

Integrated Preventative Pest Management

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In Integrated Pest Management (IPM) the focus has been about de-infestation. Museums employ procedures like freezing, heating, and anoxic fumigation to rid their institution of pests.

However, what museum should practice is Integrated Preventative Pest Management (IPPM). If pests are already inside wreaking damage, it may already be too late.

Pests come in a variety of forms: insects, rodents, bats, birds and mold. For insects, often the first evidence of their presence is the damage they cause, cast skins, frass or fecal spots rather than the pest itself.



A few examples:

Cockroaches:

If you see small (baby) cockroaches, there is an infestation in the system, but if only large cockroaches are seen, they are most likely just walking in.

Roaches spit brown fluid called attar, which they put where they like to hang out. They can smell the attar with their antennae and navigate back to the places where the attar is. Attar can get stuck on artifacts and is very hard to get out.

Cockroaches do damages to books; they cannot eat paper or the book, what they do is eat the glue in the paper and on the books.

American cockroaches have sticky pads on feet, therefore, they can inhabit all the floors of a museum. Oriental cockroaches do not have sticky pads, so they only inhabit the first floor and the basement.

American cockroaches excrete an extended pellet that looks like mouse droppings. However, mouse droppings are pointed and roach droppings usually have

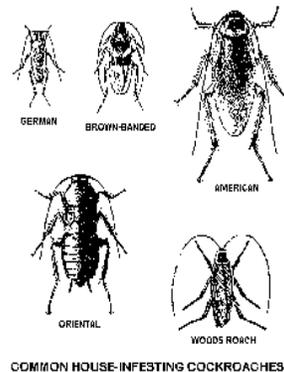
white lines running down the center.

If you see the wings and legs of roaches, you have two

problems: cockroaches and mice. Mice like to eat roaches and when they do,

they leave behind the legs and the wings.

Cockroaches love rodent bait. The bait is loaded with anti-coagulant, a blood thinner, which have no effect on insects. By misidentifying the droppings, baiting for mice will only aggravate the roach situation. So do not put down rodent bait.



COMMON HOUSE-INFESTING COCKROACHES

Webbing clothes moth

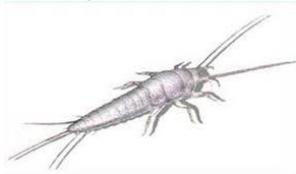
- Biggest problem in museums across the world
- Big problem in the metropolitan areas, primarily because of pigeons
- Feed on animal protein (keratin), fur, feather, wool, hair, anything from animals
- Female can lay hundreds of eggs



- Hang on walls during the day and flies around at night
- Frass of webbing clothes moths are pelletized and take on the color of the material they feed on.
- If you see pellets and webbing, you have webbing clothes moth.

Silverfish

- Nocturnal
- Like cool, moist condition
- Feed on dead insect parts
- They molt throughout lifetime
- Eat starch, wallpaper, and paper -do not often eat newspapers- too woody, likes finer finish papers because they have lousy mouthparts
- Eats areas around ink -have very lacey feeding



IPPM Program

Regular monitoring is key!

The exterior

On the exterior, do not have grass growing against the building because that will give pests a straight path to the interior.

If possible, put landscaping fabric on the grass. Landscaping fabric has holes that will not allow weeds to go through it, but will allow water to go down. Do not put polyethylene down on the ground, as it is a termite magnet. Also, trim the trees so that tree limbs are not touching the building, the roof or the chimney.

Lighting

You want to cut down the attractiveness of your museum to pest, especially at night.

Any lighting affixed to the building should be made with sodium vapor and not mercury. Lighting should have yellowish tint. Insects do not see red, but as red lighting is not attractive, the next best color to work against insects is yellow. Not only will sodium vapor lights repel insects, but they are efficient and do not use a lot of electricity. Sodium vapor lights should also be placed over personnel doors and dock doors.

Doors

Dock doors are notoriously loose at base and allow mouse to come into interior. Use bottom brush sweepers on doors. They are highly effective against rodents. Brush sweepers should also be installed on the frame of the doors. Glue boards should flank either side of the doors.

Glue board Program:

Use glue boards as a monitoring device. They catch a wide variety of pest species and the data from the catches can be used to give information on the pest, an indication of their numbers and seasonal cycles and where they congregate.

Model 100-1 glue board from Atlantic Paste and Glue Company is a good one to use.

Glue board should be placed:

- In corners, near doors, vents, fireplaces and other potential entry points for insects
- In dark, hidden areas that are not easy to survey
- In closets, and on windowsills

Windows

Biggest problem for windows is when they are double-hung, which allows easy access

for pests. To solve, get double-sided sticky Velcro and place a screen around window. Afterwards, put glue boards on window sill

Attic Window

- If windows will be in use, place screen
- If windows will not be opened, place plywood and caulk it.

Chimneys

- Screen chimneys
- Caulk flashings

Rooftop/Attic

On the rooftop, caulk where stone meets trim and in the attic, if it is being insulated, insulate floor unless the attic is a useable space. And if it is a useable space, insulation can go on ceiling. When using insulation, do not use paper or foil batt due to the potential of creating a vapor barrier, which can lead to mold

Displaying artifacts

- Exhibit case should be as tight as possible.
- If displaying a dark item, want solid light background to see frass should it occur.
- Don't use cork or any other multicolored, multi-textures material.
- The display case should be accessible, so if a problem occur, it can be resolved quickly.

Basement

- Use large glue boards and snap traps
- Make sure drains that are not in use are screened.

Storage

- Encapsulate all vulnerable item to keep them away from dust and critters. For example, adult webbing clothes moth do not feed as they do not possess functional mouths. Encapsulating materials will keep them protected.

- Metal cabinet, should be raised up from floor

- Glue boards should also be placed in storage area

In exhibits, do not use real wool, use acrylic, linen or any vegetable material like cotton. Do not use felt in exhibits, use burlap or acid-free tissue

Housekeeping

Housekeeping is the biggest neglected procedure in historic houses. When you clean, need to do more than vacuum.

- Vacuum and also use edge tool.
- Pay attention to perimeters.
- Pay attention to cracks in floorboard (for hair, and whatever else critters may want to snack on)

References:

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