

## Reclaiming Ecological Infrastructure

By Gale Fulton

There are perhaps no two words in contemporary architecture and landscape architecture discourse that are more overused - and misused - than ecology and infrastructure. It may also be that there is no project of greater importance at this time than for architects and landscape architects to prevent the early retirement of such terms through a rigorous and sustained exploration of what such a coupling of terms might productively yield. Because of their apparent dissimilarities in form and function, it is somewhat strange to realize that both systems - that of global ecology and infrastructure - are actually quite similar in the sense that both seem to face an ever greater risk of catastrophic failure. One has only to think of the dire projections made by climate scientists regarding biodiversity loss as a result of global warming trends in the coming decades. Or, on a perhaps more visceral level due in part to the suddenness of the failure, one might recall the 2007 I-35W bridge collapse in Minnesota. For those who study the resilience of systems these failures can be understood as a regime change in which the system moves into a new basin of attraction and once again searches for a stable resting point. The degree to which this shift results in a noticeable catastrophe is entirely a function of the makeup of the system in question.

Aptum's investigation of ecological infrastructure launches a reclamation project that attempts to understand the resiliency of such systems while simultaneously speculating about architecture's role in issues of infrastructure and ecology today. They are obviously not the first to enter into this space. Questions about sustainability-related issues seem to be at the forefront of many areas of current research - design or otherwise. But Aptum's approach - an *architectural approach* worthy of the name - is predicated upon an attempt to seriously consider the role of design in the face of such all-encompassing issues as infrastructure and ecology. In general, this issue seems to create a polarization in the field resulting in two primary camps: those whose mission is to solve the problem no matter the cost to the broader disciplinary project of architecture, and those who see these pressing issues as leverage points through which to expand upon the disciplinary project of architecture. The former try to find a 'solution' at the expense of all other disciplinary concerns or questions, whereas the latter try to understand the issue as simply one parameter among many that may inform a design strategy. Freed from the proof required by the applied science approach to the issue and not interested in consensus-based solutions that try to be everything to everyone, the latter group proceeds provocatively and potentially disagreeably towards the projection of new architectures, infrastructures, and landscapes that qualitatively reorganize the built environment as we've known it. This group fully accepts the 'denatured' condition of the world and harnesses this fact as a generator of hybridized domains formerly known as either natural or artificial.

Such a position requires the acceptance of the 'scientific fact' of our global post-natural condition. This acceptance frees designers to explore and exploit this condition in ways that allow for new socio-cultural-ecological configurations. This does not suggest that they wantonly abandon

environmental or ecological concerns such as carbon emissions, loss of biodiversity, or water pollution, to name only a few of the issues that now fall under the umbrella of sustainability studies. Instead, these projects demonstrate an abandonment of the romantic idea of nature as pristine and non-human - sentiments that continue to prevent many, if not most, designers from embracing the full potentials of social-ecological hybrids.

But this new reality is difficult for many to accept, and 'naturalist fantasies' of pristine nature still claim the dominant position in the imagination of many - experts and laypersons alike. For designers, fertile ground remains open for explorations of these new hybrids whether they be humachines, cyborgs, or urbanatural infrastructures. These hybrid infrastructures fuse the pure function of modernist infrastructure with the adaptive intelligence of ecology in order to create new assemblages, which are socio-culturally and environmentally productive.

Such hybrid strategies are increasingly significant given the fact that many North American cities can be described as 'thin carpets of habitation' held together by a 'green' matrix as Rem Koolhaas famously said of Atlanta nearly twenty years ago. But while this reading of the city has undoubtedly led to a useful reconsideration of the contemporary city (landscape urbanism), it must also be remembered that not all landscapes are equal in the sense of their ecological performance - just appearing green in an aerial survey is not enough. In fact, Atlanta, like so many other rapidly (sub)urbanizing cities has seen an overall quantitative and qualitative reduction in its urban canopy in recent decades. The former results from fewer trees being planted than are dying or being removed for new development, and the latter is a result of an over-reliance on fewer species than are necessary to maintain a resilient, heterogeneous ecosystem.

What is required is an architectural approach rooted in a deep understanding of the contemporary metropolis and the performance of its ecological and infrastructural components while remaining wholly committed to the capacity/responsibility of architecture to project new formal and organizational schema for society. Such an approach, Aptum's approach, reclaims the incredible potential inherent in the term 'ecological infrastructure' from the clutches of those that are merely interested in applying the latest 'bmp,' and lends its unique intelligence to the development of a new bio-physical infrastructure that will be a crucial part of the resilient and vital city of the 21<sup>st</sup> century.