The 10,000-Year Clock

By Cynthia G. Wagner
Photographs by Rolfe Horn

Our inability to think in the long term leaves us incapable of taking responsibility for the future.

To wake us up to a longer sense of time, a group of thinkers is devising plans for a 10,000-year clock.

Face of the Future?
Prototype face of Clock of the Long Now. The inner rings mark natural cycles: sun, moon, sunset, and sunrise indicators. The outer rings mark calendar cycles: centuries and years.

Why 10,000 years? This time frame was suggested because it was 10,000 years ago that the last ice age ended and what might be called civilization began. It is appropriate to strive to look as far forward as we are able to look backward.

The hope is that the image of such a clock could potentially inspire people to think differently about the future, just as images of Earth photographed from space taught people to think differently about the fragility of our planet’s environment.

And so the Clock project was born, evolving into a Clock/Library Project, “with the realization of the need for content to go along with the long-term context provided by the Clock,” according to the project summary. In 1996, The Long Now Foundation was established to discuss and develop the Clock/Library. Board members include Peter Schwartz, chairman of the Global Business Network; Paul Saffo of the Institute for the Future; and Stewart Brand, author of a new book about the project, The Clock of the Long Now.

Hillis devised the initial mechanical design and prototype of the Clock: It would be self-correcting, and its precision would equal one day in 20,000 years.

Bit serial mechanical adder, designed by Danny Hills, converts the swing of a pendulum into a highly accurate measured motion, displayed on the Clock face.
years, writes Brand. To attain this incredible accuracy, Hillis has come up with a system that combines solar alignment and a pendulum. The pendulum "would keep the Clock close to accurate, and then a pulse of focused sunlight at exact solar noon would adjust the Clock precisely on any day there was sun," Brand explains.

How is a clock—or any artifact—to survive over a period equal to all of human civilization? Among the fundamental design issues Hillis has had to deal with are choosing maintainable materials, making the operational principles obvious (because the device's designers will not always be around to explain it), making the device itself improvable over time as technological know-how evolves, and even keeping it unattractive to thieves and vandals.

The Clock would be a part of a large library complex built in a cave in the mountains near the high desert of the U.S. Southwest. In addition to the Clock, the facility would include a library that constantly increases, "akin to the truly ancient library of Alexandria," as executive director Alexander Rose describes it.

For the present, the Clock exists largely as a discussion thread on the Foundation's Web site; it is both a real project and a metaphor for the "long now"—a view of the present.
that is far broader than our current myopia permits. The Foundation invites all to participate in this long-range project by offering suggestions and ideas for the Clock on its Web site.

As a symbol, the Clock may be perceived as a very simple message from the present to the future. As Hills puts it, "I cannot imagine the future, but I care about it. I know I am a part of a story that starts long before I can remember and continues long beyond when anyone will remember me. I sense that I am alive at a time of important change, and I feel a responsibility to make sure that the change comes out well. I plant my acorns knowing that I will never live to harvest the oaks. I have hope for the future."

About the Author
Cynthia G. Wagner is managing editor of THE FUTURIST.

Three-dimensional model of Clock designed by Danny Hills.

Natural Rings
- Sun Ring: 24 hours/rot (OW)
- Moon Ring: 8 phases and 29 days/rot (CW)
- Sunset/rise indicators (dynamic)
- Astral time: window 24 hours/rot (OW), solar (solar) processes with equinoxes c. 941/404 days/rot (CCW)

Calendrical Rings
- Century Ring: c. 36524 days/rot (CW)
- Year Ring: c. 36524 days/rot (CCW)

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Time and Responsibility

Since the soon-to-be outnumber the living; since the living have greater impact on the unborn than ever before thanks to depletion of natural systems, atmospheric disruption, toxic residue, burgeoning technology, global markets, genetic engineering, and sheer population numbers; since our scientific and historic understandings now comfortably examine processes embracing eons; and now that our plan-ahead horizon has shrunk to five years or less—it would seem that a grave disconnect is in progress. Our ever-hastier decisions and actions do not respond to our long-term understanding, or to the gravity of responsibility we bear.

The Shrinking Future

When I was a kid, three decades ago, the future was a long way off. So was the turn of the millennium. But the funny thing is that, in all these years, the future that people think about has not moved past the millennium. It's as if the future has been shrinking one year, per year, for my entire life.

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