

## Long Now Plans 10,000 Year Clock

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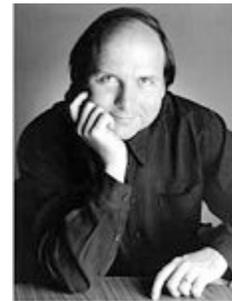
**Stewart Brand**

When exactly is "now"? Is it this second, this minute, this year - or simply "these days?" The Long Now Foundation in San Francisco encourages people to think of the current "now" in 20,000-year increments. As inspiration, they are designing and preparing to build a monumental 10,000 clock.

Stewart Brand sits, bald and smiling, at an immense conference table at the Long Now Foundation, which he founded and co-chairs. One of the group's most ambitious projects is the design and construction of a 10,000-year clock which will be housed deep within a desert cliff 3,200 meters above sea level. "One strange by-product of thinking long term," he said, "is a weird sense of optimism, of continuity, that we may be continuous for that many centuries. So that's attractive."



Attractive the clock will certainly be, even if bit strange - essentially three golden columns supporting a circular display disk. The clock uses digital numbers. Even non-engineers will be impressed by its complex mechanism of weights and interlocking spheres that adorn its face.



**Danny Hillis**

The mechanism, which is the brainchild of design engineer and Long Now co-chairman Danny Hillis, will also be monumental in scale. The prototype in the picture above Stewart Brand's head is almost three meters high but the final clock may rise to almost ninety meters. He said, "A 10,000-year clock that is beautiful enough and monumental enough might serve a function like an Eiffel Tower which continues to inspire us and is rather content-free. It stands up there and is magnificent. That's all it does. And it makes you think 'Paris' and it makes you think 'Civilization' and it makes you think 'engineering at its most beautiful' and it makes people sort of proud and happy. Rockets that go the moon have the same quality. And it's referred to as 'sublime technology.'"

This is a mad effort to make a thing that has that quality of sublimeness that relates to duration, to time. But the clock doesn't require that. The clock just sort of says, "I'm

taking 10,000 years seriously. Are you?"

It is also designed to provoke thought both today and throughout its 10 millennia life. Mr. Brand hopes it will expand our concept of the "now" beyond the phone call we're on, the election cycle we're in, the latest "greatest scientific advance of the century."



"I think the Long Now emerging these decades is partly a function of how much shorter the now has become for most of us most of the time [because of] a combination of [our] being very busy and [also] science keeps churning out new technology and the technology keeps accelerating like computer technology, bio-technology, molecular engineering all these are coming faster and faster," he said.

"And there is a sense that that is driving the pace of history. Which is very exciting. The problem is that all that immediate attention to immediate issues draws attention away from long term issues like how are we managing our culture, which is a matter of centuries. And how are we managing our relationship to nature, which is a matter of millennia. Bouncing off the future lets you think about the things that crucially important and look past the merely urgent stuff," said Mr. Brand.

When you build things with the people of the future in mind, the things themselves tend to survive calamity better. Mr. Brand offers one example. "There was an earthquake in Turkey a couple of years ago," he said, "and the collapse of so many of the commercial buildings that were built against code because people were able to buy off the officials were a terrible failure to think in earthquake time, which is centuries time. But the mosques were just fine. Because Islam is comfortable with earthquake time, it does think in thousands of years and knows there are going to be a certain number of earthquakes and builds its buildings accordingly."

The machinery and the look of the 10,000-year clock will embody the same sort of long-term thinking. Long Now executive director Alexander Rose is the artist-engineer chiefly responsible for implementing the clock design. It is a job he seems to love. "I came to this project from an industrial design background and early on in my education I was very annoyed with the way that the whole industry was about making things faster and cheaper and making more plastic and more disposable and this project was really about the opposite where all your research is about making it slower and better and using better materials. And a lot of this project is about making something that is evocative to look at. Every object has to look as good as it works and it has to work as well as it is beautiful. It's very rare to find a project where both of those things are equally valued," Mr. Rose said.

One ingenious and unique feature of the clock will be its ability to synchronize itself daily with the south-facing sun. "The difficulty in that mechanism," he said, "is that you don't always know that there is gonna be sun. And you could have a winter where every day for three months is gonna be cloudy. Or you could have volcanic eruption that is going to be dark for a very long time. So we had to make the clock accurate enough to last within those times. It we don't have to make it accurate enough to last the entire ten thousand

years without a correction. We know that the sun will be out every few months at least."

But Mr. Rose says that the clock will not only keep accurate time, it will provide useful information about itself and its makers through its parts.

"We do display things like the Gregorian calendar to sort of refer to the people that built the clock," he said. "But we also include the star field that is precessing every 26,000 years with the precession of the earth's equinoxes. So even if someone that found the clock and had no idea what our calendar system is and it had stopped even 3,000 years before, they could do an observation of the stars and look at the clock and actually rectify the two. And they would know when the thing stopped, when they are now and how long the thing had been stopped."



**Alexander Rose**

The clock is actually supposed to stop if humans do not manually wind it over the centuries. In this way, the clock itself will reflect human history. At the same time, its sheer monumentality will make allowances for human nature. Mr. Rose continued, "The largest clock will probably take more than a generation to build. Meaning, I probably won't see it completed. And that is a very important goal to me, because if you take all the fun for yourself, then it doesn't have a very good chance of surviving, I don't believe."

Generally the most dangerous time for an object is the generation after it was built. You see it very often here in San Francisco with Victorian houses. The generation after they were built they were almost all destroyed, because they were seen as ugly. Now they are seen as prizes - the most elegant homes in the city. But you have to get past that first fifty years before they are seen as valuable and as antiques. And if you are working on it over several generations, you automatically get to that point.

I asked Mr. Rose if he had any personal message for the people for ten thousand years from now. "I think we have more in common with the people of 10,000 years from now than we actually think we do," he replied. "Our creature comforts and our use of time are obviously very different. But ultimately, I think they are the same people as we are. I just hope that they have as many options as we do."

A working prototype of the 10,000 year clock is currently on display at the Science Museum in London, England.

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