

# A Flip Side

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Writing this article was prompted by my reflections related to a very successful recent landscape installation that assisted a hard working design team in their efforts to reintroduce several forms of wildlife back into an urban area of a big city. What made this project more interesting was the fact that this environmental component was installed on a site that has been transformed from an old industrial quarter into a high density, multifamily residential community. This design concept was influenced by our understanding that human population is only one of many forms of life that must coexist in our cities. Looking back on our recent history, we can see why urban growth in the Seventies, which was often concentrating on short term economic growth, lead many of our cities into some major ecological, social and consequently large scale economic troubles. Some big cities already face extremely difficult problems resulting from bad planning or lack of comprehensive vision of a long term urban development. Today, we are trying to undo these mistakes by promoting “environment friendly” practice. However, even the best intended action may cause some awkward unforeseen results. Without good understanding of the intricate interdependencies between environmental science, social relationships and economy, or by concentrating only on selected goals, we may accomplish surprising and unintended outcomes that may or may not be desired.

In that recently completed project, an area adjacent to some residential towers was selected to become a wildlife sanctuary. It was envisioned that storm water collected from the entire site would flow through



*Urban wildlife sanctuary in December*

a number of detention ponds and only after a significant rain events water would overflow into an adjacent creek. The design team, which included Civil Engineer, Environmental Consultant and Landscape Architect, carefully designed the size and shape of the water course, selected native plant material, strategically placed natural wood debris to increase biodiversity, selected the most appropriate type of growing medium, installed a temporary irrigation system to help with the establishing of the plants and provided engineering solutions allowing for a safe flow of storm water. Considerable efforts were made to create a natural ecosystem where ducks, frogs, and other forms of wildlife could coexist with humans within an urban environment. In less than two years from project installation the intended goal turned out to be a great success. Not only did wild ducks and many

other bird species settle in this area, but also a wide variety of other animals made their home in this artificially created environment. Even a family of beavers settled in the ponds, which are only 30 m from modern, concrete towers with hundreds of apartments, underground parking, children’s play areas and paved roads full of cars.

However, shortly after the beavers settled down, these new furry residents tried building a dam and altered the carefully calculated storm water management plan. As for the building material, beavers managed to cut down a significant number of recently planted trees in the area and started causing a considerable problem for the landscape maintenance within the site. The only chance for the remaining trees to survive was to protect them with an unattractive wire mesh. The new dam had to be taken apart on several occasions. ▶



*Beaver-felled bosque of trees*

Some people expressed their hope that maybe the local owners of dogs walking for daily strolls with their domesticated pets running near the water would eventually persuade the beavers to move away.

This unfortunate incident made me think of similar situations where well intended initiatives aimed at promoting good, sustainable design, sometimes cause side-effects resulting in considerable problems that were never intended. A good example of that situation can be the implementing of the LEED system that was developed in recent years and quickly become a design standard for many municipalities. The LEED system was intended to help urban planners, developers, engineers, architects, etc. make wise decisions related to construction practices. This system applied equally for the entire North America, allows for quantifying “environment friendly” initiatives in almost any project. Its intention is to provide a simple to calculate point system, allowing one to objectively measure the “friendliness” of a particular development to the surrounding environment. In the macro scale, a project labeled as LEED Gold is generally considered as more sustainable than a project that has fewer points and is therefore recognized as LEED Silver.

However, it appears that when considering long term sustainability issues, projects that were relying only on maximizing the number of “points”, created some unsustainable problems that are now difficult and costly to correct. I believe that besides counting the points one must also consider the micro scale effect of the project and carefully analyze the implemented initiatives within the particular site context.

For example, a close analysis may demonstrate that the decision to delete an irrigation system from a project, which protects potable water resources and is recommended by the LEED point system, may also result in total deterioration of a newly installed landscape, if it is installed on top of a building’s roof or on a slab above underground parking. Not everybody considers the fact that plants separated from ground water may have hard time surviving dry weather without supplementary irrigation water. Barely surviving plants may grow at much lower rate than intended. Therefore the anticipated cooling effect that plants were to provide on site may be significantly reduced. In addition, dry, unprotected growing medium may turn into dust and the entire landscape treatment may simply dry out and disappear within a relatively

short period of time. This example describes how a well intended decision of eliminating a non-sustainable irrigation system may result in a total destruction of a landscape treatment.

By altering a seemingly very small aspect of a created ecosystem one may unintentionally cause unforeseen problem that can cause a chain reaction and devastating consequences at a larger scale. There are many other examples where well intentioned decisions related to landscape architecture initiatives may result in awkward consequences. Heavy metals from air pollution may accumulate in the root vegetables grown within an urban agriculture, making them potentially harmful if consumed. A detention pond with a standing still water collected from rain events may become smelly or result in increasing local mosquito populations. Some composting bins in cities, installed to reduce the size of landfill sites may become smelly and full of fruit flies affecting the lifestyle of the residents. Attractive plant material that is well adapted to the urban environment, when planted in large groups of same or similar species, may become devastated by the spread of plant disease or an infestation with some unwelcomed insects. People tend to forget that nature has its own rules that may not necessary follow our objectives, even if they were very well intended.

In today’s busy time when professionals often rely on already established standards, it may be hard to “think outside the box” and keep questioning commonly accepted practice. However, I believe that if we want to be at the forefront of the environmental initiatives that are to shape our future cities, we have to keep carefully analyzing all new and old practice standards in relation to the long term, factual results of such practice. Only by critical thinking, while incorporating current environmental, social and economic issues into our practice, may landscape architects be able to minimize future potential problems and continue finding well thought through solutions to today’s challenges.



*Wildlife sanctuary in the City*