



Integrated Pest Management at Rockefeller Park Tower

A Contractor-led IPM Program



Built in 1925, **Rockefeller Park Tower** is a six-story brick veneer apartment building in Cleveland, Ohio. The building is comprised of 132 units including 18 efficiencies, 84 one-bedroom, and 30 two-bedroom units. The common areas include: the entryways, a lobby, a sitting area, offices, a boiler room, laundry rooms, a basement and a trash compactor area. The property, including parking, is approximately 1.45 acres.

Before IPM

Before the Mark to Market (M2M) Green Initiative prompted a change in the pest control practices at Rockefeller Park Tower, the maintenance staff provided the pest control service on an as-needed basis. They applied pesticides without training or a license. Pest infestations existed and being pest-free throughout the building was not a priority.



The Green Property Conditions Assessment (GPCA) included an IPM Inspection Report conducted before the green renovations. The report concluded that the roaches used the pipe chases to travel and spread. The report suggested a targeted cockroach cleanout and a follow up within three weeks to break the breeding cycle of the cockroach population. The IPM inspection found open rodent bait in a community room and recommended against the use of rodenticides indoors. The report also suggested implementing a comprehensive IPM program targeting the cockroaches by treating all units a minimum of four times annually. The report also mentioned carpenter ants and fungus beetles and directed property staff to take immediate action to eliminate both the pests and any underlying moisture problems.

Property management at Rockefeller Park Tower found the IPM requirements for the M2M program unclear. They put out a request for proposals for a GreenShield or GreenPro Certified company to implement an IPM program.

The president of a local pest control company, General Pest Control Co., found out about the M2M Green Initiative when a competitor placed sticky trap monitors at one of his properties for a GPCA. He soon became aware of Rockefeller Park Tower's request and others like it around Cleveland and saw the M2M requirement as an opportunity to retain his clients and expand his multifamily property clients. Because of his previous work at M2M properties, the staff trusted him to interpret the IPM requirements and to bid accordingly.

The president of General Pest Control Co. did extensive research before putting together a bid for Rockefeller Park Tower. The first step toward meeting the Green Initiative requirements was for General Pest Control Co. to become GreenPro Certified through the National Pest Management Association (NPMA). His research into the program requirements included reading through the M2M Operating Procedures Guide, exploring the resources and training available for IPM in multifamily housing through the National Center for Healthy Housing¹ and the Northeastern IPM Center² and researching Boston Housing Authority's IPM Program³.

Once certified, General Pest Control Co. proposed an IPM program to the Rockefeller Park Tower property management. Eventually management agreed to the service agreement.

Constructing the IPM Service Program Proposal

A conventional pest control service agreement lists the kinds of pests covered and includes a service schedule for quarterly treatments of units and common areas. Typically, the contractor visits the property once a month at which time he inspects and treats all common areas, 1/3 of all units, and any additional units that have reported pest problems since the last visit. As a result, the contractor visits and treats each unit four times per year, with pesticides applied at each service, regardless of infestation level. Most of the 14 properties involved in the M2M Green Initiative hired a contractor under a conventional service agreement. Property managers thought that they were following the HUD Office of Affordable Housing Preservation's (OAHP) requirements by agreeing to a "green service agreement." However, "green" usually meant that the company employed "eco-friendly" (often botanical-based) pesticides. Having a licensed GreenPro or GreenShield certified company do pest control is preferable to unlicensed maintenance staff applying over the counter products, but a conventional service agreement using "green" pesticides was not the intent of the M2M Green Initiative's IPM requirement because an IPM program avoids the routine application of pesticides, regardless of the pesticides' active ingredients.

General Pest Control Co. presented a true IPM program to Rockefeller Park Tower. Because the proposal was a significant departure from the conventional quarterly service agreement, the contractor walked the procurement officer through the bid, explaining the rationale for every component. The contractor explained how the program met HUD's OAHP M2M Green Initiative requirements, specified the pests that were covered under the service agreement, and how IPM would be used to manage each of them. The service agreement also included the responsibilities of all individuals involved in building-wide pest management—the IPM team.

Under the proposed service agreement, General Pest Control Co. technicians visit the property two times a month. Monthly, common

¹ www.nchh.org

² www.stoppests.org

³ www.bphc.org/hpphi/OwnersManagers/Pages/home.aspx

Non- or least-toxic control measures are used to eliminate pests within units only where pest infestation exists.

areas and the exterior are inspected and treated when the monitors or the observed conditions indicate that a treatment is needed. Non- or least-toxic control methods are used to eliminate pests within units only where pest infestation exists. To determine which units have infestation and discover building-wide trends, General Pest Control Co. places sticky traps in each unit, leaves them out for at least two nights, collects them, analyzes the pest counts and makes recommendations based on the findings. This is the same process that was done for the IPM Inspection Report in the GPCA. See Appendix A for a data collection form used by General Pest Control Co. to conduct the IPM Inspection. Any units found to have an active pest infestation are defined as “focus units” and are scheduled for treatment and follow-up until the infestation is eliminated. Treatment in this context can be any of the IPM control methods: cultural, physical, biological, or chemical control. See Appendix B for the Service Guidelines. The IPM Team members—General Pest Control Co., Rockefeller Park Tower management, maintenance and resident support service staff, and the residents—work together to eliminate infestations.

The property staff determine the frequency of the IPM Inspections with the contract price contingent on the frequency. The options were:

- Four times (quarterly) IPM Inspections + twice a month service program= \$604.00 per month
- Three times a year IPM Inspections + twice a month service program= \$539.00 per month
- Twice a year IPM Inspections + twice a month service program= \$432.00 per month
- Once a year IPM Inspection + twice a month service program= \$279.00 per month

After much deliberation and with the support of General Pest Control Co., property management agreed to the one-year IPM service agreement with an IPM Inspection performed once annually. The contract is for one year with an option to continue on a monthly basis. Both parties agreed that the contracting process would be more efficient and the property management could better evaluate competitive bids if management had more training on IPM.

Simply using a HUD-approved template scope of work was insufficient to ensure the success of the IPM program. IPM is a problem-solving process that varies depending on the people involved and the target pests. Property staff responsible for procurement must know the goals and objectives of an IPM program and know enough about pests and IPM to see how each proposal would meet these objectives. The GPCA IPM Inspection Report helped staff begin an IPM program and staff provided the report to General Pest Control Co. for use in preparing its proposal. However, there was no evidence that the property staff had

retained any information from it except that pest control should cost \$550 per month.

The IPM Program Service Proposal

General Pest Control Co.’s IPM Program begins with training for staff and residents, orienting them to IPM and the new service procedures. Following this training, General Pest Control Co. conducts an IPM Inspection to determine the level of infestation in each unit using sticky trap monitors. Control efforts at service visits twice monthly focus on common areas and units where the monitoring found evidence of pests. If staff or residents report infestations, the property staff adds these units to the focus unit list. The cost for this program, with IPM Inspections once a year, is \$279.00 per month with an additional per-unit, per-visit fee for each focus unit. Property management pays for all pest control, unless they are charged for a unit service that could not be done because the resident had not prepared. In this case, the resident is charged for the service. If the property management requires a visit between regular service days, General Pest Control Co. responds promptly and at no extra charge, except for the per unit fee if applicable.

To motivate all parties, if at any time property staff is not satisfied with the results of General Pest Control Co.’s service and the pest problem is not corrected within a reasonable time (30 days), General Pest Control Co. refunds the fees paid for the previous two months. This money-back guarantee is based upon the expectation of resident and management cooperation as detailed in the service agreement and preparation instructions.

IPM Implementation Plan

The plan for IPM implementation at Rockefeller Park Tower is presented below. Unless specified, General Pest Control Co. leads all activities. All activities are documented in the IPM Log which is in a binder left at the property management office. The IPM Log has sections for:

- Pest sightings (as reported to and tracked by the work order system)
- Completed service tickets or Pest Management Reports (PMRs) (See Appendix C)
- Property charts and maps
- Program description
- Labels and Material Safety Data Sheets
- Sample notices
- Misc. (including sample fact sheets and educational materials)

General Pest Control Co. follows these steps:

1) Hold initial resident meeting

- Explain IPM concept
- Present resident and manager training programs

- Review key components of program and responsibilities of participants
- Review overall procedure
- Open discussion with residents and staff, including Q & A

2) Initial Treatment to Suites and Common Areas (if needed)*

- Inspect and treat units, common areas within the building, exterior of building
- Vacuum and remove infestation
- Apply insect baits, traps and boric acid powder
- Identify and report maintenance, sanitation and clutter issues
- Document findings on Pest Management Report (PMR)
- Identify Focus Unit(s) and Problematic Common Area(s)
- Re-inspect and continue treatment at Focus Units and Problematic Common Areas at regular interval until no further signs of infestation are found

**If the initial physical assessment and pest survey reveals that more than ten percent (10%) of the residential units have pest infestations or if there are signs of a significant pest infestation in the common areas of the building, an initial corrective treatment throughout the entire building will be needed to eliminate existing pest infestation. This service includes pesticide application where infestations exist and vacuuming or sticky traps will not correct the problem. The pesticides chosen will be those from a list of low impact materials and includes gel baits, containerized baits, and boric acid dust.*

3) On-going and Regular Monitoring Program:

Suites (once a year) Common Areas (monthly)

- Place, collect, and interpret dated monitoring devices
- Perform treatment if and where needed within IPM guidelines
- Provide additional educational information
- Document findings on Pest Management Report (PMR)
- Identify, revise, and update Focus Unit List and Problematic Common Area(s)

4) Follow-up Visit(s): Focus Units and Problematic Common Area(s) (at one, two or four week intervals)

- Collect and interpret dated monitoring devices
- Perform additional treatment if needed
- Provide additional education information
- Document findings on Pest Management Report (PMR)
- Inform resident of future visits by applicator (if applicable)

5) Repeat above Follow-up Visits (if applicable)

- Document findings on Pest Management Report (PMR)

6) Distribute resident evaluation and satisfaction form

- Solicit feedback from residents on periodic basis to evaluate success or failure of program
- Evaluate data that has been collected
- Report results of evaluation to residents and leadership team

IPM Implementation at Rockefeller Park Tower

In early September 2010, after having met with and trained property staff on IPM and the service program, General Pest Control Co. placed, picked up and counted six sticky trap monitors in each of the 132 units. Resident training was delayed because of training room and community area renovations. Based on this IPM Inspection, General Pest Control Co. identified 17 focus units with cockroach infestations. An additional five units were identified as having other pest problems. Forty units were identified as having moderate or high clutter (See Appendix A for the definition of clutter).

The maintenance staff followed up on the PMP's recommendations within the month. They also agreed to increase the frequency with which they clean the trash chutes and compactor room. These areas are washed once a month unless pest problems arise, in which case they will try once a week. The property manager conducts a housekeeping inspection in every unit every 90 days to help residents who need housekeeping support. The PMP's notes help identify residents who may need further education or support. To meet this support need, the property received a grant to fund a service coordinator. Working with residents on housekeeping and pest control is part of this person's job.

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Property staff, residents, and General Pest Control Co. are working together to use IPM to solve the pest problems in focus units. Residents are becoming aware of the change in pest control service from information distributed from the office, the PMP's conversations with them and seeing the PMP carrying a HEPA vacuum instead of a spray tank.

To see the program in action, we visited Rockefeller Park Tower with General Pest Control Co. on its regular service route in October 2010. The property manager and a maintenance supervisor accompanied the PMP. On this visit, the PMP serviced the five units where monitors had found pests other than cockroaches. In all cases, poor sanitation caused the pest problems. To remedy the underlying cause, the PMP explained to the residents and the staff what needed to be done to remove the food, water, and breeding

sources for the pests. Recurring issues were dirty garbage disposals and the improper storage of un-rinsed recyclable cans and grains. No pesticides were applied during the 2-hour visit. In a few cases the PMP planned to follow up with traps for fruit flies and the maintenance supervisor made plans to use an enzyme cleaner in the garbage disposals. All parties communicated well and engaged in conversations about pests.

The PMP noted that IPM procedures take longer than conventional treatments. The PMP also noted that two major obstacles to implementing IPM at Rockefeller Park Towers are that a staff member is not always available to take the PMP around to gain access to units and that there are items stored on top of stoves and refrigerators, making inspection behind these appliances impossible. The success of any IPM program is often determined by the cooperation of staff and residents.

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The building and units were in impressive condition. Much of this is due to the M2M Green Initiative renovations, which are nearly complete. The property manager felt that the pest control conditions had improved at the property because of needed facility renovations to solve moisture problems. The data in Table 1 loosely supports this theory.

Data Associated with the IPM Program

General Pest Control Co. began the IPM program at Rockefeller Park Towers in September 2010. Although long-term data on the impact of this service procedure are unavailable, in November 2010, General Pest Control Co. placed monitors in the focus units that had been receiving interventions since the initial September monitoring. November monitoring found cockroaches in 6 of the 17 focus units (see right column in the Table 1). Four of these units had a reduction in the number of cockroaches caught, 73%, 85%, 88% and 96% respectively. The remaining 2 focus units had one cockroach caught in September and the November monitoring caught one cockroach again. 14 units had both clutter and cockroaches in September; in November five of the 15 units with clutter had improved their clutter rating, but none went from having clutter to not having any clutter.

During the five months before the IPM program there was an average of 8.8 units inspected and treated per month. After the onset of IPM, there was an average of 3.4 suites reporting pests each month. Of those reports, only one was found to have an active cockroach infestation. Four were for other occasional pests such as pavement ants, fruit flies, and centipedes.

Terminix conducted property-wide monitoring in April 2008 as part of the GPCA and found 16 units with German Cockroach



infestation. None of those 16 units had German Cockroaches in September 2010. Only three units found with pests in 2008 had infestations in 2010 (see Table 1). In 2008 there were 12 units with non-cockroach pests, in 2010 there were only five. There were eight units with beetles and flies in 2008 and four in 2010.

Other Considerations

Although the cost of the IPM program is greater than the cost of the traditional work order (complaint) driven program because of the annual inspection through all of the units, over the long-term pest-

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free housing will make the comprehensive IPM program worth the expense. Using the program detailed in this case study, one expects to see pest infestation eliminated from the building within the first few months of the contract. Additional focus units may arise due to pests hitchhiking in on items, but with community-wide education and monitoring, the PMP and work order system will document

Table 1: IPM Inspection Pest Findings

Unit*	2008 IPM Inspection Findings	2008 Infestation Severity	9/2010 IPM Inspection Findings	9/2010 Infestation Severity	11/2010 Results of Follow Up IPM Inspection
1a	Small Ants & Gnats				
1b			Small Ants		
1c	Silverfish				
1d	Small Ants				
1e	German Cockroaches	Medium	Fruit Flies		
1f	German Cockroaches	High			
1g	Carpenter & Small Ants				
1h	Small Ants		Fruit Flies		
1i	Fungus Beetle				
1j	Fungus Beetle				
1k	Gnats				
2a	Carpenter Ants				
2b			Fruit Flies		
2c	German Cockroaches	Medium			
2d	German Cockroaches	Low			
2e			German Cockroaches	Low	0 cockroaches
2f	German Cockroaches	High			
2g			German Cockroaches	Low	0 cockroaches
3a	German Cockroaches	Medium			
3b	German Cockroaches	Low			
3c	German Cockroaches	High			
3d			German Cockroaches	Low	0 cockroaches
3e			German Cockroaches	Medium	0 cockroaches
4a	German Cockroaches	Low			
4b	German Cockroaches	High			
4c	Fungus Beetle				
4d	Gnats		German Cockroaches	Low	0 cockroaches
4e			German Cockroaches	Medium	11 cockroaches
4f	German Cockroaches	Medium			
4g			German Cockroaches	Low	1 cockroach
4h			German Cockroaches	Low	0 cockroaches
4i			German Cockroaches	Medium	0 cockroaches
4j			German Cockroaches	High	2 cockroaches
4k			German Cockroaches	Medium	6 cockroaches
4l			German Cockroaches	High	15 cockroaches
4m			German Cockroaches	Low	0 cockroaches
4n			German Cockroaches	Low	1 cockroach
5o			German Cockroaches	Low	0 cockroaches
5p	German Cockroaches	High			
5q	German Cockroaches	High			
5r			German Cockroaches	Low	0 cockroaches
6a	German Cockroaches	Low			
6b	German Cockroaches	Low			
6c			Grain Beetles		
6d			German Cockroaches	Low	0 cockroaches
6e	German Cockroaches	Moderate			
6f	Gnats				

*Unit numbers were changed to protect the privacy of residents. The number represents the floor.

the introduction of new pests and the PMP will address the infestation before it has time to grow or spread. In addition, the PMP is identifying housekeeping deficiencies and recommending repairs to maintenance, taking some of the inspection burden off of property management. Although other properties implementing IPM report increased maintenance costs, Rockefeller Park Towers did not notice a change.

The monitoring component of the IPM Inspection Report done for the GPCA may be unnecessary. Monitoring is time-consuming and expensive. By the time IPM was implemented at Rockefeller Park Tower, the pest populations had changed. Furthermore, property staff didn't use the monitoring results or recommendations to focus control efforts, rather they focused in on the superfluous bid for service at the end of the IPM Inspection Report. Rather than requiring the monitoring component of the GPCA, a green certified pest control company could be asked to do a visual assessment of the property, including all units and write the recommendations report based on this. Monitoring should be mandated as part of the bid process for pest control, not the GPCA report.

The author found that property managers typically initiate new pest control programs when the M2M renovations are almost or entirely complete. The property manager at Rockefeller Park Tower used a pest control contractor on an as-needed basis during renovation. As the monitoring data in Table 1 shows, waiting for the renovation to be complete did not affect control.

In theory, educating staff, residents, and contractors about pest control before renovations take place would be ideal. Proactive education would result in contractors identifying pest problems and the PMP following up promptly with treatment. In addition, with an awareness of pest biology and behavior, contractors would take pest harborage into consideration while doing their work—resulting in well-sealed cracks and crevices and thus no places for pests to hide.

Pest control is traditionally done during construction in one of two ways:

1. A PMP is on site during renovation to treat any pest problems that are uncovered. This strategy is expensive and many pest control companies do not have enough staff to dedicate one person to a construction detail.
2. The construction crews carry pesticides and spray when they see pests. According to one multifamily housing contractor, "whatever they give us at the office. A concentrate of some sort. We mix double what we should. It poisons the bugs, not us."

We recommend a third alternative where the construction crews have HEPA vacuums and suck up any pests or evidence of pests they encounter. Having unlicensed construction workers apply pesticides is illegal in most states, including Ohio.

It does not seem to matter whether the comprehensive IPM program begins before or after the renovation effort as long as some form of pest control is done to remedy pest problems encountered during renovation. One should not apply this

conclusion to renovation efforts where residents must be moved to a temporary unit during renovation. When residents move, precautions should be in place to prevent them from moving pests to the temporary units and back into the renovated building.

When asked whether there was any more support that she needed to implement IPM, the property manager emphasized the continued need for communication and education. She would like to see education opportunities for the property staff and materials that staff can use to educate residents.

Conclusion

General Pest Control Co. based the IPM program at Rockefeller Park Tower on the successful experiences of other IPM programs in affordable multifamily housing. It meets the requirements of HUD's OAHF M2M Green Initiative. The missing component to this case study and the IPM programs of the other 13 properties reviewed is data tracking the success of the program. In most cases this is because the IPM programs have not been in place for more than a few months. In time, the author hopes to find data on the number of work orders for pests, cost of pest control, number of units with infestation and number of treatments during which the PMP applies pesticide.

The property manager and staff at Rockefeller Park Tower know they are to remove pest access and harborage and to support the residents so that food and water is not readily available to pests. General Pest Control Co. is making sure the property staff and resident do their parts and has committed to use a comprehensive IPM program to manage pests. Because of this cooperation from all members of the IPM team and a monitoring plan that identifies all infestations, pest-free healthy housing is an attainable goal for Rockefeller Park Towers.

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The National Center for Healthy Housing (NCHH) is a 501(c)(3) nonprofit dedicated to creating healthy and safe homes for children through practical and proven steps. For more information about green and healthy housing, visit: www.nchh.org/training/Green-and-Healthy-Housing.aspx.

APPENDIX A: Sample Data Collection Form for IPM Inspections

 Time In ____:____ AM
 PM

Floor No: _____ Inspector(s) _____ Date: ____/____/____

 Time Out ____:____ AM
 PM

Apt	<u>sink</u> 1	<u>frig</u> 2	<u>stve</u> 3	<u>kit</u> 4	<u>kit</u> 5	<u>bath</u> 6	Clutter, Sanitation, Maintenance	Treat Need	Mouse Evidence	Notes & Observations
01							NC LC MC HC S M		Yes No	
02							NC LC MC HC S M		Yes No	
03							NC LC MC HC S M		Yes No	
04							NC LC MC HC S M		Yes No	
05							NC LC MC HC S M		Yes No	
06							NC LC MC HC S M		Yes No	
07							NC LC MC HC S M		Yes No	
08							NC LC MC HC S M		Yes No	
09							NC LC MC HC S M		Yes No	
10							NC LC MC HC S M		Yes No	

NC = No Clutter LC = Light Clutter MC = Moderate Clutter HC = High Clutter M = Maintenance Issues S = Sanitation Issues

Definitions of Terms Used on PMR

Clutter: Clutter is the accumulation of personal possessions and other items that prevent the service specialist from performing an effective inspection or treatment. Conditions of clutter are further specified as being **LC** (light clutter), **MC** (moderate clutter), or **HC** (heavy clutter).

LC: a few piles of clothes strewn against baseboards. Closets packed with bags, clothes, and personal items but you can still open the door to inspect the shelf brackets, corners, door frames, and hinges.

MC: Personal items pushed against walls covering up to 50% of baseboards. Clothes, toys, and personal items strewn about the floor. Kitchen counter covered with dishes, utensils, food packages, and other “stuff”.

HC: Personal items pushed against walls covering up to 75% or more of baseboards. Closets stuffed with boxes, bags, etc. (difficult even to open the door). Clothes, toys, and personal items strewn about the floor. Top of refrigerator stacked with boxes, bowls, personal items, etc. Excess “stuff” on kitchen counter (sloppy and disorganized). Bedrooms packed: clothes and personal items strewn on floor making it difficult to move around inside the room.

Sanitation: an ample supply of food and moisture made available to pests due to negligence. Examples: Dirty plates left out overnight on counter, table, or in the sink; accumulated grease on stove and surrounding area; accumulated garbage and food waste overflowing from trash containers; moisture in or under a sink or tub due to leaky faucet or faulty drain; food or other debris on floor under and/or behind refrigerator or stove;

Maintenance Issues: physical or structural defects that allow entry or harborage and provide conditions conducive to pest infestation. Examples: cracks, crevices, and holes in the wall, broken windows, missing or broken window and door screens, gaps between the wall and kitchen counter or cabinets, peeling paint, loose paneling,

Inspection Codes

1. No infestation or conducive conditions observed at time of inspection
2. Potential Problem: nothing now, but it could lead to a pest problem later on
3. Light infestation: corrective treatment done at time of service
4. Moderate to Heavy infestation: corrective treatment done at time of service, follow-up service scheduled
5. Serious Situation Observed: treated at time of service AND needs immediate attention by management or support staff

Reporting Codes

- a) Not properly prepared, could not inspect or treat
- b) Clutter against the walls (see clutter statement)
- c) Open and overflowing trash inside suite
- d) Spilled food and food debris on the floor
- e) Open or exposed food (counter, stove, table) at the time of treatment
- f) Dirty dishes (food debris) left on counter, table, or in sink overnight
- g) Moisture accumulated (where) (describe location)
- h) Debris behind the refrigerator needs to be cleaned up and removed
- i) Debris behind the stove needs to be cleaned up and removed
- j) Items on top of refrigerator block or restrict ability to move the appliance
- k) Closets stuffed with clothes and belongings
- l) Access to plumbing void cover is blocked
- m) Pets running loose in apartment (unable to contain)
- n) Repairs are needed to: (describe)
 1. pipe holes under sink need to be sealed
 2. gaps around counter and lower cabinets need to be sealed
 3. coving needs to be firmly attached to wall

Other: _____

APPENDIX B: IPM Pest Control Service Guidelines—Practices and Procedures

USE OF PESTICIDES

General Pest Control Co. shall adhere to the following rules for pesticide use:

- A. Approved Products: The General Pest Control shall not apply any pesticide product that has not been included in the Pest Control Plan or approved in writing by the Property Manager.
- B. Pesticide Storage: The General Pest Control shall not store any pesticide product in the building(s) specified in this contract.
- C. Application by Need: Pesticide application shall be according to need and not by schedule. As a general rule, application of pesticides in any inside or outside area shall not occur unless visual inspection or monitoring devices indicate the presence of pests in that specific area. Requests for preventive pesticide treatments in areas where monitoring and surveillance indicates a potential insect or rodent infestation will be evaluated by the General Pest Control Co. on a case-by-case basis. The Property Manager prior to any preventive pesticide application must grant written approval.
- D. Minimization of Risk: When pesticide use is necessary, General Pest Control shall employ the least hazardous material, most precise application technique, and minimum quantity of pesticide necessary to achieve control.

INSECT CONTROL

- A. Emphasis on Non-Pesticide Methods: The General Pest Control shall use non-pesticide methods of control wherever possible. For example:
 - 1. Portable vacuums rather than pesticide sprays shall be the standard method for initial treatment of cockroach infestations, for swarming (winged) ants and termites, and for control of spiders in webs.
 - 2. Trapping devices rather than pesticide sprays shall be the standard method for indoor fly control.
- B. Monitoring: Well placed sticky traps shall be used to guide and evaluate indoor insect control efforts wherever necessary.
- C. Application of Insecticides to Cracks, Crevices, and Voids: As a general rule, the General Pest Control shall apply all approved liquid and dust insecticides as "crack and crevice" or void treatments only, defined in this contract as treatments in which the formulated insecticide is not visible to a resident, building employee, or visitor during or after the application process.
- D. Application of Insecticides to Exposed Surfaces or as Space Sprays: Application of insecticides to exposed surfaces or as space sprays ("fogging") shall be restricted to exceptional circumstances where no alternative measures are practical. The General Pest Control shall obtain approval of the Property Manager prior to any application of insecticide to an exposed surface or any space spray treatment. No surface application or space spray shall be made while residents are present. The General Pest Control shall take all necessary precautions to ensure tenant and

employee safety, and all necessary steps to ensure the containment of the pesticide to the site of application.

- E. Spot Treatments: Spot treatment indoors may be performed using only an insect growth regulator or product that the U.S. EPA has determined to be exempt from regulation (FIFRA Section 25(b)). If the use of these products does not provide a satisfactory result, spot treatment with pyrethrins may be used provided that the General Pest Control notifies the resident in writing (with a copy to the Property Manager) to avoid direct contact with the treated surface until it is dry.
- F. Insecticide Bait Formulations: Bait formulations and insect growth regulators shall be the standard pesticide technology for cockroach and ant control, with alternate formulations restricted to unique situations where baits are not practical.

RODENT CONTROL

- A. Indoor Trapping: As a general rule, rodent control inside buildings shall be accomplished with trapping devices only. All such devices shall be concealed out of the general view and in protected areas so as not to be affected by routine cleaning and other operations. Trapping devices shall be checked on a schedule mutually agreed upon by the Contractor and the Property Manager. The Contractor shall be responsible for disposing of all trapped rodents and all rodent carcasses in an appropriate manner.
- B. Use of Rodenticides: In exceptional circumstances, when rodenticides are deemed essential for adequate rodent control inside buildings, the Contractor shall obtain approval of the Contract Manager prior to making any interior rodenticide treatment. All rodenticides, regardless of packaging, shall be placed either in locations not accessible to children, pets, wildlife, and domestic animals, or in tamper-resistant bait boxes. As a general rule, rodenticide application outside buildings shall emphasize the direct treatment of rodent burrows wherever feasible.
- C. Use of Bait Boxes: All bait boxes shall be maintained in accordance with EPA regulations, with an emphasis on the safety of non-target organisms. The Contractor shall adhere to the following five points:
 1. All bait boxes shall be placed out of the general view, in locations where they will not be disturbed by routine operations.
 2. The lids of all bait boxes shall be securely locked or fastened shut.
 3. All bait boxes shall be securely attached or anchored to floor, ground, wall, or other immovable surface, so that the box cannot be picked up or moved.
 4. Bait shall always be secured in the feeding chamber of the box and never placed in the runway or entryways of the box.

APPENDIX C: Pest Management Report (PMR) and Unit Tally Sheet

Note: This is a draft version. The pest control contractor says that the use of codes in the comments section is too much work for the property staff and thus follow-up on the concerns is sometimes not finished. Future drafts will make the concerns easier for staff to understand and respond to.

Pest Management Report (PMR)

Date: ____/____/____

Time In ____:____^{AM} PM Time Out ____:____^{AM} PM

Loc	Area	✓	Findings*	Pest Problem Observed**	Sanitation and Maintenance Concerns List of conditions observed (see code below***)
1	Trash Room		A B C D E	GR PA FF MC Other _____	
2	Lower level mechanical rooms & basement		A B C D E	GR PA FF MC Other _____	
3	Building Office		A B C D E	GR PA FF MC Other _____	
4	Laundry Rooms		A B C D E	GR PA FF MC Other _____	
5	Exterior Rodent Devices		A B C D E	GR PA FF MC Other _____	
6			A B C D E	GR PA FF MC Other _____	
7			A B C D E	GR PA FF MC Other _____	
8			A B C D E	GR PA FF MC Other _____	
9			A B C D E	GR PA FF MC Other _____	
10			A B C D E	GR PA FF MC Other _____	

**For Units
See
Separate
Tally
Sheet**

*Findings Code A - no visible evidence, B - potential problem (see note), C - light infestation - treated, D - high infestation - treated, E - needs immediate attention of manager.

**Pest Code: GR - German Roaches PA - Pavement Ants FF - Fruit Flies MC - Mice ✓ = area inspected

MATERIALS USED

MATERIAL				
AMOUNT				
METHOD				
EQUIPMENT				
LOCATION				

Material and Service Codes listed on back of this form

***List of Conditions Conducive to Pest Infestation

1. Food/debris under equipment needs to be removed
2. Standing water or excessive moisture needs to be dried up
3. Floor drain(s) need to be cleaned
4. There are structural or maintenance issues that need attention
5. Rodent droppings need to be removed
6. There are areas needing service that are locked or inaccessible
7. There are specific conditions conducive to fly breeding
8. Exterior doors need to be closed when not in use
9. Other: (please describe)

Notes: _____

Did you review the above findings with the food manager, facilities manager, or other responsible party? Yes No.

Manager in Charge

(name printed)

White: GPC Office Copy
Yellow: GPC File Copy
Pink: Customer Copy

Service Specialist

(name printed)

Pest Management Service Tally Sheet

Apt. No. _____

(building name) _____

Service Date: ____/____/____ Service _____

Tech(s): _____

Reason for Visit:	Inspection only	Treatment	Follow Up Visit	Other (describe below)				
Target Pest(s):	none	roaches	mice	rats	spiders	ants	silverfish	small flies

<u>Findings:</u>	V	H	NH	R	PR	NR	NA	NI	LI	MI	HI	FT	LMT	NT		
	(home)			(preparedness)			(infestation)			retreat needed						
Conditions:	NC	LC	MC	HC	XC	EF	S	XS	M	(describe below)			9	12	15	18

Conditions found inside the apartment

- | | |
|---|---|
| <ul style="list-style-type: none"> a. Not properly prepared, could not inspect or treat b. Clutter against the walls (see clutter statement) c. Open and overflowing trash inside suite d. Spilled food and food debris on the floor e. Open or exposed food (counter, stove, table) at the time of treatment f. Dirty dishes (food debris) left on counter, table, or in sink overnight g. Moisture accumulated <u> (where) </u>
(describe location) h. Debris behind the refrigerator needs to be cleaned up and removed i. Debris behind the stove needs to be cleaned up and removed | <ul style="list-style-type: none"> j. Items on top of refrigerator block or restrict ability to move the appliance k. Closets stuffed with clothes and belongings l. Access to plumbing void cover is blocked m. Pets running loose in apartment (unable to contain) n. Repairs are needed to: (describe) <ul style="list-style-type: none"> n1. pipe holes under sink need to be sealed n2. gaps around counter and lower cabinets need to be sealed n3. coving needs to be firmly attached to wall n4. Other: _____ |
|---|---|

Other Notes: _____

V = vacant H = Home NH = not home R = ready PR = partially ready NR = not ready NA = not applicable
 FT = full treatment LMT = treatment limited by conditions NT = not treated C = Clutter Assessment NC = no clutter LC = light clutter
 NK = no key R = tenant refused MD = medical excuse given MC = moderate clutter HC = high clutter XC = extreme clutter
 S = sanitation issues XS = extreme sanitation deficiency EF = exposed food on stove or counter at time of visit