

## San Antonio as Solar Mural City ~ Fueled by Monarch Butterflies

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Imagine solar panels not looking like dark stamps on slanted surfaces. Imagine images, color, designs and drawings. Well that revolution is taking place in San Antonio, soon to be the world's first Solar Mural City!

Thanks to Seattle-based Land Art Generator Initiative (LAGI), global leaders in the movement to make renewable energy beautiful, certain San Antonio streetscapes will soon see the world's first Land Art Generator Solar Mural artworks. I've served as project manager/producer for these projects, collaborating with LAGI, EPIcenter, the Local Initiatives Support Corporation (LISC), the Ella Austin Community Center and the Esperanza Center.

Since 2010, LAGI has been conducting biennial, free-and-open, international design competitions at locations as far flung as Abu Dhabi, Copenhagen, Melbourne and Santa Monica. These competitions are designed "to accelerate the transition to post-carbon economies by providing models of renewable energy infrastructure that add value to public space, inspire, and educate—while providing equitable power to thousands of homes around the world."

Land Art Generators are pieces of public art that produce renewable energy—solar, wind or water. The San Antonio Land Art Generator Solar Mural installations are of three types—freestanding frame, wall-mounted and roof-mounted.

The world's first Land Art Generator Solar Mural artwork was *La Monarca*, a four-panel freestanding frame model who made her first public appearance at Luminaria in 2017. She is a 6.6' by 11' *Loteria* card marked '24' in homage to the number of Monarch butterfly/pollinator-protecting actions the City of San Antonio pledged to become the country's first National Wildlife Federation

Monarch Champion City. *La Monarca*'s imagery is by San Antonio artist Cruz Ortiz. She currently seeks a permanent home, a place she can provide power to an equally worthy project.

The Esperanza Center's Land Art Generator Solar Mural project at JT Brackenridge Elementary School is the world's first wall-mounted Solar Mural installation.

The Esperanza Center has long collected and exhibited historic photos fabricated into large fotobanners displayed on fences and other surfaces siding the streets of San Antonio's historic Westside. The project, *En Aquellos Tiempos: Fotohistorias del Westside*, has become a model street museum highlighting historical and cultural heritage.

Along the Guadalupe Street fence of JT Brackenridge Elementary School, arrived at on the left as you enter the Westside over the Guadalupe Bridge, are fifty sepia and black-and-white shots dating from 1906 to 1960 of youth from this *barrio*. The stretch is impressive, seemingly immense during the day, but invisible at night: Esperanza has long wanted to nocturnally illuminate this important "art"-ery.

Solar Mural® artworks have developed from a concept by the Land Art Generator Initiative into a new take on the already prolific mural street art of San Antonio. The city's Westside is home to mural tours, mural blessings and a large population of mural-making artists. Now, however, anything a mural artist can paint onto the side of a building can be transferred onto solar panels and mounted to collect solar energy.

This past spring, Land Art Generator Initiative conducted renewable energy workshops with over 75 of Mr. Vega's fifth grade science class students at JT Brackenridge Elementary School. The kids learned about how this new technology is extending the mural artform into power-generating imagery. They also helped determine the content and composition of the new wall-mounted Solar Mural installation on the Brazos Street facade of their school.

To complement this effort, LAGI also worked with a group of Westside community elders to address the same challenges: what should be projected by this project and how.

Consensus between the two generationally-diverse groups led to the selection of two images for this Solar Mural artwork: a sepia-toned 1908 class picture of JT Brackenridge Elementary School students at the school's nearby-but-long-gone original site juxtaposed against a current 2019 color shot of Mr. Vega's 75+ fifth-graders.

The Land Art Generator Solar Mural artwork is composed of eighteen 60-cell solar modules (nine modules per photograph, each in a 3x3 composition). Artist Adriana Garcia enhanced the photomontage, and internationally acclaimed Chicana poet Carmen Tafolla added text.

The eighteen modules are installed on a metal rack frame mounted to the building facade of brick veneer over concrete masonry. It was originally hoped that an exterior conduit could connect the modules to the building's electrical circuit. Instead, because of timing and plans for implementation of a school Bond initiative, this became impractical and unfeasible. The San Antonio Independent School District has been promised that neither their funds nor access to the school's interior would be needed to achieve this artwork and its illumination of the fotobanners.

The project is considered permanent; it will produce power for thirty years or more--generating the same amount of solar energy as a similarly-sized home rooftop array. Each *fotohistoria* is individually lit from below by ground lights.

Project partner South Texas Solar Systems turned the technobabble for a specific type of needed inverter/charge controller into a commodity the project got for a deeply-discounted price from the generous and ingenious folks at OutBack Power in Nevada, developers of FlexMax equipment. These conduits store solar energy absorbed by the artwork in a small battery barn on the JT Brackenridge campus. A \$1,000 grant from the San Antonio chapter of the Awesome Foundation

built the battery barn. Donated for the project from the Albuquerque-based Unirac is the rack frame holding the solar panels to the school's south-facing façade.

At the center of the Land Art Generator Solar Mural-making process are “solar skins” embedded with both imagery and photovoltaic properties. These are printed only by Sistine Solar—developers of this game-changing technology. If you look closely the solar skins, you can see the imagery is composed of small dots--much the same way pixels comprise a digital image. These pigmented dots become both picture and solar attractor.

San Antonio's own Mission Solar generously sent their quality-control team to Esperanza's second floor performance space to teach Esperanza staff and volunteers how to adhere the solar skins onto the surfaces of the solar panels. This skill was basically invented by the Mission Solar quality-control team when they laid the solar skins onto the four panels of *La Monarca* in 2017. It is a process not unlike laying a glass protection layer on a cellphone surface, but at a much greater scale. Akin also to adhering UV-blocking window film to your home or car, the solar skin must be carefully laid then squeegee-rubbed to mitigate creases and abolish air bubbles.

The solar skins of *La Monarca*'s four panels took over an hour each to be professionally applied. Esperanza staff and volunteers—led largely by Esperanza staff member Paul Plouff and other staff, honed the technique such that the final third of the eighteen panels were completed in fifteen to twenty minutes a piece. Most successful was a rolling method suggested by *gente* volunteer Veronica Sandoval who brought up from her car a lucite dowel exactly the length of the solar panels' width. The process per panel took four or more folks to execute: one or two people roll the dowel, two people handle the solar skin, and a team of folks spraying water onto each panel and solar skin surface. I became particularly adept at readying the first edge for the procedure by pressing the solar skins onto the water-sprayed panel selvage. Keeping moist the surface of panel and skin was key to the technique.

With support from a variety of sources including Esperanza's community gente, the JT Brackenridge Elementary School Solar Mural project materialized. Serendipitously, the south-facing wall of JT Brackenridge Elementary School is directly across the street from what was Giovanni's Pizzeria; upon his death, John J. Gagliano, proprietor and owner left the pizzeria building to Inner City Development and the Esperanza Center who are redesigning it as a site for fresh produce in the Westside food desert.

A third San Antonio Land Art Generator Solar Mural project is in production for the roof of an educational outdoor learning center, complete with outdoor kitchen, underway inside the community gardens of the Eastside Ella Austin Community Center. This project's imagery is by Eastside artist Kat Cadena and will also celebrate the Monarch Butterfly. [Note: the location of this mural has been changed to the west-facing façade of Booker T. Washington Elementary School, February 2021).

When we started out working on the Solar Mural artworks a couple years ago, my idea was that *Las Monarcas* could be a swarm of Monarch Butterfly-inspired Land Art Generator artworks designed for placement at and to provide power to social service centers, municipal buildings or eco-cultural tourism destinations in the City of San Antonio, or other stops along Monarch Butterfly migration routes, serving as emblems for the full range of issues Monarch Butterflies have come to represent: metamorphosis and emergence; species extinction due to global warming and climate change; immigrant, asylum seekers' and refugee rights; and, now, renewable energy and regenerative design.

Solar Mural City, USA: San Antonio's Butterfly and Pollinator Festival just happened and the Monarchs are right now making their migration to Mexico through San Antonio. Transforming plain old solar panels into murals seems almost as miraculous as the Monarchs themselves!