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Let the Sun Shine In

Class of '51 gives a gift of art and science

By Craig Brandon

Keene State College's newest work of art is more than just a lovely piece of sculpture, it's also a solar clock that students can use to tell the time once they know its secret. In the age of space shuttles and the Internet, is there a place for a timepiece with no batteries and no moving parts?

The "East West Meridian Sundial" was given by the members of the **Class of 1951** to mark their 50th reunion and was dedicated on June 2, 2001, in front of the Science Center. It will eventually be moved to its permanent home in the library courtyard once renovations to the library are completed.

"The challenge for me was to create something that was not only lovely to look at, but that would also be functional," said sculptor Nancy Frankel of Kensington, Md. She has been interested in sundials for 20 years after reading "The Great Sundial Cutout Book."

"I wanted to design something that had both an open space and an enclosed space," she said. "I realized that the moving sun was also an element in this design. I wanted something that would fit in well with the design of the library."

Working with sundial aficionado Mac Oglesby of Putney, Vt., Frankel considered a number of traditional and innovative designs before settling on a structure that resembles a giant musical G-clef without the stem. Sunlight passes through slits at the top to mark the time on the lower supports of the sculpture.

The history of sundials stretches back to the beginnings of human history, said Oglesby, and they were in common use among the Egyptians and the Greeks. "People got really good at designing them," he said. "It used to be a part of a gentleman's education to understand how sundials worked and how to make the calculations. A lot of people spent a lot of time designing them, working out the calculations."

Even as late as the early railroad era sundials were used to adjust mechanical clocks, which tended to be much less reliable, he said.

But the design was only a part of the decisions that had to be made. Frankel also had to consider the location, since access to sunlight was critical, and how big to make the sculpture so that it would fit into its environment.

"Originally we thought it would be about five feet high, but the landscape architect at the school thought it should be 10 feet high," she said. "The final version is about six feet high, but it will eventually be placed on a pedestal to make it slightly higher."

Besides all the considerations that go into an ordinary sculpture, such as scale, color, texture, and materials, she said, designing a sundial involves some

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complicated mathematics to make sure it does what it is supposed to do: tell the time.

The sundial has to be carefully aligned with the sun and also adjusted for the latitude of the place where it will be displayed. A sundial that worked perfectly in Frankel's Maryland studio, for example, would not work in Keene. So there is a "sense of place" involved in the sculpture as well. It is uniquely designed to work only in Keene, N.H.

Since there is a 23-degree difference in where the sun rises and sets depending on the time of year, there also needs to be a conversion table to translate the "local sun time" indicated on the dial into Eastern Daylight Time. You also need to subtract an hour during the winter when Daylight Saving Time is not in effect. So while the sundial probably won't ensure that students aren't late for their classes, it will provide a reasonable approximation of the local time for someone who is familiar with the conversion process.



Sculptor Nancy Frankel, far left, visited Keene State for the installation of her "East West Meridian Sundial" in its temporary home, above, on Appian Way near the Science Center. An explanatory sheet on how to read the sundial is available at the site. In the future, it will be moved to the Alumni Courtyard near Mason Library. See p. 27 for more information under "Bricks for Books."

The sculpture is a vertical dish with two hour plates, one facing due east and the other west, with the hour line markings on each face parallel to each other. Instead of the usual "gammon," the vertical swoosh found on most garden-variety sundials, Frankel's design uses semi-circular holes in the south-facing curved part of the sculpture.

Sunlight passing through the holes create a line of sunlight that falls on one of the two face plates, the east one during the morning and the west one during the afternoon. At exactly noon, the sun is lined up directly with the holes and the sunlight shadow does not fall on either plate.

Although it looks like it is made out of copper, the sundial is actually made of a man-made artificial stone material that resembles plaster of Paris but is much more durable, Frankel said. "They have used it

on cathedrals to replace gargoyles that were damaged by acid rain. I wanted something that was very hard and of course it had to be weather-resistant."

The copper color is the result of a special paint, with small amounts of copper in it, that will age into the distinctive green patina of copper sculptures without the expense of using real copper.

Of course there are a few drawbacks to sundials as timepieces. They don't work at night and they also don't work during the many cloudy days in Keene, where Oglesby estimated that the sundial could only be read about 25 percent of the time. "The rest of the time," said Frankel, "Keene can appreciate the sundial as a work of sculpture."

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