPMDirectory.cfm) and local support agencies such as health departments, and resident support services to synergize efforts.

Conclusion

Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. This brochure serves as a resource as you develop and implement your IPM program. Through IPM, you can prevent pests, save money, and reduce risks to human health and the environment.

Glossary

The following terms are used in this document or are commonly used in structural or landscape pest management in schools.

Action thresholds (action level) – a point at which pest populations or environmental conditions indicate that pest control action must be taken. **Infestation** – a troublesome level of pests in a particular area.

Inspection – the systematic examination of a site for pest activity or conditions that might encourage or allow pests to become a problem. Careful regular inspection of buildings and grounds with a focus on pest vulnerable areas such as loading docks, kitchens, food storerooms, cafeterias, mechanical rooms, and teachers' lounges can greatly reduce pest problems and the need for pesticide applications or other intervention.

Integrated Pest Management (IPM) - an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices.

IPM team – a stakeholders group comprised of building administration, maintenance, cleaning staff, and occupants. The team formulates the IPM plan and IPM policy and participates in oversight of IPM activities.

IPM coordinator – the employee responsible for day-to-day interpretation of the IPM policy for a facility. The IPM coordinator may or may not be a pest management professional, but is the decision-maker who receives specialized training in IPM, accesses the advice of professionals, and chooses a course of action. For example, the IPM coordinator may be the facilities manager or environmental manager. For facilities with an in-house professional pest management program, the IPM coordinator may also be the pest manager.

IPM plan – a written document that includes specific information on the operation of a facility's IPM program. The IPM plan may include a description of IPM roles for all staff, occupants, and other community members; pesticide application notification and posting policies; list of key pests; action thresholds, a hazard-based hierarchy of management options and prevention/avoidance strategies to be used for key pests; inspection schedules for facilities; policies for working with outside contractors; lists of resources for resolving technical questions; and other pertinent information. The IPM plan provides an excellent tool for training new personnel including during management transitions.

IPM policy – a written document stating a building or facility's commitment to IPM and defining overall IPM goals. This document is updated periodically and used to guide decision-making as the IPM program is implemented.

Key pest – an insect, mite, rodent, fungus, nematode or weed that frequently results in unacceptable damage and typically requires a management action. Key pest status is dependent on the action threshold set for the pest. For example, cutworms may be a key pest on high-visibility athletic fields, but not on adjacent lawn areas where the typical level of cutworm damage is very tolerable.

Monitoring – the regular, on-going inspection of pest vulnerable areas undertaken to provide accurate information to make appropriate decisions for managing pests.

Pest – an organism that causes problems for humans, including damage to structures, health threats to humans, domestic animals or livestock. For example, there are thousands of species of ants but only a few cause problems and are considered pests.

Pest vulnerable areas – sites where pests are especially likely to be or to cause damage, often due to availability of food, water or shelter, including loading docks, dumpster areas, kitchens, food storerooms, cafeterias, lounges, mechanical rooms, and custodial closets.

Pesticide – any substance or mixture of substances intended for preventing, destroying or repelling any insect, rodent, nematode, fungus, weed or any other form of pest.

Pesticide label – all printed material attached to or part of the pesticide container including directions for use, and storage and disposal instructions. Users are legally required to follow directions on pesticide labels.

Pesticide resistance – natural or genetic qualities of a pest population that enable pests to tolerate the poisonous effects of certain types of pesticides that are toxic to other members of that species.

Pest management professional – a contractual worker or staff member whose primary duties involve providing pest management services.

Pest management roles – the responsibilities assumed by individuals to maintain an environment free of interference from pest and pesticide risks.

Pest manager – the individual who conducts actions and/or directs others to maintain effective pest management at a site. The pest manager should receive specialized IPM training and be licensed to apply pesticides. The pest manager may be an employee or a contracted professional pest manager. The IPM coordinator may also be the pest manager.

Structural pest – a pest found in or on structures such as a termite or wood rot fungus that destroys wood in buildings, sometimes referred to indoor pests versus outdoor or landscape pests.

Sources

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Appendix A: IPM Program Review Form

Instructions

This form serves as a checklist to support the design and implementation of your IPM program. To complete, you will need:

- input from site staff/occupants
- · copies of service records for inspection/monitoring
- copies of service records for locations where pesticides were applied (up to three locations). This includes documentation of inspection, monitoring, PMP service, education efforts, and maintenance work.

Answer the following questions based on staff knowledge and provided documentation.

Background Information
Building Management Professional Completing Form
Site Address
Describe building/site function (commercial, school, residential, etc.):
Date of Last Program Evaluation:
Has the IPM program changed based on findings from the previous evaluation? \square Yes \square No \square N/A
Have you met the objectives established during the last evaluation? \square Yes \square No
Describe major construction, renovation, or service changes that influenced pest control since the last evaluation:
Did you have any pest emergencies this month? If yes, did you use a chemical in which the label of that product required notification? (Remember notification is only required if the label warrants it)
Describe method of evaluating and monitoring the success of the IPM plan & building occupant satisfaction:
Describe major findings from your evaluation/monitoring:

IPM Education Activities

Describe activities for educating stakeholders on IPM and the policy and procedures for your property since the last evaluation.

Target Audience(s)	Training Date	Training Length (hours)	Topics Covered	Attendees (number)	Instructor/ Information Source

PM training available in a variety of languages (if necessary)? ☐ Yes ☐ No								
Provide	ed IPM educationa	al materials?] Yes □ No					
One-or	n-one support pro	vided to occup	ants living/wor	king where infestation o	occurred? 🗆 Yes 🗆	No		
Total s	Total schools Including IPM education in curricula (optional)							
Main	Maintenance Repair Staff							
Mainte	Maintenance Repair Staff							
Are pe	est-proofing inspec	ctions ROUTINE	ELY conducted?	☐ Yes ☐ No				
	Are the root causes of pest problems always identified and resolved? \square Yes \square No Are maintenance staff and contractors aware of their role in the IPM program? \square Yes \square No							
Maint	enance staff educ	ated on their s _l	oecific role with	nin the past 12 months?	☐ Yes ☐ No			
Did yo	u note any eviden	nce of pest pres	sence (e.g. in a	og book)? □ Yes □ No)			
	on information in on page A-6):	the service his	tories or IPM lo	og, complete the follow	ing for three sites (u	se the treatment		
Descri	be any recent rep	airs made in re	esponse to the	IPM team's request:				
	·							
Recon	nmended Actions	(use treatmen	t codes on page	e A-6):				
Date	Repair Site (use codes on page A- 6)	Repair Performed (use codes on page A- 6)	Equipment Used (use codes on page A- 6)	Material Product Name	EPA Reg.#	Quantity (# of devices or amount of product— specify measure: oz., lbs. pt., qt. gal.)		
-			+			+		

Cleaning Staff are the first line of defense. Please record in this section all sanitation and monitoring actions performed by the cleaning staff.

Cleaning S	itaff								
	Are ALL employees aware of IPM (employees understand how to sight evidence of pest presence and how to report)? ☐ Yes ☐ No								
Cleaning s	Cleaning staff educated on their specific role within the past 12 months? \square Yes \square No								
Are forma	Are formal sanitation/housekeeping protocols in place? ☐ Yes ☐ No								
Do you use Design For Environment products? ☐ Yes ☐ No									
Did you no	Did you note any evidence of pest presence (e.g. in a log book)? ☐ Yes ☐ No								
Based on i	nformation in t	he service hist	ories or IPM log	, complete the following	for three sites (us	e codes on page A-6):			
Recomme	nded Actions (use treatment	codes on page A	A-6):					
Record of	Cleaning Treat	ments (list all _l	products)						
Date	Cleaning Site (use codes on page A- 6)	Cleaning Method (use codes on page A- 6)	Equipment Used (use codes on page A- 6)	Product EPA Reg. #	DfE Product (Y or N)	Quantity (# of devices or amount of product— specify measure: oz., lbs. pt., qt. gal.)			

Pest Management Professional & Building Manager

Building managers and Pest Management Professionals are primarily responsible for making decisions regarding chemical section / application in or around the building. Please document actions and decision made by both parties together in this section.

IPM coordinator is aware of all treatment options including alternative control methods without using pesticides? ☐ Yes ☐ No
Do you have a strategy for pesticide risk reduction? ☐ Yes ☐ No
Do you have IPM provisions in your pest control contract? ☐ Yes ☐ No
Are all Pest Management Personnel on site properly licensed and trained? ☐ Yes ☐ No
Are copies of current licenses included in the on-site log? ☐ Yes ☐ No
Are copies of current labels and MSDSs for each pesticide product used included in the on-site log? \square Yes \square No
Is notification of intent of service with customized preparation instruction (if needed) given in advance
of visit? ☐ Yes ☐ No
Is notification and any educational materials provided in appropriate language/reading level? ☐ Yes ☐ No
Is there a formal IPM policy in place? ☐ Yes ☐ No
Is there an IPM plan in place (a plan to deal with potential and current pest issues)? \Box Yes \Box No
Is there an active, well-qualified and effective IPM coordinator? \square Yes \square No
Are ALL employees aware of IPM? ☐ Yes ☐ No
Management educated on their specific role within the past 12 months? \square Yes \square No
Do you ALWAYS utilize formal IPM decision-making protocols? ☐ Yes ☐ No
Have pests been identified before ANY treatment? ☐ Yes ☐ No
Does the PMP make pest-proofing recommendations at each visit? \square Yes \square No
Are the root causes of pest problems always identified and resolved? \square Yes \square No
Did your staff follow the IPM policy and plan when addressing pest issues? \square Yes \square No
If no, list strategies to improve their future response.
Have pest monitoring and action thresholds been utilized? ☐ Yes ☐ No
Are formal sanitation/housekeeping protocols in place? ☐ Yes ☐ No
Based on information in the service histories or IPM log, indicate whether the following have been completed:
☐ Occupant interviewed for history of pest problem(s) and tolerance level
☐ Site inspected and pest(s) identified (including exterior, if applicable)
☐ Conducive conditions recorded (interior and exterior, if applicable)
☐ Recommendations written for conditions that attract pest and acknowledged by responsible parties
☐ Discussed findings with occupant/IPM coordinator

☐ Info	ormation about	☐ Information about pest prevention/treatment communicated to/left with occupant						
□ No	n-chemical con	trol tactics use	d for every infe	estation				
☐ Act	ion threshold a	cknowledged	and response s	caled to level of infe	station			
□ Pes	ticides selected	d with risk in m	nind and used ju	udiciously				
☐ Fol	low-up inspecti	on scheduled	before pest pop	pulations could rebo	und to determine	if treatment w	as effective	
Date of Treatment:								
Treatment Record (use treatment codes on page A-6):								
Date	Treatment Site (use codes on page A- 6)	Treatment Method (use codes on page A- 6)	Equipment Used (use codes on page A- 6)	Product		Check if not on	Quantity (# of devices or amt. of concentrate—specify measure: oz., lbs. pt.,	
	on page A- of	on page A- of	on page A- 0)	Product Name	EPA Reg. #	Program List	qt. gal.)	
Preve	ntion Responsi	bilities and Re	ecommendation	ns				
Comm	nunication with	n Customer (bi	uilding occupar	nts)				
Communication with Customer (building occupants) Information about pest prevention/treatment communicated to/left with customer (by building liaison or IPM Coordinator):								
Did you have any pest emergencies this month? If yes, did you use a chemical in which the label of that product required						t product required		
notific	ation? (Remen	nber notification	on is only requi	red if the label warra	ants it)			
Describe method of evaluating and monitoring the success of the IPM plan and building occupants satisfaction:								

Suggested Prevention/Treatment Choices (Choose from items below; write number code in space in previous pages)

TO L	MIT FOOD	TO L	IMIT HABITAT	TO LIMIT ACCESS
1.	Improve general cleanliness	20.	Move wood piles away from structure	40. Seal holes in structure outside
2.	Vacuum and/or mop floors	21.	Remove brush and/or rock piles	41. Seal holes in structure inside
3.	Store food (including pet food and bird seed)	22.	Eliminate areas of excessive moisture	42. Trim tree and shrub branches 3' to 6' away
	in pest-proof containers or in refrigerator	23.	Fix plumbing and irrigation leaks	from structure—leave a clean border around
4.	Remove or seal up garbage at night.	24.	Seal up cracks and crevices	foundation
5.	Clean garbage cans/garbage area	25.	Bring order to storage areas	43. Weather-strip doors and/or windows
6.	Clean recyclables before storing	26.	Eliminate clutter, esp. near sinks, stoves &	44. Add screens
7.	Clean recycling area		refrigerators	45. Repair screens
8.	Keep tight-fitting lids on garbage cans and	27.	Eliminate long expanses of dense, ground	46. Add door sweeps or otherwise fix gaps under
	dumpsters when not in use and at night		cover	doors
9.	Remove and clean pet dishes after pets eat	28.	Trim tree and shrub branches 3' to 6' away	47. Add kick-plates
10.	Treat, trim or remove vegetation with		from structure—leave a clean border around	48. Seal HVAC units
	honeydew producing insects (aphids, scales,		foundation	49. Cover air vents with ¼" hardware cloth
	mealybugs)	29.	Remove standing water	50. Other
11.	Remove pet droppings outside	30.	Remove debris from gutters	51. Other
12.	Clean up fallen fruit and nuts outside	31.	Remove debris from roof	52. Other
13.	Clean up spilled bird seed around feeders	32.	Other	
14.	Other	33.	Other	
15.	Other	34.	Other	
16.	Other			

SITE = Site where treatment applied	METHOD = Treatment method used	EQUIPMENT = Used for chemical application
RESIDENTIAL	NON-CHEMICAL	200. Insect bait station
1. Kitchen	50. Inspection only	201. Hand duster
2. Living Room	51. General cleaning	202. Power duster
3. Bathrooms	52. Vacuuming	203. Insect bait applicator
4. Bedrooms	53. Steam cleaning	204. Aerosol can
5. Dining room	54. Heat treatment	202. Paint brush application
6. Den	55. Pest exclusion work	203. Compressed sprayer
7. Utility room	56. Insect sticky trap placement	204. ULV machine
8. Basement/crawl space	57. Snap trap placement	205. Rodent bait station
9. Outside	58. Multiple-catch trap placement	206. Power sprayer
10. Attic	59. Glue board placement	207. Other
11. Roof/gutters	60. Live trap placement	208. Other
12.Other	_ 61. Rodent monitoring block/non-toxic tracking	209. Other
13.Other	_ powder placement	
14.Other	62. Other	
	63. Other	
	64. Other	
COMMERCIAL	CHEMICAL	COORDINATION AND EDUCATION
20. Product areas	70. Insect bait placement	300. Conduct initial IPM team meeting
21. Rest rooms	71. Void treatment	
22. Storage	72. Treatment to other inaccessible area	301. Hold regular team meetings
23. Offices	73. Treatment to area humans would not normally	302. Provide training materials to all stakeholders
24. Classrooms	contact	
25. Meeting rooms	74. Spot treatment outdoors (2ft. sq. max.)	
26. Areas occupied by people	75. Rodenticide placement	
27. Food consumption areas	76. Other	
20.5	77. Oth	
28. Food prep areas	77. Other	
28. Food prep areas 29. Recreation	77. Other 78. Other	
	78. Other	
29. Recreation	77. Other 78. Other 79. Other	
29. Recreation 30. Dumpster	78. Other	
29. Recreation 30. Dumpster 31. Exterior	78. Other	
29. Recreation 30. Dumpster 31. Exterior 32. Basement or crawl space IDENTIFY OTHER AREAS NOT LISTED	78. Other	
29. Recreation30. Dumpster31. Exterior32. Basement or crawl space	78. Other	

 $Modified\ with\ permission\ from\ EcoWise\ Certified\ treatment\ code\ reference\ chart\ .\ (EcoWise\ Certified\ ,2011)$