

## Around the Antenna Tree: The Politics of Infrastructural Visibility

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### Abstract

With the globalization of mobile telephony during the past two decades, cell towers have sprouted up across different parts of the world. The “unsightliness” of these towers has resulted in responses ranging from neighborhood protests to manufacturers’ concealment strategies. This essay explores the installation of towers in different locations from urban spaces to national parks and considers how their emergence relates to a set of concerns about technology, knowledge, and power. In addition to examining cell towers in different environments, I describe various “concealment strategies,” including covering towers in tree camouflage, mosque minarets, flagpoles, birds’ nests, and other hiding places. I explore what is at stake in hiding infrastructure and how such practices end up trading technological awareness for a highly synthetic version of “nature.” By disguising infrastructure as part of the natural and/or built environment, such strategies keep citizens naïve and uninformed about the network technologies they subsidize and use. Finally, I consider whether it might be possible to develop modes of affective engagement with infrastructure sites such as cell towers by discussing the work of artists such as Robert Voit (Enchanted Wood), Marijetica Potrč (Permanently Unfinished House with Cell Phone Tree), and Olaf Nicolai (Antenna Tree).

Communication infrastructures are frequently visualized as flow diagrams designed to approximate the spatial relations of a network. As a result, there is a tendency to overlook the uniqueness of particular nodes in a network: their physical form, the stories of their development, or the practices that surround them once they are activated. The antenna tree, I want to suggest, represents the potential to develop a more node-centric and materialist approach to the study of infrastructure. As a cell tower disguised as a tree, the antenna tree draws attention to the materiality of infrastructure in the very process of trying to conceal it. People often chuckle at these uncanny objects that have been designed to soften the severity of the steel tower with botanical plastics. This tower in disguise not only relays signals, but it is implicated in an array of industrial, legal, and socio-cultural relationships. Each antenna tree can be understood as a symptom of processes of fabrication and installation, state and local regulation, community delibera-

tion, and urban transformation. Thinking around the antenna tree, then, involves considering the fields of negotiation that are produced as an effect of infrastructure development and placement.

In this essay, I describe the emergence of cell-tower concealment strategies and discuss art works by Robert Voit (Enchanted Wood) and Marijetica Potrč (Permanently Unfinished House with Cell Phone Tree) that integrate antenna trees and provoke discussions of infrastructural in/visibility. I explore what is at stake in hiding infrastructure and how such practices may end up trading technological awareness for a highly synthetic version of “nature.” By disguising infrastructure as part of the natural environment, concealment strategies keep citizens naïve and uninformed about the network technologies they subsidize and use each day. We describe ourselves as a “networked society,” yet most members of the public know very little about the infrastructures that support that designation in broadcasting, web, or wireless systems. This issue of infrastructure literacy becomes more prescient as we enter an era of ubiquitous computing in which many different kinds of objects and surfaces will be used as relay towers and/or web interfaces. Since infrastructure sites are becoming more pervasive and less invisible, the work of visual artists can be extremely important in drawing our attention to them and triggering conversations about their design, placement, and effects.

### Concealment

Cell-tower concealment began in the US during the early 1990s, as wireless carriers installed new infrastructure in cities across the country. These coverings, or concealment strategies, as they came to be known, were marketed as a way of disguising unsightly towers installed in the midst of urban and suburban areas. As cell towers sprouted up, citizens groups nicknamed NIMBY’s (not in my backyard) formed in communities across the country to protest tower installation, especially in residential districts. Such groups expressed concern not only about neighborhood aesthetics, but also about potential health risks, since the federal government authorized tower installation without conducting trials to assess their effects on people living nearby. Others feared that cell-tower installa-

tion near their homes would reduce property values. By 2005, there were at least 500 formal complaints filed in communities across the US protesting cell-tower installations. Some communities (such as Redmond, Washington) passed ordinances mandating concealment of towers installed in residential districts, and Connecticut created a Siting Council to regulate cell-tower placement throughout the state.

Opposition to cell-tower placement was not limited to residential areas. One of the most controversial installations occurred in Yellowstone National Park. In 2001, Western Wireless Corporation mounted a 100-foot cell tower in close proximity to the beloved geyser Old Faithful. After the installation, it was impossible to look at the geyser without seeing the steel cell tower looming in the distance. In 2004, the environmental organization PEER (Public Employees for Environmental Responsibility) filed a petition for removal of the tower near Old Faithful, stating that it was illegally installed and done without public comment.<sup>1</sup> When Congress passed the 1996 Telecommunications Act, it authorized construction of cell towers on federal lands. Cell tower installations have occurred in other national parks as well, and wireless corporations provide funds to the National Park Service by leasing these lands. For instance, Western Wireless pays \$12,200 to the National Park Service each year to lease the land on which the tower near Old Faithful sits.<sup>2</sup> A side effect of the 1996 Telecom Act is that private wireless carriers now provide operating revenue to the National Park Service.

Installation of cell towers raises fundamental questions about control of property, whether on the ground or in the spectrum, in neighborhoods or national parks. The cell tower only gained public attention when installed in the “wrong place” – that is, when it was perceived as violating the sanctity of a nationally protected forest or a valued neighborhood. Such controversies are useful, in that they draw public attention to infrastructure sites and their relationship to social, economic, and environmental issues. Wireless infrastructure is defined not only as the capacity, as advertisers would have it, to speak on a phone “anytime anywhere,” it also involves (re)allocation of publicly owned natural resources, installation of new equipment on private and public properties, and restructuring of lifestyles and communities.

Given the controversies that emerged around cell-tower installation, manufacturers and wireless carriers resorted to the use of camouflage as a way to appease NIMBY and environmental groups. Increasingly, owners have concealed the technology in an effort to mitigate complaints. Larson Camouflage, based in Tucson, Arizona, devised the first “tree tower” in 1992. Since then, other companies with names such as Steel in the Air, SpectraSite, Clearshot, Crown Castle, Treescapes, TeleStructures, and Pinnacle Towers have sold and installed so-called “stealth towers” designed to look like different tree species, flagpoles, church steeples, mosque minarets, crosses, and grain silos, among other things. One company

customized a tower to look like an osprey nest. Another sells a “lightning tree” designed to look like a stump struck by lightning. These tower get-ups can cost up to \$200,000, and securing permission for their installation can require elaborate planning and meetings with property owners, community groups, local political officials, and representatives of wireless corporations.

With the globalization of wireless telephony, similar firms have emerged in parts of the world that specialize in international distribution of tree tower coverings. For instance, Envirocom, based in Gauteng, South Africa, sells antenna trees to clients in Uruguay, Brazil, the US, Portugal, France, the UK, Holland, and Turkey. And the Turkish company Preserved Palm, based in Ankara, has signed deals with clients in Dubai, Saudi Arabia, Qatar, Egypt, the United Arab Emirates, Moldova, Kazakhstan, and Germany, among others. A global industry has formed to conceal wireless infrastructure, and these new products have been installed in various sites for different reasons. Given this growing trend, we might ask: What is at stake in this concealment? When technologies remain hidden or obscure, they remain beyond public concern. Only when cell towers became visible in neighborhoods and national parks did citizens take an interest in them and their effects. Most people notice infrastructures only when they are put in the wrong place or break down. This means that public knowledge of them is largely limited to their misplacement or malfunction.

While concealing infrastructure sites may be a viable aspect of urban planning (as has long been the case for sewer, electricity, and water systems), one of its effects is to keep citizens and users naïve about the systems that surround them and that they subsidize and use. Because of this, it is important to devise other ways of visualizing and developing literacy about infrastructures and the relations that take shape through and around them. Are there ways of representing cell towers that will encourage citizens to participate in sustained discussions and decisions about network ownership, development, and access? What is it about infrastructure that is aesthetically unappealing? What form should infrastructure sites assume? Should they be visible or invisible?

#### Antenna Tree Artworks

While manufacturers and carriers have devised ways to con-

ceal cell towers, some artists have created works designed to draw our attention back to them. German photographer Robert Voit has exhibited a series of photographs entitled “Enchanted Wood” that were taken between 2003 and 2005 in the US, Great Britain, South Africa, Korea, Italy, and Portugal. The photos draw upon the conventions of landscape photography and scientific illustration to present an inventory of cell towers that have been camouflaged as tree species in different settings. Each photograph represents an antenna tree in isolation (cactus, pine, palm, or cypress, as well as the environment surrounding the tower: desert floor, grassy field, parking lot, or mobile home park).<sup>3</sup> By framing each tree next to an electrical box, Voit prompts the viewer to recognize it as an electrical apparatus and to reflect upon its status as such. What does it mean to view a tree that is actually a cell tower made of steel and plastic? In one photograph set upon a lush green landscape in Great Britain, the top of the tower is adorned with a thin branchlike structure that barely covers the transponders, so that they stand out silhouetted against the pale grey sky.

The tree’s conspicuously synthetic top works in stark contrast to its bottom, which is surrounded by a thick cluster of live plants and foliage and a rolling expanse of green grass. The photo works to expose an infrastructure site that has been carefully designed to blend in with the environment, but it also evokes the electrical sublime by subtly alluding to the complex and imperceptible signal transactions that occur across geophysical and electromagnetic territories.

Collectively, Voit’s photos activate a series of tensions between visibility and invisibility, spectacle and obscurity, and nature and artifice, and they provide a useful space for thinking about the politics of infrastructure concealment. While the photos resemble some of those that appear on manufacturers’ web sites, they are distinguished by their meticulous attention to framing, which privileges the tower against

its surroundings in the same way a botanist might focus on a new tree species. The sheer prominence of the antenna tree in each photo is a testament to Voit’s own curiosity about these new biotech forms, and he has roamed through different countries and settings to find them. In this sense, Voit’s work also merges with the practices of the online communities of Fraud-Frond.com and Waymarking.com, where users post images, descriptions, and/or GPS data of disguised cell towers and



Robert Voit  
*Enchanted Woods*

document their emergence in various locations.<sup>4</sup> As an art photographer, however, Voit is able to activate and play upon different visual conventions such as landscape imaging, scientific illustration, and advertising, and in doing so, he makes a stronger conceptual intervention in the representation of infrastructure. Not only does his work stir uncertainties about the distinction between nature and technology, he also ultimately provokes the viewer to glimpse something that is not meant to be seen: the practice of concealment itself.

While Voit represents the antenna tree in different settings and foregrounds, Slovenian architect and installation artist



Marjetica Potrč  
*Permanently Unfinished House with Cell Phone Tree*

Marjetica Potrč encourages us to consider the cell tower in relation to urban dwellings and space. Potrč has worked in different parts of the world and often integrates aspects of communication infrastructure (satellite dishes or cell towers, for example) into her designs. Committed to issues such as renewable energy, low-income housing, and visual ecology, Potrč's Contemporary Building Strategies series conceptualizes a variety of small dwellings based on her experiences in a range of locations including villages in the Brazilian Amazon, barrios in Caracas, neighborhoods in Pristina, and settlements in South Africa. One of the works in this series, entitled *Permanently Unfinished House with Cell Phone Tree*, was exhibited as an installation at the Salzburg Kunstverein in 2003 and the NGBK in Berlin in 2006. It featured a small pink house made of bricks with wooden planks that support a plastic awning over the entrance. Steel rods emerge from the rooftop to suggest that the construction is unfinished, and a cell tower disguised as a pine tree stands next to the house. Potrč explains that the house is designed to remain unfinished so the owners can avoid paying property taxes.

The installation provokes consideration of urban space

and regulation, of dwelling and communication. By placing the cell tower near the home, Potrč raises the issue of connectivity and low-income housing, symbolically inscribing this "illegal" structure within a field of wireless communication. While the piece could be read as echoing the concerns of NIMBY groups, Potrč's position differs. The conceptual basis for her work is grounded in her experiences far beyond US suburbs and national parks. Here the antenna tree appears to be a welcome, if awkward, addition to the urban landscape. The placement of an antenna tree next to an unfinished makeshift dwelling serves as a reminder that poverty persists within the boundaries of wireless footprints. Who is the owner of this property? Is the tower located on the homeowner's land or not? Just as wireless carriers pay permit fees to the US National Park Service, they compensate private property owners when they install and operate towers on their lands. In the context of low-income housing districts, there may be strong incentives to allow tower installations right next to a home to help subsidize the costs of ownership and/or construction, while in more affluent neighborhoods, such supplemental income may not be as necessary or desirable. Thus the antenna tree is a symptom of financial gain for the landowner that hosts it and of an increasing intersection in the determination of geophysical and electromagnetic property values.

Potrč's piece also raises important questions about the meanings of materiality in the age of globalization – whether the raw materials (brick, plastic, wood, and steel) used to construct the house and/or hide the cell tower, or the electronic signals that invisibly traverse transponders on the antenna tree. What is the urban environment made of, exactly? What kind of contradictory arrangements are built in different parts of the world? Why is it easier for wireless companies to install towers in urban space than it is for some citizens/workers to build and afford homes? What is the relationship between wireless infrastructure and the mode of unfinished and transient dwelling? These are the kinds of questions Potrč encourages us to consider. Her fieldwork in impoverished yet vibrantly resourceful communities in various parts of the world enabled her to position the antenna tree in a different milieu, where issues of class, taste, scale, ownership, and control emerge around it.

The politics of infrastructural invisibility that take shape around the antenna tree involve citizens' concerns about neighborhood aesthetics, health and property values, environmentalists' protection of national parks, global corporate enterprises, and artists who challenge us to reflect upon the contexts and effects of infrastructure concealment. Though these groups are situated around the antenna tree in different ways, they all draw attention to and help to generate dialogues about it.

Perhaps the ultimate irony of the antenna tree is that it actually exposes more than it hides and in this sense can be thought of as a site for generating further public knowledge about the materiality of wireless and other network systems.

We are socialized to know so little about the infrastructures that surround us, even though many of us use mobile phones each day. Would our experience of mobile telephony change if we knew more about the architectures of signal distribution? It is difficult to say, but we certainly would have a different relation to the technology if we understood it as something more elaborate and expansive than something that rings in our purse or vibrates in our pocket.

The emergence of wireless telephony has involved sale and lease of public and private property; allocation of space in the electromagnetic spectrum; redefinition of urban, suburban, and rural environments; and alteration of patterns of daily life. By thinking around the antenna tree, perhaps it is possible to begin cultivating new critical approaches to the study of infrastructure and its relation to cultures of everyday life.

#### Notes

1. Park Service Directors Silent as Cell towers Grow in National Parks. 2004. Omega News, [omega.twoday.net/20040427/](http://omega.twoday.net/20040427/).
2. Foster, M. 2004. Height of Yellowstone Cell tower Questioned, Preservation Online, [www.nationaltrust.org/magazine/archives/arc\\_news/031804.htm](http://www.nationaltrust.org/magazine/archives/arc_news/031804.htm).
3. Some of Robert Voit's photos are available at [www.robertvoit.com/bilder/serie1\\_new\\_trees/index.php?id=9](http://www.robertvoit.com/bilder/serie1_new_trees/index.php?id=9).
4. See FraudFond at [www.fraudfrond.com](http://www.fraudfrond.com), and the Disguised Cell-towers community of Waymarking.com at [www.waymarking.com/cat/details.aspx?f=1&guid=5df351c0-98ea-4b8c-9a84-844f67beb552&r=200](http://www.waymarking.com/cat/details.aspx?f=1&guid=5df351c0-98ea-4b8c-9a84-844f67beb552&r=200).