

# Birds and Buildings:

## Case Study for How Our Built Environment Can Better Support Urban Wildlife

A Town+Gown Symposium Event in Collaboration with  
The Animal Law Committee of the New York City Bar Association  
@42 West 44th Street, New York NY  
Thursday, October 6, 2016, 6:30 to 8:30 pm.

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6:30—6:40 pm	Introduction and Welcome
6:40—7:00 pm	Wildlife and the Urban Landscape: What Ecology Can Tell Us Animals Need from Urban Environment
7:00—7:10 pm	Questions and Answers
7:10—7:20 pm	Break—Light Refreshments
7:20—8:20 pm	Panel Case Study Discussion: How Planning and Design Can Help Improve Urban Landscape Outcomes for Birds and Other Wildlife
8:20—8:25 pm	Questions and Answers
8:25—8:30 p.m.	Closing



## INTRODUCTION

The construction, reconstruction and maintenance and repair of public and private built environment artifacts or assets—commonly referred to as infrastructure (primarily of a horizontal or mechanical nature) and buildings (primarily of a vertical nature) are the result of service demands, are subject to constraints, physical and financial, and become the object of various built environment considerations, ranging from environmental sustainability, resiliency and climate adaptation. Within any jurisdictional boundary there are private owners and public owners, and among public owners, there are many legally distinct owners of public infrastructure and buildings. For example, with respect to roadways and park land in New York City, some are the responsibility of New York City, while others the responsibility of New York State. Some parks are the responsibility of the federal government.

Owners of infrastructure and building assets are in a continual process of maintaining and repairing them, sometimes at a level of renovation that approaches new construction, and replacing them with new construction. All such efforts deal with constraints and current policy considerations so that the pipelines for various efforts represent opportunities to bring in addition policy concerns to inform the planning and design of assets and their maintenance, repair and replacement. This event begins an initial collective discussion to support a Town+Gown research question entitled Investigations into the Relation of Built Environment Design and Natural Phenomena. The relationship of the built environment to all natural phenomena is complex especially as our landscapes are becoming increasingly urbanized, with more than half of the world's people now living in ever-expanding cities. Historically, our built environment and the processes that create and maintain them did not consider the ecological needs of non-human animals.



We see examples of interactions between animals and the built environment ourselves and in the press. For example, migrating birds often collide with glass structures, during day-time stop-overs, and are lured into dangerous environments by night-time lights. Certain birds that were once migratory but are now resident are attracted to certain assets that can conflict with public health and safety concerns and policies. Animals find themselves in previously thought unlikely places—above ground utility infrastructure and golf courses. Other animals, due to domestic pet practices, become feral and free-roaming—sometimes preying on native wildlife. This event will begin to explore how asset owners can take advantage planning and design, supported by the science of animals, to improve outcomes for both humans and animals.



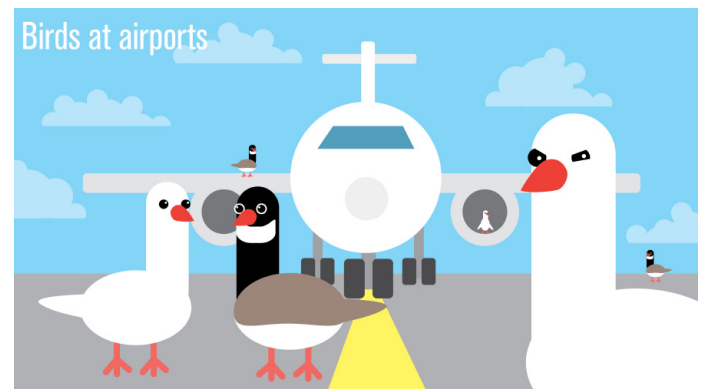
<sup>1</sup> In this taxonomy, parks and related green spaces, such as golf courses, are designed artifacts and share aspects of horizontal infrastructure; they often have vertical structures located within them.

<sup>2</sup> For this purpose zoning and other land use functions could fall under the physical constraint in addition to physical conditions themselves; they could also fall under built environment considerations.



The history of the sustainability agenda, now firmly embedded into the public's consciousness, is instructive. Concern with the environment began to change the practice of planning and designing assets after the science of climate change became known to increasing numbers of people outside science. The ability to quantify system-wide costs and benefits, based on science, permitted a credible expansion of the traditional cost-benefit model to include more aspects of life: economics, the environment and equity or social concerns. The sustainable—or triple bottom line—accounting paradigm has developed sufficiently since the early 1990s to support LEED metrics on buildings and ENVISION metrics on infrastructure and evaluation of built structures' impact on the environment. Hedonic-based difference-in-difference modeling also has developed sufficiently since the 1990s to support evaluation of economic impacts of built environment assets. Work on social indicators necessary to evaluate the impacts of such assets on equity within a jurisdiction is catching up. The social indicators that emerged from traditional theories of production and accounting, such as physical capital, human capital, individual capital, intellectual capital, relational capital, structural capital, organizational capital and natural capital, have been joined with a series of indicators that originated from sociologist Pierre Bourdieu as well as from the urban planning field, inspired by Jane Jacobs, and now include cultural capital, academic capital, symbolic capital and social capital.

Moving this robust assessment model into the space of specific animal sectors within the environment, it should be possible, over time, to develop and add animals to the paradigm to account for all aspects of the environment. With the science of animals as a foundation, it should be possible to begin quantifying the long-term costs imposed by current human action as reified in the built environment and the long-term benefits that can accrue to making changes in the built environment to support animal, as well as human, life. If it is possible to value and quantify the social benefits of expanding tree canopies and green infrastructure in an urban environment, which has its costs, it should be possible to perform similar calculations with respect to animals.



Adapting the triple bottom line accounting to account for animals in the built environment, however, will require a systems approach with respect to the built environment, especially for the corpus of inter-related public assets—with their accompanying and varied animal interactions—within a jurisdiction. One example of a systems approach to the issue of animal and built environment issues that can serve as an initial conceptual basis for a systems approach to plan and design future assets to both support animals within a jurisdiction and mitigate conflicts and negative impacts over time consists of the Federal Aviation Administration's approach to hazardous wildlife attractants on or near airports.

This approach, which is one-sided due to its limited objectives, focuses on a wide area—a five-mile radius around an airport—which reflects the reality of the animal world even in an urban environment. Moreover, it requires all public and private owners within that area to focus on the interactions between animals and attractants to wildlife. Implementation of such approach, which applies to all airports that have received federal grant funds, has resulted in the creation of long-standing multi-jurisdictional groups that coordinate efforts and cooperate. Groups of this nature would be an important pre-requisite for planning change. Government owners within a jurisdiction are responsible for much of the horizontal infrastructure within any jurisdiction. Among the government owners is at least one that regulates the land use processes within the jurisdiction. The long-standing existence of multi-jurisdictional groups related to airports provides government with an important model.

It is hoped that the following questions to be discussed at this event, focusing on migratory birds and buildings, will provide the foundation for future research projects, bringing together those from animal science, planning and design disciplines, focusing on improving animal/built environment interactions:

- Using migratory birds and buildings as the case study for other animal/asset interactions, what does the scientific literature reveal? Broadening the focus to include birds and the built environment more generally, what does the scientific literature reveal?
- What aspects of life in a complex urban environment does biodiversity influence?
- With respect to new construction or major renovations, what planning and design strategies could improve the outcome?
- What other strategies would be necessary to support such planning and design strategies?
- What information would be needed to expand the sustainability accounting paradigm to include animal/built environment interactions and what might such an expanded cost/benefit analysis of such interventions reveal?
- In what ways can biodiversity be viewed as both a response to and an indicator of other relevant environmental conditions in an urban built environment?
- What types of planning and design interventions would help to improve the urban landscape to better meet the ecological needs of wildlife while reducing the types of interactions that pose health and safety issues to humans?
- Moving into the regulatory field, what types of laws and policies would help to improve the urban landscape to better meet the ecological needs of wildlife while reducing the types of interactions that pose health and safety issues to humans?