

EXPLORE, ENGAGE, ENJOY

LIGHTS ON TAMPA

2015



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LIGHTS ON TAMPA 2015

Engaging art

American cities and towns aspire to be places where people want to live and want to visit. Having a particular community identity, especially in terms of what our towns look like, is becoming even more important in a world where every place tends to look like every place else. Places with strong public art expressions break the trend of blandness and sameness, and give communities a stronger sense of place and identity.



Source: Americans for the Arts Public Art Network

Making connections

Once upon a time, libraries were looked at as places to read books and do quiet research. Today, libraries have become media centers that engage learners and provide interactive activities. So, too, have cities and communities evolved. Making connections and providing an interaction within the community is what Lights On Tampa is all about.

Connecting people to place, place to the arts and the arts to people defines Lights On Tampa. Art and technology are both avenues in which many things travel. Recognizing that culture and innovation emerge from the community, Lights On Tampa provides a foundation for exploration of ideas and puts them in the spotlight.

Through the extraordinary mingling of technology, art, music and audience participation, viewers will become immersed in the interactive exhibits. Learn more about the connections between art, light, science and the community on the pages of this Newspaper in Education publication.



Dear Tampa Bay:

On Friday, February 20, 2015 and Saturday, February 21, 2015, Lights On Tampa returns to downtown Tampa. The event ushers in Gasparilla Arts Month, a month that celebrates Tampa's commitment to culture and the arts with the Gasparilla Fine Arts Festival, Music Festival, and Film Festival.

Lights On Tampa is a major cultural event that brings free and public access to artistic excellence in addition to great educational content as seen here in the Newspaper In Education insert. This program is a public/private partnership and is another successful example of what can be achieved when the public and private sectors work together.

The vision of this program is to bring people together to experience public spaces in dynamic and transformative ways, and it is making a difference in our downtown. Since its beginning in 2006, close to \$3 million dollars in private sector funds have been invested in light-based public art in our community.

There has been such positive and impactful growth in this city in recent years and public art is very much a part of that. From our Riverwalk to multifamily homes to new event oriented city parks, public art plays a key role in contributing to vibrant downtowns, neighborhoods or public spaces.

I feel strongly that a city's role in culture is to enable people, offer free access to artistic excellence and provide opportunities for engagement. This project seeks to do just that, and more is to come!

Please come to Lights On Tampa to enjoy, experience, and engage. This is for everyone, and I hope to see you there.

Sincerely,

Mayor Bob Buckhorn

Regards,

Mayor Bob Buckhorn

Exploration of art



Learning with the Times

So what is art? Does art have to be permanent, or can it be transitory? Does art have to involve a passive audience, or can the art be interactive? Should art be tangible, or can it appeal to the senses emotionally? There are many definitions and genres of art. The common thread in all of the definitions is that art has an aesthetic principle, or visual beauty. However, since everyone defines beauty and art differently, that definition is highly subjective. How do you define art? Explore the art depicted in this educational publication and on the Lights On Tampa website, lightsontampa.org, as well as art (photos, advertisements, cartoons, headlines) shown on the pages of the *Tampa Bay Times*. Think about the different types of art and the meaning art has for you personally. Do you see things inside the images or graphics that others do not? Can you detect the tone of the artist and the mood of the artwork? How does the art make you feel? Keep a journal of your thoughts.

What is art?



Rendering by Wannemacher Jensen Architects

Art and light

Light and art go hand in hand. From the use of light and shadow in paintings, sculptures and architecture to the use of bulbs, neon, fluorescent tubing and LEDs, artists have used light to express themselves.

“One of the attractions of light is the immediate physical, optical quality — it’s going to be the thing that gets your attention,” says John Ravenal, a curator at the Virginia Museum of Fine Arts. “Dan Flavin called it the ‘factuality of light.’ It’s bright, it’s commanding and metaphorically it’s so rich. It’s just basic — there was darkness, and then there was light.”

The juxtaposition of light and dark has been a constant theme in art spanning back to Greek and Roman sculpture to Renaissance painting to film. As technology has advanced, the use of light as an actual medium has become more prevalent.

But as technology advanced from the glow of the electric lightbulb to the computer monitor, artists have been experimenting with actual light as material and subject. The 1960s saw a high point in activity, with artists such as Flavin, Bruce

Nauman and James Turrell creating sculptures and environments out of diffuse light or radiant fluorescent and neon tubing. Today, younger artists are looking beyond their forerunners and taking light in new directions.

Source: Hilarie M. Sheets, *ARTnews*

Photo credit: Tampa Bay Times

Musical composer Paul O’Neill once said, “The purpose of art is to create an emotional response in the person that is exposed to that art. And there are three categories of art; bad art, good art and great art. Bad art will elicit no emotional response in the person that is exposed to it ... Good art will make you feel an emotion that you have felt before ... Great art will make you feel an emotion you have never felt before.”

Author Leo Tolstoy wrote: “In order correctly to define art, it is necessary, first of all, to cease to consider it as a means to pleasure and to consider it as one of the conditions of human life ... Every work of art causes the receiver to enter into a certain kind of relationship both with him who produced, or is producing, the art, and with all those who, simultaneously, previously or subsequently, receive the same artistic impression.”

Art every day

Robert Lynch, president of Americans for the Arts, challenges you to review your Facebook feeds that are filled with vacation photos. Chances are good those photos include some type of public art: statues, lighted buildings and bridges, graffiti.

Lynch writes: “We often photograph these pieces because they help us remember a space, because they make that trip unique and because we are moved, inspired or maybe even upset by their presence. Art plays an important part in our tourism experiences and public art especially helps us interact and converse with places throughout the world.”

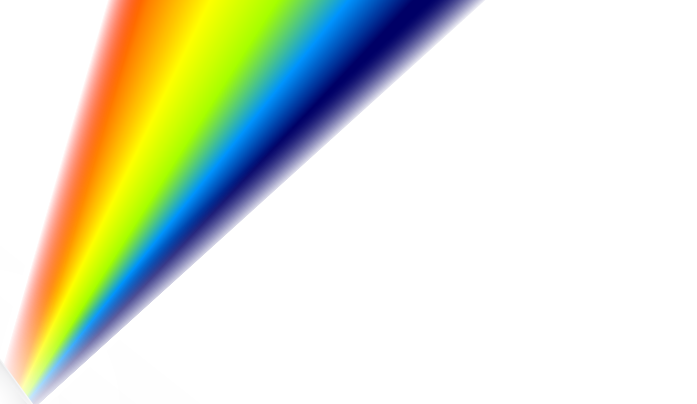
While the term “public art” may make you think of war monuments and statues to politicians, public art is much more than that. “Today, public art takes on a wide range of forms and sizes as well as scales and can be temporary or permanent. Public art includes murals, sculpture, memorials, integrated architectural or landscape architectural work, community art, digital media and even performances, as well as festivals.”

Think about how art has evolved and grown over the years as you journey through this publication. As you explore this educational publication and the Lights On Tampa structures, think about how the integration of art and light communicates to us. Keep a journal to explore your ideas and thoughts.

Photo credit: Tampa Bay Times



The science of light



Light art history

Natural light has been an important part of art since its beginning. Shadow and light are paramount for painting. But while natural light has always been at the forefront of art, adding artificial light has a rich history, too. Did you know that light artworks date back to the 1920s and 1930s with the creation of kinetic sculptures? Artists such as Thomas Wilfred and László Moholy-Nagy developed moving light designs, which debuted in New York City. In 1919, Wilfred created organs that projected lights when played.

During the 1960s, it became more common for artists to use light. Bonnie Clearwater, director of the Museum of Contemporary Art in North Miami, credits the use of light in art to painters like Mark Rothko. “A good deal of the interest in light occurred after World War II, when the studies in phenomenology and Gestalt psychology were being popularized,” Clearwater says. “Rothko was aware of this. He was interested in creating a physical response of the body to light. Artists like Robert Irwin and Nauman and Turrell, who were in L.A. in the 1960s, picked up this aspect of Rothko’s work rather than the Abstract Expressionist gestures and started creating works in which the viewer becomes, in essence, the performer, and is being made to do things according to the space that these artists have created.”

In the 1970s and ‘80s, artists began using fluorescent and neon lights to enhance, distort and illuminate the atmosphere. The next progression had light-emitting

diodes (LEDs) being added to the artistic — visual and auditory — mix.

ARTnews editor Hilarie M. Sheets writes, “The spread of digital technology has dramatically expanded the way artists use and think about light.”



Photo credit: Ben Dickmann

Science and art

Art intersects with science in many ways. Art can help us explore, understand and appreciate our natural world: Paintings, photographs, sculptures as well as light installations can illustrate the landscapes, flora, fauna and people of places near and far.

Art can help us to better interact with the world around us: Architects, designers and artisans create

technological advances in their search for better materials for their craft or invent new uses for old materials.

What light through yonder, window breaks?

Okay, so poetically speaking, light can represent beauty as is alluded to in the William Shakespeare line from *Romeo and Juliet*. But scientifically speaking, light is simply a ray that moves from one point to another. Right? Well, not exactly.

The first theories about light surfaced during the time of the ancient Greeks, but during the following centuries, the theory of light has changed rather dramatically. From Pythagoras to Epicurus to Euclid and Ptolemy, the ancients presented many theories about how light rays work.

Creating magical art

Whether low-tech or high-tech, the use of light in art is becoming increasingly commonplace. Artist Dan Flavin says, “One might not think of light as a matter of fact, but I do. And it is, as I said, as plain and open and direct an art as you will ever find.”

Research and write a report about one of the following innovative artists. While you are doing your research, pay attention to the type of light the artist uses and the effectiveness of that light. Share what you have discovered with your class.

- Dan Flavin
- Mark Rothko
- James Turrell
- Nadine Robinson
- Jennifer Allora
- Terence Koh
- Spencer Finch
- Robert Irwin
- Kira Lynn Harris
- Olafur Eliasson
- Guillermo Calzadilla
- Charles Ross
- Bruce Nauman
- Sanford Biggers
- Nathaniel Rackowe
- Ivan Navarro

Source: Hilarie M. Sheets, *ARTnews*

art installations, buildings, furniture, housewares and tools whose function is as important as their aesthetics. Artists and viewers interact with the works as well as the environment in which the art is presented.

Art can drive scientific innovation and push the boundaries of technology: Artists often spur

Then, in 1690, Dutch mathematician-astronomer Christiaan Huygens “speculated on the existence of some invisible medium — an ether — filling all empty space between objects,” and the concept of light waves took flight. In 1704, Sir Issac Newton stepped to the plate suggesting that light is actually composed of particles.

Source: How Stuff Works

Light as a wave

Isaac Newton's corpuscular model of light was introduced in the 1700s. Around 1802, English physician and physicist Thomas Young demonstrated that "an interference pattern is produced when light from two sources overlaps." This theory proved that light has a wave-like characteristic. *Encyclopaedia Britannica* defines light and sound waves: "A wave is a disturbance that spreads through space. Most waves move through a supporting medium, such as water or air. The wave provides a disturbance that physically alters the medium. The time dependence of the displacement at any single point in space is often an oscillation about some equilibrium position."

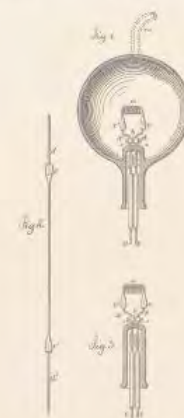
Source: *Encyclopaedia Britannica*

Light as particles

On Dec. 14, 1900, Max Planck introduced a simple concept: Light must carry energy in separate quantities. Five years later, Albert Einstein took Planck's theory a step further in studying the photoelectric effect. Together Planck and Einstein promoted the particle theory of light. And, in 1913, Niels Bohr "proposed that electrons exist in discrete orbits based on their energy." He took the ideas to the next level with the quantum theory of light – "the idea that light exists as tiny packets, or particles, called photons".

Source: How Stuff Works

T. A. EDISON.
Electric-Lamp.
No. 223,898. Patented Jan. 27, 1880.



Inventor
Thomas A. Edison
+ Leonard S. Peck
1880

Think about it

On Jan. 27, 1880, Thomas Edison received the historic patent embodying the principles of his incandescent lamp. Edison's invention paved the way for the universal domestic use of electric light. With your class, make a list of all of the ways your day would be different without this invention.

Photo credit: Rob Harris

Did you know?

Light waves and particles can have a healing effect on your body and mind. Phototherapy uses light to treat skin conditions, mental disorders and even some diseases. Research phototherapy in your public library or school media center. Share what you learn with your class.

Photo credit: Ben Dickmann

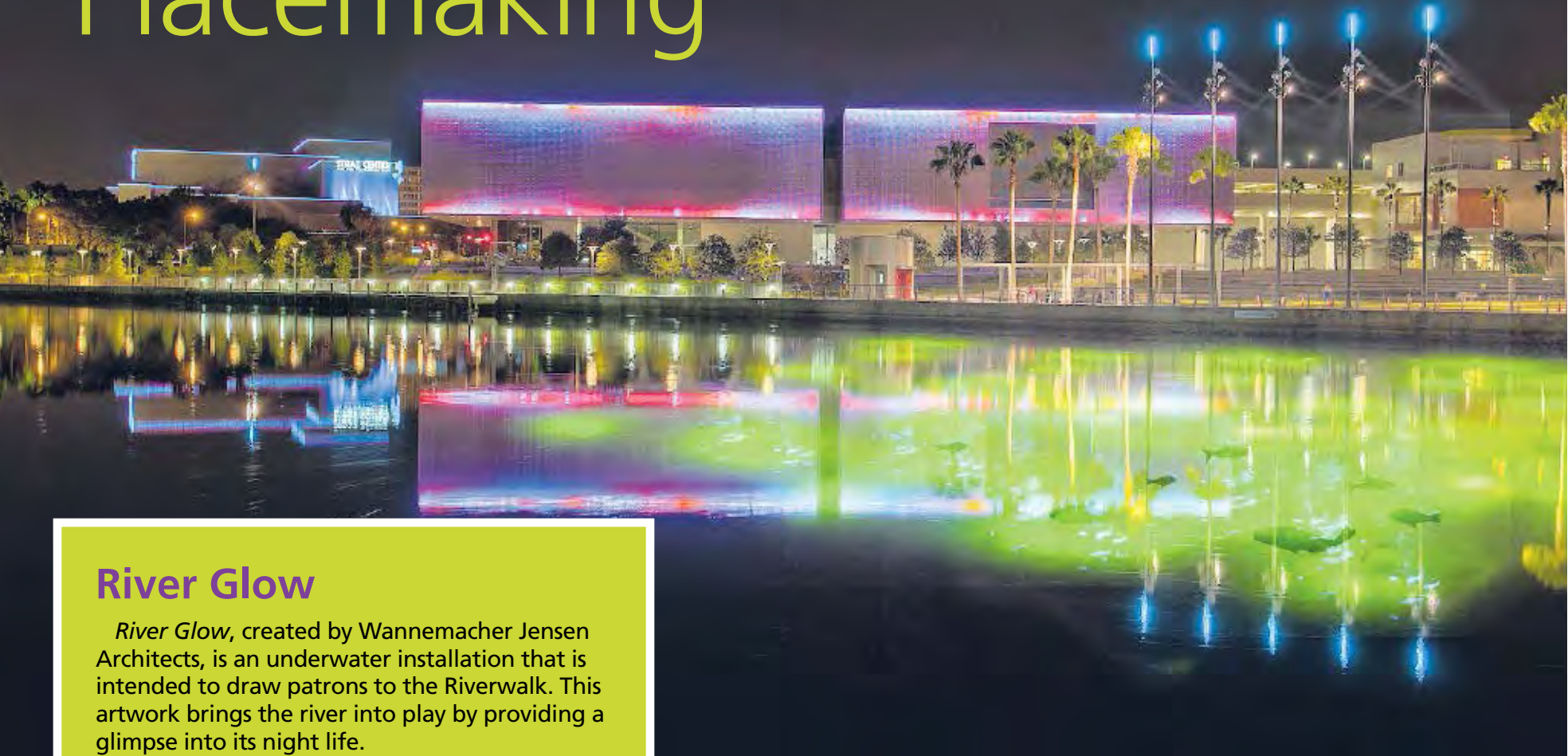
Learning new words

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Learning with
the Times

When you study new things, you often come up against some tough vocabulary words! Most vocabulary words are learned from context clues or good old-fashioned dictionary work. While you read this publication, be sure to highlight or circle words you don't know. Try to figure out the words' meanings by looking for clues in the sentences around them. Write down your best guess, and then look the words up in a dictionary. As a group activity, make a list of the words students identified and see which ones stumped the class. Next, use these words for a news scavenger hunt. See if you can find these words in the *Tampa Bay Times*. The group that finds the most words wins the game.

Placemaking



River Glow

River Glow, created by Wannemacher Jensen Architects, is an underwater installation that is intended to draw patrons to the Riverwalk. This artwork brings the river into play by providing a glimpse into its night life.

After *Lights On Tampa*, and with the completion of the adjacent portion of the Riverwalk, *River Glow* will be reinstalled as a permanent feature along this pedestrian path and provide opportunities to interact with a lighting feature.

River Glow, which is approximately 50 feet long, 125 feet wide and 6 feet deep, is composed of 38 Mega Brite 2800 Double bulb system green metal halide and 25 megawatt iris blue/green 21k lumens.



Photo credit: Richard Barnes

Rendering by Wannemacher Jensen Architects

Reflection and refraction

Encyclopaedia Britannica notes that “Light rays change direction when they reflect off a surface, move from one transparent medium into another or travel through a medium whose composition is continuously changing.”

Keeping this in mind, water is a perfect medium for light to travel through. According to the law of reflection, “Reflection from a smooth surface, the angle of the reflected ray is equal to the angle of the incident ray. The reflected ray is always in the plane defined by the incident ray and the normal to the surface. Diffuse reflection is responsible for the ability to see most illuminated surfaces from any position — rays reach the eyes after reflecting off every portion of the surface.”

Water and air are mediums that interact with light waves. So, when light encounters water or air, a portion of the “light is reflected and a portion is transmitted into the second medium. As the transmitted light moves into the second medium, it changes its direction of travel.” In other words, the light is then refracted. The law of refraction is known as Snell’s Law.

Keep these laws and ideas in mind as you view the water installations. Write down what you see

and how the laws of reflection and refraction apply. Compare the view of the installation to the two-dimensional photo in this publication. Explain how the two images differ.

Source: *Encyclopaedia Britannica*

Perception of light

We know that refraction is the bending of light as it passes from one substance to another. It is through refraction that we get various views of light through lenses, magnifying glasses, prisms and rainbows. It is important to note that the change of speed of the light causes the particles and waves to change direction. As light travels from the air into water, it slows down. This results in a new angle or direction.

Light from the sun will be perceived differently as it goes through water. In addition, artificial light will change based on the type of projection being used and whether the light goes through that projection in air or under water.

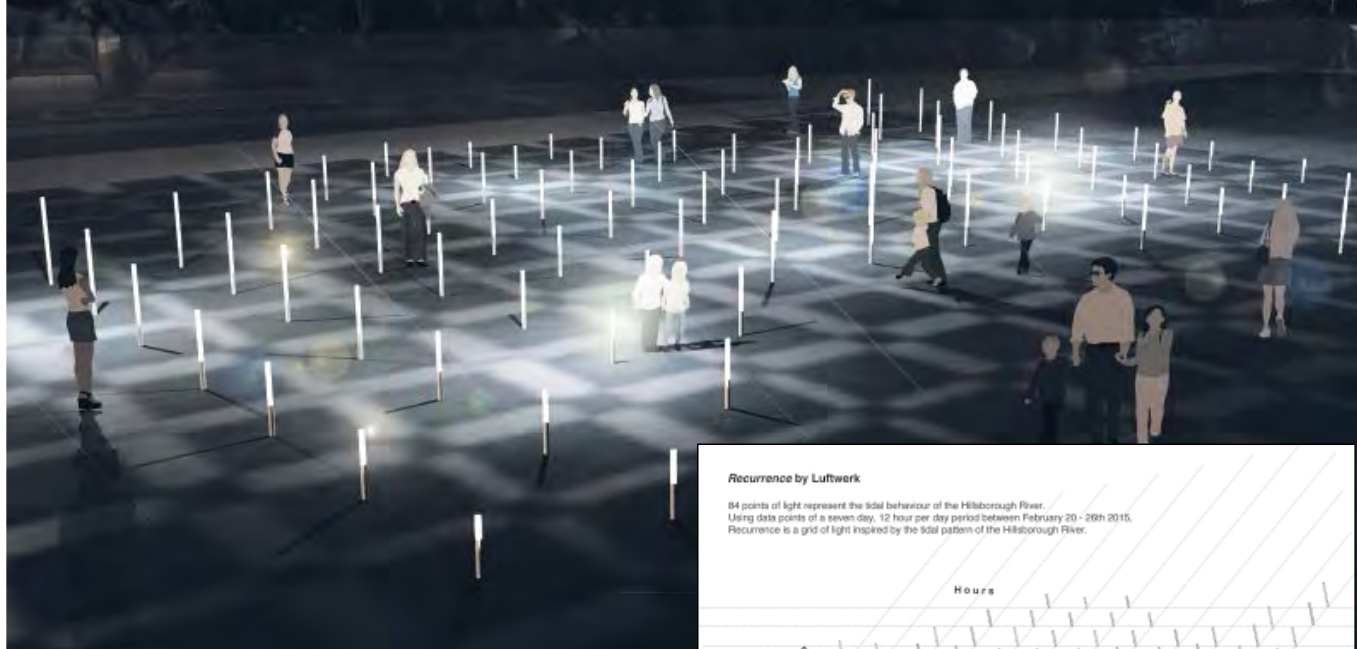
Think about that concept as you view these two installations. What external stimuli will change the direction and speed of the light? Write down your thoughts in your journal and share them with your class.

Recurrence

Recurrence, created by Luftwerk, is a field of light whereby the grid-like pattern is based on a 12-hour timetable of a seven-day sequence. The specified height of each LED parallels the tide measurement of the Hillsborough River in the corresponding time. Lighting design for the grid is an organic interpretation of the fluid dynamics, diurnal time measurements and the local environment of the Hillsborough River.

The lighting grid is composed of 84 acrylic-and-metal fabricated forms, each at varying heights between 6 inches and 18 inches. The forms will be connected and secured into the grass using metal spikes. The total grid area is 72 by 39 feet and will be located in Kiley Gardens, 400 N Ashley Drive, for Lights On Tampa on Friday, Feb. 20, and Saturday, Feb. 21.

“Our work lives within the connection of light and surface, revealing an inherent texture. A video projector illuminates the surface and opens a dialogue between source and destination. Each project is a new discovery where we interpret a site, material and context to create work that sculpts an immersive environment,” states Luftwerk, a collaborative vision of Petra Bachmaier and Sean Gallero.



Renderings by Luftwerk

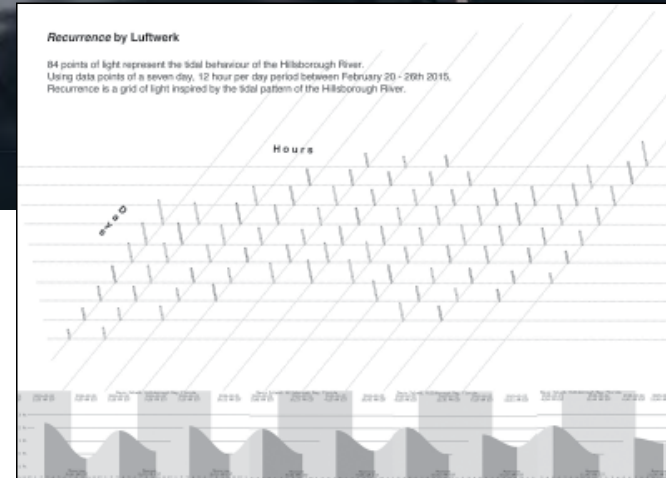
Visible light waves

Did you know that visible light waves are the only electromagnetic waves humans can see? We see these visible light waves as the colors of the rainbow. According to NASA, “Each color has a different wavelength. Red has the longest wavelength and violet has the shortest wavelength. When all the waves are seen together, they make white light. When white light shines through a prism, the white light is broken apart into the colors of the visible light spectrum.”

Source: NASA

Waves

In the installation *Recurrence*, LED light units parallel the tidal waves in the Hillsborough River. The U.S. Geological Survey defines a tidal wave as a shallow water wave caused by the gravitational interactions between the sun, moon and Earth. Simply put, a wave is a disturbance that travels through a medium (water, air, land) from one location to another location. Do some research about tidal waves and light waves in your local



library or school media center. What are the similarities and differences between the two? Make a Venn diagram showing what you have learned.

Seeing like the fishes

Did you know that humans are the only species that can see all of the colors of the spectrum? Humans have a trichromatic visual system. We have blue-green-and-yellow/orange-sensitive cones in our eyes. Some fish are trichromatic, but the color-sensitive cones in their retinas are arranged in a matrix. Other fish are dichromatic, which means they have only two color pigments.

According to the Rochester Institute of Technology, “Color vision is our visual system’s sensitivity to light photons in the band of electromagnetic frequencies called the visible spectrum. It goes from red, orange, yellow, green, blue, indigo to violet. We do not see infrared or ultraviolet but some of the fishes may see infrared and one species at least, the blue, or slimy, mackerel, does see ultraviolet.”

So the colors and reflections you see in the water are being viewed very differently by the fish in the Hillsborough River. And, the fish would not be able to see the red light shown in the photo.



Photo credit:
Tampa Bay Times

Being perceptive

As you are learning, the term “art” can be applied to many different mediums. A newspaper encompasses many different art forms from graphic design and cartoons to photography, words and advertisements. Photos are an interesting art form that rely on light, color and shadows. Photographs have remarkable power to communicate information, sometimes in startling ways. You can learn to use questions to decode, evaluate and respond to photographic images. Find a photograph in the *Tampa Bay Times* and determine what information is being conveyed through that image. On a piece of paper, write down answers to the following questions: Who or what do you see? When was this photograph taken? What is happening in the photograph? Where was this photograph taken? Why was this photograph taken? Why did the photographer choose these particular elements to include in the photograph? What don’t you see? Did the photographer focus on certain elements and not others? Why do you think that is? Based on what is happening in the photo, can you infer what happens next or perhaps what happened before time stopped?

Write a short essay based on your responses to these questions. Be sure to use specific examples from the image to support your ideas. Share your photo and report with your class.


Learning with
the Times

2015: International Year of Light

together with educational institutions, technology platforms, nonprofit organizations, private sector partners and government agencies. Lights On Tampa is just one of the many initiatives that is part of this event.

According to the International Year of Light website, "In proclaiming an International Year focusing on the topic of light science and its applications, the United Nations has recognized the importance of raising global awareness about how light-based technologies promote sustainable development and provide solutions to global challenges in energy, education, agriculture and health. Light plays a vital role in our daily lives and is an imperative cross-cutting discipline of science in the 21st century. It has revolutionized medicine, has opened up international communication via the Internet, and continues to be central to linking cultural, economic and political aspects of the global society."

Appreciating light

The International Year of Light will consist of coordinated activities on national, regional and international levels. Activities will be planned so that people of all ages and all backgrounds can gain an appreciation for the central role of light in science and culture, and as a cross-cutting scientific discipline that can advance sustainable development. The City of Tampa is honored to be part of this celebration and appreciation of light with Lights On Tampa.

Light matters

Light is necessary for the existence of life, from the most fundamental level with photosynthesis to the many

When that energy reaches Earth, it can be converted into heat and electricity. Around the world, scientists are working with governments to develop clean, affordable and sustainable solar

Photo credit: Richard Barnes



Rendering by Urban Conga

ground-breaking applications of light that have changed the way we live our lives through medicine, communications, entertainment and culture.

Below are some basic examples illustrated on the 2015 Year of Light website: "Photonics is the science and technology of generating, controlling and detecting photons, which are particles of light." Photonics is the basis for all the technology we use on a daily basis, from smartphones to laptops to the Internet to medical instruments to lighting technology.

Light is energy. The sun emits constant energy.

energy technologies.

Light is of paramount importance to business. Businesses that study photonics and light-based technologies are constantly striving to solve key societal challenges, such as energy generation and efficiency, healthy aging of the population, climate change and security. Photonic technologies have a major impact on the world economy.

Light connects the world. Think about it: Social media, telephone calls, video conferencing and Skyping are all examples of how the Internet connects people in ways that have never before been possible. And, of course, this innovative technology is because of light.

Did you know?

According to the International Energy

Detail photo of Ray King's artwork on the Port Authority Parking Garage



Celebrating light

The United Nations General Assembly 68th Session proclaimed 2015 as the International Year of Light and Light-based Technologies. This International Year focuses on bringing the scientific community and the United Nations Educational, Scientific and Cultural Organization (UNESCO)

An alternate world



Imagine a world with only natural light as a source. Science fiction is a literature of imagination, of ideas and thought experiments, of "what if." A science fiction story may be set on another planet; thousands of years in the future; in a universe with different physical laws; within a society with more, less or different races or genders; or in a world similar to our own but with a different past. Science fiction author Brian W. Aldiss once called science fiction "a mirror to the present," which, set up 50 years into the future, serves to illuminate what seems like chaos from our vantage point in the present. Working in small groups, create a future world that has been shaped by people who fear technological advancements. Write a fully developed paragraph describing your world. Using the front page of the *Tampa Bay Times* as a model, create a newspaper for this science fiction world you have created. Each student in your group should be responsible for different stories, giving the reader a good view of this new world. Share the description of your world and your stories with your classmates.

Agency, "Lighting represents almost 20 percent of global electricity consumption. The future development of society in both developed countries and emerging economies around the world is intimately tied up with the ability to effectively light our cities, homes, schools and recreation areas."

Light in nature can be seen in sunsets and rainbows, as well as the blues and greens of the ocean and the awe-inspiring range of colors of plants and animals.

Light and life are inseparable. Light, through photosynthesis, is at the heart of all life. And every day, photonic technologies "provide new tools for

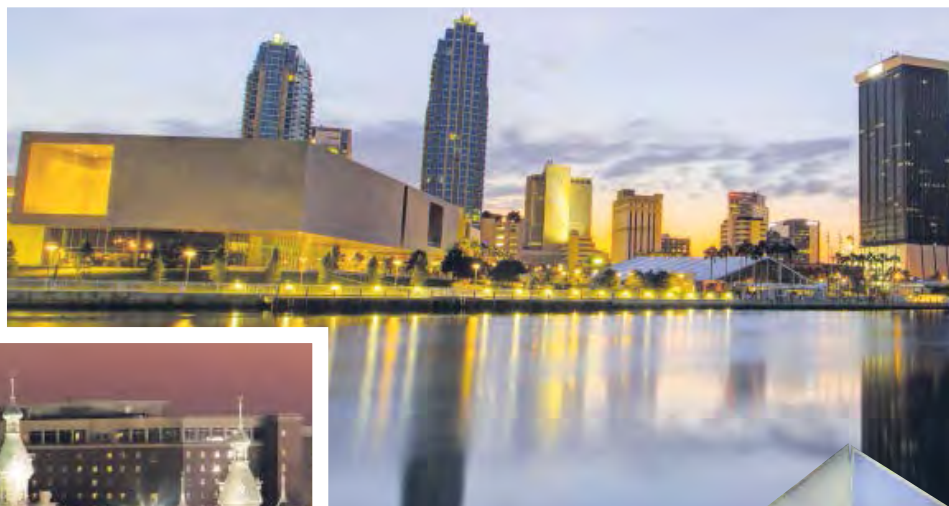


Photo credit: Tampa Bay Times

From infinity to beyond

Light is everywhere. Even when there are no electronic lights, natural light is present. Light permits people to go about our daily activities. Thanks to light, we can be entertained, earn money, stay healthy and even play electronic games when we have time. There are many different types of lights, and each one serves a special purpose.

Lasers are used for medical purposes, but they also are used at the grocery store checkout and in your DVD player. The International Year of Light website defines a laser as "an optical amplifier — a device that strengthens light waves. Some lasers have a well-directed, very bright beam with a very specific color; others emphasize different properties, such as extremely short pulses. The key feature is that the amplification makes light that is very well defined and reproducible, unlike ordinary light sources such as the sun or a lamp."

Synchrotron light is used by scientists to study everything from new medicines and treatments for disease to innovative engineering and cutting-edge technology. This light can be used to study fragments of ancient paintings or unknown virus structures.

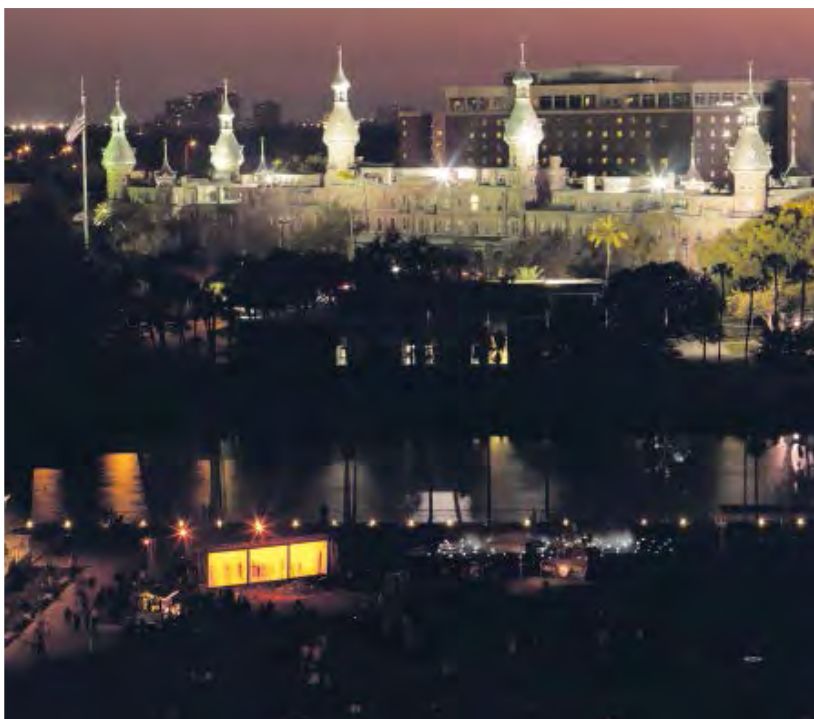


Photo credit: George Cott

doctors and surgeons. New developments in optometry and vision science improve quality of life, and light-based technologies are used every day in medical diagnostics in ways that we are often unaware of."

Source: International Year of Light website

Light of art

Art and culture come alive with light. As the International Year of Light website notes:

"Paintings and murals in all cultures of the world show how artists have used light and shade and color to illustrate mood and create atmosphere. Modern technological possibilities allow artists to use light in new ways in entertainment and performance, and large-scale lighting installations can dramatically highlight the beauty of architecture."

Light and media

T
Learning with
the *Times*

While the sun is a natural source for visible light, lightbulbs in their various forms are artificial sources for visible light. There are many types of lights. Look through the pages of the *Tampa Bay Times* and see how many examples of light you can find. Look for words, images and graphics. With a partner, make a list of all of the examples you can find. Are you surprised by the number of items on your list? Share your results with your class.

Lights On Tampa Sponsors





Rendering by Traction Architecture

Think about it

Sky Striker and the carnival game, High Striker, work on the same principles, but the actual process of the game is different. High Striker would use force, energy and gravity to work. Do some research on these physics principles. Test out *Sky Striker* at Lights On Tampa. In your journal, write about the different experiences for the participant. Share your thoughts with your class.

Sky Striker

Sky Striker is inspired by the classic carnival game High Striker, the traditional test of strength, or strong-man, game where a participant swings and strikes a base with an oversized mallet, causing a puck to shoot up a vertical chart and strike a bell that measures his or her strength.

Sky Striker is rigged much like the traditional High Striker game with mallet and base and tower. However, rather than seeing your results on a lighted board, called the tower, the adjacent downtown landmark of Rivergate Tower, the 32-floor skyscraper located at Kennedy Blvd. and the Hillsborough River, takes on the function of being the “tower.”

This installation is composed of 40 ColorBlast LED Light 6-Packs, antenna system, cables, transmitters and a striker. Four floors (6, 8, 18 and 22) are used in this project. Interactivity is the true driver of this project. The lights will be reset after each result.

Sky Striker is the concept of Traction Architecture, design and technical consultant by Freeman Co.

Did you know?

Rivergate Tower was built in 1986. It is one of the Florida Chapter of

the American Institute of Architect’s Top 100 buildings that represent the best that Florida architecture has to offer. Designed by Harry Wolf, FAIA, this building has a cylindrical shape. Rivergate Tower is a 454-foot skyscraper with 32 floors. It is the sixth-tallest building in Tampa and one of the tallest limestone buildings in the world.

The visible spectrum

Both *Urban Pixels* and *Sky Striker* use light and color as a way to engage the audience. Although the light is an intricate part of these installations, color is the main event. So, what exactly is color, and does each individual see the exact same colors with the exact same intensity as other people?

The term “color” usually applies to the appearance of an object (red, pink, purple, brown, white) or a light source (warm-white, cool-white). The appearance of color seems to be derived from the physical characteristics of the electromagnetic radiation reaching the retina. However, color is actually the result of a person’s visual system process, which includes the eyes and brain.

Source: Rensselaer Polytechnic Institute

Urban Pixels

Urban Pixels, created by locally based Urban Conga, is sponsored by the Tampa Bay Rays. The installation is composed of 30 lighted “prisms”, 18 inches apart in a tetrahedral form, making all sides even and easy to stack and connect. The prisms are composed of durable, fully recyclable nontoxic polymer, PCB chip LEDs.

The light prisms are designed to not only attract attention but also to spark activity and play within the space. People can then begin to explore their creativity and make alien space ships, futuristic benches or whatever their imagination can think of. The lights inside the pieces are responsive to the interactivity.

The randomness of light and form will not only make the space feel safer but also will provide it with a platform for interactivity and play. After Lights On Tampa, look for these artworks at Tampa Bay Rays games.

Color and light

Importance of place

The location of the Lights On Tampa installations allows the community to become entrenched in not only the beauty of the art but also the beauty of Tampa. These installations are unique works of art because they have become enmeshed with the environment, making this event a true Public Art exhibit in every sense of the term.

Curtis Hixon Waterfront Park

This eight-acre park features an urban design, sustainable construction and operational features, including reclaimed water for irrigation and LED lighting. Park amenities include the Great Lawn, with flexible perimeter seating and a dog run. There are two interactive fountains: the Louver and the Mist. The park's playground features an interactive NEOS 360 Ring, which combines video games with aerobic exercise and is the first of its kind in the southeastern United States.

Kiley Gardens

Located next to Curtis Hixon Waterfront Park and along the Hillsborough River, Kiley Gardens was designed by award-winning architect Harry Wolf and National Medal of Arts recipient landscape designer Dan Kiley. Kiley Gardens is 2.5 acres and is a popular location for wedding ceremonies. Kiley used the Fibonacci mathematical sequence to determine the plaza's checkerboard pattern of grass and concrete panels. The garden is located eight feet above street grade.

Sources: City of Tampa and the Cultural Landscape Foundation



LOOK IT UP!

What are PCB chips, pixels and LEDs? Define these three items and then research the terms on the Internet. How are these technological items used? How would they contribute to the concept of a light prism? How is the use of LEDs energy efficient? Share your ideas in your journal and with your class.

Art and architecture



As the Center for the Study of Art and Architecture notes, "Architecture is considered a visual art like painting and sculpture. Architects design buildings using a creative process by which they manipulate art elements to create a unified and pleasing artistic statement." The design of a building, both interior and exterior, can be considered an art project. Like the Lights On Tampa installations, architecture includes form, function and aesthetics.

Consider the aesthetics of the structures on these pages. Do they fit the category of architecture? Are the aesthetics of the structures separate from the artistic light elements?

Sky Striker has been installed on the Rivergate Tower. How does the shape of the building contribute to the overall aesthetic appeal of the installation? Write down your thoughts in your journal. Then, look for photos and graphics of buildings in the *Tampa Bay Times*. Think about the structure and shape of these buildings. Design an installation to coincide with one of the buildings. Write a blog post detailing the structure of the building and your installation ideas. Share your ideas with your class. As a class, discuss the feasibility of each proposed installation.



Art immersion

Photo credit: George Cott



Think about it

Public Art joins together artists, cities and the community at large. It is not only the artists' visions that are represented, but also a message of inclusion for the civic community as a whole. Public Art lends itself to aesthetic, social and collaborative efforts among the city, public and artists. Public Art is a collaboration of planners, engineers, designers, elected officials and community stakeholders, not to mention the artists who bring their creativity and imagination into the fold.

Source: Americans for the Arts



Shadows play an integral role in letting sunlight permeate the scene. They provide a 'setting' that complements the sun-kissed lights. Often, shadows will have a golden tint, or even a rosy red color that conveys a unique atmospheric glow.
—Jeanne Dobie, artist

UpLit

A simple phrase can capture the essence of something or some place. It can elude, evoke, suggest and inspire. Encountering a phrase or words out of context in the streets of a city park also can invite the passer-by to remember a story. It can give the element of surprise, start a conversation, bring a smile or encouragement, make a memory. It can invite us in, but into what we may not be exactly sure.

This project recognizes the value of the written word and invites readers, poets, writers — professional and amateur alike — to submit a phrase that captures how we live now and what that means. A panel of jurors selected poet Silvia Curbelo's phrase to be put in lights.

Installation art

Light, shadows, words, structures ... it is all about art. The term "installation art" can be applied to a range of arts that involve configuration of objects in a space. It is not really a genre of art, as it applies more to presentation and production than actual type. Installation art can include various mediums, such as painting, sculpture, found objects, drawings, text and lights.

Installation art includes the avant-garde movements of minimalism, environmental art, land art, conceptual art and performance art. In some cases, as with Lights On Tampa, it also includes the idea of Public Art.

The experience for the viewer of installation art is very different from more traditional artwork. Not only does installation art often enter into the space of the viewer, but many times the viewer actually interacts

with the art, as with many of the installations in the Lights On Tampa exhibit.

With installation art, the viewer is required to actively participate. Therefore, the experience of each viewer is unique. As the viewer enters the space for the artwork, he or she can be immersed from various perspectives. In addition to sight, the viewer also uses touch, sound and smell to engage.

Source: Irish Museum of Modern Art

Shadow Plays

Back by popular demand, this interactive and engaging artwork combines light, music and dance for a playful experience in beautiful Curtis Hixon Waterfront Park. *Shadow Plays* first debuted at Lights On Tampa 2011. This unique stage platform makes music and dance an up-close, interactive and engaging experience.

Encyclopaedia Britannica defines a shadow play as a type of "theatrical entertainment performed with puppets, probably originating in China and on the Indonesian islands of Java and Bali. Flat images are manipulated by the puppeteers between a bright light and a translucent screen, on the other side of which sits the audience."

The installation at Lights On Tampa allows for the audience to be the puppeteers, so that the community becomes part of the show.

Public Art

Art isn't just found in museums. Art can be found in (and on) many public buildings and spaces, such as parks, plazas, libraries and government buildings. Like all art, public statues, murals, memorials, art installations and architecture are subject to criticism and study as people decide whether or not they like them.

Visual art is like food — it's entirely possible to dislike a certain piece of "good" art. A city's role in culture is to enable people, offer free access to artistic excellence and provide opportunities for engagement. The arts have something for everyone, and the City of Tampa encourages the arts in the community.

Americans for the Arts notes: "Cities gain value through public art — cultural, social and economic value. Public art is a distinguishing part of our public history and our evolving culture. It reflects and reveals our society, adds meaning to our cities and uniqueness to our communities. Public art humanizes the built environment and invigorates public spaces. It provides an intersection between past, present and future, between disciplines and between ideas."

Source - Americans for the Arts

An expression of community values

Robert Lynch, president of Americans for the Arts, stated, "Public art is more than just an attractive decoration — it is a conversation with the public, revealing a place's or a people's history, values and stories."



The work serves as a way for communities to announce themselves as a unique place."

Public art is being embraced around the country. Lynch notes that "twenty-seven states and at least 300 municipalities annually allocate a percentage of all capital and building costs to acquire and maintain public art."

As the Lights On Tampa installations show, public art has evolved beyond classic art forms to encompass interactive, ever-changing digital creations. *UpLit* is a classic example of the change in stagnant murals to a changing platform of expression.

Lynch asks, "What is the public art of the future? What conversations do we want to have with our cities, our government, our tourists and one another in the next century? The pieces we leave behind will tell our stories of today. The pieces we fund, install and create will tell our stories in the future. That's the power of public art."

We live in a diverse society, and not all art appeals to all people. The purpose of public art is to attract attention. In a sense, all art is an interactive process between the creator and the audience. In the case of public art, the interaction is expanded by the nature of the work, funders and community members.

Public art is a part of our shared history, our evolving and diverse culture, and our collective memory.



The art of communication

T
Learning with
the Times

Public Art serves as a form of communication. Think about some other cultures that have used art — pictures, symbols, sculptures, structures — as a means of communication. What impact did this form of communication have on each culture? How do we use pictures and symbols to communicate? Look through the *Tampa Bay Times* for examples of symbols that represent communication. Make a list of all of the symbols you find and share them with your class. Create your own work of art to illustrate the ideas being communicated. Write a blog post describing your artwork and its purpose.

DID YOU KNOW?

The City of Tampa's Public Art Program promotes the involvement of artists in projects throughout the city that enhance the physical environment and celebrate Tampa's unique character and identity. Its goals are to:

- Oversee the City's Public Art Collection
- Heighten Tampa's reputation and visibility, both regionally and nationally, as a city culturally aware and supportive of the arts
- Facilitate the creation of art and culture representative of the character and identity of Tampa to major public-use projects
- Provide a variety of opportunities for citizens and visitors alike that are diverse and of high quality
- Provide access to educational content about artwork with the city's collection

www.tampagov.net/art-programs

NICK CAVE HEARD·TPA



Photo credit: Matt May Photography

Lights On Tampa commissioned artist Nick Cave to bring his *HEARD-Tampa* to downtown Tampa's Hixon Waterfront Park. *HEARD* is an artful performance that has taken place from New York to Hong Kong and is composed of a magical, choreographed herd of 30 dancing horses that are actually 60 local dancers. These dancers come together with musicians and original music for an unforgettable evening. The extraordinary costumes are composed of mixed media, including synthetic raffia, fabric, metal and found objects.

Cave is an artist and educator working between the visual and performing arts through a wide range of mediums inclusive of sculpture, installation, video, sound and performance. Cave attended the Kansas City Art Institute and received his MFA from Cranbrook Academy of Art in Michigan. He is a professor in the Fashion Department of the School of the Art Institute of Chicago.

Cave has created *HEARD* performances for metropolitan cities throughout the United States. "We used to be dreamers, thinking 'What would I like to be?'" Cave told the *Pittsburgh Post-Gazette*. "Under the stresses of contemporary life, we seem to have lost that capacity. With works like *HEARD NY*, I try to create a moment that brings us back to dreaming and fantasy, to a state of mind where we can think about alternative ways of being."

Collaborative sound

HEARD features music composed and arranged by Ray "rayzilla" Villadonga. The ensemble features the following members of the WAHH! World Fusion Band: Jovan Falcon, trumpet with electronics; Shankachur "Shankh" Lahiri, tabla, voice, percussion; Hector "Acho Brother" Mayoral, congas, percussion; Peter Mongaya Hogsholm, electric guitar; Alfredo Rivero, classical and midi guitars; Michael Washington, drums, percussion; and Ray "rayzilla" Villadonga, electric bass, voice, conductor. Tampa musician Ray Villadonga will assist Cave in bringing *HEARD* to life through the magic of music. Villadonga, the experimental music director at WMNF Community Radio answered some questions about this extraordinary performance.

Q: How do you approach your writing process for performance/dance?

A: "Each dance speaks in its own way. In *HEARD*'s case, since it's a piece that has been performed before and has specific feel to the choreography/performance, the tempo of the dance directs the tempo of the music naturally. So as a composer, I'll

take suggestions from the dance and try to add Tampa flavor to the music. For this commission, I've been recently working with some great Hindustani musicians in a band called WAHH!, so I'm integrating elements of the great Indian raga tradition with the Afro/Cuban/Caribbean influences so prevalent in the Tampa Bay area's musical history."

Q: Does this process differ from standard song writing? If so, how?

A: "Yes there is a difference. With dance, the music should complement and partner with the choreography. And like in the last answer, I take instruction from the pace and look of the dance and try to translate the movement into music.

There are many methods you can apply when writing a song. The best ones seem to come out like you are just a conduit for the inspiration. Other times you have an idea that you carry around with you for a while before you write it."

Q: You responded well to the fusion of Eastern and Latin sounds. Explain each style and how they differ, but how they complement one another in your compositions.

A: "Hindustani classical music (or as it's labeled "Eastern" in the question) is very sophisticated and advanced in melody (raga) and rhythm (tal). Ragas incorporate what Western folks call modes/scales, but differ in the fact that the ascending notes in the scale can be different from the descending notes. The rhythmic aspects of Hindustani classical are grouped in cycles. This is different from the Western concept of time signatures. ... Many instruments are used in Indian music: human voice, sitar, harmonium, tabla (tuned drums), santur (hammered dulcimer) and a whole lot more that I won't list. In the music for *HEARD* we will use the human voice in Indian style as an instrument both in a melodic and rhythmic role. The music will also incorporate tabla drums.

"Afro/Cuban/Caribbean (or as it's labeled "Latin" in the question) is music that developed in the New World. It's a hybrid of African rhythms and call-and-response singing with European melodies and harmony. This music is also very sophisticated in its polyrhythms.

"Since both music forms have a strong rhythm base, the styles can mesh and blend naturally.



“In the HEARD performance, Latin percussion instruments such as conga, cajon, bongo drums and maracas will be used along with the above-mentioned tabla drums and voice, drum set, bass, electronics and guitars, both electric and acoustic.

“In performance art, the artist’s medium is the body, and the live actions he or she performs are the work of art. Performance art usually consists of four elements: time, space, the performer’s body, and a relationship between audience and performer. Traditionally, the work is interdisciplinary, employing some other kind of visual art, video, sound or props.

“The term, used loosely, at first, arose in the early 1960s as American practitioners sought a way to refer to and describe the many live events taking place at that time. Although performance art takes the form of live action, it has reached a large public audience through documentation of the performance.”

A collaborative genre

Performance art is a collaborative effort between the performer and the audience. That is why it is a perfect format for Public Art. The primary purpose of performance art, historically, has been to challenge traditional art formats, such as painting and sculpture, which are more stagnant in nature.

The foremost purpose of performance art has almost always been to challenge the conventions of traditional forms of visual art, such as painting and sculpture. According to the Art Story Foundation website, performance art becomes more popular when traditional forms of art “no longer seem to answer artists’ needs — when they seem too conservative, or too enmeshed in the traditional art world and too distant from ordinary people. Artists have often turned to performance in order to find new audiences and test new ideas.”

Nick Cave’s production uses many forms of performance and traditional art. Think about the roles the costuming, dance and music play in the performance. There are many different elements of art at play.

One could characterize *HEARD* as an action form of art. This type of art distinguishes “art performance

HEARD•TPA

Friday and Saturday,
6:30 and 8:30 p.m.

Curtis Hixon Waterfront Park

from the more conventional kinds of entertainment found in theater. But the term also reflects a strain of American performance art that could be said to emerge out of a reinterpretation of action painting, in which the object of art is no longer paint on canvas, but something else — often the artist’s own body.”

Source: The Art Story Foundation

Melodious art

Human beings are pretty darn creative. We can express ideas through words, art, symbols and music. Think about how remarkable that is. As the How Stuff Works website notes: “Through our art and music, the emotion felt by an artist may be encoded through color, shadow and harmony to be decoded and experienced by an observer or listener. That is arguably one of humanity’s greatest accomplishments.”

Music can evoke emotions from happiness to sadness to anger. “Cognitive scientist Mark Changzi suggests that music creates emotion, in the listener because we associate the sound with human movement. Since we’re able to infer emotion from the expressions and movements of others and to empathize with those people through our own emotions, then if we associate music with human movement, this explains how music can evoke emotion.”

Source: How Stuff Works

Performance as art

HEARD is a perfect blend of theatrics, music and dance. In other words, it presents viewers with the perfect storm that is performance art. Traditionally, performance art combines four elements: time, space, the performer’s body, and a relationship between audience and performer. After attending Lights On Tampa, reflect on the work of the performance artists and the art installations. Choose one of the performances and write a review. Use the articles in the *Tampa Bay Times* as models for your review.



Learning with
the Times



Art and education

The study of the arts has been shown to improve student attendance, engagement and academic achievement. Integrating arts education across the curriculum helps students to develop critical thinking, communication and problem-solving skills. Arts education is positively associated with higher achievement in mathematics and with literacy and language development. Students from low socio-economic backgrounds, English language learners and students with special needs realize particularly strong benefits through arts education.

Sources: Americans for the Arts Artsblog; Arts Education Partnership; *Guiding Principles for the Arts Grades K–12* by David Coleman Documenting Performance

BRING TO LIGHT: A DIALOGUE WITH THE ARTISTS OF LIGHTS ON TAMPA 2015

Wednesday, February 18, 2015
12:00 P.M - 1:15 PM
 Bring your lunch!

John F. Germany Public Library Auditorium
900 N. Ashley Drive

Moderated by Sarah Howard, University of South Florida
 Curator of Public Art and Social Practice
 Presented by: City of Tampa Art Programs Division,
 University of South Florida and the Bailey Family Foundation

It's all about culture

A city's role in culture is to enable people, offer free access to artistic excellence and provide opportunities for engagement. The arts has something for everyone. Lights On Tampa is a shining example of the soundness of Tampa's cultural health.

According to Americans for the Arts, indicators of a city's cultural health are based on talent, connections,

The art of communication

Art can be a very effective means of communication. Think about how our culture uses art to communicate ideas. Make a list of all of the methods you can think of (cartoons, graphic novels, posters, advertising). Some other cultures that have used pictures and symbols as a means of communication: hieroglyphics, pictographs, cave drawings. What impact did this form of communication have on each culture? How do we use pictures and symbols to communicate? Hint: Think about traffic signage, emoticons and text messaging. Look through the *Tampa Bay Times* for examples of symbols that represent communication or make a specific statement. Using the articles and images in the *Times* as a guide, write a news article using only symbols. Share your story with your class



distinctiveness and innovation. Lights On Tampa can relate to each of these:

- Lights On Tampa brings the visual arts, dance, music and poetry together
- Lights On Tampa is fun, free and for families
- Lights On Tampa is about experience, education and engagement

Public Art matters

Public Art has cultural, social and economic value. Not only does it bring governments and citizens together, but it reflects on our culture and reveals our history. Public Art has the ability to humanize the structural environment of a community and energize the public spaces.

The humanization of a structural environment is important to the social and cultural makeup of a city. Public Art provides a sense of identity for the city and its citizens and provides a strong sense of belonging.

As the Americans for the Arts defines it, Public Art “provides an intersection between past, present and future, between discipline and between ideas.”

Source: Americans for the Arts Public Art Network Council

It takes a village

A goal of Lights On Tampa, like other Public Art events, is to bring the community together, not just the creators, engineers and sponsors of the events, but also the potential audience.

“Public Art brings artists and their creative vision into the civic decision-making process,” according to the Americans for the Arts Public Art Network Council. “In addition to the aesthetic benefits of having works of art in public places, artists can make valuable contributions when they are included in the mix of planners, engineers, designers, elected officials and community stakeholders who are involved in planning public spaces and amenities. Artists bring their own creative skill set to those conversations, which can also inspire creativity in others, ideally bringing the means of decisions and problem-solving to a more responsive and imaginative result.”

Source: Americans for the Arts Public Art Network Council

Did you know?

Cultural events and institutions in the City of Tampa are a major force in the bay-area market, with annual attendance for cultural events in downtown alone averaging more than 2.5 million. Cultural institutions in the urban core are numerous and strong. They include the Tampa Museum of Art, the Glazer Children's Museum, the David A. Straz Center for the Performing Arts, the Tampa Bay History Center, the Florida Aquarium and the Amalie Arena.

IN THE KNOW. IN THE TIMES.

The Tampa Bay Times Newspaper in Education (NIE) program is a cooperative effort between schools and the *Times* to encourage the use of newspapers in print and electronic form as educational resources. Our educational resources fall into the category of informational text.



Informational text is a type of nonfiction text. The primary purpose of informational text is to convey information about the natural or social world.

Since the mid-1970s, NIE has provided schools with class sets of informational text in the form of the daily newspaper and our award-winning original curriculum, at no cost to students, teachers or schools. In the Tampa Bay area each year, more than 5 million newspapers and electronic licenses are provided to teachers and students free of charge thanks to our generous individual, corporate, governmental and foundation sponsors.

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For more information about NIE, visit tampabay.com/nie or call 800-333-7505, ext. 8138. Follow us on Twitter at [Twitter.com/TBTimesNIE](https://twitter.com/TBTimesNIE).

Educators, email ordernie@tampabay.com or call 800-333-7505, ext. 8138 to request free copies of this publication.

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Credits

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