



Part 2 : The 'Growth' Phenomena

The **adaplation** of fungi evolution, the **mycelium** fungi are **substiting** the facade of the homeless center as a living exterior skin.

Part 2 focus on the **expansion** of set idea by interpreting the fungi as an organism that **constantly grows** throughout the city creating **crevasses and platforms**.

The idea is then carefully detailed by **introducing grid** structure around the city as a support for the mycelium.

The mycelium will grows along the grids and naturally creating spaces for the people in the city, and the homeless center becoming one of one the **nucleus** that started the **'growth' phenomena**.

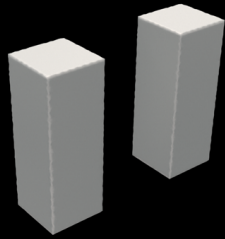


Mycelium is the roots of mushrooms. It has remarkable properties that have evolved millions of years before us.

These new discoveries of bio-technology of the mycelium allow us to build bridges between nature and technology.

Mycelium can grow very quickly and it acts as a binding agent at any given substrates .

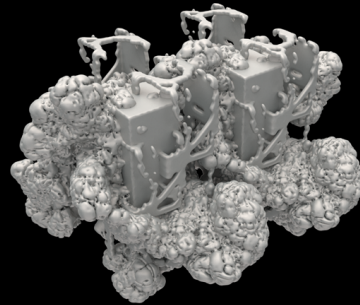
The mycelium is also considered very light weight and durable material.
It is able to withstand fire and cold climate conditions.



The mycelium blocks
The blocks is a solid lightweight blocks.



The mycelium structuring
as time passed by the mycelium will kept on growing and repairing itself and eventually the structure inside the facade will be as strong as a concrete.



The overgrown
a hypothetical visualization of the structure of the facade constantly growing until it changes the original form of the building design hence the "living organism as building"



Less cost + cooling effect + adaptable in climate



Source of oxygen exchange



lightweight



strong structure



biodegradable

The Process

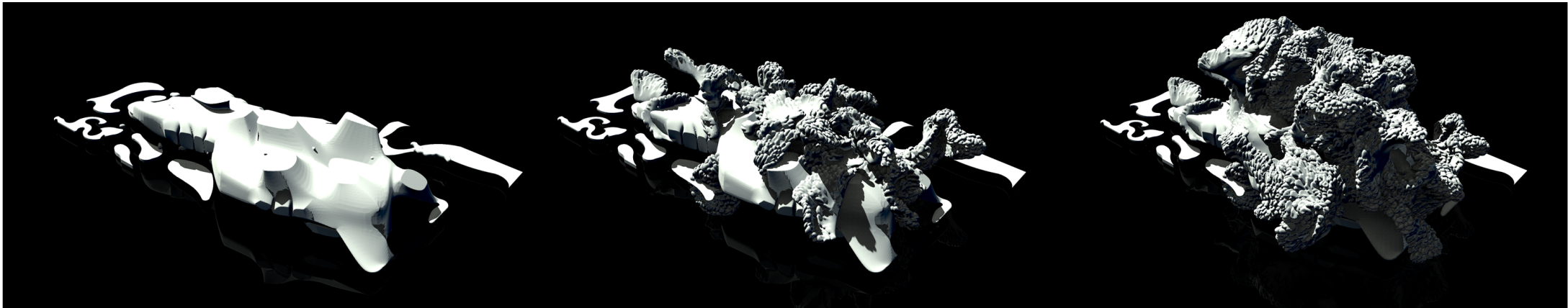
The **Mycelium fungi composite block** is made out of **composite material** that has been **recycle and combine** with the mycelium fungi. Its main advantage is to provide sufficient oxygen, cooling effect for people inside as well as self sustain facade. A conceptual visualization of the fungi growing and changing the origin shape of the building creating a new movement of architecture. The living architecture.



The conceptual diagram of the nucleus being made from a 3D printed plastic mold.

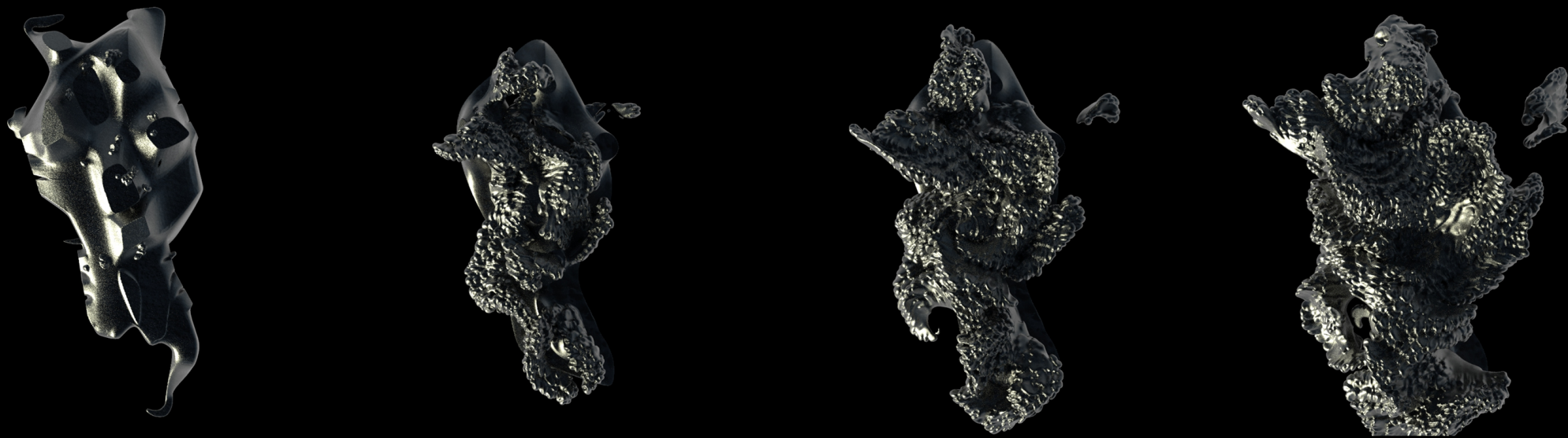
The Interval Series : 3D printed plastic mold

The intervals shows the plastic mold open ups revealing the newly cast and strong composite mycelium mold that have been made.

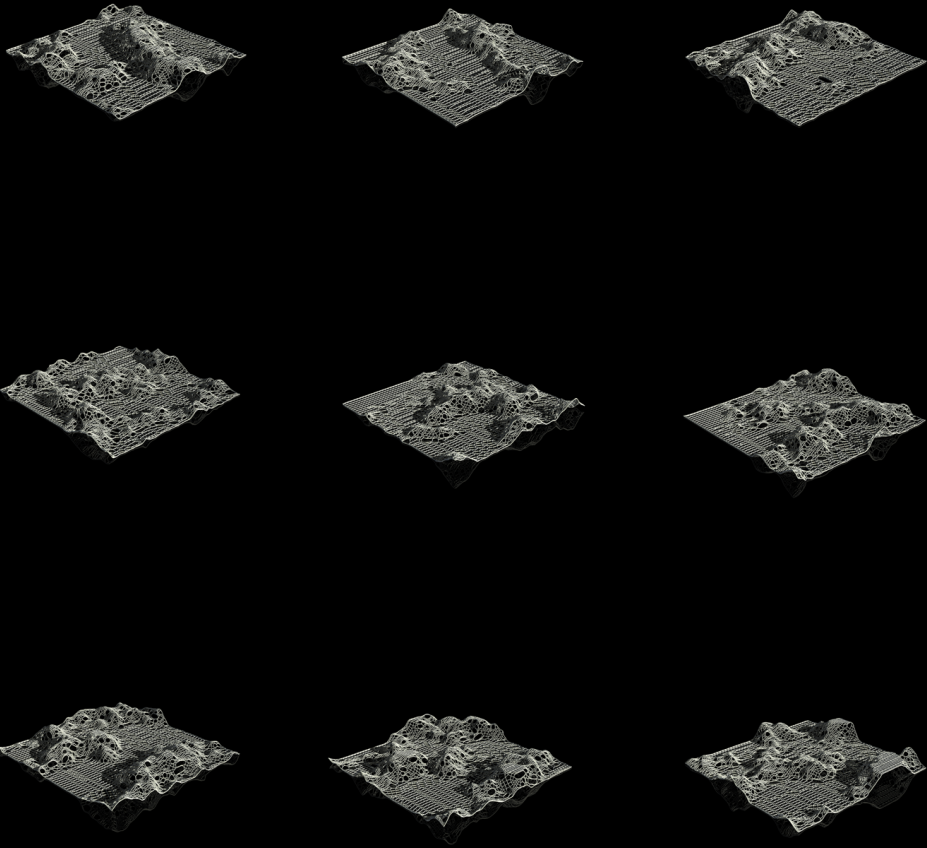


An extension of the idea o'living architecture' a conceptual idea that highlights the potential of mycelium fungi as a medium of expanding the architecture future.

An architectural GROWTH, the effect of the mycelium fungi constantly growing and living mutually with the homeless people as the lifestyle of the homeless people changed due to the positive outcome of the 'market of labour'.



The conceptual diagram of the nucleus constantly growing and spreading the mycelium fungi, overtime changing the looks of the original nucleus.



The Interval Series : Nine growing intervals

A mycelium brick is an organic brick that is formed from organic waste and the mycelium of fungus. Mycelium are the thin root-like fibres from fungi which run underneath the ground, when dried it can be used as a super strong, water, mould and fire resistant building material that can be grown into specific forms, thus reducing the processing requirements.

This 100% organic material has been gradually developed across multiple disciplines, with the architectural and construction industry recently taking interest in its possible implications.

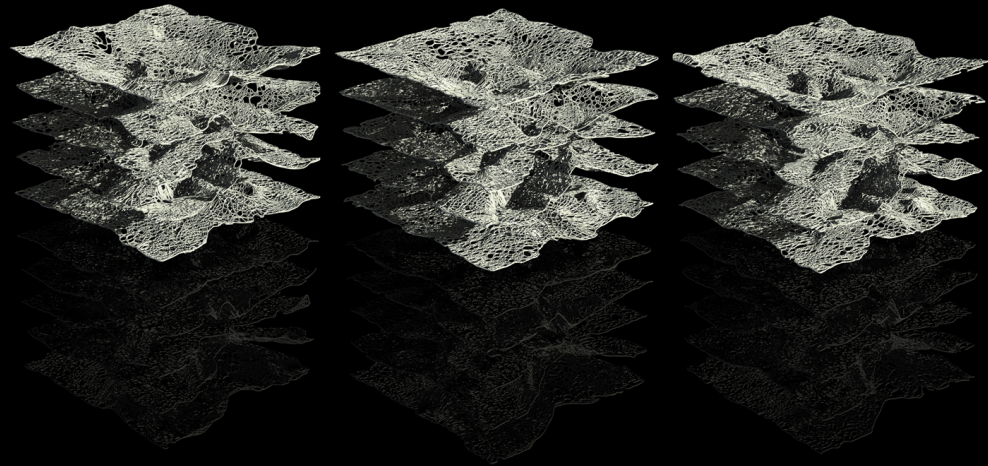
Construction applications for mycelium include a composite board (Myco-board) which can be used much like Medium-density fibreboard/particle board without the extremely dangerous formaldehyde used in the glue. Mycelium can be used to grow furniture and/or the bricks which are easily recycled at the end of their life. Depending on how the mycelium brick was made its compressive strength may be around 30 psi in comparison to the 4000 psi compressive strength of concrete. However, relative to its weight a mycelium brick is stronger than concrete with a cubic metre of mycelium brick weighing 43 kg and a cubic metre of concrete weighing 2400 kg.

(source - google)

The diagram shows the formation of cells inside the mycelium wall. The cells are replicating and multiplying itself - a constant regeneration of mycelium structure cells.

The '9 intervals' are a representation of the movement and changing in form / shapes of the mycelium according to the external of the mycelium composite.

Conceptual diagram of the movement and growing of the mycelium cells inside the walls in 9 intervals.



The Interval Series : Porous cellular layers

The layers are the replication of the multiple layers of the mycelium walls. That makes it possible for it to become resistant to hazards, while also able to withstand fire hazard, water hazard and insulating the air inside the building, making the building cooler suitable for living subjects. The mycelium walls also provide a decrease in Carbon dioxide levels to the environment by 20%.

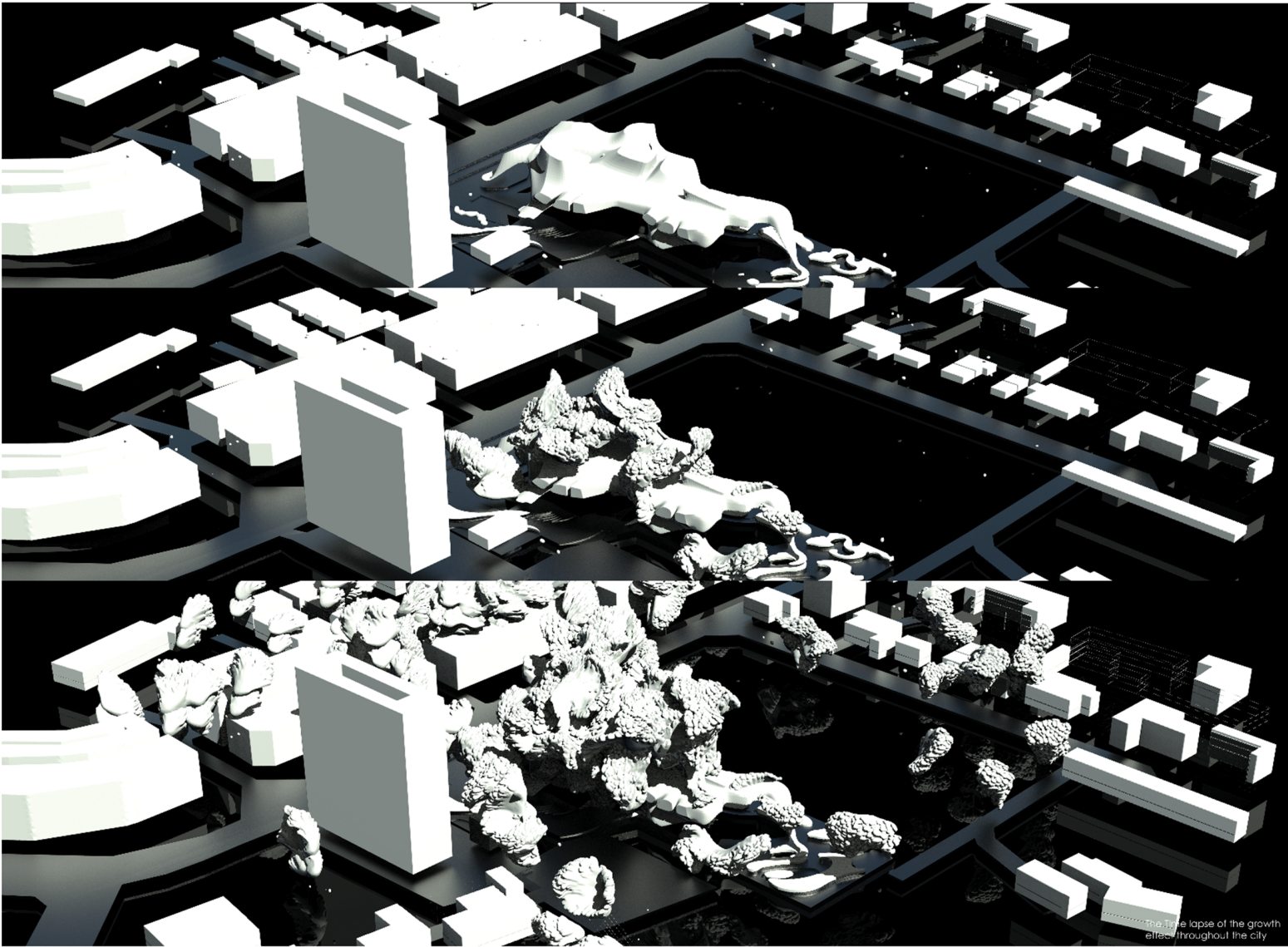
Conceptual diagram of the layers of mycelium fungi that protects subject from hazards.



Conceptual diagram of the replication of the Fungi in 3 different forms.

The Interval Series : replication of fungi

The growing effect of the fungi in physical form, a detail replication of how the fungi interacts with the environment and constantly growing and becoming an interconnecting layers of network. The structure of the mycelium walls grows stronger the more it is properly care and can laster longer than a regular building would.

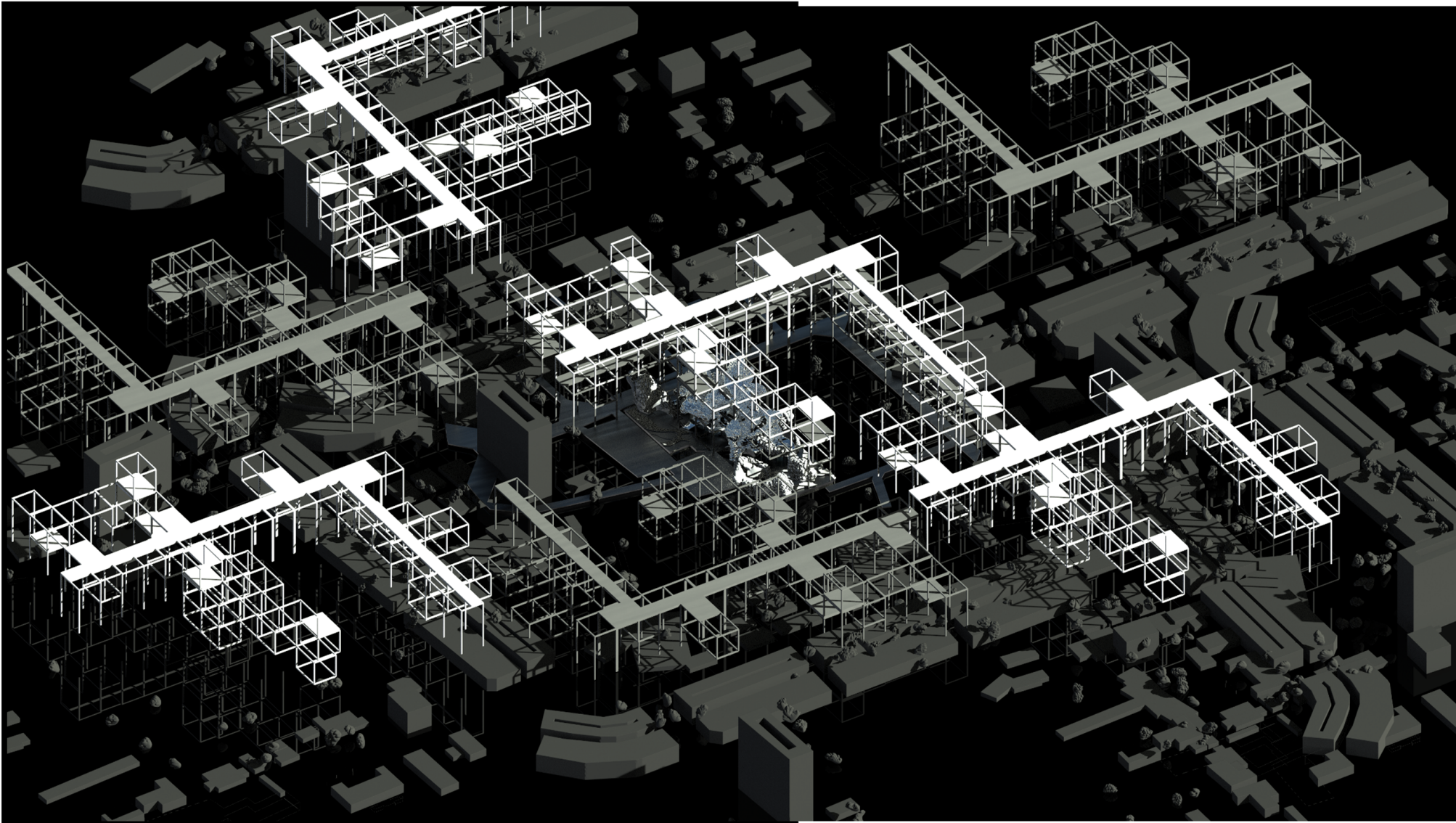


Time Lapse of the 'Growth' phenomena

A 3 intervals of the growth phenomena being shown as a depiction of the morphology aspects of the nucleus to influence the surrounding building to also infected by the speculative mycelium growing reaction.

The time lapse also shows how face the mycelium able to grow and spread throughout the urban landscape.

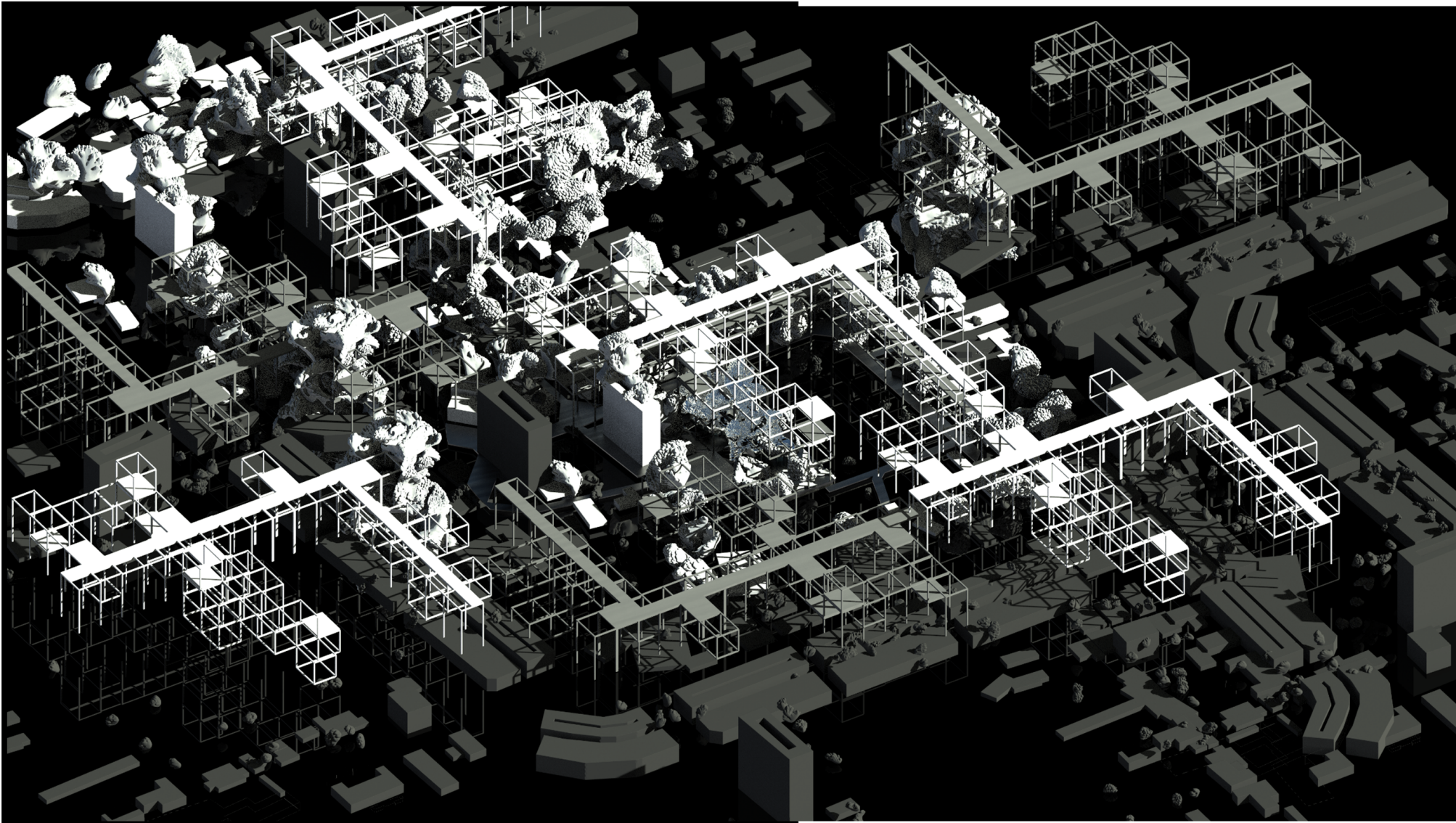
the Time lapse of the growth effect throughout the city



The Component of
the 'Growth'
phenomena

The Grid Structure
is the first
component that
needed to be
installed around
the urban
landscape as a
supporting
medium to control
the spreading of
the mycelium
fungi.

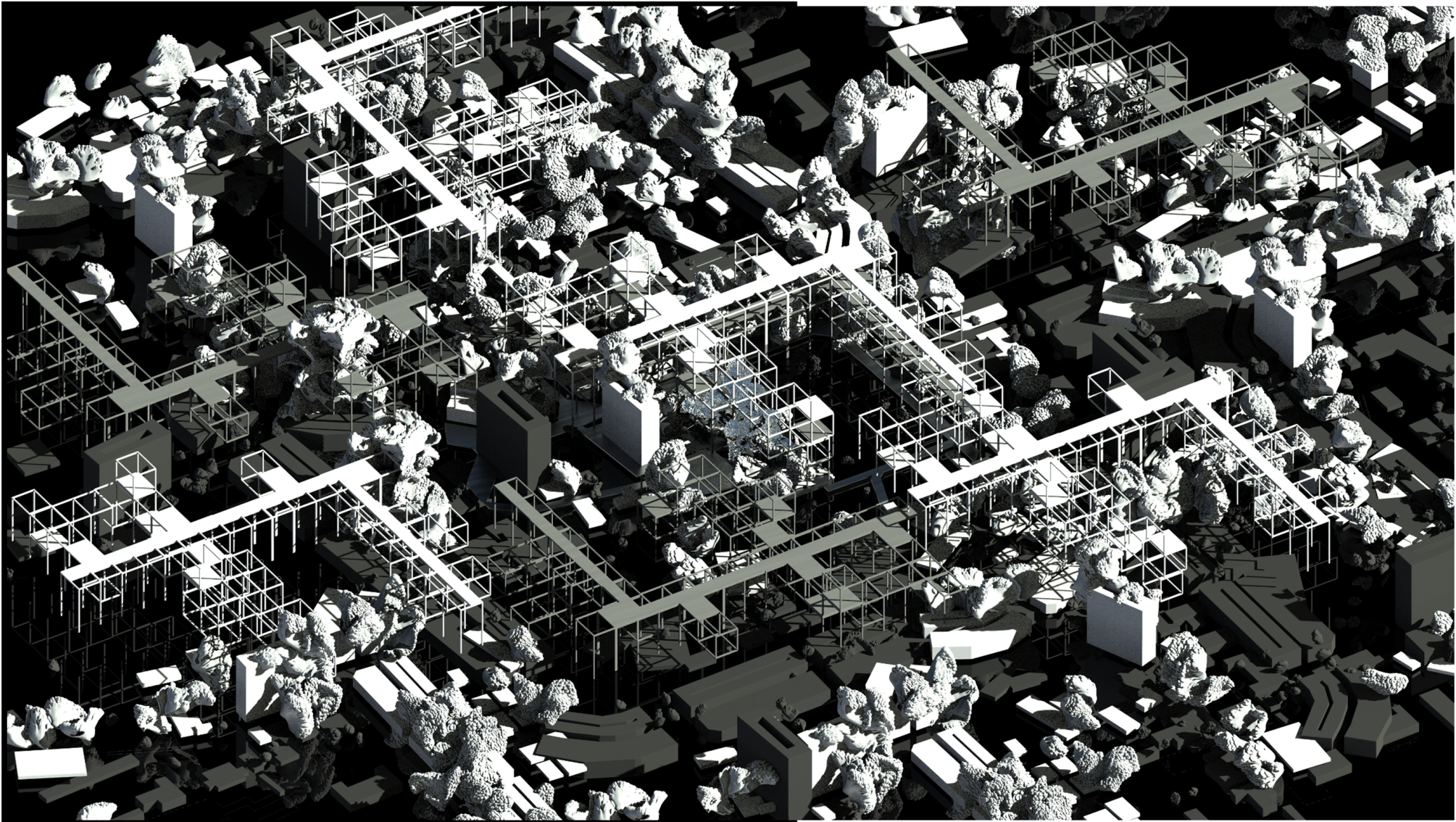
Providing the right
path for the
mycelium to grow.



The Component of
the 'Growth'
phenomena

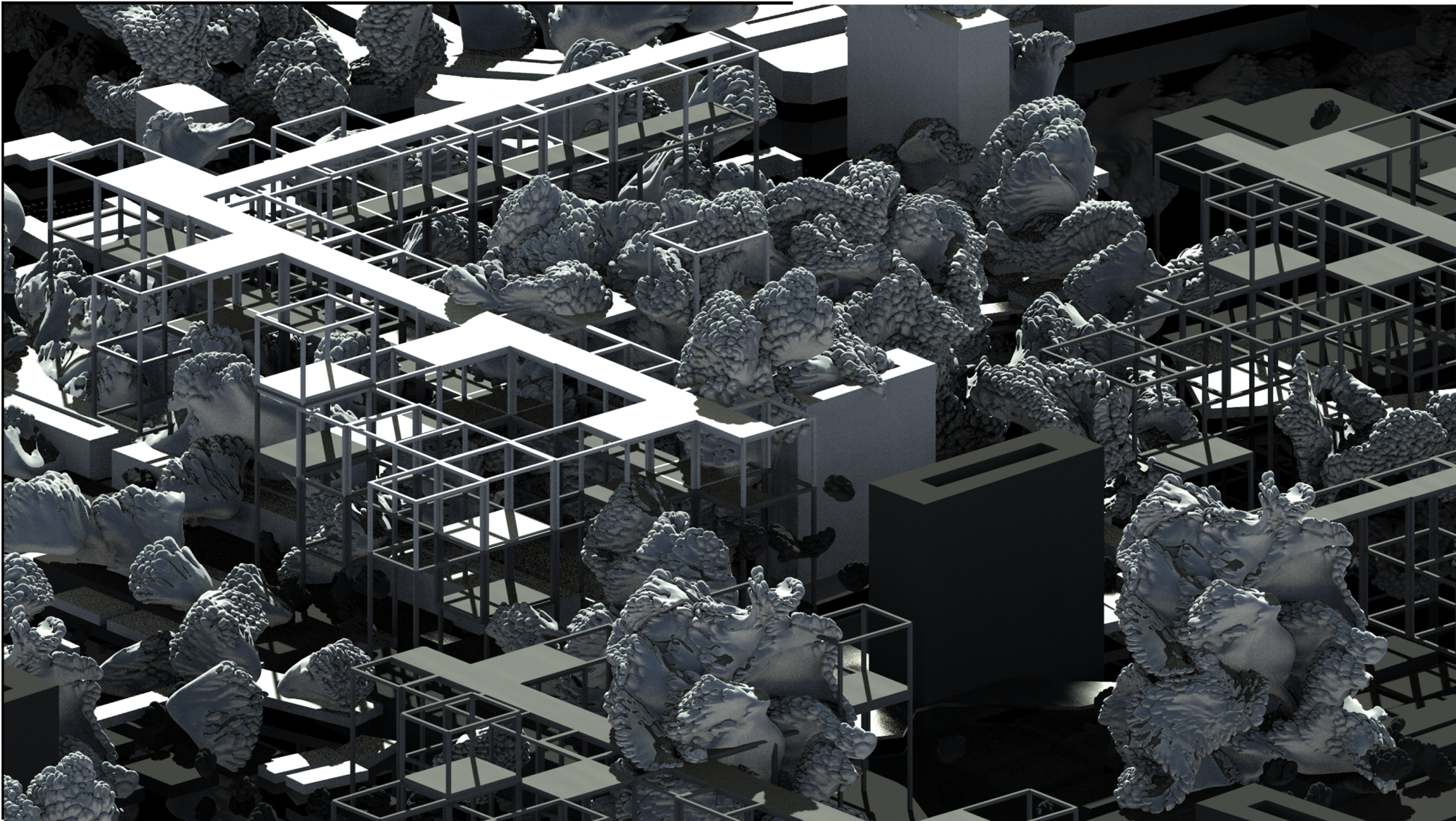
The Mycelium initial
grow spurs that
come out from the
nucleus, the
increase in
naturally made
spaces and shelter.

Slowly reducing
the excessive
amount of carbon
dioxide in the
environment.



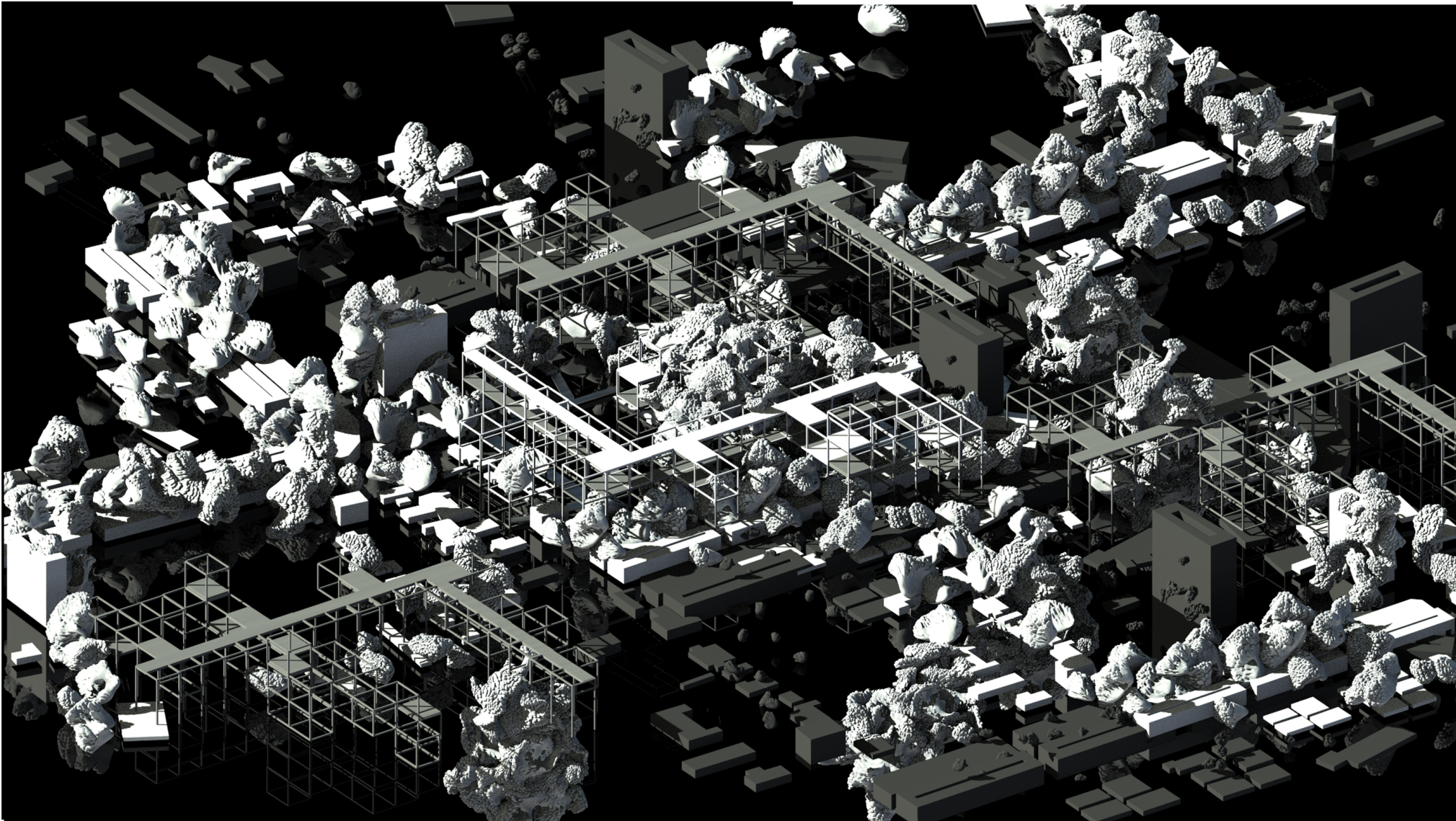
The 'Growth'
phenomena

The final outcome of the mycelium cells overgrown throughout the entire urban landscape and providing the naturally made spaces as well detoxin the air that have been covered with carbon dioxide through exchange of gases by the fungi.



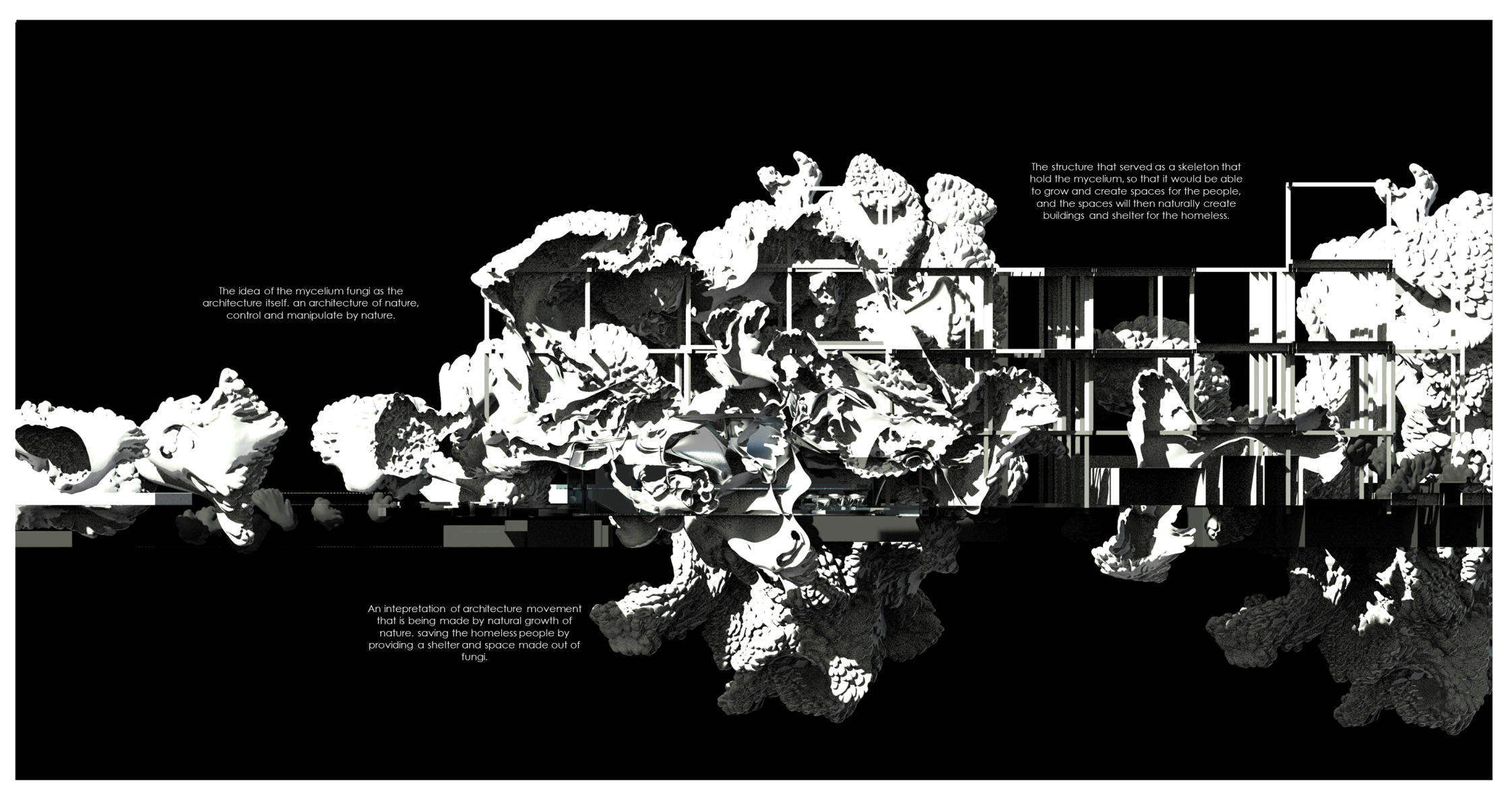
The 'Growth'
phenomena

The close up look
at the detail of the
structure system
and the mycelium
integrated
together spurring
out from the
nucleus.



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The idea of the mycelium fungi as the architecture itself, an architecture of nature, control and manipulate by nature.

The structure that served as a skeleton that hold the mycelium, so that it would be able to grow and create spaces for the people, and the spaces will then naturally create buildings and shelter for the homeless.

An interpretation of architecture movement that is being made by natural growth of nature, saving the homeless people by providing a shelter and space made out of fungi.