

It's a huge structure and they can see it from a distance and can avoid it. I don't think they are hitting the building during migration flights. What I see them doing is flying straight for the reflections of trees at the base of the Hancock building. They get disoriented or frightened by people and cars and aim for cover and smack straight into the glass. At times, I found so many dead birds I only had time to just shove them into my backpack to deliver to the Field Museum without even identifying them."

Birds often don't die directly after impact with a window or building. A leading researcher into the mechanics of bird mortality, Dr. Daniel Klem Jr., conducted a study in which he examined 300 birds that died after hitting windows (Klem 1990, Dunn 1993) from buildings in southern Illinois in the late 1980s. His research showed that: "The consequences of window strikes vary greatly for individual birds. Some are killed instantly.

Others are knocked unconscious or stunned and later succumb to their injuries or scavengers, or they recover enough to fly off weakly, but seemingly unharmed. Still others appear startled, but unaffected and fly off immediately after impact."

Klem's examination of the external and internal injuries of birds that struck windows showed that in every fatality there was some intracranial hemorrhaging. Skull fractures are very rare and none of the dead showed evidence of broken necks. Even birds that fly away from a window after hitting it are likely to suffer brain damage and internal head injuries. Klem's research suggests these accidents are likely to affect the bird's ability to survive and thrive even months later. Broken mandibles are a frequent result of a window smack, impairing the bird's ability to feed, leading to a long, agonizing death by starvation.

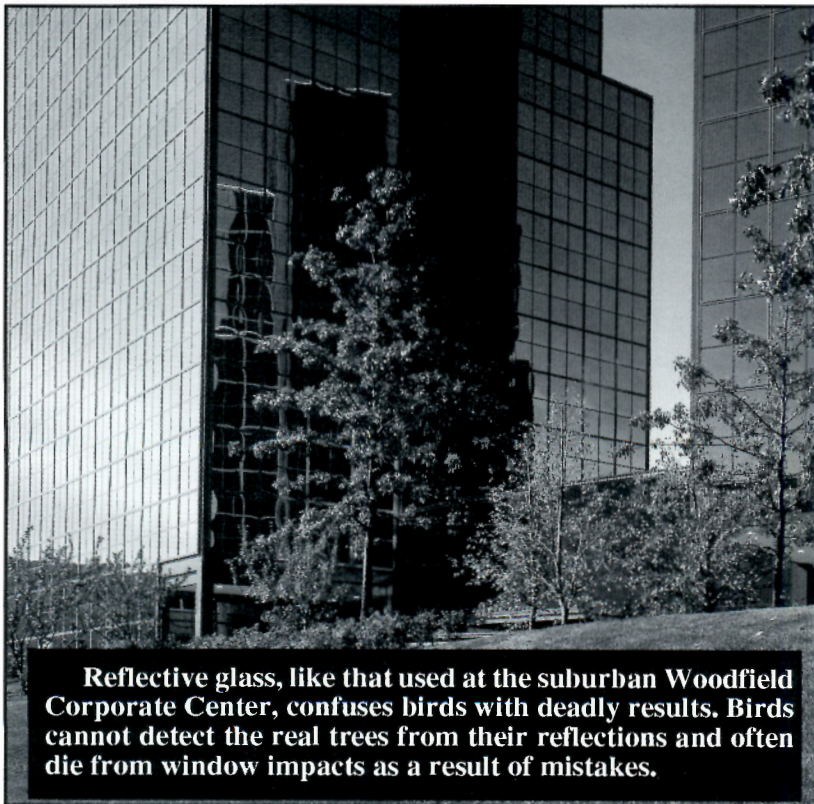
Bird mortality in the city of Chi-

cago itself, while tragic, may yield important data for understanding mid-continental North American bird migration. Dr. David Willard, collection manager at the Field Museum, has been collecting and preserving dead birds from McCormick Place every day during spring and fall migration for 15 years. He is beginning the mammoth process of collating and analyzing his data. Over the years, McCormick Place, right on the lakefront at the mouth of Burnham Harbor, has averaged a kill rate between 1,000 and 2,000 every year.

"The data we've collected will be extremely useful on a number of fronts," said Willard. "We can compare species and numbers from spring migration to fall migration. We can tell from our data what birds are doing better on their wintering or breeding grounds.

We can tell from the proportions of species we find killed which sex of a species tended to survive migration and wintering in South America better over the course of several migrations. We can see what effects a climatic change may have on bird health and population numbers. We can chart early and late migration dates year to year. There is really hard data on bird population numbers waiting for us as a result of the dead birds we've collected at McCormick Place."

Noting the predominance of building kills by species may also help researchers map the pattern migrating birds take as they move south to north and back again through the Chicago area. McCormick Place, right on the lakefront, appears to attract sparrows and thrushes, said Willard. Bob Hughes finds similar species killed by the windows at Navy Pier, another hazard jutting into Lake Michigan. The Hancock, a few blocks inland, is a prime warbler magnet. Al Welby finds a mix of sparrows and warblers at the Wedding Cake building, but also finds dead and injured American Woodcock and Common Snipe, possibly due to the building's



**Reflective glass, like that used at the suburban Woodfield Corporate Center, confuses birds with deadly results. Birds cannot detect the real trees from their reflections and often die from window impacts as a result of mistakes.**