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Article: *Emerald Laser Lawn* by Dan Corson in the Broward County Public Art & Design Collection

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# **EMERALD LASER LAWN BY DAN CORSON IN THE BROWARD COUNTY PUBLIC ART & DESIGN COLLECTION**

TIN LY

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## ABSTRACT

To validate the digital and electronic technology of the 21<sup>st</sup> Century, the Broward County Public Art & Design (PAD) Program commissioned an ambitious light-based artwork to add to its public art collection. Can such a project be considered “permanent” artwork with a minimum of 15 years lifespan of daily eight hours operation? How well can a laser artwork be preserved and maintained by a public art program? What are the unique challenges and rewards? “*Broward Light Project: Emerald Laser Lawn*” by Dan Corson, a recipient of the 2008 Public Art Year in Review, was installed in early 2007 in an open plaza of downtown Fort Lauderdale, Florida. Combining laser technology and computer software programming, this interactive artwork consists of three lasers projected at low vantage point across the lawn of a 1.8 acre plaza. It has fascinated the public by its constant mutation of nine different light sequences and patterns. However, within one year of its operation, the light installation encountered a major set-back when one laser malfunctioned. A lengthy process of restoration ensued. I will discuss the roles that the artist and conservator play in the long term preservation of the artwork through collaboration with a fabricator, a computer software designer and a local service provider in this complicated restoration process.

## 1. INTRODUCTION

Established in 1976, the Broward County Public Art & Design Program has commissioned and acquired 234 titled artworks. The program has allocated two percent (2%) of the county capital construction project for commissioning artists who provide design expertise and create artworks within a broad range of medium and expression. The program focuses on the enhancement of urban design through the commissioned works of art which create a “sense of place.” As a result of the dynamic interaction between selected artists and interested constituent groups, 167 portables (artworks of traditional media, such as painting, sculpture, photography, drawing and so on, that can be removed and relocated easily) and 67 integrated art projects were acquired and implemented.

Among them, eight light-based projects have been commissioned, covering a wide range of media from solar energy to Light Emitting Diode (LED). Some examples are illustrated: *Florida Current*, by Keith Sonnier, was installed in 2001 at Terminal 4 of the Fort Lauderdale-Hollywood International Airport. The neon artwork, powered by static transformers, measures 245 running feet across the back walls of the Baggage Claim area.

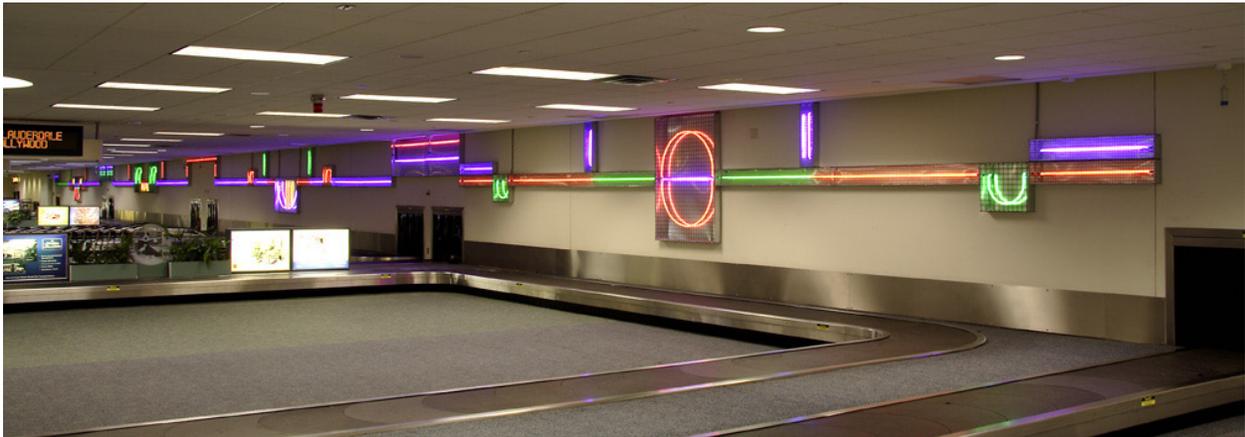


Fig. 1. Keith Sonnier, *Florida Current*, 2001, Fort Lauderdale-Hollywood International Airport  
(Courtesy of Broward County Public Art & Design Collection)

*Solar Time Plane*, by Dale Eldred, installed in 1986 at the Broward County Main Library in downtown Fort Lauderdale, incorporates solar diffraction grating material on the surface coating. The sculpture presents a constant shifting spectrum of colors that underlines the interactive complexities of time and relative optical movement.

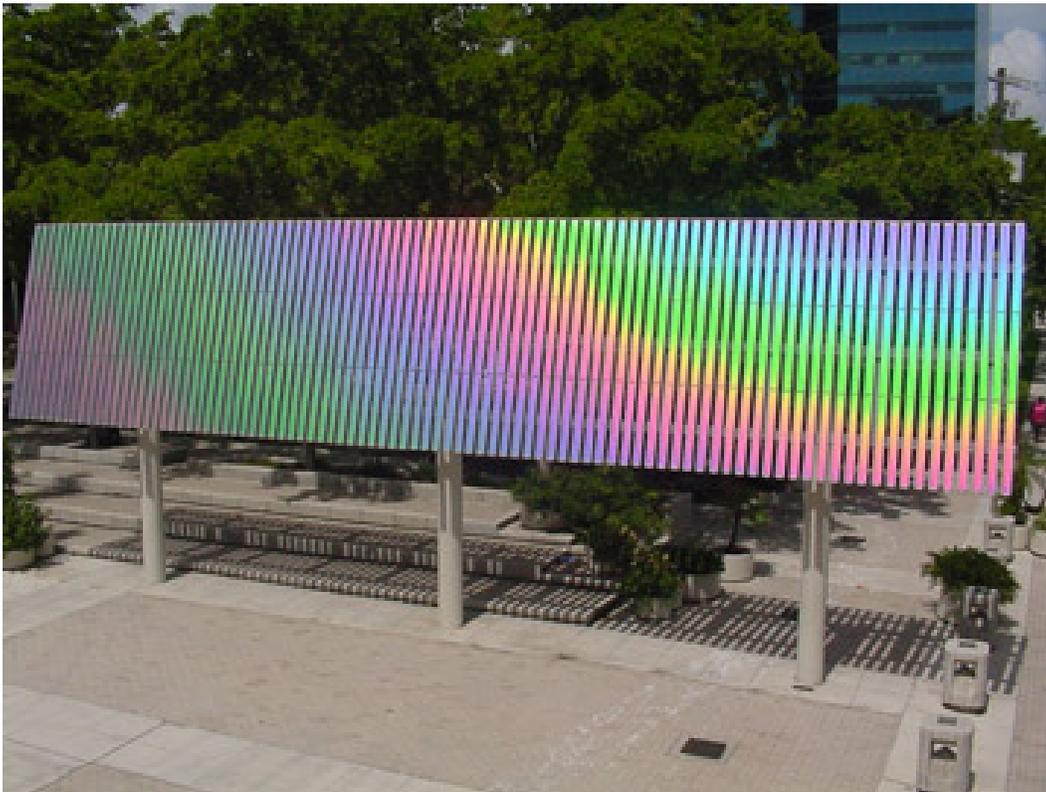


Fig. 2. Dale Eldred, *Solar Time Plane*, 1986, Main Library  
(Courtesy of Broward County Public Art & Design Collection)

*Calypso and Waves*, by Tobey Archer, installed in 1998 at Terminal 2 of Port Everglades, utilizes neon and fiber optic to illuminate a 26,000 square feet of interior space.

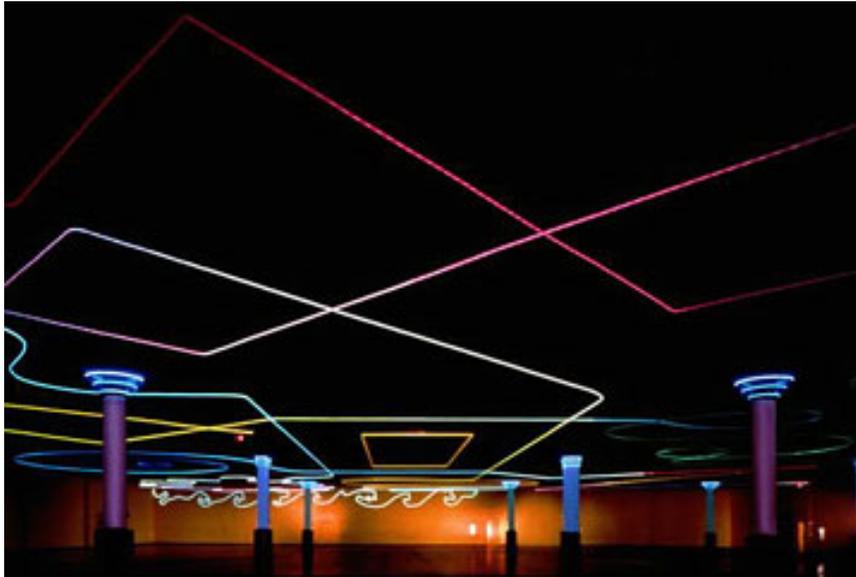
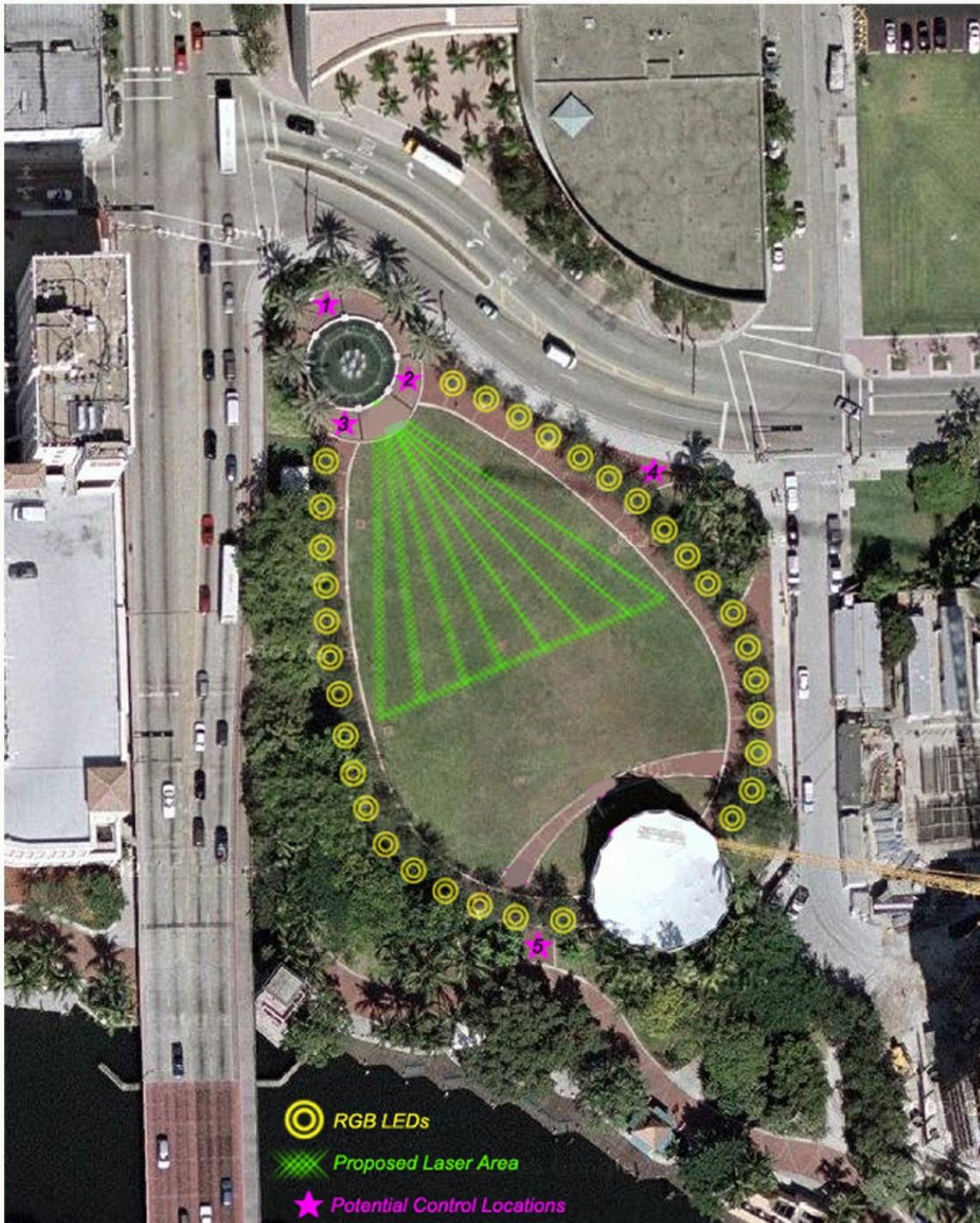


Fig. 3. Tobey Archer, *Calypso and Waves*, 1998, Port Everglades (Courtesy of Broward County Public Art & Design Collection)

*Luminous Portals*, by James Carpenter, installed in 2005 at the Rental Car Center of the Fort Lauderdale-Hollywood International Airport, combines the use of computerized and interactive LED lighting with various glass finishes creating an animated interaction between six portals and moving passengers.



Fig. 4. James Carpenter, *Luminous Portals*, 2005, Rental Car Center at Fort Lauderdale-Hollywood International Airport (Courtesy of Broward County Public Art & Design Collection)



**BROWARD LIGHT PROJECT Huizenga Park, 5/18/06**

Fig. 5. Huizenga Plaza, Laser Artwork layout plan (Courtesy of City of Fort Lauderdale)

## 2. FROM CONCEPT TO REALITY

In 2006, to celebrate 30 years of Broward County's Public Art & Design Program, a light-based project was approved by the Broward Cultural Council. Artist Dan Corson of Seattle, WA was selected to receive this commission to create a permanent installation.

The City of Fort Lauderdale and the Downtown Development Authority, in an unusual act of cooperation, partnered with the Broward County Commission, and together they supported this multi-dimensional project. Dan Corson took up the challenge to find a suitable site. He selected Huizenga Plaza, a 1.8 acre of open space in downtown Fort Lauderdale for this experimental light-based project. Corson stated:

Lasers moving through the grass allow us to experience in a new way something that is ubiquitous in the American Landscape - Lawn. Turf or sod is the largest irrigated crop in the United States. It is everywhere. Illuminating the lawn with coherent radiation, allows us to re-see with new eyes what is normal and all around us. Moving light simulates (and stimulates) the growth of the lawn, the flooding of the fields, the sparkle of the dew on the grass. The kinetic patterns on the lawn animate the grass for people to explore and play with the light. (Broward County Cultural Division 2007)

Installed in early 2007, this light-based artwork drew people out in the evening, like a magnet. With nine pre-programmed sequences of light patterns lasting for ten minutes each, the laser artwork has captivated children and adults alike.



Fig. 6. Laser pattern A (Courtesy of Broward County Public Art & Design Collection)



Fig. 7. Laser pattern B (Courtesy of Broward County Public Art & Design Collection)

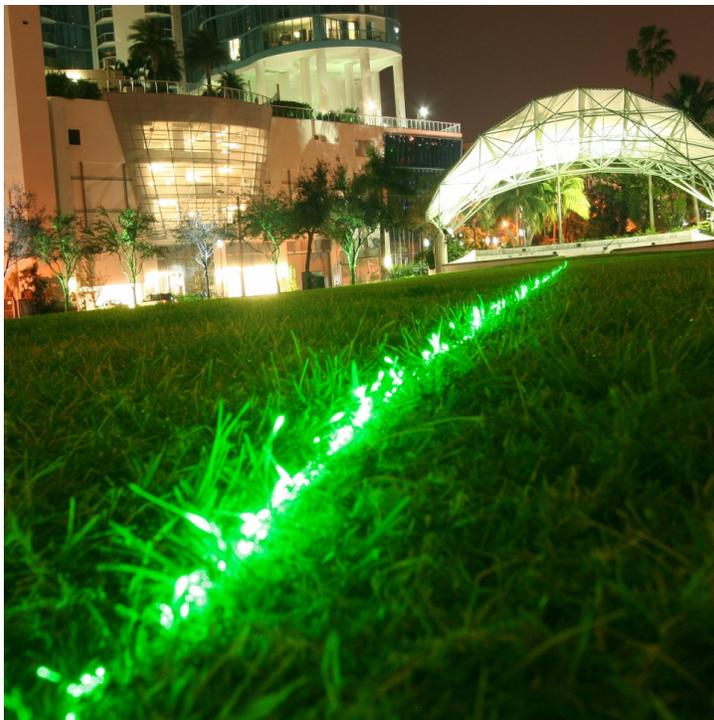


Fig. 8. Laser pattern C (Courtesy of Broward County Public Art & Design Collection)

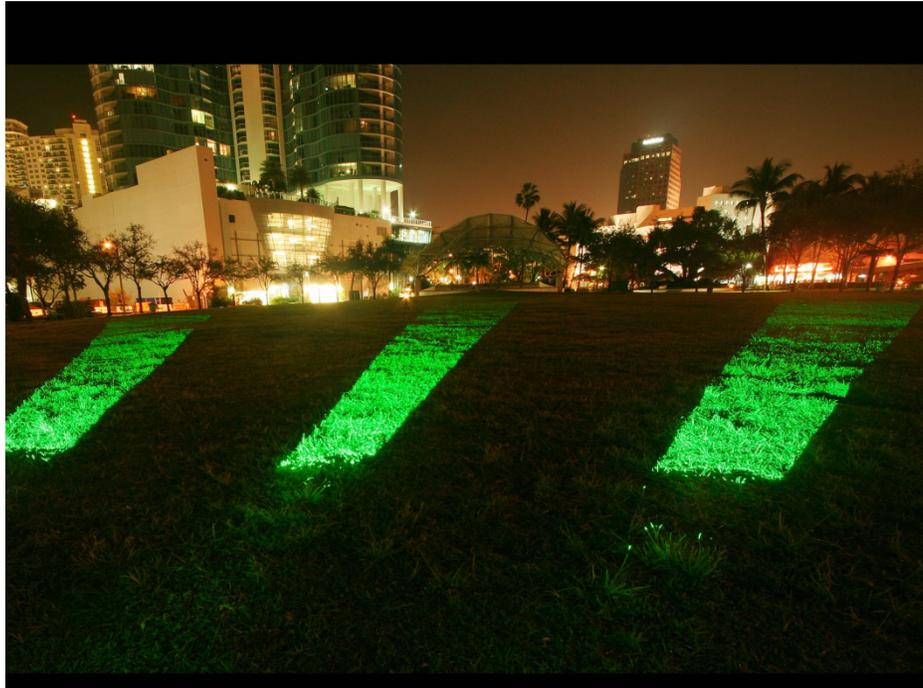


Fig. 9. Laser pattern D (Courtesy of Broward County Public Art & Design Collection)



Fig. 10. Laser pattern E (Courtesy of Broward County Public Art & Design Collection)

### 3. THE MAKING OF LASER ARTWORK

With his fully-developed concept of a laser artwork, artist Dan Corson collaborated with Jeff Silverman, chief designer and owner of Nth Degree Creative, a laser production company from Everett, WA, for the fabrication of this project. Mr. Silverman designed and custom-built the following items:

- **Laser system:** consisted of three laser units; each unit is a 2 channels, 300mw, rated IIIB green DPSS (Diode Pumped Solid State) projection system, with beam split, rated by CDRH (Center for Devices and Radiological Health) and various accessories. This laser system has a CDRH variance for safety compliance and testing. The three laser units, encased within a custom-made powder coated stainless steel box which was locked and bolted down to concrete floor, were installed under a park bench situated at one end of the open plaza.
- **Safety system:** a custom “scan fail safe circuit” (to avoid hurting eyes) for all three laser units; and a “Proximity Detection” device for the laser to shut down as needed when the device detects a moving object five feet from the laser system
- **Custom digital three channels Pangolin controller** (which is electronic equipment that contains programmable hardware and a circuit board to produce a laser show used in the entertainment industry for designed Light show) with built-in timer: runs a pre-programmed sequence of nine light patterns, housed in an A/C facility twenty feet away from the laser system.
- **Computer and monitor:** control the pre-programmed light sequence. The computer is housed in the same A/C facility, operated with its dedicated power supply and power back-up.
- **Three motion detectors:** located at different areas in the Plaza, to detect motion of a passer-by which activates the laser artwork and starts the pre-programmed sequence of nine light patterns.

The three laser systems mounted below the park bench are controlled from within the laser equipment vault to produce the various laser patterns projected out to the lawn at a low angle. These three laser systems are fed electronically with information provided by a computer which programs the three channels Pangolin controller, both housed in a nearby air-conditioned facility.

The laser systems are integrated as a whole where the start and stop operation is caused by approaching visitors triggered the three motion detectors to “start”, along with a disengage sensor or safety system to “stop”, located in front of the laser system) Within two years of its operation, the light-based installation encountered a major set-back when one unit of laser system was malfunctioned and shut down. A lengthy process of restoration ensued.



Fig.11. Laser System (Courtesy of Broward County Public Art & Design Collection)



Fig. 12. Laser Location (Courtesy of Broward County Public Art & Design Collection)



Fig. 13. Laser Safety System (Courtesy of Broward County Public Art & Design Collection)



Fig. 14. Pangolin Controller (Courtesy of Broward County Public Art & Design Collection)

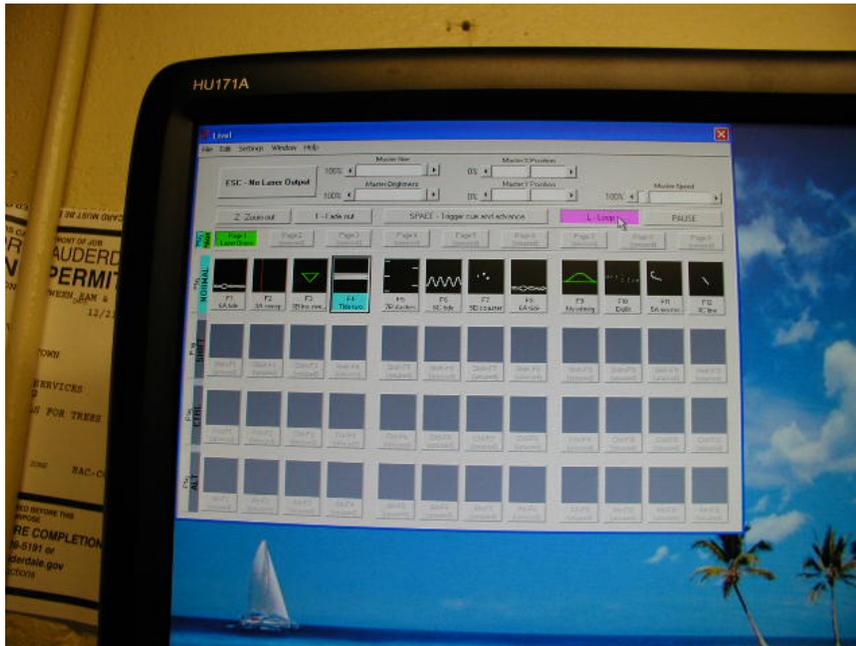


Fig. 15. Laser pre-programmed sequence (Courtesy of Broward County Public Art & Design Collection)



Fig. 16. Computer and monitor (Courtesy of Broward County Public Art & Design Collection)

#### 4. CONSERVATION PROCESS

After informing the artist of the occurrence (whose one-year warranty on the artwork had expired), the artist recommended that the malfunctioned laser unit be shipped back to the laser designer and fabricator, Jeff Silverman of Nth Degree Creative, for technical diagnosis to determine the course of restoration.

Due to a proactive measure to prevent this kind of unfortunate incidence, the Broward County Public Art & Design Program requires artists who work in digital, electronic and light-based media to secure and train a local/regional service provider. The latter would learn about the technical components of the artwork directly from the artist while the artwork was installed. This local service provider would assist in emergency repair and related maintenance need. With that provision, his service was engaged to de-install the malfunctioned laser unit which was shipped to Mr. Silverman.

After a lengthy process of testing in his lab, Mr. Silverman reported that the cause of the problem was indeed a non-functioning and burnt laser diode which would need to be replaced with a new unit. Dan Corson agreed with the assessment and the laser unit was restored by Mr. Silverman and returned one month later to be re-installed at its proper location. Then, the restored unit was tested by the local service provider Eduardo E. Carriles of United Laser Artists, Miami FL, coached by long distance call from Mr. Silverman; and re-calibrated to integrate with the other two laser units to form a seamless whole.

From the time of de-installation to its resumed operation, it took three months to complete the restoration. The laser artwork has been performing smoothly and perfectly.

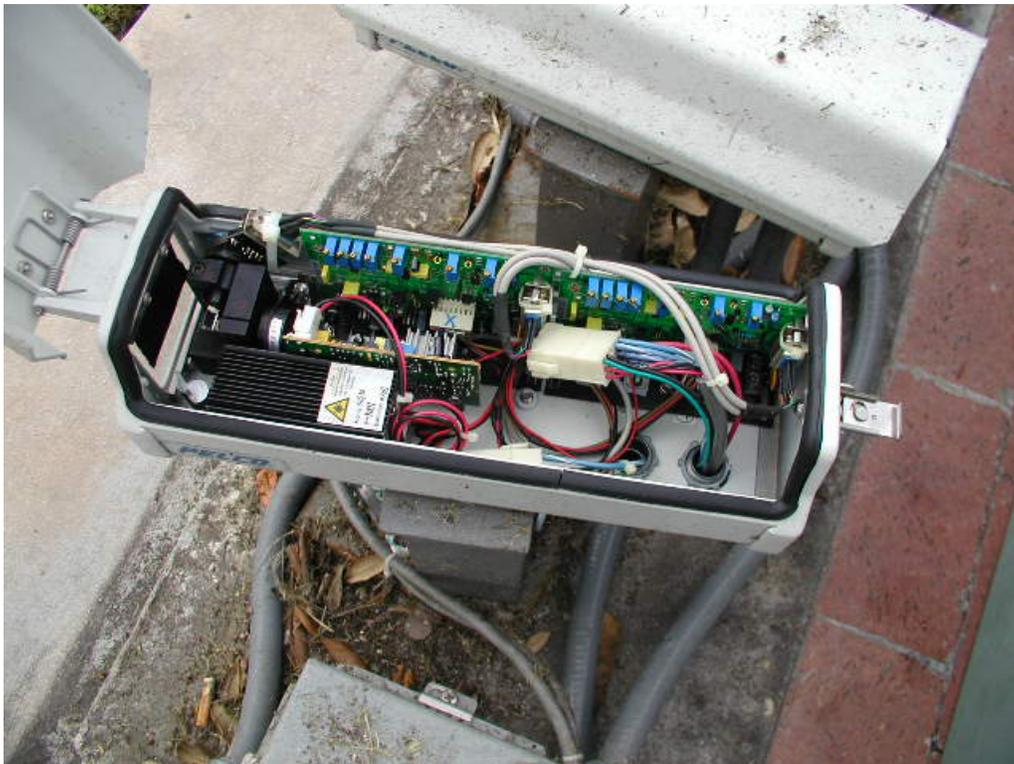


Fig. 17. Laser unit uncovered (Courtesy of Broward County Public Art & Design Collection)



Fig. 18. Calibrating laser units (Courtesy of Broward County Public Art & Design Collection)

## 5. CONCLUSION

Broward County Public Art & Design Program has been encouraging artists to experiment with new media for their commissioned project. However, a proactive approach for long term preservation has forged a Conservation Review process before a new project is approved by the Public Art Selection Committee. This preventive Conservation Review would continue through design development into fabrication and installation phases, to ensure that technical details of the project would not be overlooked in the process. Furthermore, a detailed cataloging form was provided by the artist and design team to complete the full documentation of the project. The Broward County Public Art Conservation Program is funded by a 15% of the 2% public art allocation, accounted for an average of 25 conservation projects each year.

According to a survey conducted in 2006 by the Public Art Network of the American for the Arts, there are 341 public art programs in operation in 46 states. The majority (90%) of these programs do not have funding set aside for maintenance and long term preservation of their collection. Yet, these programs represent a sizable portion of public artworks that would require the service of conservators of all disciplines in the future.

The advancement of digital and electronic art in the public art arena further complicates the situation. Are there conservators trained in this field? What kind of role should the software designer and electronic technician play in the conservation of these new media? It is with high hopes that future conservators would be able to meet the challenges to maintain and preserve the legacy of so many artists and public art programs created around us.

## ACKNOWLEDGMENTS

Mary A. Becht, Director, Broward County Cultural Division; Dan Corson, public artist; Claire Garrett, Project Manager, Broward County Cultural Division, Public Art & Design Program

## APPENDIX 1. CONSERVATION REVIEW REPORT OF THE CONCEPTUAL DESIGN FOR *EMERALD LASER LAWN* PROJECT

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### PUBLIC ART AND DESIGN PROGRAM CONSERVATION REVIEW OF PROPOSED DESIGN

**Date:** May 15, 2006  
**Artist:** Dan Corson  
**Project Name:** Broward Light Project: Green Laser Lawn  
**Project Location:** Huizenga Park, Fort Lauderdale  
**Project Manager:** Claire Garrett  
**Reviewed by:** Tin Ly, Conservation Manager

#### **Project Lifespan**

Temporary (1 to 5 years)     Midspan (5 to 15 years)     Permanent (more than 15 years)

#### **Remarks**

##### **Dynamic LED Effects**

Public Art & Design Program will pay for the 5 sensors at the “medallions zone” with programmed sequence of LED light patterns and colors. Maintenance of LED is provided by DDA (Downtown Development Authority of Fort Lauderdale).

##### **Green Laser Lawn:** maintained by County PAD program

A painted stainless steel box, housing the green diode laser light system, is secured under a bench.

Laser system: 300 mw, rated IIIB green DPSS diode projection system, with a digital 3 channels Pangolin controller to control each scan set. The laser projection starts at 18” from ground level, aiming down gradually to the center of open field of lawn. This system is unique and fabricated by Nth Degree Creative of Everett, Washington.

Precautionary measures: a custom “scan fail safe circuit” for all 3 scan sets of laser (avoiding hurting eyes), and a “proximity detector” for laser shut down as needed when the device detects an object 5’ away from the system.

This laser system will have a CDRH variance application for safety compliance study and testing.

Lifespan: 10,000 hours of operation, with average of daily usage from 8pm to 12am, resulting in a lifespan between 3 to 10 years. Artist gives a one year parts and labor warranty.

Installation method: to be determined as location may differ from the proposed one.

##### **Project will be further reviewed for conservation during design development phase**

- Laser design and fabrication may differ from the proposed one pending on the CDRH variance application process for laser safety compliance
- Installation method
- 

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Exhibit 3

EXHIBIT C – (Continued) Catalog # \_\_\_\_\_ Page 3 of 4

H. Artist's statement:

III. Fabrication Information

A. Material(s) used in Artwork:

B. Material Finish:

C. Materials used in the presentation of the project (maquette):

D. Fabricators (name, address, phone, fax, e-mail, web site):

E. Fabrication method (attach diagrams or drawings):

F. Architect/Engineer (name, address, telephone, fax, e-mail):

IV. Installation

A. Installation executed by (name, address, phone, fax, e-mail, website):

B. Installation method (attach diagram of substructure, footings):

C. Date of Installation:



## REFERENCES

Americans for the Arts, *2005-2006 Public Art Program Directory: A Comprehensive Guide to Public Art Programs in the United States*, Susan Gillespie, editor; Renee Piechocki, research

Broward County Cultural Division, Public Art & Design Program. 2007. *Cataloging Form, 2007. I. Di; H. Artist's Statement*

TIN LY has worked as a visual artist and art conservator in Broward County, Florida, for the past thirty years. A recipient of many awards and fellowships (including twice from the Florida Arts Council and twice from the South Florida Cultural Consortium), he joined the Broward County Cultural Division in September of 1999 as Conservation Manager of the County's Public Art Collection. Ly has conserved artworks for the Charles Saatchi Collection in London UK, Martin Margulies Collection in Miami FL and Ludwig Museum in Koln, Germany, among others. Ly is a Duane Hanson specialist.

With the Broward County Public Art Collection, he has managed over 90 some major conservation projects of artwork in diverse medium, from traditional to contemporary, interactive electronic to digital, such as artwork by James Carpenter, Alice Aycock, Alice Adams, Jody Pinto, Dan Corson, Mags Harries/Lajos Heder, Michele Oka Doner, Yaacov Agam, Keith Sonnier, Ralph Helmick, Jim Sanborn etc...

He has presented at:

- 2001: "*Conservation and Maintenance of Contemporary Public Art*", organized by the Cambridge Arts Council, Boston MA
- 2006: "*Material Meaning: Process, Product and Preservation in Public Art*" at the American for the Arts, Public Art Preconference, Milwaukee WI
- 2008: "*Sculpture in Public: Part 2, Pubic Art*" at the 21<sup>st</sup> International Sculpture Conference, Grand Rapids MI
- 2010: "*Case Studies in Contemporary Art*", co-organized meeting between INCCA-NA and the OSG and EMG specialty groups at the American Institute for Conservation (AIC) Annual Meeting, Milwaukee WI

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