

Stromatolites - Eternal Return series (2019 - ongoing)
Lundahl & Seidl + ScanLAB Projects

Medium> A visitor's choreographed perception via memory, movement, touch, and scent — in friction with sound and sight via VR technology, stereolithography-resin-prints on steel scaffolds, fossilized cyanobacteria, microbial mats, and sponges.

The experience is one-to-one and performer-guided. Experience of the virtual is complemented by the performer's delicate touch and digital presence within the work. Onlookers experience the work outwith headset.

Duration: 15'

[Video Documentation](#)



Max 200-word text:

1.

191words

Eternal Return is a series of artworks: together they form a choreographed, mixed-reality exhibition exploring the future of memory. Memory is the biotech of *Eternal Return*.

Stromatolites (the second piece in the *Eternal Return* series) is an encounter with a digital entity modelled after the first form of memory, the single-cell bacteria, the oldest trace of life on earth, predating human experience by 3.7 billion years. *Stromatolites* become a human's companions in this speculative fiction about deep-time co-dependence, within the cyclical nature of the universe.

Stromatolites explores the relationship and dependence between digital objects and material substrates by revealing the tight connection between geology, life and digital worlds. It involves VR technologies in friction with: objects, and the human ability to organize perception to build a world via touch, scent, sight and sound. Visitors become witnesses to the capacity of memory within their bodies.

The *Eternal Return* series is an investigation of virtual reality, not as technology, but as a developing sensibility toward a relationship with surroundings, other life forms, and processes.

The Memor, a novelette, by Malin Zimm is a companion text to the exhibition.

Full text:

Part of the Eternal Return series, *Stromatolites* is an encounter with a digital entity modelled after the first form of memory, the single-cell bacteria, the oldest trace of life on earth, a fossil that predates the human experience by 3.7 billion years. *Stromatolites* grew in shallow pools using water, carbon dioxide, and sunlight to create their food. As a by-product of photosynthesis, they expelled oxygen as waste into the atmosphere, raising levels from 1 per cent to 20 per cent. As one of the earliest forms of life on Earth, stromatolites represent the beginning of a cycle of evolution that has led to the development of more complex forms of life. Packed together and exposed to friction, this symbiotic community of cells was the first step towards consciousness. Yet, in the short term, nothing else existed on earth that could balance their waste back into an ecosystem, and the diversity and abundance of *Stromatolites* declined. They verged upon causing their own extinction.

In the context of the Eternal Return series, the *Stromatolite* becomes a human visitor's companion in this speculative fiction about deep-time co-dependence, within the cyclical nature of the universe. Juxtaposed with the material objects in the installation and the human ability to organise perception into a world, *Stromatolites* open up a broader notion of virtual reality, not as technology, but as a developing sensibility toward a relationship with surroundings, other life forms, and processes.

Touching a fossil that predates the human experience by 3.7 billion years is itself a leap into virtual reality. Two timelines meet. The VR technology in the installation gives this virtual room another layer, to reveal how memory allows for strings of data to pass through matter and across time.

For millions of years, cyanobacteria and other microbial mats build up layer by layer, growing gradually to a metre or more over time, providing records of ancient life on Earth. Inside the VR headset, the visitor steps away from material entropy in the physical world: time can run in two directions at once. Visible in the dark void of the headset is a liquid cluster of digital swirling particles modelled after the *Stromatolite*. The digital fossil continues the legacy of being an actualiser, triggering each visitor to become a collaborator to co-create virtual space. Augmented by the analogue touch of the unseen performer and digital code, the visitor follows the cluster as it leads the way. The cluster also listens and responds with touch, vibrations, spatialized sound, scents, movement, and other sensory stimuli to conjoin the virtual and physical worlds, acting as a means for the digital objects to take place within the visitor's perceived corporeal reality.

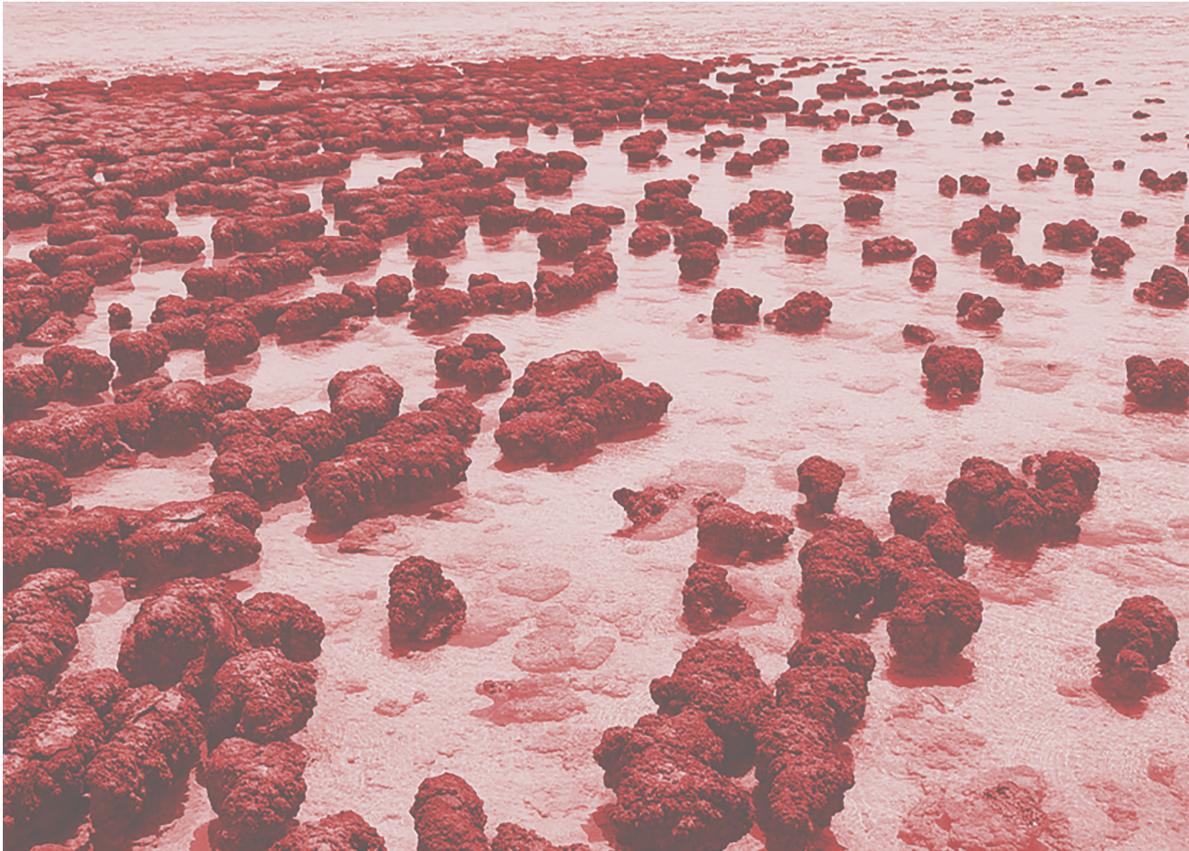
The Physical Installation —

An Abandoned Stage Set or Reality Backstage

*A primordial scent of petrichor.
Bone-white empty shells of objects
resting on a sound-absorbing carpet
A door handle, a railing, a chandelier, and a bed
a fresh, cold ozone haze*

From a materialist perspective, just as the Stromatolites relied on physical processes such as photosynthesis to survive and thrive, any digital life depends on material substrates for its existence, such as computer hardware made from different minerals and rocks extracted from the earth crust.

The objects in the installation oscillate between being props, tools, or reproductions without bibliographic references to their origin. They are fragments of interior spaces, stereolithographic-resin-prints on steel scaffolds. Hyperconnected, when touched, the objects trigger a series of digitally aligning point cloud environments inside the VR headset, based on terrestrial laser scanning of possibly existing spaces: a handrail of the RMS Titanic, a piano tuner's workshop, and a benevolent abyss. The visitors to the installation have total freedom to move throughout the 7x7 meter area of each artwork in the Eternal Return series. But, as this freedom is only relative to the curiosity, trust, and attention of each visitor, an unseen performer steers the visitor's perception and movement through the installation. Via touch and scent, in friction with sight and sound, a single visitor becomes witness to the capacity of memory within their own body.



Stromatolites, Shark Bay Australia

Within

Inside the headset, the visitor enters the artwork through an impossible place in time, before or without the event of biological life, yet it is a time of happenings... stars collide, neutrons merge, and nebulae form without witness and unrecorded.

The visitor starts inside a point-cloud wave: a formless substance of swaying sea dust. A gravitational object moves around and seems to form into a cluster of points - a digital entity modelled after a Stromatolite fossil.

A tracker on the performer's hand is visible in the headset as a liquid cluster of particles. It becomes the visitor's companion inside the new world. High-end headphones cancel out all sound from the external world and the immersed visitors are accompanied by a pulsating voice emanating from inside the cluster. Augmented by the analogue touch of the unseen performer and digital code, the cluster leads the way but also listens and responds with touch, vibrations, scents, movement and other sensory stimuli as a means for the digital objects to take place within perceived, corporeal reality.

The cluster: *Imagine a corridor, not in front of you, not behind, but at every place at once.*

As if through a joint effort accessing a memory together with the cluster, the point-cloud starts to form a corridor, eventually in front of us defined in space. The corridor becomes

a door, a room becomes a bed. Every movement and distance in the physical installation is perfectly aligned with the digital, temporally allowing a perfect illusion of reality, felt within the proprioceptive body of the visitor (who cannot see their own body). When laying down in the bed, the room starts to become physically unstable - rocking side to side until it shoots out into a dark void.

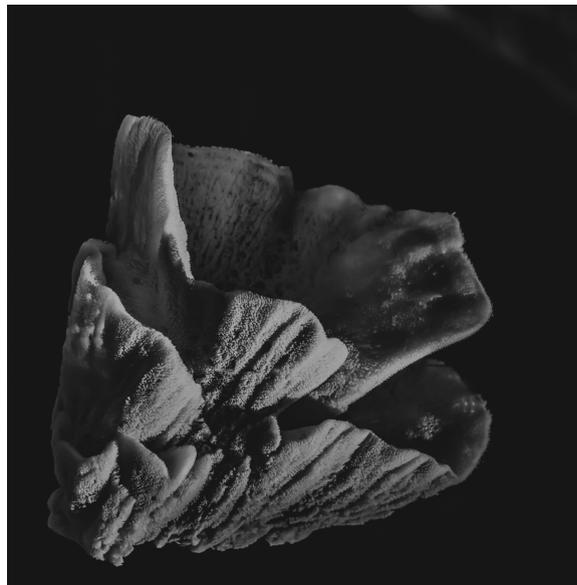
- *the weight of your body has rendered the space unstable. When matter comes in contact with other matter, there is always something shifting...*

It is unclear if this is underwater or inside an unknown substance. Particles resembling sea dust or stars from far away are organized into a piano tuner's workshop. Like a large ship, it passes above, upside down, near enough to touch. Some of the workshop's parts are felt physically under the visitor's hand since they exist as sculptural abstractions in the physical installation of the work. Letting go of an object makes the visitor's whole world turn into a dark void, where the small points that previously formed the workshop become dust particles eventually organizing into a gigantic pulsating sun, blinding the visitor, and making them close their eyes.

- *Can you still see the light on the inside of your eyelids?*



Fossilised cyanobacteria - *Stromatolite*



Sea Sponge

The installation is accompanied by: [*The Memor* by Malin Zimm a speculative fiction text](#) and an expanded narrative framework. Objects and scenes in the installation thus take on a multitude of experiential modes: physical, virtual, narrative, and emotional. The fiction expands as the art installation evolves, yet its parts can be read and experienced in any order as a non-linear envelope. As speculative fiction, the text moves from the old world to the new, weaving history and fiction together by picking up facts floating in the tide, and finding a new use for them in the narrative. The story contains numerous references to demonstrate the method of “playing” the internet for facts and news, encyclopaedic knowledge, and archives. The various references are composed together, to form a new interpretation of the events in and around the world, as it is presented to our senses.