

# **2054Bacterial Future City**

**collection/anqi hou/2024.6.17/ super-future**

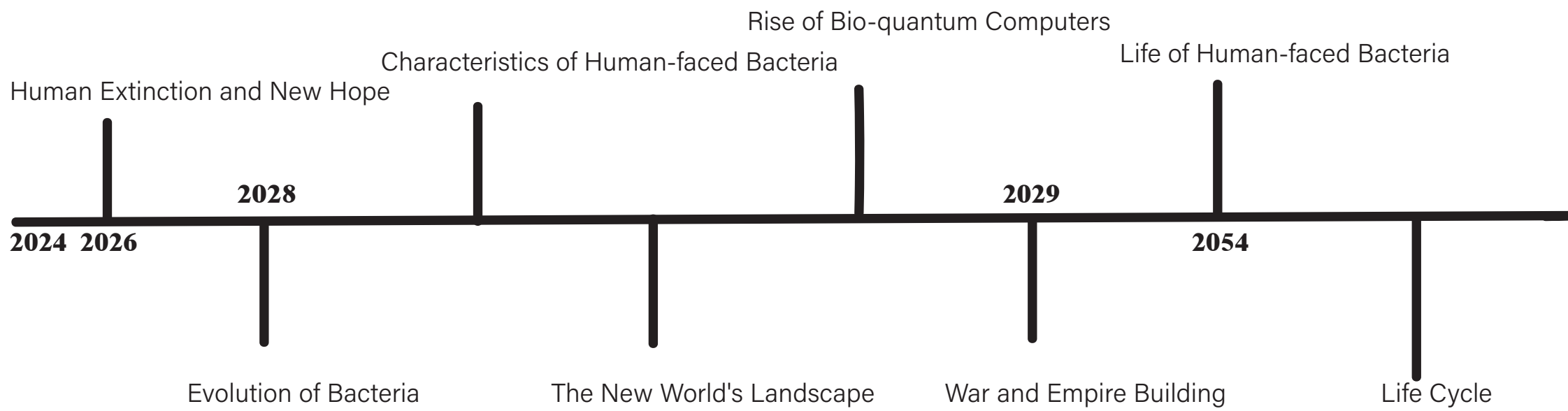
# researches

This project aims to study the non-human organisms of the planet and to predict and speculate on how they will use, reuse, recycle and reshape the world we humans have built.

This not only reveals how a new world could be the cradle of fragments of human civilisation's memories, but also demonstrates the ways in which it preserves its heritage.

# question

The question posed by the project is 2054, new possibilities for future civilisations, reflecting on how the 'second world' has become the cradle of fragments of the memory of human civilisation and preserved its heritage?



## **2054Bacterial Future City**

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**What if humanity disappeared?**

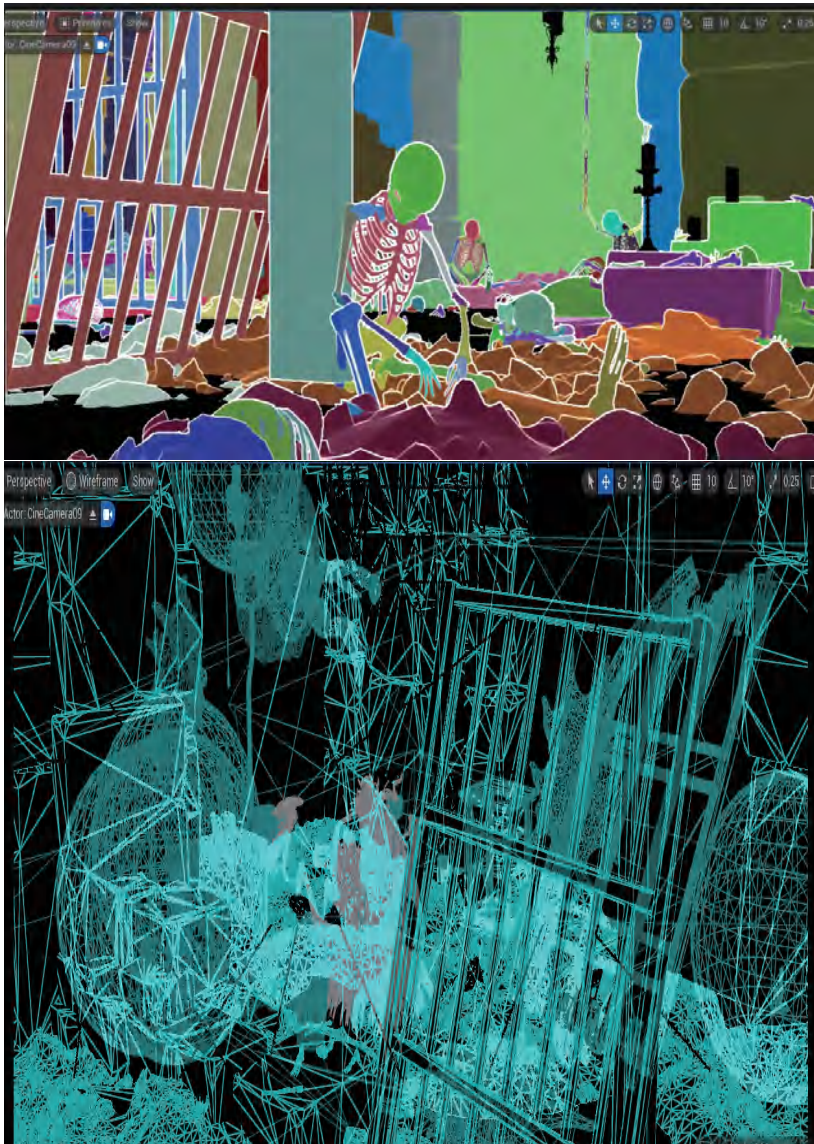
**Human Extinction and New Hope**

# The Background

In 2026, World War III breaks out, leading to a global climate crisis.

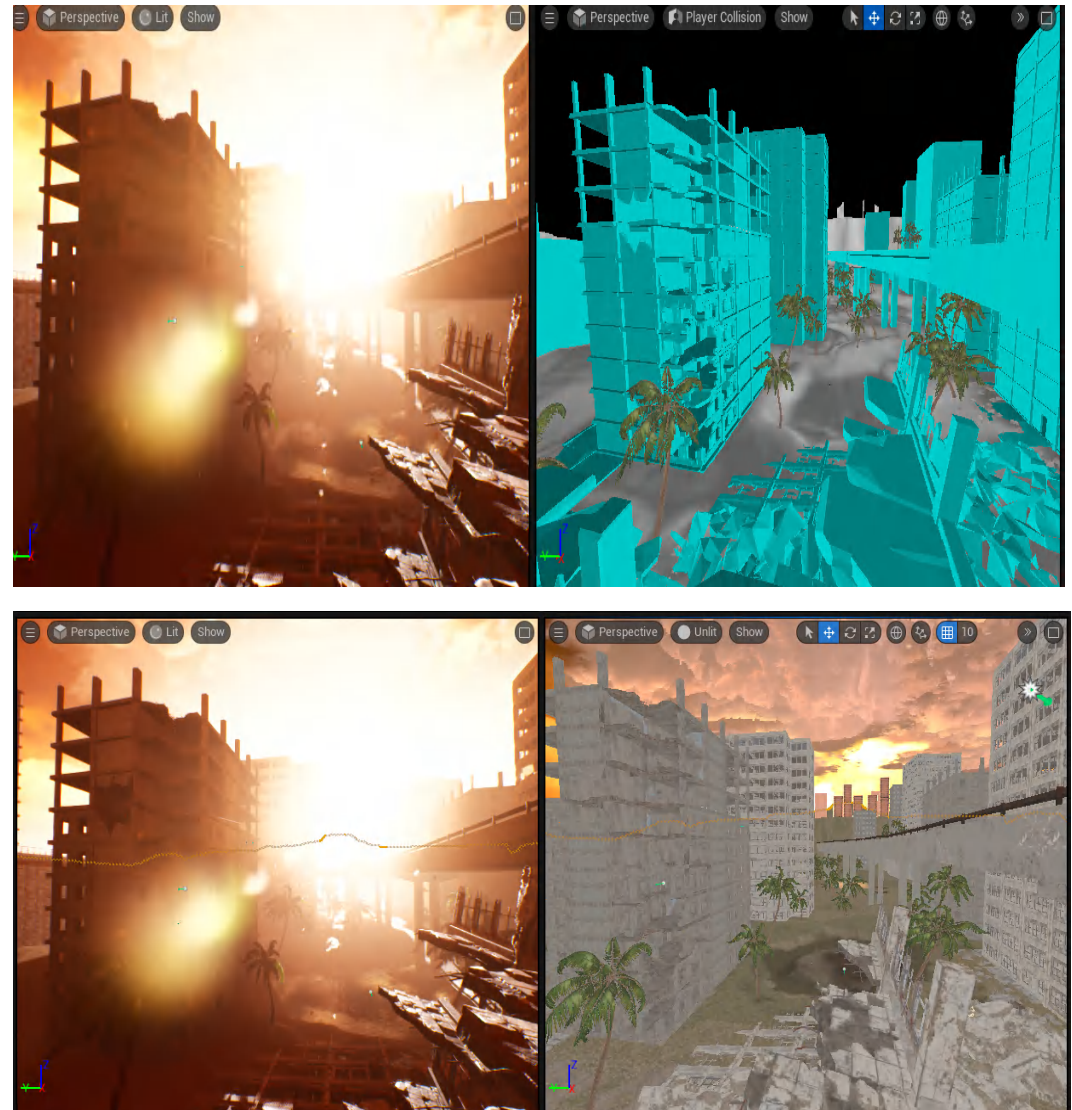


# Scene modelling



The extreme climate conditions made it impossible for humans to adapt, and the once prosperous civilization perished in this disaster.

However, in this seemingly hopeless darkness, the Earth did not completely give up on itself.



# Film Intercepts

The extreme climate conditions made it impossible for humans to adapt, and the once prosperous civilization perished in this disaster.

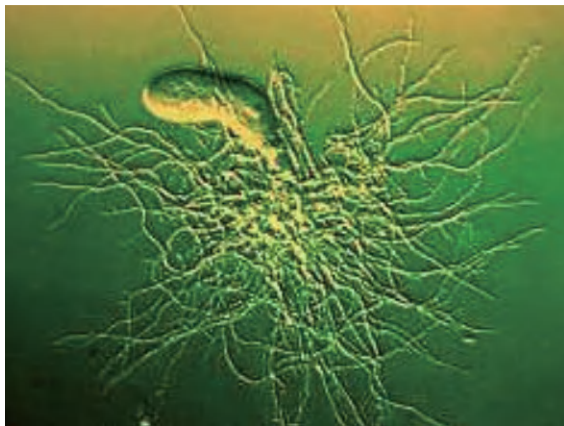
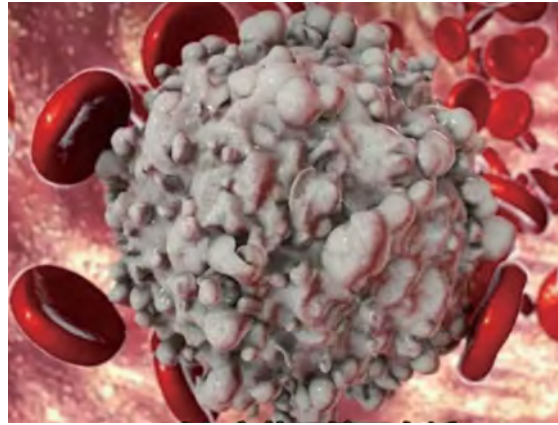
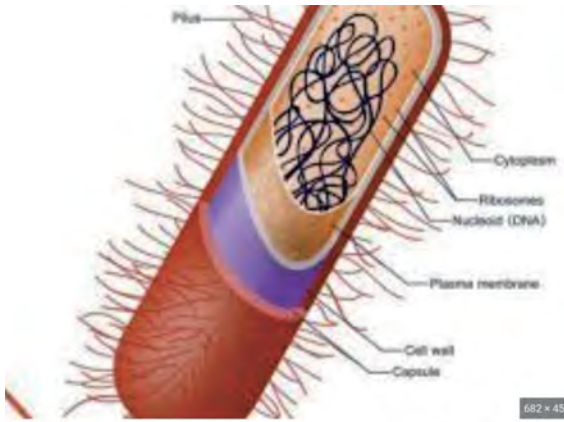


In this desolate land, rubbish dumps have become breeding grounds for primitive bacteria.  
They thrive in this abandoned pleasure ground.....

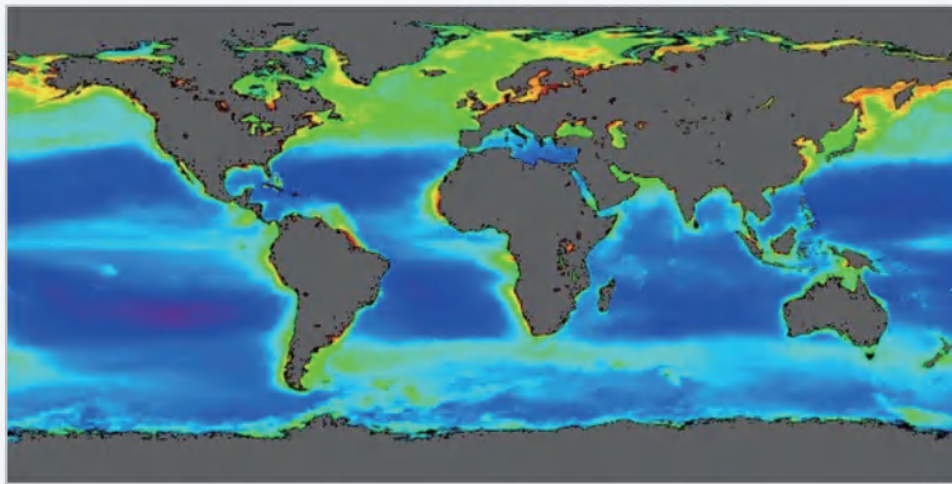
**The New World's Landscape**

# The Background

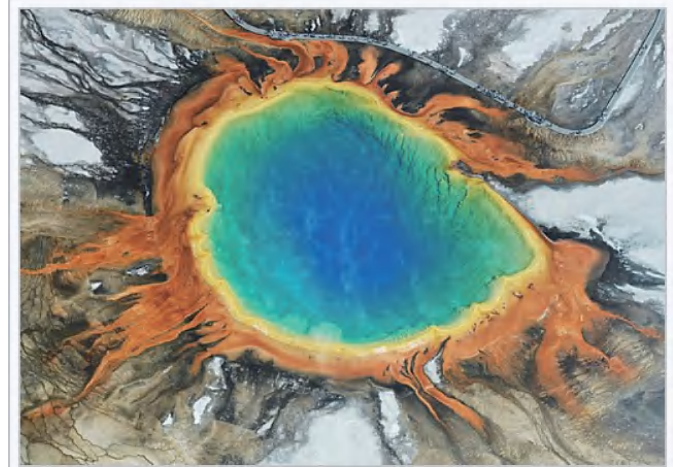
As the global climate crisis ends, the surface temperature rises to 80 degrees. Earth's living organisms die and an ancient bacteria begins to invade the city. The bacterium is extremely adaptable and resilient, and it's called the "Saltophilic Archaea".



"Halophilic Archaea is an extreme microorganism that can live in the vicinity of extreme landscapes such as salt lakes and volcanic craters, and has survived since the early days of life on Earth.

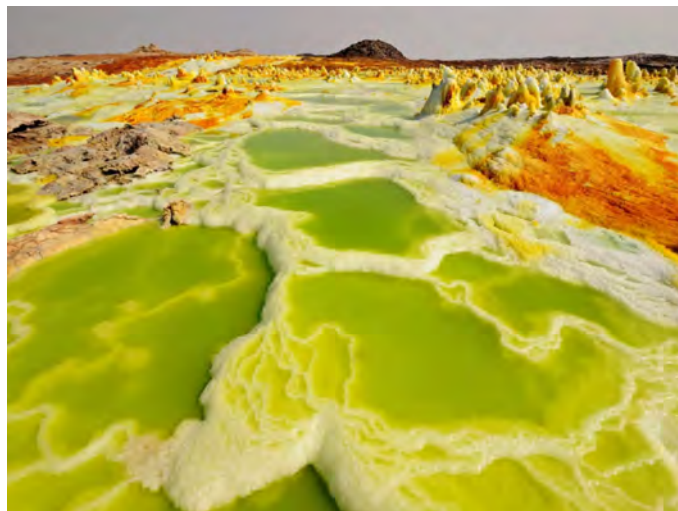


海洋中浮游生物（浅绿色）的图，古菌是海洋浮游生物中重要的一部分



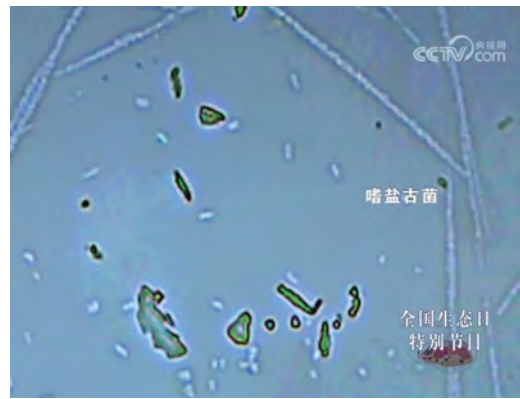
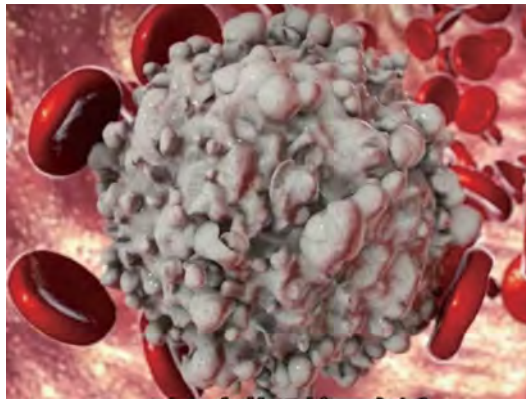
古菌最早是在一些极端环境，如火山温泉中发现的。图为黄石国家公园的大棱镜温泉。

They have survived since the early days of life on Earth.  
Combined with the ruins of cities, they have created a new ecosystem, the "Danakil Depression" landscape..

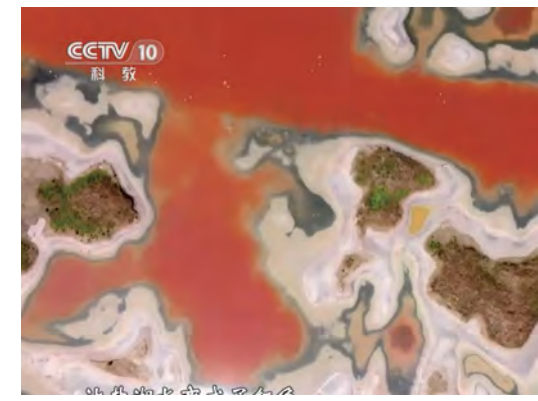


# Research

When the salty archaea is eaten by the shrimp in the river, the water is coloured red. The water is coloured red..



Rubbish dumps



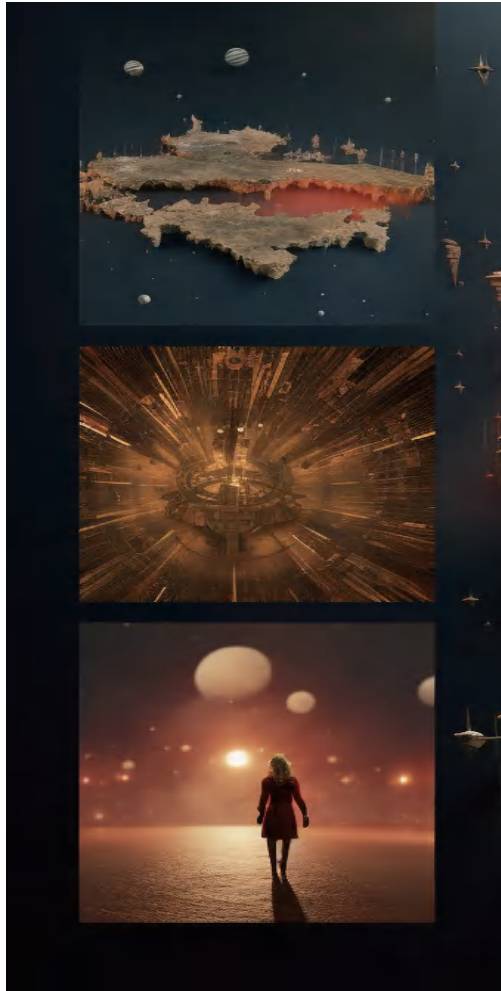
# Terrain Iteration

During the iteration process, consider the temperature, the colour of the ground,



# Terrain Iteration

Initially the concept was an abstract second world, and no terrain research was done, which also made it seem unrealistic. There was no science to guide it.

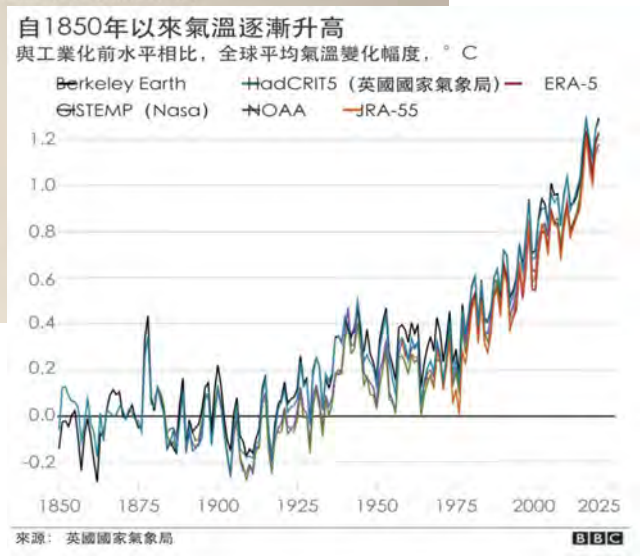


# Research

Analysing the direction of global warming



bish dumps



# The map

In the food chain of this new world, school cinemas and domestic spaces have long since fallen into ruin, while rubbish dumps have become breeding grounds for primitive bacteria.

We, as members of the human/bacteria hybrid, have gathered at the government building to plan with our kind to take control of this world.



# The Film

Those film slices and the process of making them



The year is 2028. On this forgotten wasteland, a new type of bacteria capable of surviving in extreme heat began to thrive.

**The birth of bacteria**

# Primitive bacteria

The primitive bacteria are inspired by mushrooms, I designed feet for the primitive bacteria and replaced them with whiskers.



# Research

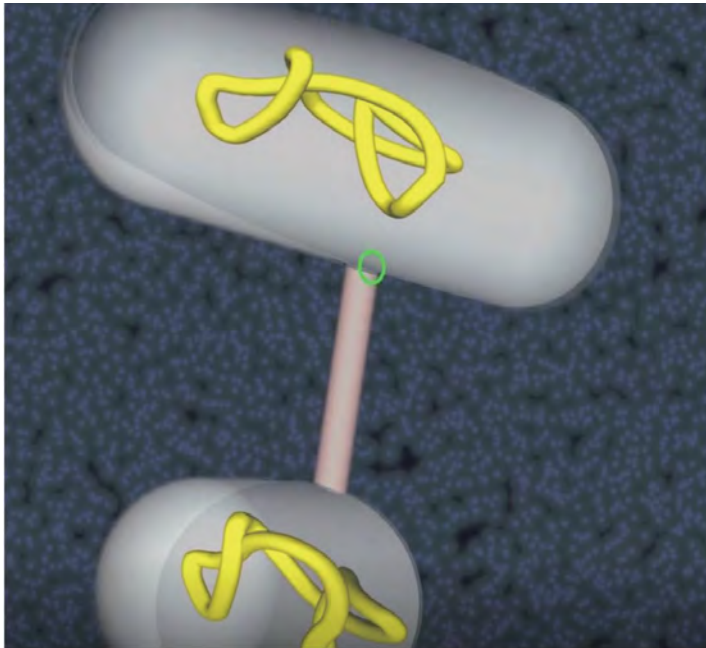
From human remains and their DNA traces left on the earth, the Archaea bacteria fused with them and formed human bacteria hybrid organisms.



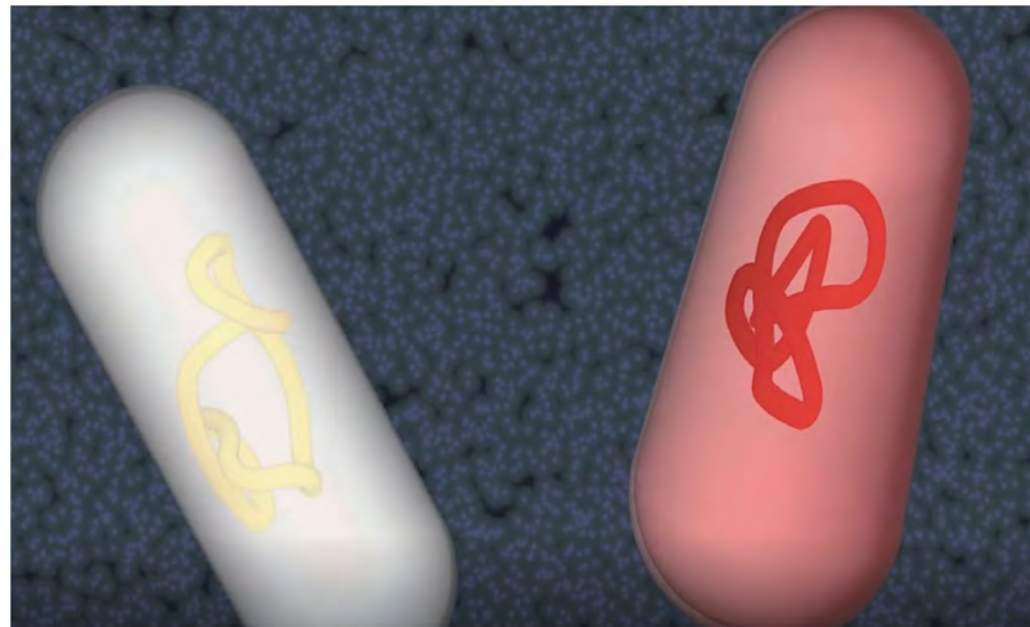
## Exchange of genetic material between bacteria

Bacteria do not have a dedicated sexual reproduction stage in their lifecycle but can actively exchange genetic information through gene transfer.

Under laboratory conditions, using calcium chloride ( $\text{CaCl}_2$ ) solution can make bacteria like *E. coli* capable of absorbing external DNA. This transformation is an important tool in recombinant DNA technology, allowing one organism to acquire genetic traits from another.



图源: Encyclopædia



图源: Encyclopædia



妮基·桑法勒



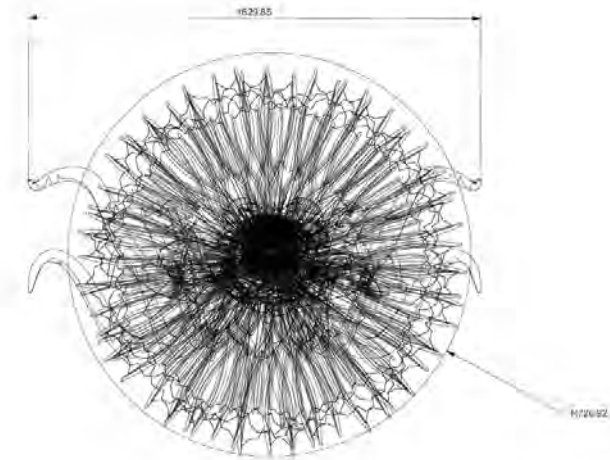
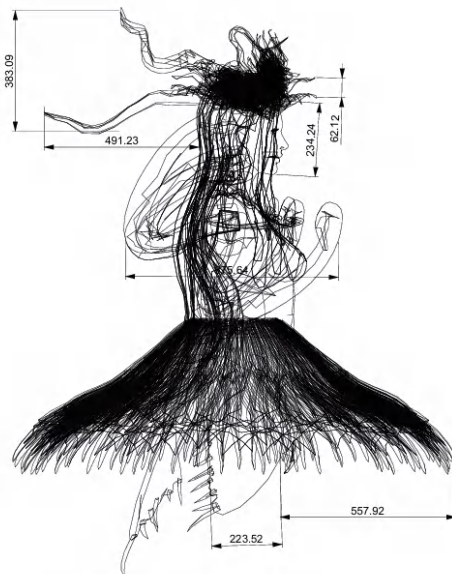
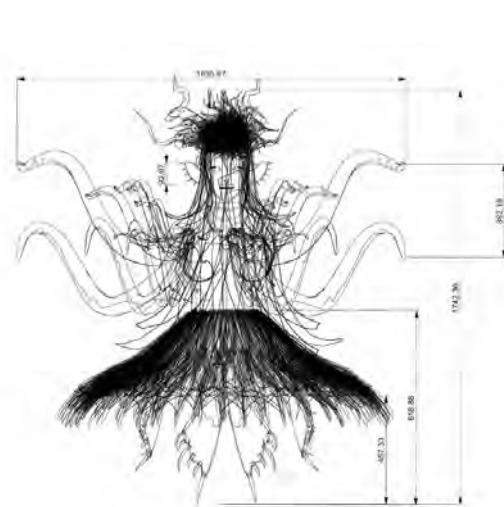
自由之树



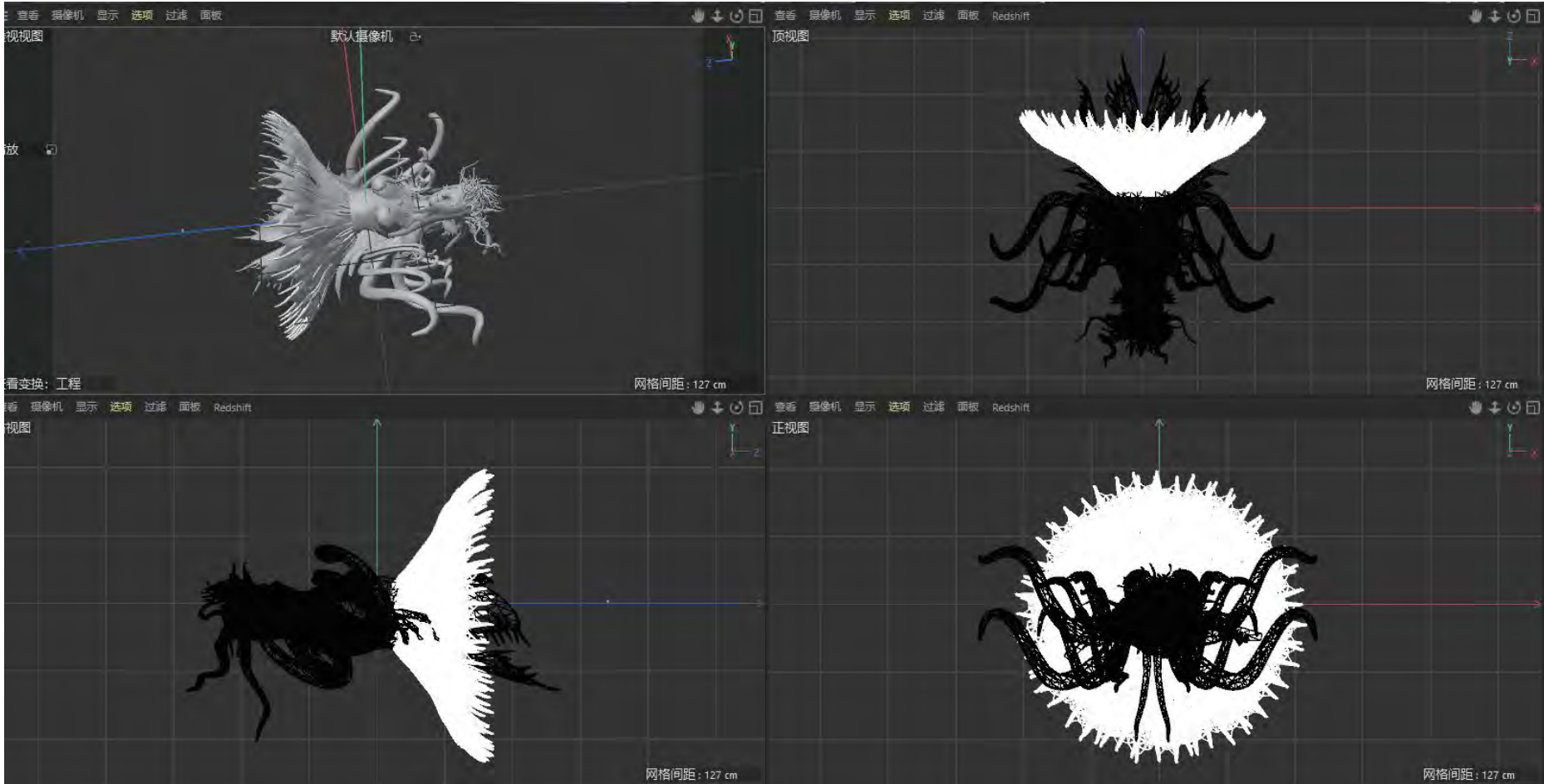
蚀刻版画 蛇

## Face Bacteria Programme Design

For the model of the face bacteria, I refer to the artist "Nikki Sanfale" snake woman as the base form.



# modelling



# Film Intercepts

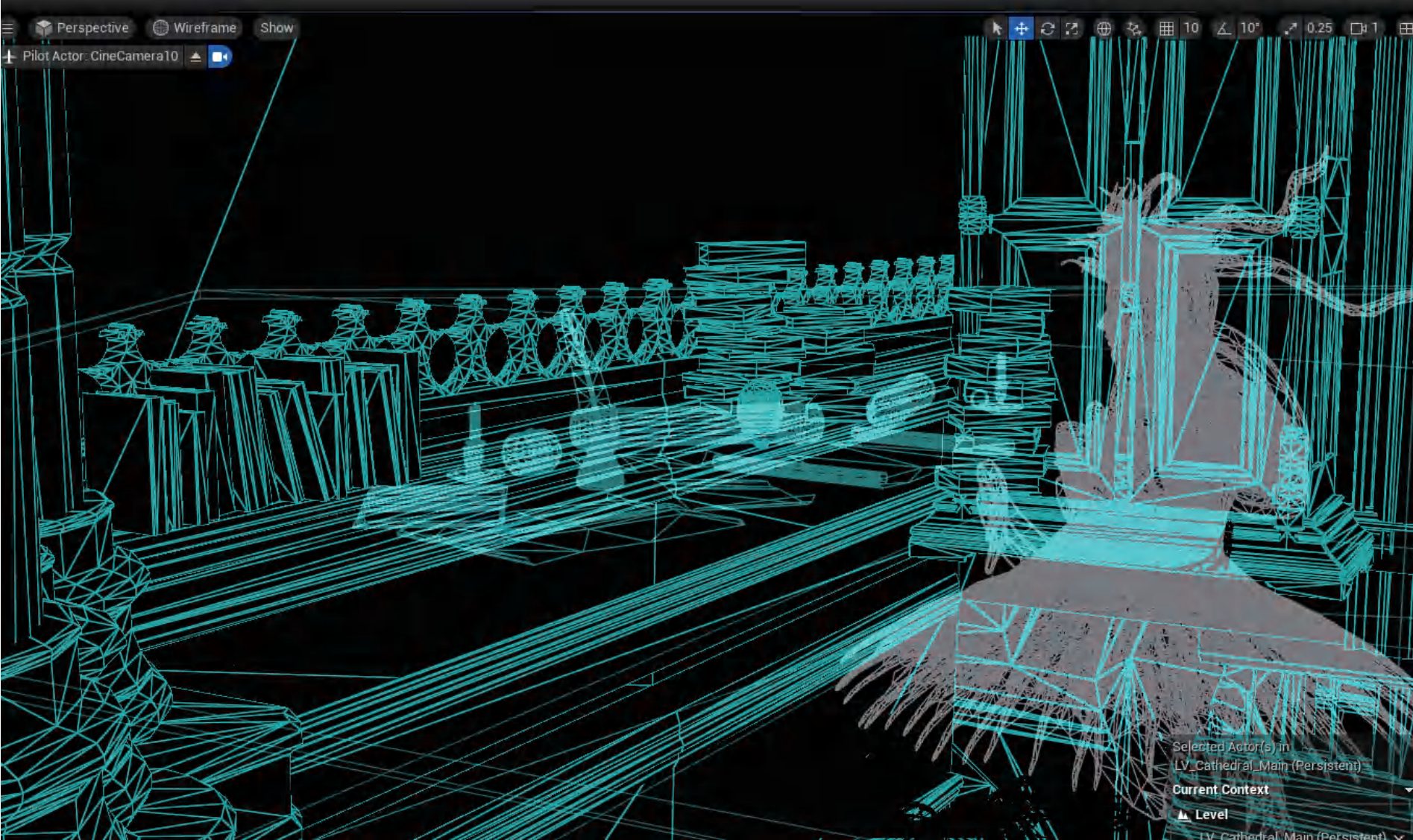
As time passes, these bacteria in the petri dish undergo an unprecedented evolution. a new hybrid bacterial species is born—The Humanoid Bacteria.

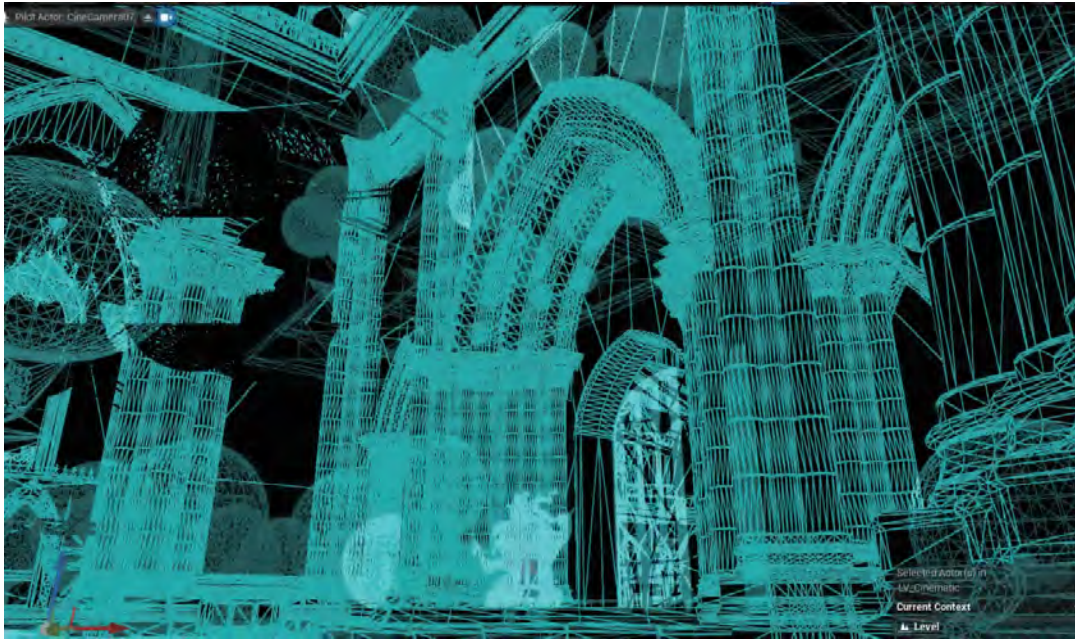


In the world of microbiology, the humanoid bacteria are a unique presence. Despite their bizarre appearance, the humanoid bacteria possess extremely agile minds.

## **Characteristics of Human-faced Bacteria**

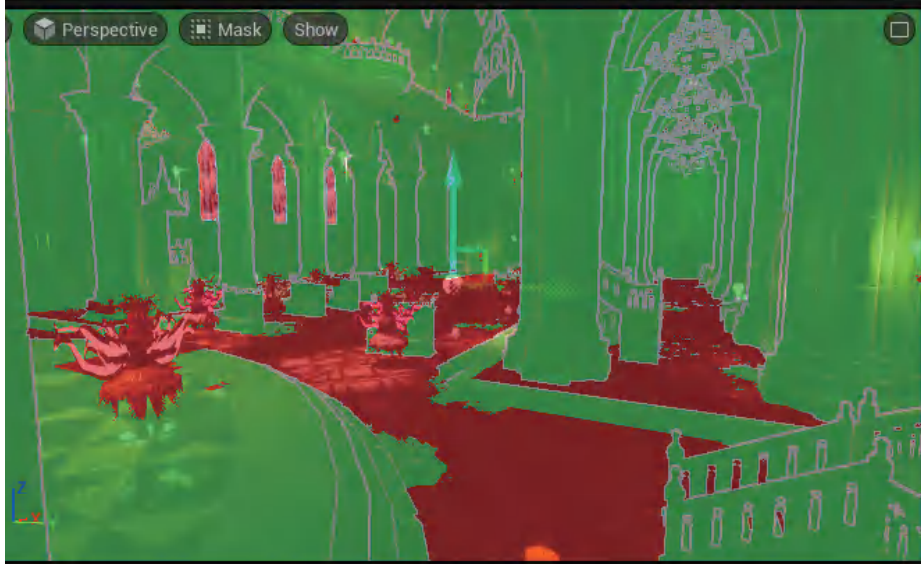
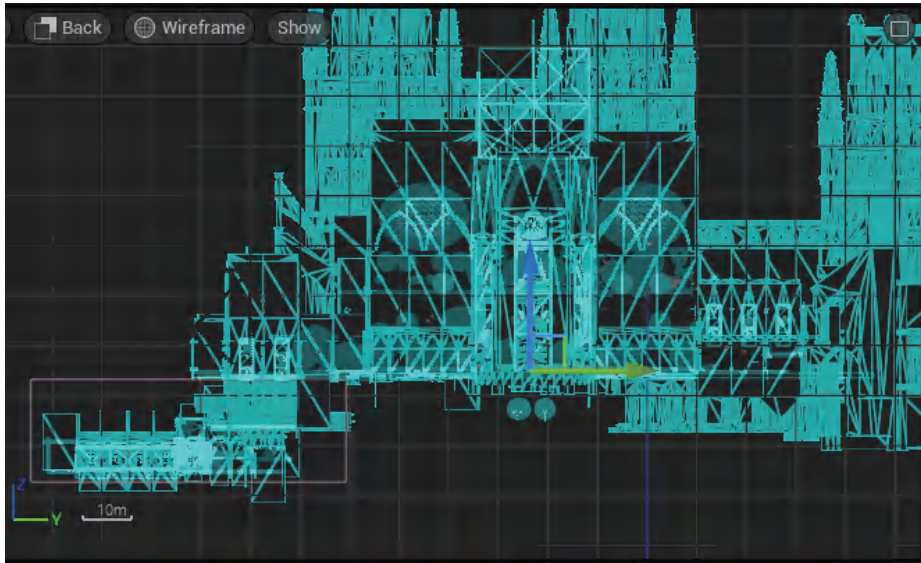
# Scene modelling





Unsatisfied with the ordinary identity of bacteria, they strive to stand out in the microbial realm. It's worth mentioning that all humanoid bacteria are female, forming a unique and entirely new ecosystem. In this ecosystem, humanoid bacteria communicate with each other and make decisions together.





# Film Intercepts

Just like humans holding meetings, they also have their own "conference rooms." In this conference room, every humanoid bacterium is equal, and they use different colors and decorations to distinguish each other's identities. Humanoid bacteria, this unique life form, with its distinctive form and agile thinking, showcases its extraordinary charm in the microbial world.



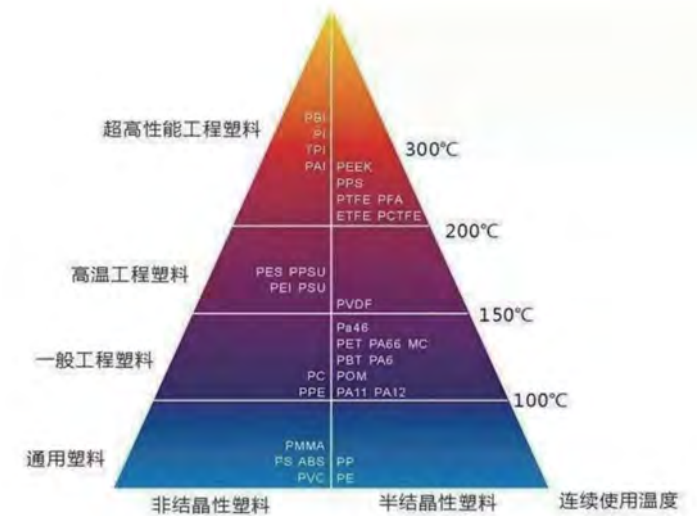
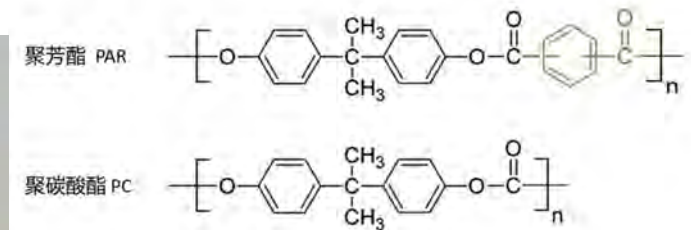
They begin to "devour" or "melt" the electronic waste, and when the supercomputer of the "Neuralink" brain interface left by Musk is devoured...

# Material analysis

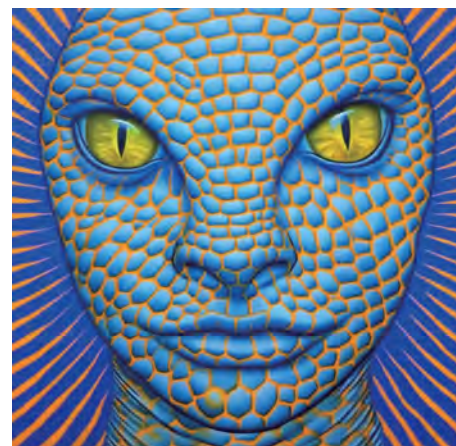
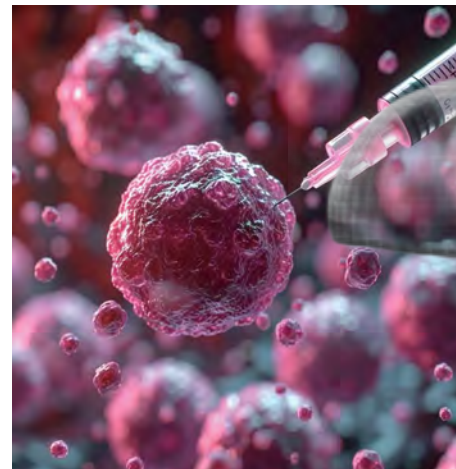
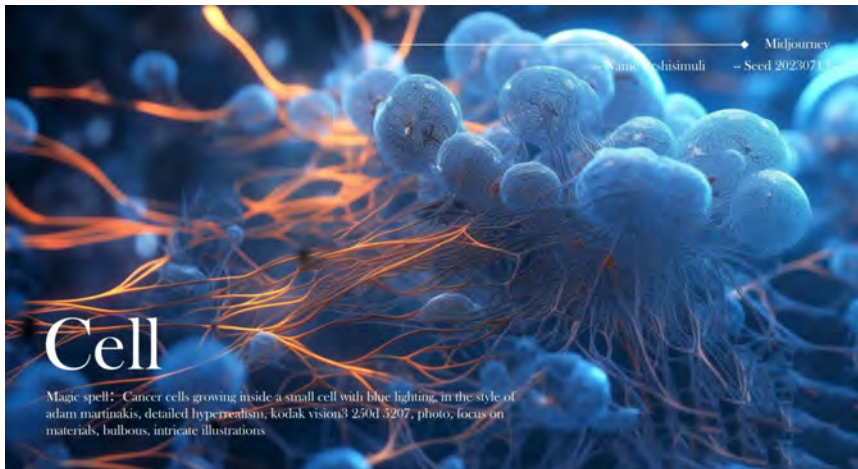
High-temperature engineering plastics are used at temperatures above 150°C.

In addition to high heat resistance and flame retardancy, these materials usually have excellent machinability, ageing resistance, dimensional stability and excellent electrical properties.

They can be used to replace metal materials and are widely used in electronic and electrical appliances, aerospace, medical devices, automotive, and military fields. It is the material at the top of the plastic pyramid.



High-temperature engineering plastics are used at temperatures above 150 degrees Celsius, so we will use the plastic in the bio-quantum computer itself, he can be very good to protect the computer from high temperature melting!



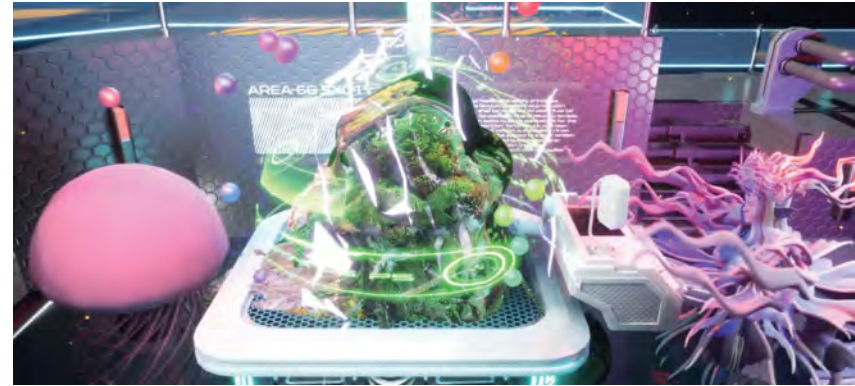
It grows with bacteria, they are everywhere.

# Model

The Birth of the Biological Quantum Computer, the symbiosis of bacteria and a waste has given rise to bio quantum computers, providing power to the ruins of past human civilisation and opening new possibilities for the advancement of future civilizations.



They feed on primitive cells,  
converting their energy into a constant stream of kinetic energy to power the new world.  
They feed on primitive cells, converting their energy into a constant stream of kinetic energy to power the new world.



# Film Intercepts

She has cleverly implanted human brain chips containing a wealth of information and knowledge into the brains of Sphinx bacteria.



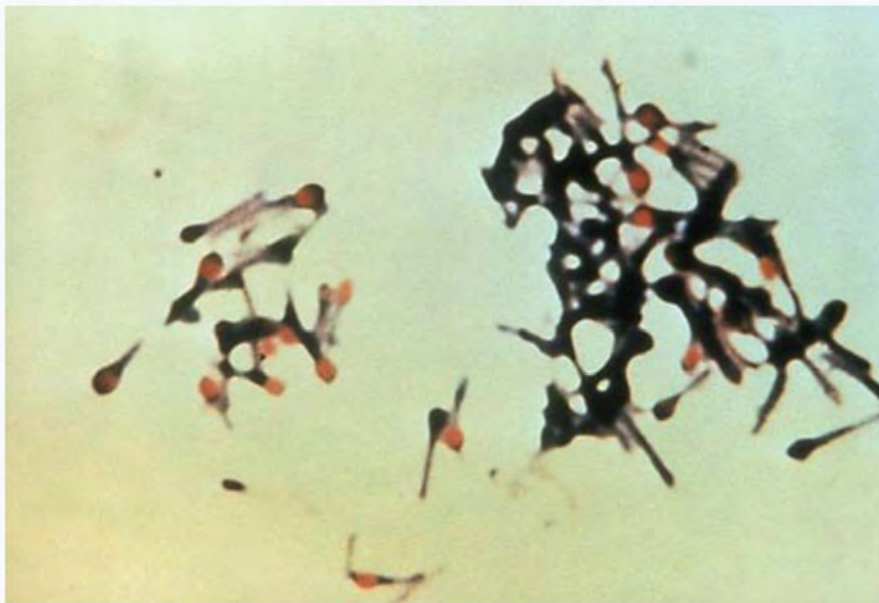
In 2029, the boundary between technology and nature became blurred. In this year, the human-faced bacteria were no longer content with their current state. They engaged in fierce battles with primitive bacteria, attempting to control the world's bacterial resources.

**War and Empire Building**

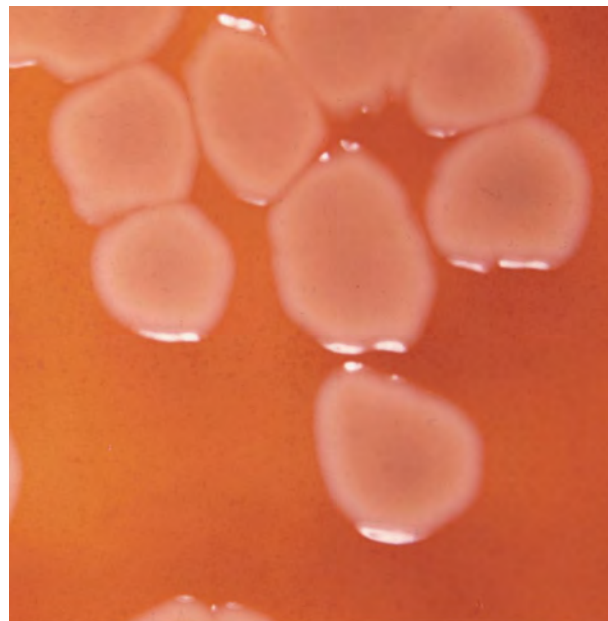
# Research

## Factors affecting bacterial growth

Nutritional requirements for bacterial growth include carbon, nitrogen, sulfur, phosphorus, various inorganic salts (such as potassium, magnesium, sodium, calcium, and iron), and numerous other trace elements (such as zinc, copper, manganese, selenium, tungsten, and molybdenum). Carbon is the most essential element for bacteria because hydrogen and oxygen can be obtained from water, which is a prerequisite for bacterial growth. Additionally, an energy source is needed to drive bacterial metabolism.

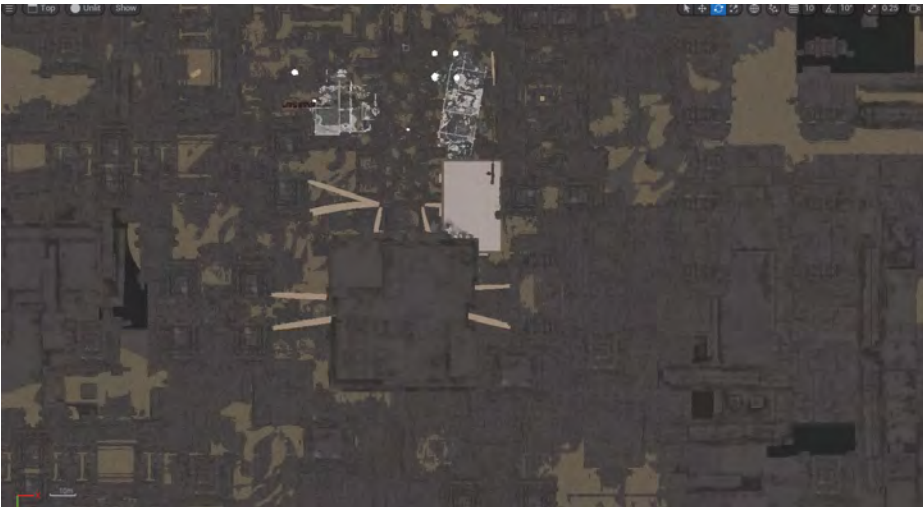
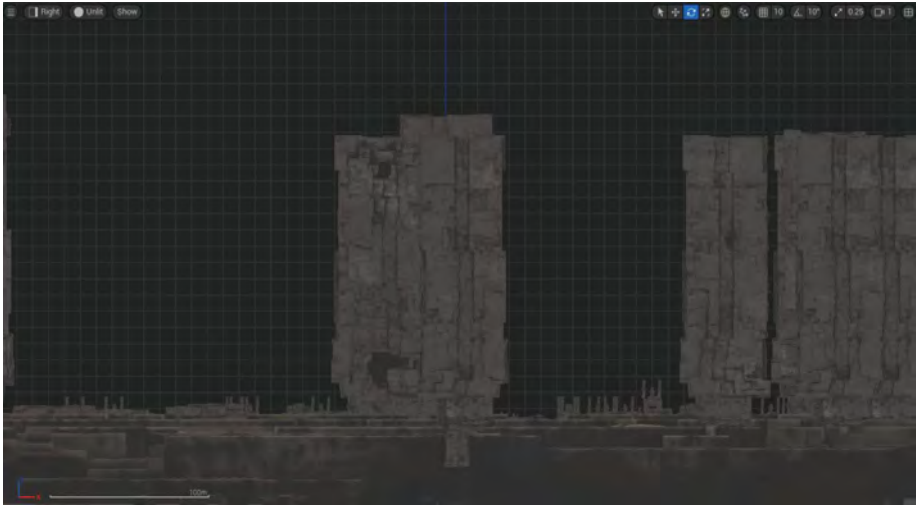
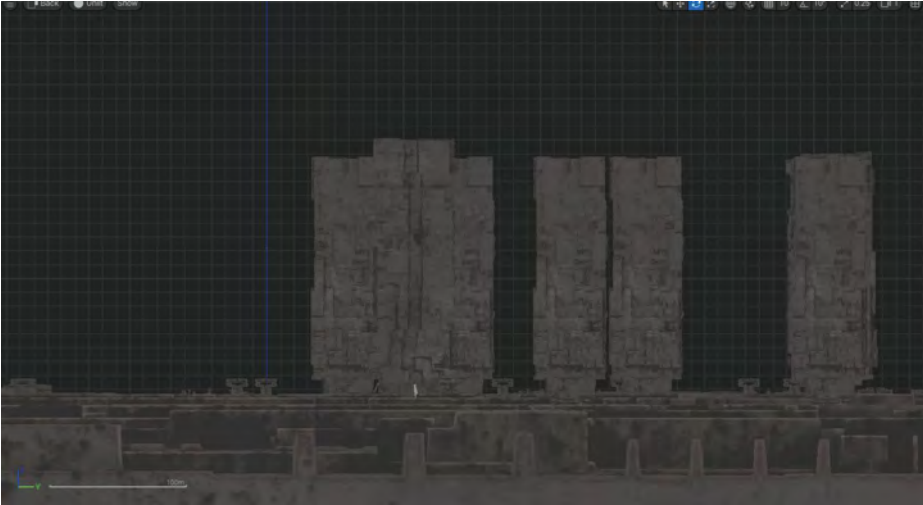


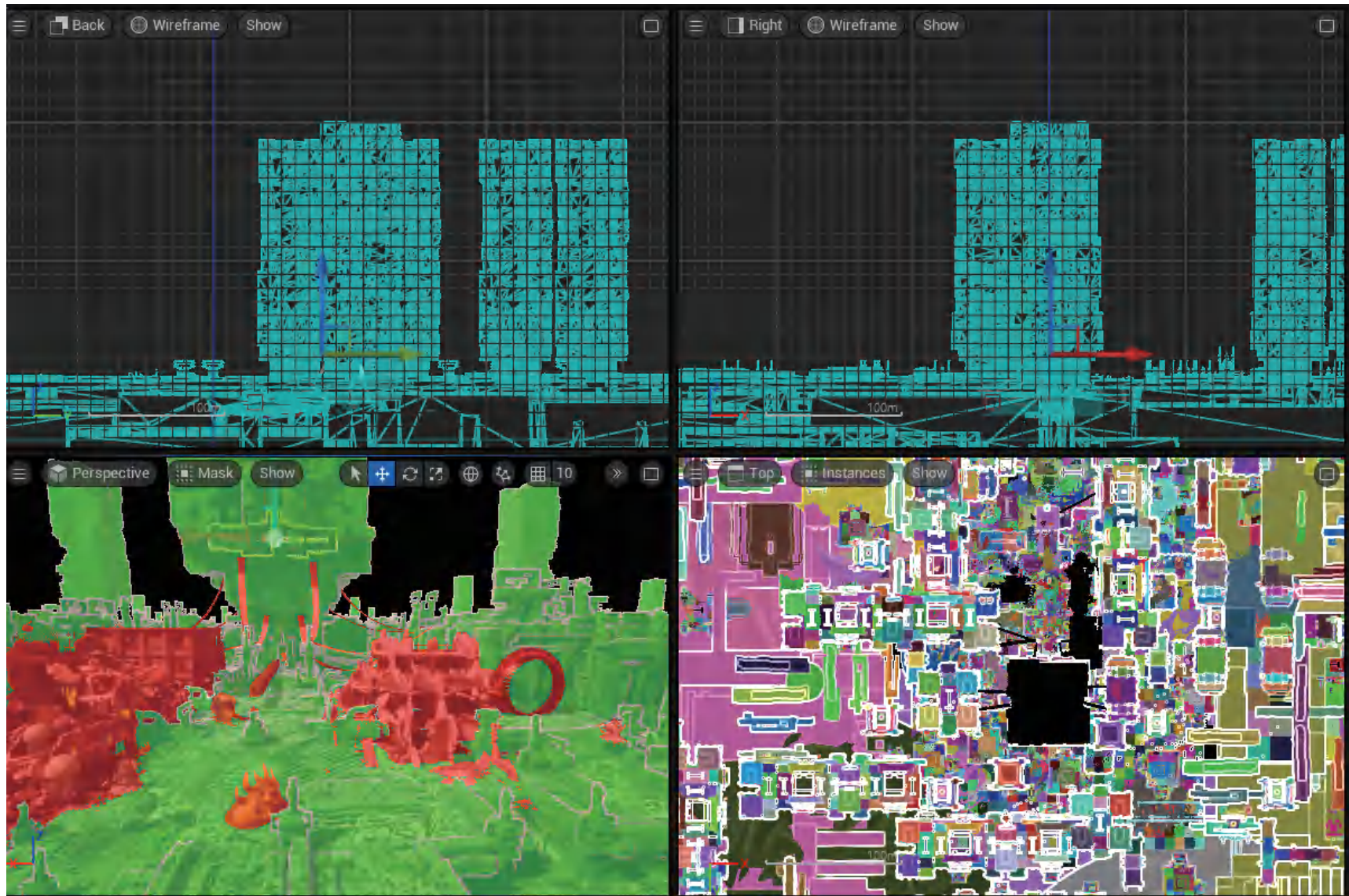
图源: Centers for Disease Control and Prevention



铜绿假单胞菌

# Scene modelling





# Film Intercepts

In the design of the fight scene, I used a golden triangle for the stand of the bacteria, so that I could see the whole picture better.



Calcite, bone meal,  
and milk stone are the main food  
for humanoid bacteria

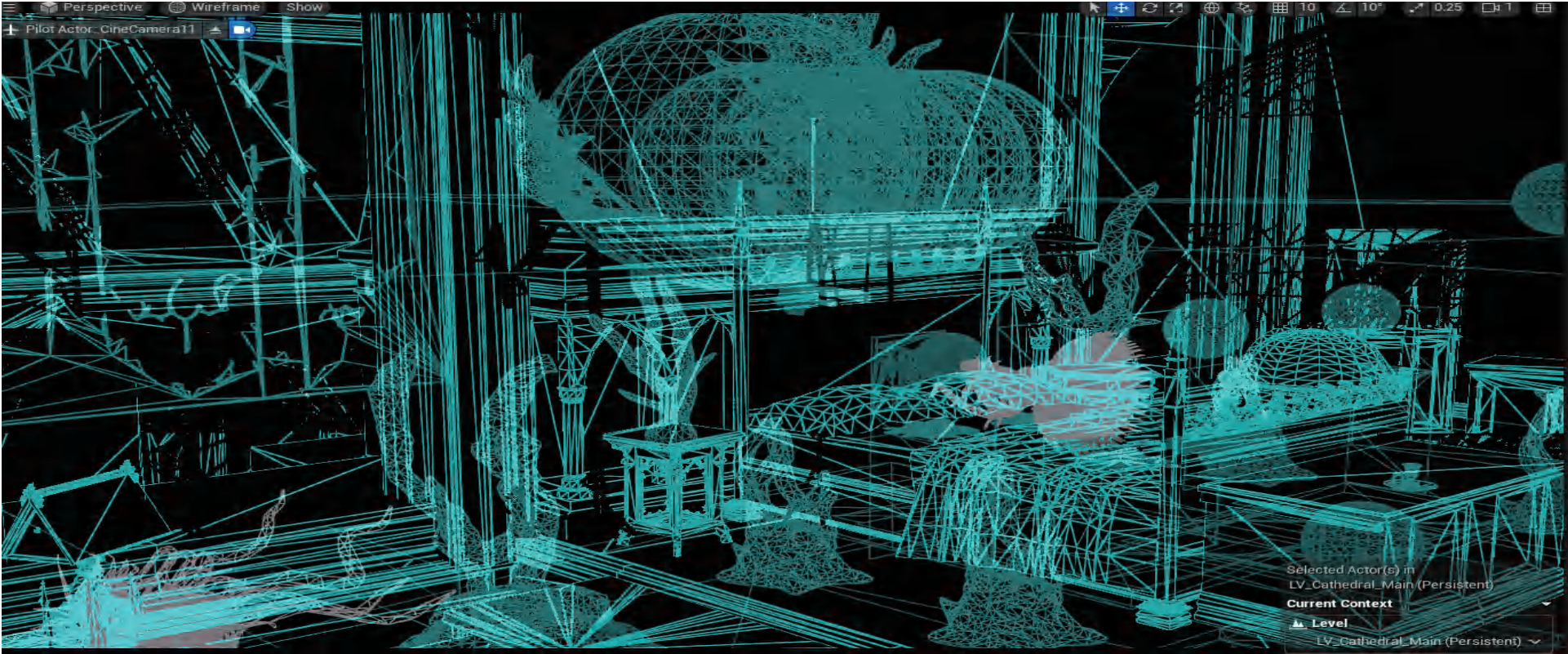


By 2059, the new world of human-faced bacteria has become vastly different from our familiar world.

**Life of Human-faced Bacteria**

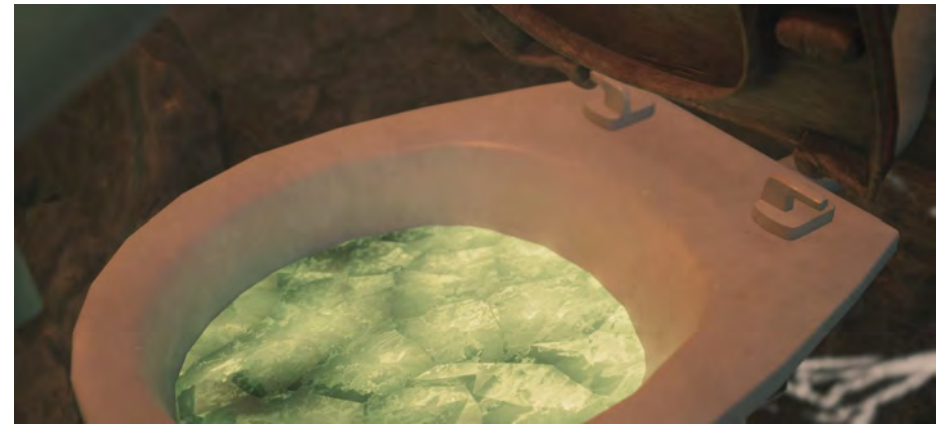


# Scene modelling



# Film Intercepts

By 2059, the new world of human-faced bacteria has become vastly different from our familiar world. In this unique ecosystem, even the most everyday spaces, such as the bathroom, humanoid bacteria also demonstrate their unique adaptive abilities. They use their tentacles to excrete waste and sense the atmosphere of this special environment.



When humanoid bacteria need to rest, they curl up into a ball and emit a soft glow, as if engaging in some kind of mysterious ritual. Their beds, covered in a layer of slimy mucus and bacteria, represent their unique lifestyle and habits.

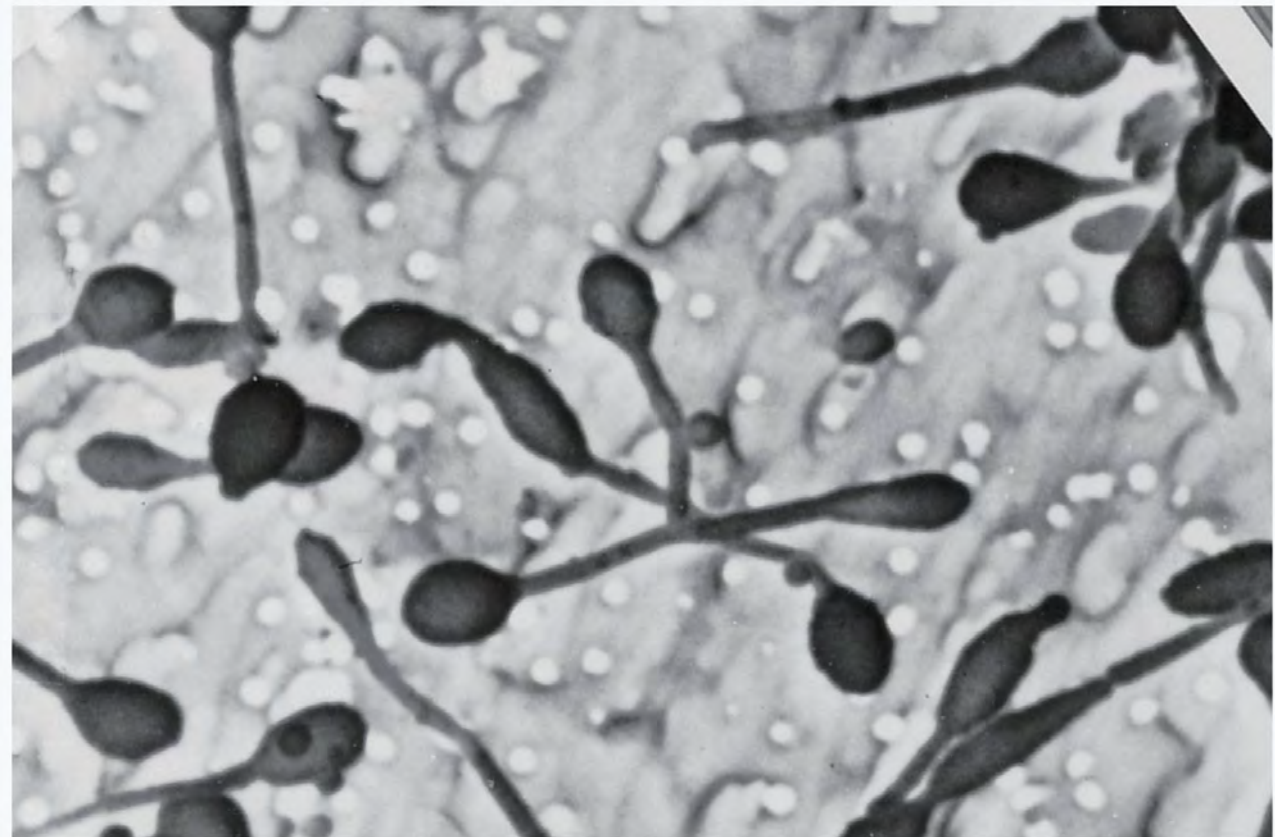


When these unique life forms reach the end of their lives, their bodies do not simply disappear, but begin a new journey.

# Research

## Reproductive Process: Dichotomy

Most prokaryotes reproduce through the process of binary fission, where the cell increases in size until it splits into two halves, producing two identical daughter cells. Each daughter cell can then continue to grow at the same rate as the parent cell. To achieve this, the cell must grow over its entire surface until cell division occurs, forming a new hemispherical pole at the division septum in the middle of the cell.

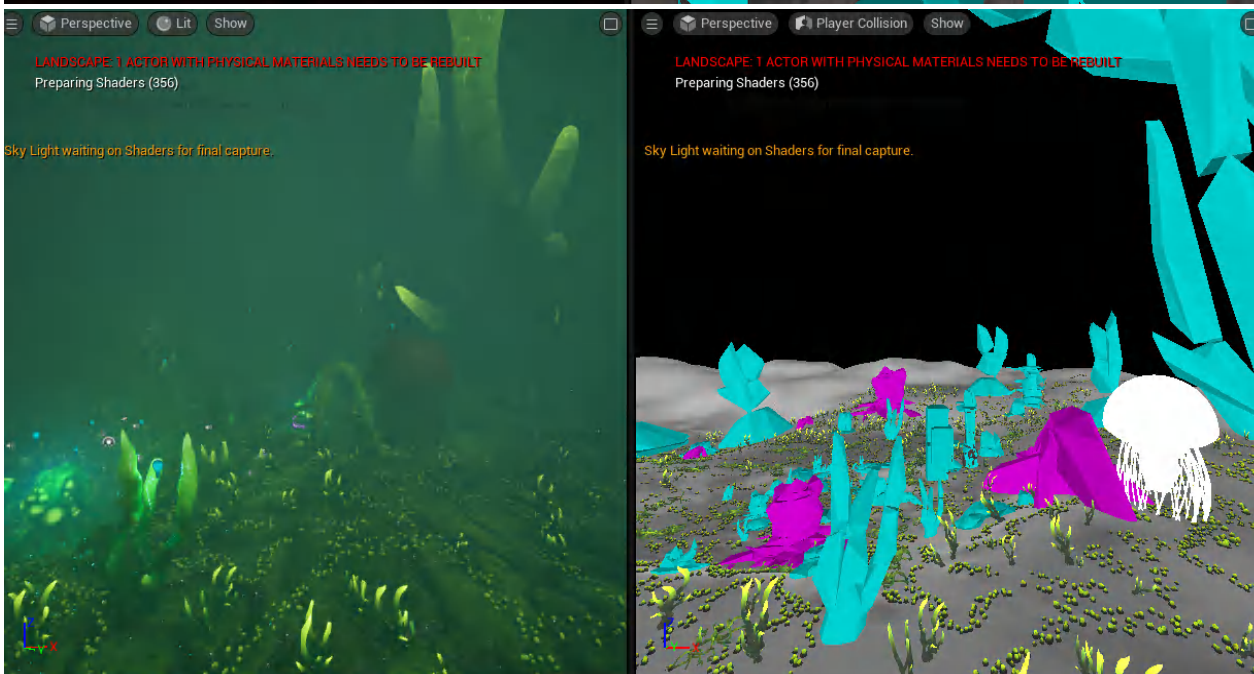


图源: Biological Photo Service

# Scene modelling



Their organic matter gradually decomposes over time, turning into tiny particles that drift in the air, merge into the soil, or are absorbed by other organisms.



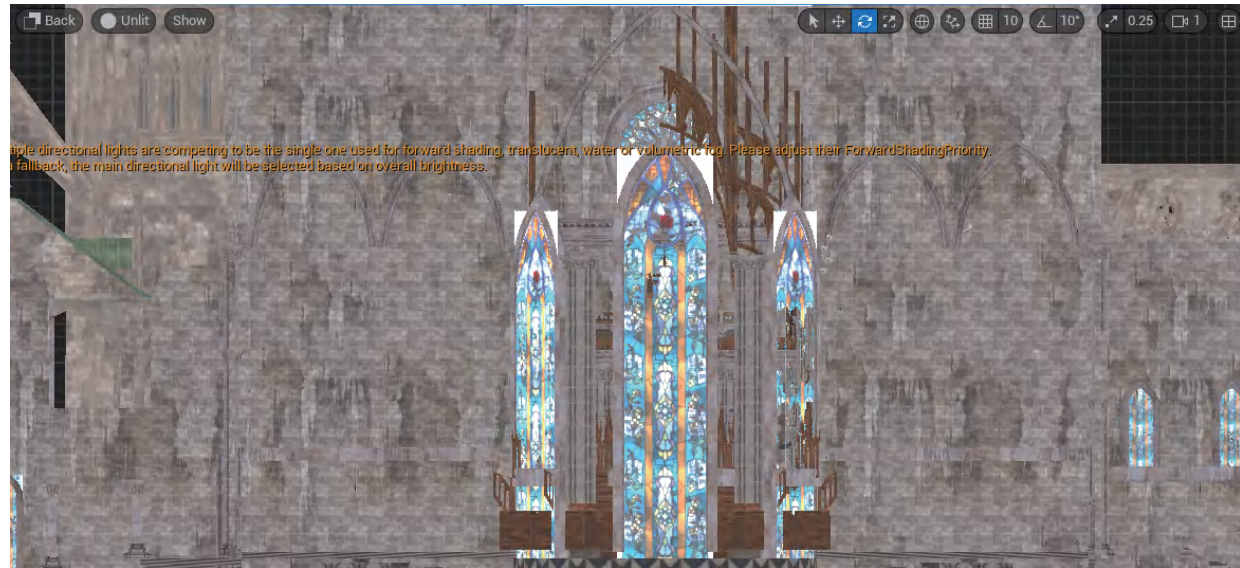
# Film Intercepts

When these unique life forms reach the end of their lives, their bodies do not simply disappear, but begin a new journey.

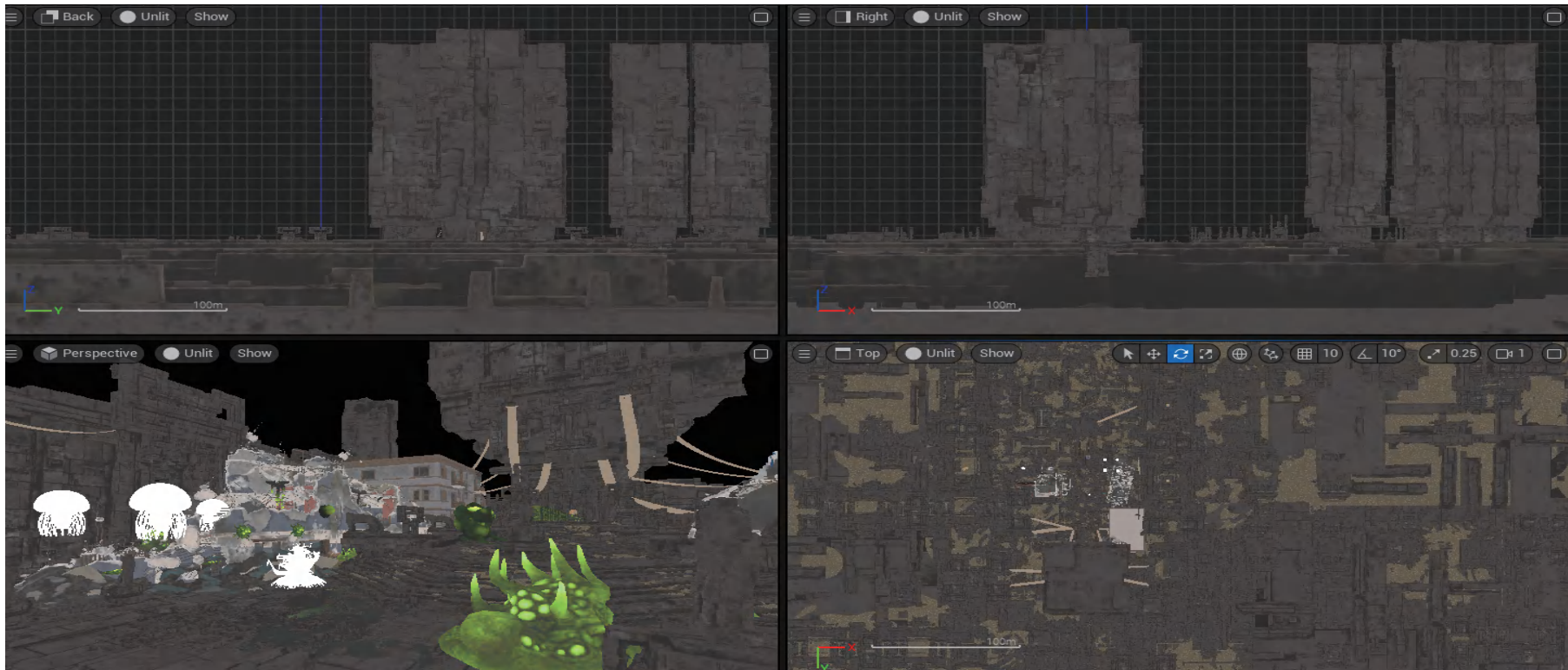


These nutrients become the source of new life, nourishing other organisms and maintaining the balance of the ecosystem

## Detailed view of the glass pattern



# Bacteria positioning map



# Small model construction



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# **THE DED**

The way people live and dwell does not stop with us,  
but continues to exist through the environments we live in,  
the traces we leave behind, the spaces we create.