

# PICTURING SMOKE & MIRRORS

[ By Harrison Jacobs ]

## ART AND SCIENCE WORKING TOGETHER TO SHOW OUR CHANGING CLIMATE

“What is art for?” seems to be one of those cliché questions that get brought up too often during gallery openings. Nonetheless, it’s a question Sean Deckert often asks himself when working on his many assorted projects. While Deckert has no problem with “art for art’s sake,” he believes that art can change peoples’ ways of thinking and, if it can’t exactly provide all the answers for how to change the world, at least it’s a starting point for asking questions.

### LOCATION, LOCATION, LOCATION

Deckert is a photographer who defines himself by his environment. It’s therefore Phoenix, Arizona, is a metropolis at war with the elements. In summer, temperatures sit above 100 degrees Fahrenheit, while massive sandstorms whip through the city. For those not acclimated to the Phoenix sun, the climate can seem unbearable. Climate change has been a hot issue for

**TEMPE|MILL AVENUE THERMAL TOUR:** A still from Deckert’s two-channel video mixes infrared and daylight footage to offer a unique tour of the city that, as Deckert explains it, “redefines the spaces of the downtown Phoenix Metro area through scientific tools used artistically.”

years, but it's easy to talk about polar ice melts and forget about changes in a place like Phoenix. For a photographer as concerned with "locality" (his term) as Deckert, this is impossible to ignore.

A long-running local phenomenon he's observed called the Urban Heat Island can be described as a metropolitan area that's significantly hotter than surrounding rural areas. The mix of extreme climate and massive quantities of asphalt and brick makes Phoenix an ideal breeding ground for this effect. During the day, the extreme heat gets trapped in the materials. In cooler cities, the heat would dissipate overnight, yet in Phoenix, there's not enough time for structures to cool to their previous temperatures. This

gets compounded day after day, inching the temperature ever closer to hellish levels. Additionally, large expanses of urban glass and steel reflect the harsh sunlight, sometimes spiking temperatures higher in the shade than in the sun. While Phoenix residents understand this intuitively, outsiders are blindsided.

#### TINKERING WITH TECH

When Deckert enrolled in Phoenix Transect <[www.phoenixtransect.org](http://www.phoenixtransect.org)>, a small interdisciplinary class uniting photographers and social scientists to study and solve local issues, his intent was clear: to visually demonstrate the severity of the Urban Heat Island. He proposed to work with a specialized

FLIR infrared camera, provided by ASU's Global Institute for Sustainability SMARTlab, which he jury-rigged to produce video in addition to stills. The camera interpolated the data gathered from the stills into colors, with each pixel representing a certain temperature.

Typically used by researchers or the military, the FLIR camera has the ability to detect infrared radiation. While the camera was able to intake the radiation data by itself, special software—both expensive and exclusive to FLIR—was required to create Deckert's temperature maps. Being a student and short on funds, he contacted Chris Bainter, a manager at FLIR, and explained his situation.

"We knew he was a student," Bainter says. "For educational projects, funding can be hard to get, and we want to give students and educators the tools to be successful."

At Bainter's behest, the company provided Deckert with their proprietary research and development software and a serial dongle, requesting that FLIR be credited in the project and also reserving the right to use some of the resulting photographs. With these tools in hand, Deckert was able to interpret the camera's raw data into Thermo-vision infrared photographs, accurate to .01 degree.

Deckert then combined his images from Phoenix neighborhoods in lenticular prints to demonstrate the visual shift from a traditional view to the FLIR camera's infrared capabilities. He describes the lenticular effect as operating under the same principal as holographic promotions more commonly seen in advertising displays. When standing directly in front of the print, the viewer sees a standard cityscape, yet when he or she walks past the print, the normal image dissolves into the FLIR's temperature map, showing just how hot Phoenix gets. Deckert's final project for Phoenix Transect, entitled PULS (Phoenix Urban Light Study), consists of the prints along with video-art pieces of FLIR-camera-guided city tours.



#### STEP BEHIND-THE-SCENES

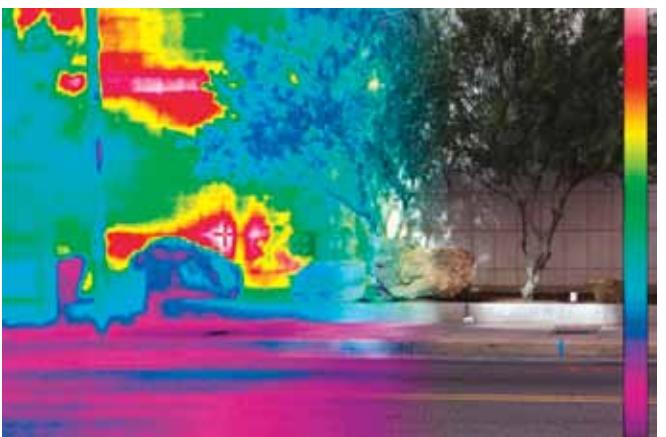


**URBAN HABOOB:** Deckert combined individual images of a Phoenix duststorm and other atmospheric phenomena using lenticular prints to create shifting views of a climate on steroids. To view this work as it appeared to gallery viewers, log on to PDNedu's digital edition <[www.digitalmag.pdn.edu/pdnedu](http://www.digitalmag.pdn.edu/pdnedu)> for a video of the installation.



All photos this spread © Sean Deckert <[www.seandekert.com](http://www.seandekert.com)>

**WHILE THE AESTHETICS ARE IMPORTANT, HE FEELS IT'S THE SCIENCE THAT DRIVES THE PROJECT. "THE ART IS THE BY-PRODUCT," DECKERT SAYS. "WHEN I STARTED USING THE FLIR CAMERA, THAT'S WHEN I STARTED GETTING HARD NUMBERS. THAT'S WHERE MY IDEAS AND PHILOSOPHIES BEGAN TO BE PROVED IN FACT."**



**URBAN HEAT:** In the lenticular print Street View #1, Deckert combines daylight and FLIR infrared camera views to depict heat signatures in real time.

#### THE MERGING OF SCIENCE AND ART

If this project sounds like a scientific study, consider it intentional. Although the Transect class is led by photo educator Mark Klett, the class roster included as many social scientists as photographers. According to Deckert, they all brought issues to bear on his idea, most notably Karina Benessaiah, a human environment geographer. While she was not involved with the majority of Deckert's project, interviews about the climate that she recorded with local residents were incorporated in an audio track for Deckert's video-art pieces.

Benessaiah notes, "I don't think we ended up doing enough sampling to be a science project per se, but I think that it's a beginning," adding that a potential convergence of art and science is evidenced in the way the project adopted scientific methodologies while using "the power of arts-based representation" to add weight.

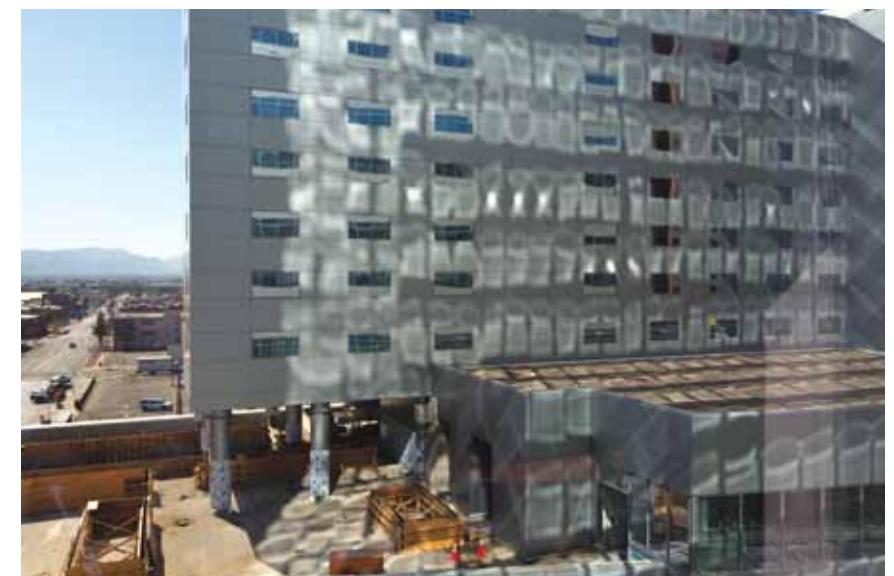
Deckert talks about this work with an enthusiasm that speaks to a potential for encouraging changes in urban planning. While the aesthetics are important, he feels it's the science that drives the project. "The art is the by-product," says Deckert. "When I started using the FLIR camera, that's when I started getting hard numbers. That's where my ideas and philosophies began to be proved in fact."

#### ART MIMICS LIFE

As he was working on his PULS project, Deckert drew on his sculpture and mixed-media skills to design a gallery for the first of his findings, and aesthetically demonstrate his point. In the exhibition *Smoke and Mirrors*, he assembled a series of lenticular prints depicting

ing sandstorms in Phoenix, a recent phenomenon further aggravated by the Urban Heat Island. He arranged the work in a circular fashion, requiring viewers to start at the beginning and follow the show strictly to the end, bringing them to where they started. The show took place in December, so, for a change, Phoenix was cold—until Deckert turned up the heat in the gallery. At first, the audience didn't notice, but over time, the gallery became stifling. The whole experience was meant to mimic the unbearable heat, the cyclical nature of the Urban Heat Island and the inescapability of Phoenix's sandstorms.

When asked why he constructed the



**CITYSCAPE LOOKING SOUTH:** Reflected light from a mirrored glass and steel structure tracks across the side of the City of Phoenix Transit office. Related temperature data proves a heat increase of between ten to 15 degrees.