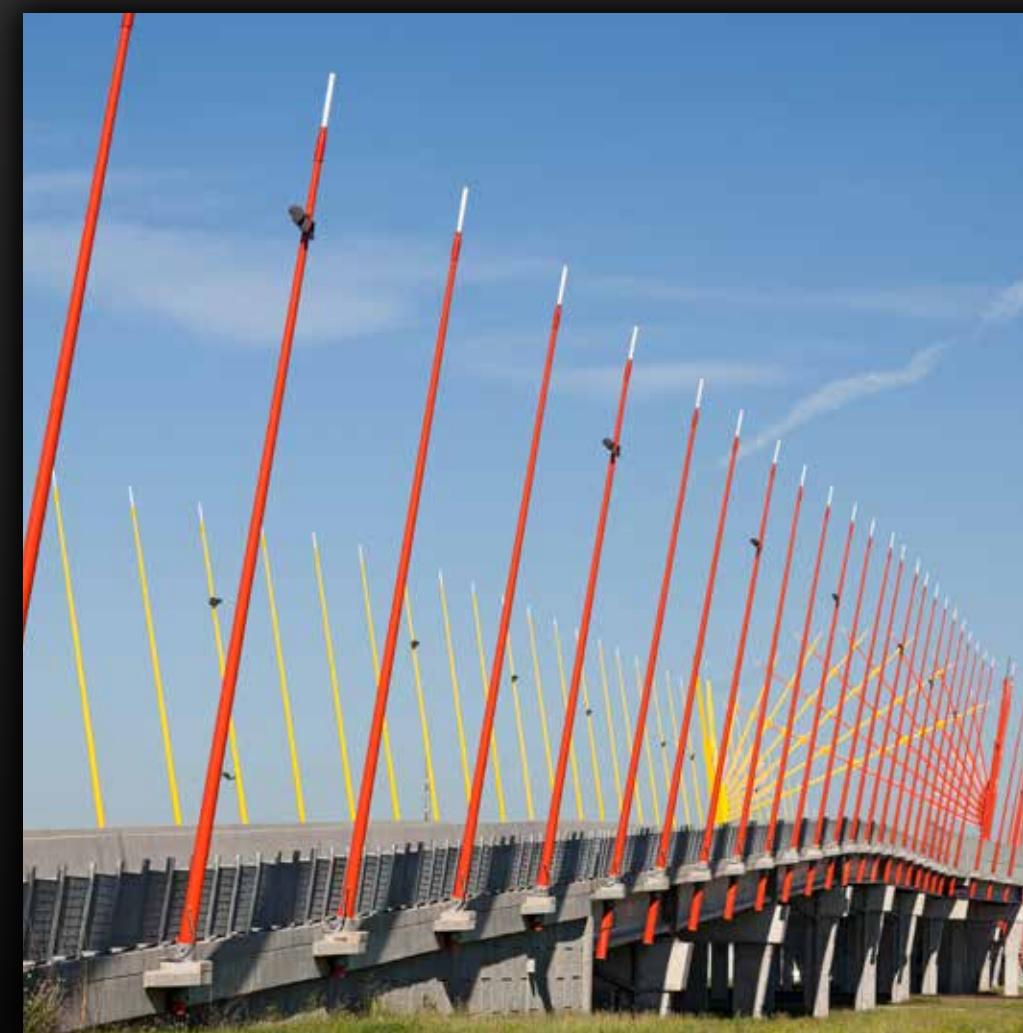
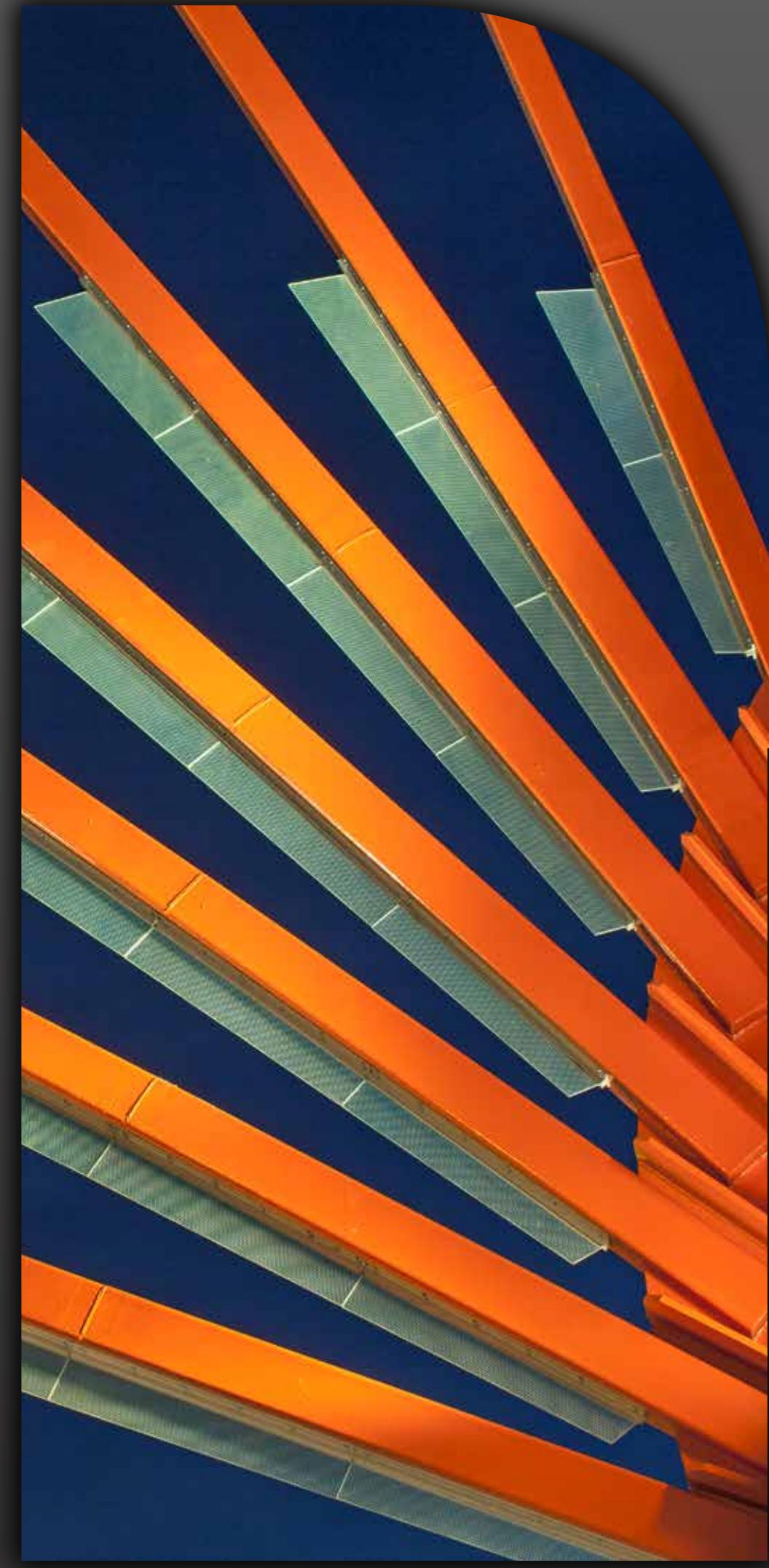


STEEL, ALUMINUM, LAMINATED DICHROIC GLASS, STAINLESS STEEL CABLES AND LED LIGHTING



IWPA

Iowa West Public Art

ED CARPENTER
BROADWAY
VIADUCT
GATEWAY
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ED CARPENTER ON THE BROADWAY VIADUCT BRIDGE GATEWAY

ABOUT THE ARTIST

Ed Carpenter is an artist whose large-scale public artworks incorporate light, nature, glass and engineering. He was born in Los Angeles, Calif., in 1946, and his family background influenced his choice of career. Ed Carpenter says, "My grandfather was a painter and a sculptor, and my stepfather, with whom I grew up, was an architect. And I ended up doing something that turns out to be kind of like a combination of what the two of them did." He learned about architecture working in his stepfather's architectural office in the summers when he was a teenager.



While Ed Carpenter was studying at the University of California at Berkeley he became friends with a local glass artist. This friendship inspired him to study the craft of stained-glass in England and Germany. For about ten years he worked mostly in the medium of stained glass. His growing curiosity about how light can be used has led him to work in a variety of media.

Now living in Portland, Ore., Ed Carpenter works with a team of professionals, including structural, acoustic, and lighting consultants and architects to make his large-scale sculptures. He is recognized as an innovator in his experiments with glass, light and new technologies. Ed Carpenter says that a common thread running through all his work, whether for indoor or outdoor

sites, is that it is, at the same time, both "technological and sentient [able to feel things], engineered and organic, mechanical and botanical." He says that his work, which is both artistic and scientific, "addresses the heart, the eyes and the mind in that order." His public art projects have included bridges, towers, gateways, and indoor and outdoor sculptures in places such as airports, medical centers, universities and churches.

WORK OF ART

MEDIUM AND DESCRIPTION

Ed Carpenter's sculpture is on the Broadway Viaduct bridge on the north side of downtown Council Bluffs, Iowa. The Broadway Viaduct bridge, originally built in 1955, was identified as a central link in downtown Council Bluffs and allowed traffic to flow over the railroad tracks and industrial buildings below. The sculptural enhancement is part of the recent rebuilding of this bridge which connects the east and west sides of this main street of the city. Ed Carpenter was impressed by how seriously people take development of the city of Council Bluffs and how influential this landmark bridge will be in the life of the city.

The 111 brightly painted and tilted light poles set at 40-foot intervals stretch to each end of the Broadway Viaduct bridge. The poles grow in size from 35 to 60 feet tall as one nears Ed Carpenter's gateway sculpture at the center of the bridge.

The gateway is constructed of steel, aluminum and laminated dichroic glass. Dichroic glass displays a variety of colors that change depending on the angle from which you view it. There are two base poles, one in a reddish orange color and the other in a golden color. Towards the top of these base poles, thin aluminum poles in the same red and yellow colors fan off at diagonals toward the center of the bridge. The dichroic glass is located at the bases and tips of the diagonal poles. Ed Carpenter sees these fans as the rays of the sun or as long fingers in the form of a handshake.

Turn to a partner, fan the fingers of your right hands out and reach toward one another as if you are going to shake hands. Compare this gesture to those made by the fans on the bridge.

What kind of meaning might this gesture have?

How would this be appropriate to a bridge which is meant to be the gateway to downtown Council Bluffs?

Look at the following public artworks by Ed Carpenter:

- Springstar, Santa Fe Springs, Calif.
- Rays, McCarran International Airport, Las Vegas, Nev.
- Triplet, Raleigh-Durham International Airport, Morrisville, NC
- Light Veil, Memphis Public Library Atrium, Memphis, Tenn.
- Light Wings, Houston International Airport, Houston, Texas
- Finfan, Ft. Lauderdale-Hollywood Airport, Ft. Lauderdale, Fla.

[Links available at www.iowawestpublicart.org](#)

Make a list of the similarities you see in these artworks and in the Broadway Viaduct Gateway. Point out where you see horizontal lines, vertical lines, and diagonal lines. Which type does Ed Carpenter use most?

Which type of line do you think seems to move or gesture more?

Lines that are set at an angle or tilted are often called canted lines.

Which lines in the Broadway Viaduct Gateway are canted?

If canted lines suggest movement, how could you connect canted lines to what might happen on or around a bridge?

Ed Carpenter says that he doesn't just get an idea and then draw it. Instead, he travels on a journey of discovery to understand how his works connect to the sites where they are built. For the Broadway Viaduct Gateway he studied reds and oranges because "warm colors seemed like they fit in this case."

Why do you think warm colors might fit the location of the Gateway?

Because the Broadway Viaduct runs east/west, the Gateway sculpture frames the sunset or sunrise depending on which way you are driving. Ed Carpenter chose a bright red-orange and a golden color because "these colors cross and merge in the gateway and ...are formed in such a way that they suggest a sunrise or a sunset."

Ed Carpenter also used color and glass to suggest sunrise and sunset in his sculpture for the McCarran International Airport in Las Vegas, Nev. Ed Carpenter says, "In a state with endless vistas and magnificent sunrises and sunsets, it is fitting to employ light as a central metaphor. This installation refers colors and forms from the horizons and weather patterns of the state of Nevada."

Although the Broadway Viaduct Gateway sculpture can suggest a handshake and make reference to a sunrise or sunset, Ed Carpenter still says, "I am designing something which is intentionally very abstract. It is not representational art."

INTERPRETATION

Watch the 18-minute video on Ed Carpenter Site/Light.

[Link available at www.iowawestpublicart.org](#)

Ed Carpenter says that it is difficult to describe what he does. He works with architects and engineers but he is neither. His sculptures offer a perfect melding of art, science and nature. We can look at other works by Ed Carpenter to help us understand his ideas that led to the creation of the Broadway Viaduct Gateway.

Look at the following work:

TECOTOSH, Maseeh College of Engineering and Computer Science, Portland State University (Look at all the images available on the link.)

[Link available at www.iowawestpublicart.org](#)

TECOTOSH, at Portland State University, was designed to make the courtyard in front of the Engineering building more than just an entryway, to make it a place for students to stop and gather. As Ed Carpenter imagined people going into and under the sculpture, he began drawing moving, creature-like forms. (Look at his drawings on the website.) As he worked with an engineer to build the piece he realized that it demonstrated the four basic forces that structural engineers deal with: tension, compression, torsion and shear. The name of the piece is made up of the first two letters of each of these terms.

Tension - the state of being stretched tight

Compression - the state of being squeezed or pressed together or into a smaller space

Torsion - the state of being twisted

Shear - to break off or cause to break off, owing to a structural strain

Look again at the images.

Point out places where you see these engineering forces at work.

Look at the following works:

Dream Leaves, John A. Burns School of Medicine, Honolulu, Hawaii
Leaf, U.S. Federal Courthouse, Seattle, Wash.

[Links available at www.iowawestpublicart.org](#)

Can you find any of these engineering forces at work in these sculptures?

What features of an actual leaf does Ed Carpenter use in Dream Leaves?

Ed Carpenter created this work by using strong contour lines to outline the shape of a taro leaf. This sculpture is located in Honolulu, Hawaii, where the taro plant forms the basis of an important Hawaiian food, but also is part of the traditional Hawaiian creation story. The heart shape of the contour of the leaf also makes reference to the fact that this sculpture is in front of a medical school. It wraps around two sides of the building creating a garden-like environment that people can enter. Ed Carpenter uses both natural sunlight and dichroic glass to cast moving organic images and changing colors on the building and ground.

Look again at the images of Dream Leaves and point out where you see the colored glass.

Ed Carpenter created another sculpture using the shape of a leaf. He designed the sculpture for the U.S. Federal Courthouse in Seattle, Wash., where he was dealing with a tall, thin enclosed space with offices on either side. He found himself drawing tall, thin, transparent shapes and it wasn't until he was walking through the forest that he connected this shape to the shape of a leaf.

Ed Carpenter says that every one of his projects has a metaphor that he discovers as he solves other questions of scale, space and design principals. For a number of his artworks, the metaphor ties the works to nature. In this case, he was inspired by finding alder leaves on the ground in the forest. He realized that the alder tree has a special role in a forest. It is the first tree to come back after a landslide or a forest fire, so it has a restorative role in nature. Because this sculpture is in a federal courthouse, Ed Carpenter made a connection between the restorative role of the alder tree and the role of the court system in solving human problems. So the sculpture, Leaf, responds both to the unusual shape of the space and to the use of the space.

How does the Broadway Viaduct Gateway sculpture respond to both the shape of the viaduct and to its use?

How does the Broadway Viaduct Gateway make reference to the natural world?

VOCABULARY

Abstraction – not visually representing any object in the physical world

Canted – to be set at an angle or tilted

Contour line – the line that defines a form or edge

Gesture – a movement of part of the body to express an idea or meaning

Metaphor – a word or phrase that is used to draw similarities between two different things

Value – the relative degree of lightness or darkness of a particular color

CLASSROOM CONNECTIONS

EXPLORE BIG IDEAS:

Artists play with both natural and artificial light in their creations.

Connect with Other Art, Artists and Cultures

An article about Ed Carpenter's work says that the common element among all his pieces is "an exploration of how light - whether daylight, electrical illumination, or a combination of the two - affects the built structure it falls upon, passes through or radiates from." (www.edcarpenter.net/publications/ar0604)

Look at the following works:

Silver Thaw, Redmond, Wash.
Vessel, Fred Hutchinson Cancer Research Center, Seattle, Wash.
Light Veil, Memphis Public Library Atrium, Memphis, Tenn.
Richmond Convention center pedestrian bridge walkway, Richmond, Va.
Lightstream, Dallas Convention Center, Dallas, Texas

[Links available at www.iowawestpublicart.org](#)

Where do you see sunlight falling upon the sculptures, passing through them, or radiating from them? Where do you see artificial light interacting with the sculptures?

Another quote says that Ed Carpenter manipulates light to "create a game of layering and texturing, obscuring and revealing, and allowing the movement of shadows and light patterns to animate a room, a wall, or a courtyard." (www.edcarpenter.net/publications/ar0604.html)

Point out where Ed Carpenter has overlapped or layered parts of the sculptures to create a texture. Point out where you see shadows and reflections caused by light.

In Silver Thaw, Ed Carpenter wanted to take advantage of the reflections and play of light in a pool in front of the Redmond, Wash., City Hall. He positioned the sculpture to catch the light of the sun as it moves through the day. The forms reminded him of grasses along the river near the building, especially in the winter when they are covered with ice.

Where have you seen sunlight reflecting off ice in the winter?

Vessel is a huge sculpture created in a traffic circle in front of the Fred Hutchinson Cancer Research Center in Seattle, Wash. Light changes in relation to the sculpture depending on the season and the time of day. During the day, natural light is projected and reflected by the sculpture. At night the sculpture is illuminated with artificial light. As the sun moves during the day it projects the shadow of the sculpture on the ground, creating the movement of a giant sundial (see photos).

Why do you think this sculpture is named Vessel?

Can you think of anything else besides sundials that makes use of the position of the sun?

Since ancient times, people have built structures that have tracked the position of the sun and connected it to the changing seasons on earth.

Look at the following ancient structures:

Stonehenge, Neolithic England
Templo Mayor, Aztec, Tenochtitlan (ancient Mexico)
Pueblo Bonito, Chaco Canyon, Ancestral Pueblo (New Mexico)

[Links available at www.iowawestpublicart.org](#)

Do you know how Stonehenge is connected to the movement of the sun?

Through keen observations these civilizations were able to lay out structures so that the light of the sun on certain days, like the summer and winter solstice, would appear in key positions. In this way they could predict important times of the year such as the summer solstice which is the day of longest sunlight.

Even in modern times, artists have made use of natural light in their sculptures.

Look at the following works and watch the videos:

Nancy Holt, Sun Tunnels, Utah
James Turrell, Roden Crater

[Links available at www.iowawestpublicart.org](#)

Why do you think throughout time people have been so interested in capturing the light of the sun? In what ways is the sun important to us today?

Look at the following paintings:

Janet Fish, Green Glass from Alexis, 2001
Roman still life painting, Herculaneum, Italy

[Links available at www.iowawestpublicart.org](#)

How do these paintings make use of natural light?

Both the artist Janet Fish and the ancient Roman artist were interested in the way light penetrates and reflects from glass. They used paint to create the illusion that you are looking at light hitting and reflecting from objects.

Point out places in both paintings where you can see light through an object.

Point out where objects reflect light.

Point out where light and shade (value) make an object seem three-dimensional.

Now look at the following glass sculpture:

Dale Chihuly, Inside and Out, Joslyn Art Museum, Omaha Neb.

[Link available at www.iowawestpublicart.org](#)

Rather than painting glass, Dale Chihuly uses actual glass to make his work.

How does light affect the sculpture during different times of the day?

Dale Chihuly creates a variety of shapes for his glass sculptures, some which resemble sea life and plants, some of which are large installations and some which are small pieces, but both natural and artificial light play a large part in the display of the works.

Some artists focus particularly on artificial light to create their works. The light is the medium in which they work.

Look at the following works:

Michael Hayden, Sky's the Limit, Chicago O'Hare International Airport, Ill.
Leo Villareal, Multiverse, National Gallery, Washington, D.C.

How are the lights these two artists use different? (color and shape)

How do the artists intend people to experience their works? (move through them)

In both these works the lights change in pattern and in Hayden's work they change in color as well.

How would you feel as you walked through each of these works with the lights all around you?

Now watch the short video on Multiverse (Part 4, Resolution), and a minute or two of the video on Sky's the Limit.

Now that you have experienced the works through video, what surprised you about them?

How do some Ed Carpenter's works, that you have looked at, make a connection to these works that use artificial light?

How does Broadway Viaduct Gateway make use of both artificial and natural light?

Experiment with Art Making

Look at the following two Ed Carpenter works:

Vessel, Fred Hutchinson Cancer Research Center, Seattle, Wash.
Sphere, Carlson School of Management, University of Minnesota, Minneapolis, Minn.

Look at the way both sculptures reflect onto the spaces around them. Remember how Vessel casts a shadow that moves as the sun moves like a big sundial.

You are going to create a sculpture out of linear elements like straws, popsicle sticks, pipe cleaners, or twigs. You want to create a design that will make an interesting shadow when you shine a flashlight through it.

Are you going to use canted lines the way Ed Carpenter does?

Place your sculpture in two different spaces, one so the sculpture can reflect on a wall, and another in an open space so the shadow is on the surface.

Try shining the light through your sculpture from several different directions in both places.

Ed Carpenter uses dichroic glass to add color to his sculptures. Try adding color to your sculpture by attaching pieces of colored cellophane.

How do the shadows change depending upon the position of the flashlight?

How do the shadows change depending on the surface upon which they are cast?

Where could you put your sculpture outside so that the natural light of the sun would cast interesting shadows through it?

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