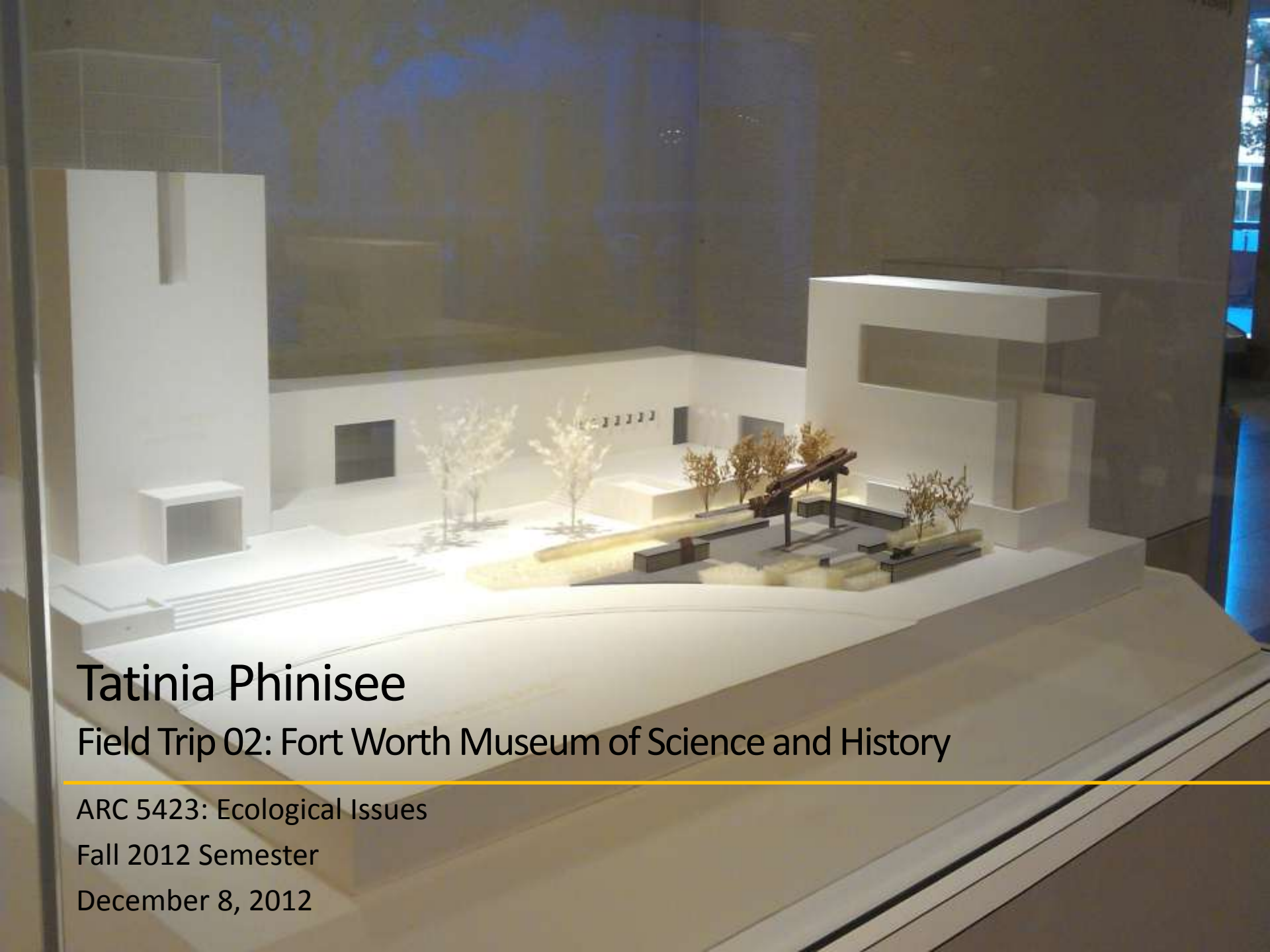




Tatinia Phinisee

Field Trip 02: Fort Worth Museum of Science and History

ARC 5423: Ecological Issues

Fall 2012 Semester

December 8, 2012

“Dedicated to lifelong learning and anchored by our rich collections, the Fort Worth Museum of Science and History engages our diverse community through creative, vibrant programs and exhibits interpreting science and the stories of Texas and the Southwest.”

– <http://www.fwmuseum.org/about-us-history>



Mission Statement

Field Trip 02: Fort Worth Museum of Science and History

The new building, completed in 2009, was design by Legorreta + Legorreta. Based in Mexico-City, the firm was operated by Ricardo Legorreta and his son Victor. Ricardo received the AIA Gold Medal Award in 2000, the highest award given to individuals . Ricardo used bright colors and geometric forms to create ‘a very happy environment, a building for kids, young people and adults.’ The community has been greatly enriched by Ricardo’s vision. He “established not only a landmark addition to the Fort Worth Cultural District but also a beacon of learning, entertainment, and enlightenment for the world’s community of progressive museums.” Ricardo died Dec. 30, 2011.
– <http://www.fwmuseum.org/museum-architecture-about-architects>



Architectural Vision

Field Trip 02: Fort Worth Museum of Science and History

In 1939 the local council of Administrative Women in Education considered starting a children's museum in Fort Worth. The charter was filed on May 21, 1941.

With the help of the school board, the Fort Worth Children's Museum was opened in 1945 in two rooms in a local elementary school, De Zavala. In 1947 the museum moved into the R.E. Harding House. As time passed the museum gained popularity and support. On January 25, 1954 the museum opened a new facility in Fort Worth.

In 1968 the name was changed to the Fort Worth Museum of Science and History to encourage all in the community to visit – adults and children alike.

– <http://www.fwmuseum.org/about-us-history>

History

Field Trip 02: Fort Worth Museum of Science and History

In 1983 the museum added the Omni Theater, the first IMAX® dome theater in the Southwest.

Over the years the Museum grew from solely displaying its permanent exhibits by collaborating with other museums and science centers across the nation. The museum also added interactive, hands-on exhibits and world-class traveling exhibits.

Annual attendance has grown to approximate one million. Due to the increasing popularity the museum saw the need to expand by creating the new building that we see today.

– <http://www.fwmuseum.org/about-us-history>



History

Field Trip 02: Fort Worth Museum of Science and History



History

Field Trip 02: Fort Worth Museum of Science and History

The new facility has approximately 166,000 square feet. It is sited in the Museum District of Fort Worth, and faces a plaza that connects it with adjacent buildings such as the Will Rogers Center and the National Cowgirl Museum and Hall of Fame.

The main entrance is announced by a 76-foot 'urban lantern' that beckons visitors of all ages, just as a lighthouse guides ships at sea. The entry is designed to allow natural light into the building in the daytime and to softly illuminate the site at night, without creating harsh light pollution.

– <http://www.fwmuseum.org/museum-architecture-urban-lantern>

Facility

Field Trip 02: Fort Worth Museum of Science and History

“The Lantern is illuminated using LED (light-emitting diode) and compact fluorescent lights. Interior lighting is via compact fluorescent sconces around the lantern. Each LED fixture is 50W if powered with all LEDs at maximum power (brightest white). With a yellow/golden color, output is less than half – 20-25W per fixture.

The Lantern has 32 fixtures, all of which are full color changing and fully dimmable, and can be set to various colors and apparent brightness levels. It is illuminated automatically via the astronomical time clock. The on-time changes with the seasons. The off-time is set by the Museum.”

– <http://www.fwmuseum.org/museum-architecture-urban-lantern>



Sustainability: LED Lighting

Field Trip 02: Fort Worth Museum of Science and History

Not only is natural light featured in the main entrance, but it is also embraced throughout the facility by a series of courtyards, indoor-outdoor spaces, skylights, pergolas, and other openings which allow in ample natural light.

The architect wanted people to experience the changes in the intensity, color, and warmth of natural through the progression of the seasons.



Sustainability: Daylighting

Field Trip 02: Fort Worth Museum of Science and History

‘Daylighting is an approach to provide at least 90 percent of the occupants in the building some view and to have as much daylight extend as deep into the building as possible. Legorreta accomplished daylighting through extensive use of very large glass wall openings.... “Large clerestories in the energy gallery, along with other large windows throughout the building, combined with the openness of the plan, allow daylight far into the structure. Daylight is present in 95 percent of the public space inside the new Museum,” according to Museum President Van A. Romans.’

– <http://www.fwmuseum.org/museum-architecture-solar-panels>

Sustainability: Daylighting

Field Trip 02: Fort Worth Museum of Science and History



Another aspect of the building's sustainability is the recycling of demolition materials during construction. According to the museum's website the following items were diverted from landfills:

- 5,148 tons of concrete
- 140 tons of steel and metal
- 270 tons of asphalt
- 7,000 lbs. of copper wire
- 2,500 lbs. of copper pipe
- Electrical breakers and switchgears
- Specialty items: flag poles, cast iron tree grates, interior storage "cages", etc.

– <http://www.fwmuseum.org/museum-architecture-solar-panels>



Sustainability: Recycling

Field Trip 02: Fort Worth Museum of Science and History

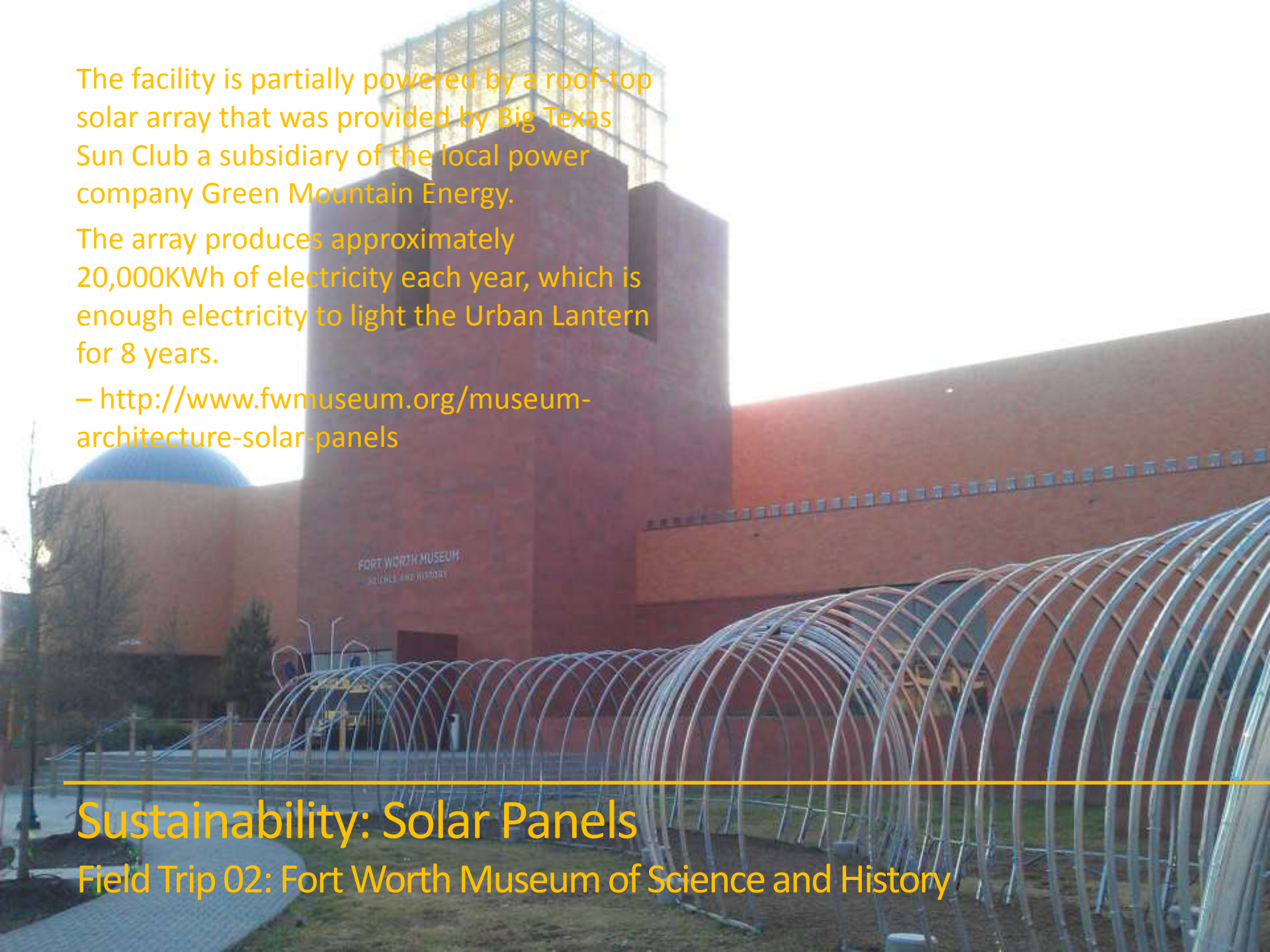
The facility is partially powered by a roof-top solar array that was provided by Big Texas Sun Club a subsidiary of the local power company Green Mountain Energy.

The array produces approximately 20,000KWh of electricity each year, which is enough electricity to light the Urban Lantern for 8 years.

– <http://www.fwmuseum.org/museum-architecture-solar-panels>

Sustainability: Solar Panels

Field Trip 02: Fort Worth Museum of Science and History



Sustainable features include ‘a concrete cistern with a 20,000-gallon capacity that was installed under the north courtyard. Rainwater is routed from the Museum rooftop to flow into this tank. The stored water is used to irrigate landscaping around the building and is supplemented by city water, when necessary. The cistern will hold enough water to irrigate the landscape for approximately one week, saving the Museum from purchasing and treating water from a city source.’

– <http://www.fwmuseum.org/museum-architecture-solar-panels>



Sustainability: Water Cistern

Field Trip 02: Fort Worth Museum of Science and History

“The entire Children’s Museum courtyard features a permeable hardscape. This child-safe surface allows rainwater to pass through it and into the ground, then into the ground water. “We have storm water drain collection in the area that will also pick up what soaks through and take it to the cistern, as well,” said Bruce Benner, AIA, president of the building’s architect of record, Gideon Toal.”

– <http://www.fwmuseum.org/museum-architecture-solar-panels>



Sustainability: Permeable Hardscape

Field Trip 02: Fort Worth Museum of Science and History

“The Museum design also includes a reservoir to reclaim water from the children’s water play sculpture in the Fort Worth Children’s Museum. “This is an attempt at reclaiming as much of the water as possible that is used in the water play sculpture,” Benner said. “The water the kids will be engaged with collects into drains, flows into the reservoir, and recycles back through the system.”

– <http://www.fwmuseum.org/museum-architecture-solar-panels>

Sustainability: Waterplay Reservoir

Field Trip 02: Fort Worth Museum of Science and History





Additional Photographs

Field Trip 02: Fort Worth Museum of Science and History



Additional Photographs

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Additional Photographs

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Additional Photographs

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Additional Photographs

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Additional Photographs

Field Trip 02: Fort Worth Museum of Science and History



FORT WORTH
MUSEUM SCHOOL
Nancy Lee Bass Schoolhouse

Additional Photographs

Field Trip 02: Fort Worth Museum of Science and History



The End – Thanks! 😊

Field Trip 02: Fort Worth Museum of Science and History