

Leif Brush and the Earth Philharmonic

by Dave Helland

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Iowa City, Iowa--Someday Leif Brush will write a symphony, but now he is busy tuning a tree, perfecting the Insect Broadcasting System, and inventing other instruments to perform the symphony. The rough idea for his river harp is on paper: now he needs engineers to put his idea into blueprint form and roughly \$500,000 to construct the instrument. His rain and draft monitors are perfected. These are all examples of what Brush calls terrain instruments, instruments played by the elements of nature. The music they make are the random, minute sounds of nature-water running down a tree, ants' footsteps, a leaf hitting a taut wire- electronically amplified and then recorded. Unlike his fellow professors at the University of Iowa's School of Art, who paint, sculpt or make prints in their indoor studios, Brush's studio is his yard and house. When the wind is strong, he monitors three steel stakes in the ground around a tree and several steel pins driven into the trunk, crotch, bark and limbs of the tree. By hooking one of the stakes or pins to a pre-amp, he can record the vibrations caused by wind buffeting the tree. Each is recorded separately, but his goal is to be able to hear them simultaneously. Soon, he'll be able to mix the recordings to bring out the most interesting sound taking place at any given moment.

Five wires of different gauges strung between two trees serve as his cricket and cicada monitor. Insect noises cause the the wires to vibrate slightly, but when these vibrations are amplified electronically they can be recorded. While recording this monitor, he heard strange noises he couldn't account for until he noticed that ants were crawling across the wires of the monitor. This led to the portable Insect Broadcasting System, consisting of an amplifier, transmitter and insect recording studio (a small plastic box with a tinsel-thin metal floor wired to pick up the sounds of ants walking).

Brush has perfected some other devices for recording the sounds nature makes but rarely lets us hear. His draft monitor is constructed of individually tunable wires and fits into a window. Besides letting flies in, it allows Brush to record sounds made by gusts blowing into his house. His rain monitor is a 300-foot length of 12-gauge wire. The amplified vibrations caused by raindrops hitting the wire sound like the random striking of piano keys.

"When you pluck a guitar the sound decays, dies out, after only a few seconds, but the decay time of the rain monitor lasted sometimes for more than a minute without any electronic restatement. This makes the acoustics of a concert hall sound like a peanut shell. Man-made acoustics are too limited and contained for me scale-wise," says Brush. My goals go beyond perfecting each individual instrument and then composing music the way a producer arranges various tracks in order to make a record. He wants to explore new arts forms by showing how art and technology can work together. "Lots of what we know trickles off from the branches of science while exploration in art has sort of ground to a halt. The uneasiness I feel with compartmentalizing science into one area and art into another is that it only siphons off the energy that should flow between the two."

The \$3,000 grant Brush received last year from the National Endowment for the Arts enabled him to show how science and technology can mesh. His river harp, "an interdisciplinary, generative public-use sculpture," sprang from the work he did under the grant. He proposed to the university a musical instrument that would span the Iowa River. Brush's rough design called for 75 wires to be strung between beams anchored on

both sides of the Iowa River. Three performance barges joined as one would float underneath the wires, and their parabolic shape would focus and reflect the sounds made by musicians, actors or dancers on the barge toward the wires. Sensors on the barge floor would make it possible to hear as well as see people dance. The river harp, however, was an idea whose time has not yet come.

While several engineering professors volunteered to work out the technical problems, the art and music instructors vetoed the project as too weird. What is Brush doing? Sometimes even he doesn't know. "I'm not going to put a label on my work before I know what the hell it is. Some people say I'm putting down certain artistic forms. Really, I'm just temporarily unplugging from them."