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PEST BIRDS AND MODERN ARCHITECTURE

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FALL: Dave and I owe a significant part of our background on bird control to this series of conferences. We're glad to be back and tell you something about what we've been doing.

Talks in this and previous conferences have touched on the topic we are going to discuss. We are offering some remarks on what the entomologist would call the areas of cultural control. Our interest in this approach developed out of a series of information discussions we've had concerning regional planning programs at Penn State. Our ideas on the applications of this to bird management are not well developed; we'd be happy to hear your suggestions and comments. The ideas of cultural control are not new and are only one of many approaches. But perhaps we are reaching a stage of public concern about bird problems and about environmental contamination which make the climate for long range planning and cooperation more favorable.

Most of the investigators and PCOs engaged in the management of bird populations are aware that the problem has two basic approaches: attacking the birds directly or making the environment unsuitable. Both these approaches are generally applied after the bird problem has developed. In the terminology of the medical profession, we are "treating symptoms." We build our cities, shopping centers, and airports and wait for the bird populations to develop. Then we use our ingenuity to attempt to remove the birds with poisons, repellents, or structural modifications, while at the same time, someone has to clean up the mess and mollify irritated citizens and customers. In this report, we shall suggest some of the ways of reducing bird problems at the design level—a method that can be considered ecological exclusion or preventive pest control.

Preventive pest control, like preventive medicine, is aimed at the underlying causes of an ecological disease to prevent its occurrence. This approach has many applications. We shall restrict our remarks to the problems of sparrows, starlings, or pigeons roosting or nesting in or on structures. It's been said for a long time that we have inadequate information available on the urban ecology of these birds. In what kinds of places will they nest? How large are the preferred nest spaces? How enclosed? Why are some areas preferred roosting sites for bird flocks? What influences the movement of pest birds into a new area?

We know that animal populations require food and habitat to maintain themselves. Pest bird populations have developed because we have supplied an abundance of food and habitat. Our old style buildings with their "gingerbread," sills, ledges, gables, and towers provide some of the best bird habitat in our cities. We know the cost of "treating symptoms" or of rehabilitation, and we know, in part, why we have bird problems. Yet some of our modern building practices are leaving us wide open for more bird infestations. What we may be failing to do (and ecologists have made this mistake before) is to take our meager knowledge to the right people in time to prevent more ecological disease.

Now in this case the "right people" seem to be those designing and constructing buildings. Many architects are not informed of the pest problems that develop after their buildings leave the drawing boards; many contractors are not aware that use of certain materials or certain practices may bring the owner or his customers nuisance, health hazard, legal action, or recurrent expense. With the design and construction of new central cities on the horizon, it is increasingly important that building design take potential pest problems into account. With the rapid construction of suburban shopping centers and modern apartment buildings, some attention to the exclusion of pest bird habitats will go a long way toward preventing the development of new populations of pest birds. Ecological exclusion of some species at the design level may also help to reduce the bird hazard at the new airports and terminals which are sure to be built in the near future.

During the past year, Dave and I visited a variety of modern and modernized buildings, apartment complexes, and shopping centers in central Pennsylvania to survey the extent of bird infestation and why it occurred. In nearly every case, a design change would have prevented the problem. In a city which already had a healthy bird population, a downtown bank "spruced up" with a new facade of ornamental block, providing several hundred new "nestholes." A strikingly modern church had pigeons roosting in its sculptured walls, and its imported bells were spotted with "whitewash." A 400 unit apartment complex had a sparrow infestation even before its construction was completed, and the method of construction might permit movement of ectoparasites into the apartments. Four out of five shopping centers, a drive-in restaurant, and a car dealer, all with relatively modern buildings, had house sparrow infestations due to ceiling construction with corrugated metal sections or stamped beams which left openings into the enclosed part of the roof. Other habitats were provided by air conditioning equipment, electrical boxes, open light fixtures, and wall or ceiling signs.

Last month in Altoona, Pennsylvania, a pigeon carrying a burning cigarette to a home caused a \$2500 fire, calling attention to a pigeon population which was already a source of irritation to local officials. A potential fire hazard existed in some of the modern buildings we visited this summer. Several sparrow nests examined closely for ectoparasites contained numerous cigarette filters.

At Penn State, we are developing a cooperation between the Department of Architecture and the pest control people in Entomology. Hopefully, we will

all learn more about the uses of environmental design to prevent some of our future pest problems. What the architects want to know is "How much does it cost?" Is it cheaper to develop new building materials, to build bird-free buildings and shopping plazas than to pay for clean-ups and recurrent bird reduction? We think that in many cases it is. But the situations where bird problems can be avoided by architectural methods must be identified. More consideration should be given to area wide planning for continuing bird management, and more information on the cost-effectiveness of all our methods should be developed and discussed with designers and city planners.

SCHNEIDER: SLIDES:

When you walk down main street of any town as we did in State College, Pennsylvania, and nearby towns, you will invariably see some urban bird populations. Traditional building styles are generally complicated with a variety of sills, ledges, gables, and other features which invite bird nesting or roosting. Here's an example of ancient architecture, and there are pigeons in the classical belfry, too.

Many modern buildings by contrast have few ledges, overhangs, or hidden spaces because of their soaring vertical aspects, replacement of windows by glass walls, or smooth outer covering. But perhaps this is too hasty a generalization. Should we pat ourselves on the back too soon?

If we look at a so-called modern building more closely, or from a different angle, we will see the potential for pest bird habitat as on the sculptured walls of this church. Such potential exists not only in the ultra-modern design of some beautiful buildings, but it is inherent within some present day building materials and construction techniques specified by architects and performed by builders.

One such material is decorative concrete block. This material was originally developed for construction of well-ventilated but sturdy buildings in the humid tropics. Designers in this country then saw the decorative potential of hollow blocks as a "fence" to hide an air conditioning system atop a roof or as a wall pattern to please the eye by breaking the monotony of brick or stucco. Its use creates pest bird nesting habitat.

Another material often used in open walled buildings because of its low weight to strength ratio and low cost is corrugated steel sheeting. Easy to handle and cheap to install, this material has built into it spaces where a sparrow may nest at each point where the corrugation rests on another member and creates a box.

Because of its relative low cost corrugated sheet steel can be found in many locations where birds are least desirable. All shopping centers we visited with this type of roof and canopy had a sparrow population. The baby in this picture is directly beneath a nest.

Cost of bird proofing with repellents or toxic perches in such a situation with its many ins and outs would be relatively high, we suspect. Redesign to close the spaces to birds is really necessary for permanence. We suggest that such faults be eliminated from the design at the drawing board stage.

The situation shown here is additionally undesirable because of appurtenances such as lights and signs, both of which create boxes with the corrugations into which sparrows can enter. At another shopping complex with similar construction there was a similar sparrow population. Goods displayed for "dollar days" sales were stained with sparrow excrement.

Fluorescent fixtures over the sidewalk were installed with the end pieces not put in place. Holes thus created were used by sparrows for nesting. Feces stained the looks of this building which is little more than one year old.

The use of I-beams in open walled structures such as in this picture created prefabricated ledges for bird nests. Here is yet another example of an open walled drive-in restaurant; the roof is corrugated steel with stamped beams.

Again we see the fluorescent tube housing with no metal plate to close the end. Nest material was removed several times in the past year, and at one time hung down for nearly a foot. All this is above the food service area, where the birds, in this case house sparrows and grackles, also took their sustenance from spills.

Here is an auto dealer's outdoor patio showroom. The ceiling is made of paperboard, which either was wetted or torn enough to entice a sparrow to nest and create the typical house sparrow mess. This was outside the manager's glass-front office.

Here is a familiar signature to some. How many sparrow nests do you see? There are four sparrow nests behind this sign. The sign is made of steel and is hollow behind. It is bolted to the wall with a one inch clearance between bricks and the sign. The letters are 3 inches deep and are stuffed full of sparrow nest material. We found similar infestations on other types of signature signs.

In summary, we can say that modern design has not, as we might have thought, eliminated bird problems we had with older buildings. Indeed some very unique control situations have been created.

We feel that the kinds of infestation you have seen here could have been avoided if the designers knew what we have learned in this rudimentary study. It makes no sense for a city, as an example, to pay for control of birds in one place while building new habitat for pest birds at another.

There is a fair question at this point: Is it really worth it? Does the lower cost of cheap construction cover the continued cost of maintenance against pest birds? We do not have dollar figures or comparative costs yet, but we feel that ecological exclusion is worth the cost when we know it will prevent infestation. Of course this comparison will depend in part on the prices PCOs are willing to charge.

But for the present, we must try to sell the idea of ecological exclusion based on a long list of intangibles: annoyance to the public, potential disease hazard, ectoparasite annoyance, defacement, and other esthetic considerations. While this will sell corrective treatments, we must recognize that the real problem is not solved until we correct design faults before they are built.

To attack the problem at the community level a pest control operator needs to be able to identify problem areas even before the birds move in. He

should represent himself as an ecological manager of past birds, not as a "hired killer." Bill Spitz was correct; you can't afford the killer image.

Professional liason with architects' association, or through personal friendship, can pave the way for discussions of this mutual problem. Contact with civic leaders and participation in local city planning can serve as the spark which is needed to attract interest of the right people.

It boils down to an educational effort. In research, we must learn more of avian ecology in the urban environment. Designers, builders, and city planners need to become aware of the ideal pest habitats they are placing in the midst of our super-clean society. We should qualify this and say that this is not suggested as a total panacea but as a very effective tool. Thank you.

DISCUSSION:

LIEB: Is there any possibility of getting help of the insurance companies coming in there to give a policy when the building isn't right to protect their interest too?

SCHNEIDER: This is a possibility we haven't investigated. We only received this semi-official report from the Altoona Bureau of Fire last month, and we plan on making a probe into the Fire Underwriter's circle to see how they respond to this sort of thing. As far as we know this record is the first official piece. You've been working with the Fire Underwriter's, Phil Spear, . . .

SPEAR: Through the National Fire Protection Association. We do have some additional records, but they're not nearly as complete as they should be, and I would welcome having any additional ones.

SCHNEIDER: This admittedly is a hearsay report on what somebody else saw. We have the letter if anyone would want to see it.

SPEAR: There were two published in Audubon or official bird publications within the last two or three years I'd be glad to supply you with.

BERNARD STEGMAN: Is there a legal aspect to this problem? Is there a time of year when you're most likely to have some bird nesting?

FALL: Well, I think that if we looked hard enough we could say that if you build a building at one time of year, you're more likely to get infestation than if you build it at another time when the birds are out building nests, or when the fledglings are leaving. This perhaps is a time when we could look for new infestations. Again we haven't paid attention to that at this stage.

SCHNEIDER: If we consider roosting in addition to nesting, it's a year around problem.

DALTON: As far as pigeon nesting is concerned, it's two eggs six or seven times a year. That's twelve or fourteen pigeons all year long.

SCHNEIDER: We have found squabs in January. Any more questions? Thank you.

Modern building practices create many nesting and roosting places for pest birds. In these urban and suburban scenes, one can see that decorative concrete block used as a screen on both an apartment building and on a downtown bank building affords sparrows nesting protection. Likewise, the corrugated sheet steel provides nesting holes for sparrows at a market shopping center. The soaring sweep of the church is attractive, but the many stained glass insets provide roosting holes for pigeons.

