



# CCI Notes

3/2

## Detecting Infestations: Facility Inspection Procedure and Checklist

### Introduction

The presence of insect pests in a museum is indicated by a variety of signs (casings, frass, cocoons, etc.). While the actual living organisms may be visible in various stages of development, the signs of activity are usually detected first.

There are two basic modes of detecting insect infestations: active, where someone inspects likely areas and objects; and passive, where a trap collects pests or indicates their presence. The latter mode, however, still requires someone to inspect the traps, to record the findings, and to follow up on the problem.

### Signs of Infestation

Artifacts in storage and on display should be inspected for insect infestations monthly because this is roughly the period during which many insects pass from one developmental stage to the next. If this is not possible, building inspections should be carried out at least twice a year in the spring and fall, concurrent with the opening and closing of seasonal museums. Along with these inspections, all staff should be encouraged to report immediately signs of infestation. If dirty or dusty conditions are anticipated while carrying out the inspection, especially conditions

involving mould or faecal matter, wear a well-fitting dust mask rated for respirable dust or better.

Signs of insect activity include the presence of insects, dead or alive, at various stages of their development; insect parts, wings, casings, etc.; and damaged areas on the building or artifact, loss of hair and fibres, chewed feathers and quills, perforated skins, grazed nap on fabrics, or holes in surfaces of wood. See CCI Notes 3/1, *Preventing Infestations: Control Strategies and Detection Methods* for more information on how to recognize and detect insect activity on artifacts.

The presence of rodents is indicated by faecal pellets, urine stains, gnawed material, greasy rub marks, nesting activity, and corpses.

### Inspection Procedure

- 1) Review previous inspection reports, in-house sighting sheets, and outside pest control operator work sheets.
- 2) Have updated drawings of the building floor plan and of exterior features.
- 3) Assemble a kit that contains the following items:
  - a bright flashlight to illuminate dark areas (use this as a raking light to detect small insects and objects lying on floors or along walls and pipes);

- a clipboard, a pencil or pen, and paper;
  - clear plastic bags, screw-cap vials, labels, a small spatula, tweezers, fine forceps, a magnifying loupe, an insect aspirator, and any other equipment that can be used to collect samples for identification; and
  - a dust mask, knee pads, protective clothing, and a hard hat.
- 4) Inspect the building methodically. Begin outside with the grounds and inspect from the lowest level to the attic and roof.

The following list includes details of a building that warrant attention during pest inspections. It is presented as a tool for focussing on the pests' environment. Ensure action is taken on noted deficiencies after the inspection is completed.

### Exterior of Building

Landscaping around the building should include a sanitary perimeter that prevents plant and rodent colonization along the building wall. Check window boxes, planters, and planting beds.

Eavestroughs and downspouts should drain 2 metres from the building. The ground should slope away from the building. Avoid ponded water on the grounds.

Note loose or damaged areas on walls, flashings, and visible roofing.

Remove mammal, bird, and insect nests on or near the building.

Note insect build-up in or near exterior light housings and eliminate them.

Note poor disposal practices, piles of refuse, leaves, building materials, etc.

Ensure that compactors, dumpsters, cans, and compost are rodent proofed.

Check for rotting wood fencing and stumps, which are common wood beetle, carpenter ant, and termite habitats.

Note cracks. Insects can enter through 0.5 mm cracks in the building's foundation and under concrete pads; rodents can enter through 6 mm cracks.

Repair broken screens and lattice around crawl spaces, stoops, porches and steps.

Inspect external sumps, drains, sewers and ditches.

Ensure that seal details around doors and windows are intact. Check if thresholds are caulked to flooring in exterior doorways.

Inspect outbuildings in the same way as the main building.

### Interior of Building

#### a) Basement

Inspect the following areas for pest habitats and signs of activity:

- interior foundation holes, cracks, crevices, and rough masonry;
- along sill plates;
- mechanical or furnace rooms;
- trenches, sumps, drains, expansion joints, and cracks or pits in floors;
- inside electrical panels, accessible ducts, mechanical room equipment, air filtering media, chimney cleanout, and all open pipes or conduits;
- under staircases;
- around water-heaters, sanitary system pipes, and oil tanks;
- in cold rooms;
- exterior insulation;
- underneath and among all piles of supplies, cardboard, or construction material;
- elevator pits;
- janitorial storage areas and clothes lockers.

#### b) Main and Upper Floors

Inspect the following areas:

- foyers, hallways, rooms, and closets;
- stand-alone and built-in cupboards;
- perimeter of floors in rooms, hallway dead-ends, and landings;
- kitchens, cafeterias, and pantries;
- all window sills and between sashes. Note holes in screens, rotting sills, and deteriorating walls underneath;
- all horizontal surfaces, ledges, picture rails, mantels, and tops of door lintels;
- room corners;
- under carpeting in foyers, rooms, stairs, and landings;
- cracks in walls;
- crevices in flooring;
- loose or gapped baseboards;
- sliding pocket-door recesses;
- under stairways;
- electrical trenches;
- cold air returns;
- damaged packages of edible material;
- cafeteria storage;
- vending machines, microwave ovens, refrigerators, and stoves;
- underside of sinks;
- firewood boxes;
- potted plants;
- umbrella stands;
- under hard-to-move furniture, beds, pianos, cabinets, shelves, exhibit cases and their linings;
- behind radiators;
- under all items stored along walls;
- in, under, and on top of cabinets;
- desk drawers (be sure to pull out the bottom drawer and check the floor underneath);
- hampers for dirty work clothes;
- loading bay platforms, loading bay door seals, and dock leveller pits;
- railway tracks coming through doorways (e.g. in transportation museums);
- inside fire control cabinets and among folded fire hoses;
- behind pictures and wall hangings;
- overhead pipes;
- overhead light fixtures;
- above false ceilings.

### c) Attic

Inspect the following areas:

- exposed rafters;
- among and under loose insulation;
- near ventilation holes and pipes;
- around water-stained areas (e.g. end walls, chimneys, etc.).

### d) Roof

Inspect the following areas:

- intact membrane and shingles;
- build-up of dirt and leaves on roof and in gutters;
- nests in or around air intakes and exhausts.

## Sanitation and Pest Control Equipment

Tools that are used to clean throughout a building have a high risk of becoming sources of pests. Devices used to trap insects or rodents can also become sources of insect infestation.

Inspect mops, brooms, feather dusters, cloths, trash cans, ashtrays, janitorial cupboards, and the bag room for the built-in vacuum. Discard vacuum cleaner bags regularly even if they are not full.

Look for dermestid activity in insect glue traps, light traps and electrocutors. Look for insect contamination of baits in rodent traps. Check spider webs for trapped insects.

## Further Reading

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