## $+$ <br> M.I.celium mexicanus

Rejecting Modernity through Zapotec Futurism
by
Lynced Angelica Torres
Bachelor of Science, Architecture
Texas Tech University, 2016

Submitted to the Department of Architecture in Partial Fulfillment of the Requirements for the Degree of

Master of Architecture
at the

| Massachusetts Institute of Technology |  |
| :---: | :---: |
| June 2021 | $+{ }_{1}^{+}$ |

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Photo Credit: Skylar Perez

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## ABSTRACT

[M.I.]celium mexicanus is an entry point for architects and humans to consider transforming their relationship to the Earth's critical zone through reconciliation with mushrooms to cultivate fungal allyship. The thesis examines
and reimagines a future of building that drives towards the biological vs. that which is mineralized and controlled through unempathetic forces such as extraction through mining, greenwashing renewable energy to sustain mining
production, and commercialization of architecture and planning practices. These elements are contaminants in the culture and lives of the Zapotec community residing in Juchitan, Oaxaca and perpetuate a historical system of colonisation and exploitation by not only foreign powers, but their own country and people.

The city itself currently as of 202r has not completely been able to rebuild the damage faced in the event of the 2017 hurricane that struck in the southern coast of the Isthmus de Tehuantepec. Government aid is minimal and services towards westernized modular building units like the concrete block, which are not ideal given the hot climate, serve as a unitized symbol for economic status, and is also susceptible to destruction.

The house and temple of the future embeds all the ideals, values, and ACTIONS that it may collectively take to revitalize the very soil and territory that offers itself as a substrate for life. The actions reflect and respect the rituals of the "The People" as they are no longer considered inhabitants of the past, incapable of appreciating and forging technology for the modern world. Rather, in an act of architectural and environmental anarchy, they guide the future away from extraction and towards circular economies through their collective wisdom of the past, experience in the survival of countless apocalypses, and with their close ties to mushrooms.

Thesis Supervisor: Sheila Kennedy
Title: Professor of Architecture


2020 How to Grow Almost Anything Group
Photo Credit: Parnian Barekatain

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God, the earth;
and the rest of the MIT School of Architecture community.
M.I. VS.A.I. | M.I.CELIUM MEXICANUS

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## M.I. VS. AI

Mushroom Intelligence vs. Artificial Intelligence is a conflicting tension that humans perhaps are not fully aware of in the banality of their lives. A.I. is perhaps a pinnacle for the imaginary realization of the Industrial Complex. It is human's reach to create long living legacy with
the information we hold in our minds to transfer it onto avatars or other machines that do our labor for us, think for us, research for us, and etc.
These inventions work, in part, to free our minds from the banal of

making, of deciding, of
allowing our bodies in all of its senses to connect with the matters before us. Our creations and technologies are not regenerative, but have many instances of coded biases (Coded Bias) that exploit large populations of humans and other species who do not have the same systems of voice,
expression, and representation in the creation of the modern world. This project reimagines the modernities forgotten and lost within my own creation. WHO M.I.?

DWELL, PRAY, EAT, DRINK, [DIE]GEST, AND TURN.
M.I. VS.A.I. | M.I.CELIUM MEXICANUS
$+$
18
$+$
$+$
$+$
$+$

## _Chapter 01 <br> DWELL ON MY WORD: <br> We Must Repair the Soil What M.I.?

1 function (translate/
2 English)
3 <Psalm 91:1>
4 //"He who DWELLS in
5 in the shelter of the
6 Most High will abide
7 in the shadow of the
8 Almighty." (Hiesberger)
9 \}
10 */
11 */
+12 */
13 */
14 */
15 Error code:403
16 Forbidden
17 //The client does not 18 have access rights to 19 the content that is,
20 it is unathorized, so
21 the server is
22 refusing to give the
23 requested resource.
24 <Where M.I.?>
25 <Where M.I.?>
26 <Where M.I.?>










M.I. VS.A.I. I M.I.CELIUM MEXICANUS

## HOW DID HUMANS GO OFF CYCLE?

Humans stray from the cycle of regeneration when they try to reinvent the technologies that already exist. Unmanaged global capitalism and globalisation will be the earth's demise (Generation Wealth).

Decisions to build and unbuild will always be restricted to what is at the interest of the corporations at power. Without profit, there isn't production and there isn't a "company" to do the work. When we, as humans, commercialize land, architecture, and govern the means to which what material is "safe" in generalized contexts, the environments and the terrior are immediately affected.

Modernisation in architecture has shifted from the vernacular building methodoliges ritually passed from generations in a
given region, depending on what the climate is and what materials are locally available to be sourced.

The notion that material can be produced ubiquitously and transferred to another region for built work has removed us as consumers of architecture from the realities behind the walls we inhabit.

How many communities and ecosystems were destroyed so that I can live here in my own idea of "modernity"?

Architecture can be a beautifu tool to create the spaces we dwell in, but just as any other technology, it can be a tool of destruction.


Baby



















M.I. VS.A.I. | M.I.CELIUM MEXICANUS

# _Chapter 02 <br> PRAY AND YOU SHALL <br> RECIEVE: <br> The Miracles of Mycelium When M.I.? 

1 function (translate/ 2 English)
3 <Mark 11:24>
4 //"Therefore I tell
5 you, whatever you ask
6 in PRAYer, believe
7 that you have
8 received it, and it
9 will be yours." (Hiesberger)
10 \}
11 */
12 */
13 */
14 */
15 Error code:403
16 Forbidden
17 //The client does not 18 have access rights to 19 the content that is, 20 it is unathorized, so 21 the server is
22 refusing to give the 23 requested resource.
24 <Why M.I.?>
25 <Why M.I.?>
26 <Why M.I.?>






## Mexico's Indigenous Lanouage Geneology




MADE AND FOUND
THROUGH DATA COMPILED FROM
(INEGI)
| M.I. VS. A.I.



MADE AND FOUND
THROUGH DATA
COMPILED FROM
(INEGI)

# "The world will ask you who you are, and if you do not know, the world will tell you. <br> - Carl Jung 

## _ [PSCILOCYBIN]: Mexican Mycophilia Preserving Dialects and Mushroom Memory

"Isthmus Zapotec has one hundred thousand speakers, but the language may fall silent this century. Fewer and fewer children speak it fluently, as televisions, radios, and internet cafés in Oaxaca relentlessly bleat Spanish, and sometimes even English. Zapotec shares its grim fate with approximately thirtyfive hundred other languages worldwide. While about 7 percent of the planet's known plant and animal species are in danger of extinction, so percent of the world's languages are similarly endangered. That is to say, half of our global repository for recording human experience, naming the world around us, and understanding our place in the ecosphere might soon be lost to us.

Zapotec remains the dominant language in

Juchitán's five-hundred-year-old central market, where horse-drawn carriages carry local flowers, fruit, and fish, but at the edge of town, employees at Bodega Aurrera (a Walmart-owned Mexican chain) and Burger King address customers only in Spanish. Pineda, who writes in Zapotec and then creates what she calls "parallel poems" in Spanish, strives to change this situation. She is not alone. Juchitán is an epicenter in the geography of indigenous-language literature. Within one hundred miles of Pineda's hometown, indigenous writers perform and publish fiction, poetry, and drama in more than a dozen languages, including Zapotec, Mazatec, Tzotzil, and Zoque. As much of the world bends toward the blandly global, the specificity of these languages
| M.I. VS. A.I.
insists on the local. Zapotec's
dialects are so diverse that Pineda might have trouble understanding other Zapotec speakers who grew up just sixty miles from Juchitán.

Most Zapotecs, educated entirely in Spanish, can't read or write their native language,

+ even though it has the longest
- written history in the Western

62 Hemisphere. Zapotecs invented a glyph writing

+ system around 6oo BCE -
+ one of the few times that
$+\quad$ writing was invented, rather
+ than adopted, in the New
World." (Orion Magazine)
Transfer of knowledge and ritual is inevitably at stake in many indigenous communities. Knowing the mushroom and Mushroom Intelligence offers reconnection to the earth so that they are reminded of who they are.


# _DE-COLONIZATION: Cohabitation Cultivation via [M.I.celium 

To work with mycelium is an act of anarchy in and of itself. The ways of engaging

+ important parameter: time. + Understanding a source of + biological transformation and examining it, creates memory even within the process of design that is remniscent to the way we as architects begin to draw and visualize the larger concepts we wish to depict. Each line, like the hypha strands in a mycelium network operates not in singularity but through collective aggregation. When we as humans, are able to understand process and the built form through collective aggregation, perhaps the issues of the amount of labor and time put into the work it takes to build a home become less overwhelming.

Time and attention towards
the aggregation of collective work is inherent to making that of the body feel productive, feel purposeful, feel happy. The more we rely on the mechanize structures created and invented for the convenience of life, the more we disengage with the body. The more memories we lose for their very lack of creation. Transformation and colonisation of theologies, ideals, and even technologies, have grand effects and can turn into tools of weaponization towards culture, towards ritual, towards the advent of making and connecting with the mind.

The tools of progress, tools that perhaps were meant for the production of a "better" world are more evidently being shown as tools of destruction.

CARE FOR M.I.


## _WHERE DOES THE MUSHROOM DWELL?

The natural medium in which they thrive and cultivate on rely on moisture, making them prominent in the mountainous
landscapes of Mexico. The higher altitudes, where warm air rises and pushes cold air down, maintains the proper currents to sustain reoccurring rainfall, allowing these areas to retain higher amounts of humidity throughout the year.
$+$

+ WHAT TO LOOK FOR IN MUSHROOM FORAGING.
$+$
- What people may not initially realize, is that fungi have been
+ integral to the development of life on Earth. In fact, neither land plants, nor terrestrial animals would exist without them. They are the first miners of rock, crushing and turning them into what would become soil.

Part of finding the mushroom means allowing the body to contact and be in tune with the elements that allow for fungal

1. TOP: BOSQUE dE OAXACA BY DAVID
2. LEFT:

MUSHROOM IN
SIERRA NORTE DE
OAXACA
3. BOTTOM:

MOUNTAINS IN
SAN JOSÉ DEL
PACIFICO (NORTH)

M.I. VS.A.I. I M.I.CELIUM MEXICANUS




Amanita basil
American matsutake Tricholoma magnivelare


Ramaria versatilis


Golden Chanterelle Cantharellus cibarius


Shaggy-stalked Bolete Heimioporus betula


Oyster Mushroom Pleurotus ostreatus


Corrugated-map Milky
Lactifluus corrugis


White Button Mushroom Agaricus bisporus

Jackson's slender Caesar Cor Amanita jacksonii


Ramaria purpurissima
Ramaria rubricarnata verna

American matsutake
Tricholoma magnivetare


Laccaria
vinaceobrunnea

False Chanterelle
Hygrophoropsis aurantiaca


Veiled Purple Hygrophorus Hygrophorus purpurascens

Amanita
tecomate

## Myceliums' Natural Petri Dish

$\underset{\text { I Jan. I Feb. I Mar. I Apr. I May I J }}{\text { I }}$ $-$

## $\square$




## 



| km | 0 | 1100 | 200 | 300 | 400 |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | mi | 0 | 1100 | $\mid 200$ |  | 300



MADE AND FOUND
THROUGH DATA
COMPILED FROM
(INEGI)








"My experiences and reflections drew me to Short's (2010) sociological take on genocide. Short revives the original 22 definition first coined by Raphael Lemkin (1944) in which cultural destruction of a group's way of life can contribute to the wholesale annihilation of the group.

# _ UNLEARNING "Modern" ARCHITECTURE: a History of Colonisation and Exploitation 

FOLLOW "THE PEOPLE"
[01] "In August 1519, Spanish explorer Hernando Cortés marched inland into Mexican territory, beginning a long period of European colonization of the region. Indigenous communities + didn't succumb to the invaders, nor did they disappear. They contended with them. The period of colonization that followed Cortés's conquest was complex. Indigenous communities were living among the Spanish—not in perfect harmony, but still very much living-negotiating for the maintenance of their own languages, land, and hierarchies.

Over the summer [of 2019], the Blanton Museum of Art at the University of Texas at Austin challenged the idea that Indigenous cultures were completely destroyed. "Mapping Memory: Space and History in 16th-century Mexico," which featured I9 hand-painted maps created by indigenous artists known as the
[03] Mapas de las Relaciones Geográficas, showcased the cultural hybridization that formed during this period." (Indigenous Artists Used Maps as Tools of Resistance in Colonial Mexico article)

Today resistance is still seen in Mexico through protest, continuing the fight for the terroir. Through human connection cultivation of community can thrive. Choosing the labor, is choosing the ritual, and the connection it takes to live together, embracing the reality of architecture, not the sterility of typically seen contemporary architectures that remove the human.

## _REBUILDING AFTER THE 2017 ISTHMUS EARTHQUAKE

"As a result of the earthquakes that occurred on September 7, 19 and 23 of this year and that affected states such as Chiapas, Morelos, Puebla, Mexico City and Oaxaca, especially the Isthmus and Sierra Mixe area, Oaxaca Community Foundation It has responded to the emergency with the mobilization of resources (economic and food) of its own and of other civil society organizations, national and + international community

+ foundations and companies of various kinds.

As of today, the figures show that $50 \%$ of the state's municipalities (291) have been affected, however, of that percentage, 41 municipalities were severely affected. It is estimated that those affected number more than I2O thousand people; almost 40 thousand houses with partial damage and around 21 thousand that were completely lost." (Fundación Comunitaria Oaxaca)
"While the impact of the earthquakes were severe, some towns and homes were
impacted less than others. Juchitán, as mentioned, was devastated, but residents of surrounding towns-many of which are fighting wind park development-were less affected.

Maria Xochimeh, a resident of Gui'Xhi' Ro (Álvaro Obregón), said that in their community, "not a single house fell to the ground." While some houses experienced structural damage, many did not because their kitchens "were made of palm" and they were "not a part of the concrete house-it's not all bunched together." The more traditional and dispersed courtyard layout, with trees and plants used for daily life, also helped absorb the impact and reduce damage to homes.

This was not the experience in San Blas Atempa, Tehuantepec, Juchitán, Matias Romero and the other main towns devastated by the earthquake. This has to do with the reduction of courtyard space due to dense urbanization, the proliferation of concrete houses and faulty

material and construction regulations. Soil moisture, which can mitigate earthquake shocks, is another factor.

Humanitarian aid slowly arrived in the isthmus following the earthquake. Aid materials were the usual tents, tarps, ropes and food provisions. Land defenders I interviewed told me how they watched plastic and trash proliferate across Juchitán during recovery efforts. This
was matched with sadness. Carlos Martínez, a Zapotec activist, witnessed a "terrible loss of historical memory about using palm to make rooftops and the general vernacular architecture" as people scrambled to access tarps."
(Toward Freedom)

M.I. VS.A.I. | M.I.CELIUM MEXICANUS

# _Chapter 03 <br> EAT MY FLESH: <br> Relearning Ancient <br> Farming Technologies <br> like the M.I.lpa <br> Where M.I.? 

1 function (translate/
2 English)
$3<$ John 6:51>
4 //"I am the living
5 bread that came-down
6 from heaven up from 7 Whoever EATs of this 8 bread will live
9 forever; and the
10 bread that I will
11 give for the life of
${ }^{+} 12$ of the world is my
${ }^{90} 13$ flesh." (Hiesberger)
14 \}
15 Error code:403
16 Forbidden
17 //The client does not 18 have access rights to 19 the content that is, 20 it is unathorized, so 21 the server is
22 refusing to give the 23 requested resource.
24 <Who M.I.?>
25 <Who M.I.?>
26 <Who M.I.?>










## Crop Consequences for the Human and the Musbroom



Many migrations and disptacements duetto


| km | 0 | 100 | 200 | 300 | 400 |
| :--- | :--- | :--- | :--- | :--- | :--- |
|  | mi | 0 |  | 100 | $\mid 200$ |



MADE AND FOUND
THROUGH DATA
COMPILED FROM
(INEGI)

## _ERGOT: A Fungi of PRODUCTION and DESTRUCTION

Ergot lies within the family of plants called to earth by the gods. It is typically found in grains and historically has been known to cause epidemics of ergotism within the Middle

+ Ages. People experiencing
+ ergotism can undergo
+ symptoms of convulsions, spasms, seizures, "iarrhea, paresthesias, itching, mental effects including mania or psychosis, headaches, nausea and vomiting. Usually the gastrointestinal effects precede central nervous system effects. (Ergotism). These are the symptoms that are predicted to have caused the Salem Witch Trials in 1693.

The paradox of this fungal species is that beyond its ability to destroy and cause havoc, lies a thin will to produce beneficiary relationships to the human population. Albert
Hofmann, Swiss chemist
is known for synthesizing
and ingesting lysergic acid diethylamide (LSD) which couldn't have been uncovered without the ergot alkaloids. Hoffman was also the first chemist to isolate, synthesize and name psilocybin, the critical compounds within psychedelic mushrooms (How To Change Your Mind).

Beyond ergot's ability to recreate psychedelic compounds, the species can actually be used as a medicine to treat severe headaches, relieve migraines, and is useful in the third stage of labor in order to prevent postpartum haemmorrhage (The Plants).



M.I. VS.A.I. | M.I.CELIUM MEXICANUS

$$
\begin{aligned}
& \text { Chapter } 04 \\
& \text { DRINK THE WATER I PURIFY } \\
& \text { FOR YOU: } \\
& \text { Mycofiltrating Mine } \\
& \text { Tailing Contaminated } \\
& \text { Watersheds } \\
& \text { Why M.I.? }
\end{aligned}
$$

[^1]1 function (translate/
2 English)
3 <John 6:56-57>
4 //"Those who eat
5 my flesh and DRINK my
6 blood have eternal
7 life, and I will
8 raise them up on the
9 last day; (1) for my
10 flesh is true food 11 and my blood is true
12 DRINK. " (Hiesberger)
13 \}
14 */
15 Error code:403
16 Forbidden
17 //The client does not 18 have access rights to 19 the content that is, 20 it is unathorized, so
21 the server is
22 refusing to give the
23 requested resource.
24 <When M.I.?>
25 <When M.I.?>
26 <When M.I.?>





"Infrastructural colonization spreads socialwar predicated on the ideology of modernity, discourses of progress \& the fabrication of desires/aspirations of populations to justify its socioecological repercussions. Social warfare recognizes that invasion is
infrastructural."

Rufina Sánchez, mother of murdered activist Bernardo Vásquez, stands by a mural at her house that says, "If you love life, fight the mine."
Vásquez was gunned down in 2012 presumably for his leadership against the Fortuna Silver mine in Oaxaca, Mexico.
(Cuslar)

# _THE INDUSTRIAL COMPLEX: Resisting Exploitation 

"MINING VS. COMMUNITY FOREST PROTECTION"
[01] "More than 400 mining projects exist in Oaxaca. None of them have the consent of communities and indigenous peoples living in these regions alongside these projects. Forty-eight communities gathered last February and demanded the cancellation of all mining ${ }_{-}^{+}$ projects in Oaxaca.
"With no real restrictions on foreign ownership, an incredibly low +
[02] tax regime, and no royalties, simplified administrative procedures + and environmental laws that are not enforced in practice, Mexico has become the number one destination in Latin America for foreign direct investment (FDI) in mining," according to Henry Veltmeyer and James Petras in The New Extractivism. In 2005 the Mexican mining sector attracted $\$ 256$ million in FDI. By 2011 it was \$559 million." (Cuslar)




PIGS.
SHEEP
OAXACAN SPINY-TAILED IGUANA

## _PROTECTING <br> BIODIVERSITY AND A VERNACULAR ARCHITECTURE



Town mayor Saúl
Aquino discusses
the mining
concession
during the
Capulálpam
conservation
workshop.
Photo by
Martha Pskowski).
"The Zina Palm is endangered by the construction of the [EDF] wind park that will require the destruction of 5,000 hectares
of palm trees
near the Union
Hidalgo,"
explained
Carlos
Martinez,
the Zapotec
activist, in an intervisew.


M.I. VS.A.I. | M.I.CELIUM MEXICANUS

[^2]
# _Chapter 05 <br> [DIE]GEST MY WORD: <br> Get Your Shit Together How M.I.? 

1 function (translate/
2 English)
3 <Deuteronomy 23:13>
4 //"...and you shall
5 have a spade among
6 your tools, and it
7 shall be when you sit
8 down outside, you
9 shall be when you sit
10 down outside, you 11 shall dig with it and 12 shall turn to cover 13 up your EXCREMENT." 14 \}
(Hiesberger)
15 Error code:403
16 Forbidden
17 //The client does not 18 have access rights to 19 the content that is, 20 it is unathorized, so
21 the server is
22 refusing to give the
23 requested resource.
24 <What M.I.?>
25 <What M.I.?>
26 <What M.I.?>













M.I. VS.A.I. | M.I.CELIUM MEXICANUS

[^3]
# _Chapter 06 TURN TO THE EARTH: Not Return But Turn Who M.I.? 

1 function (translate/
2 English)
3 <Isaiah 44:22>
4 //"I have swept your
5 offenses like a
6 cloud, your sins like
7 the morning mist.
8 RETURN to me, for I 9 have redeemed you.
10 \}
(Hiesberger)
11 */
12 */
13 */
14 */
15 Error code:403
16 Forbidden
17 //The client does not 18 have access rights to 19 the content that is,
20 it is unathorized, so
21 the server is
22 refusing to give the
23 requested resource.
24 <How M.I.?>
25 <How M.I.?>
26 <How M.I.?>

M.I. VS.A.I. | M.I.CELIUM MEXICANUS

(NATIONAL GEOGRAPHIC)


THE CORDYCEP
My parasitic cousin, the cordycep. Her spores infiltrate the minds of the insect, wiring and controlling the body to move to high altitudes. The insect clamps itself down, releasing her fruiting body and spores across the forest. Nature is more pervasive than science fiction. Perhaps frightening for the insect, but M.I.s abilidades regenerate the body in death as a vessel for life.



(BECOMING AN ANCESTOR)



M.I. VS.A.I. | M.I.CELIUM MEXICANUS
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150$+$
$+$
$+$
$+$

# _Chapter 07 <br> PROCESS: Learning from the Mushroom and the Material Mind 

image by ("Minjeong
AN") A SELF PORTRAIT

## _THE MAKING OF THE PSILOCYBE SPIRIT GUIDE

Much of the inspiration to give a voice to the mycelium as a material of agency and action was inspired through the artistic creations of Minjeong An, with the Self Portrait as being the key trigger for the conception of the psilocybe mushroom guide. Many of her works embed a collective wholistic image produced through the intricate detailing of symbols and notations of the ways in which she engages with her personal body. The form it takes stradles between the cusp of the modern world through its use of technological icons and with the historical world, as even despite the manner in which the drawing is made, presents a Coptic quality to the piece with the depiction of the body's aura.

Louis Kahn talked to bricks, we should speak to mycelium and actually listen to what it has to say back.

One can speak to material, but how this material relates and originates to environment and society should also be included in the conversation.

Material and matter have undeniable spirit when considered in its holistic scale of how the system of matter is concieved on earth. Part of creation is destruction in the natural environment, but with destruction, it promises life. Our cycles of production, as we know it, are unsustainable in the eye of the earth.

Isolating the fungal strain is essential for keeping a regenerative library. Using a fruiting body or remnants of the fruiting body like the genetics of the spores when they are release can all be collected and placed within substrates whether it made within an agar plate or a combined use of mixtures to create a grain that the mycelium can then use for nutrients and form.
[01] Architecture, usually depicted in isolation, is usually shown in sterility. Paradoxically, if one is to grow and understand mycelium and mushrooms beyond their natural context, they requre sterile work environments to reduce risk of contamination by other particles.

PETRI DISH SUBSTRATE: BLACK AGAR PLATES, ACTIVATED CHARCOAL AGAR

FRUITING BODY COLLECTED IN MUSHROOM FORAGING


Photo Credit: Skylar Perez


## _A LIBRARY OF MYCELIUMGRAPHIC LANDSCAPES

## LANDSCAPES IN TENSION

Modern cartographies, and the medium of maps and landscapes have historically been used as powerful tools of knowledge and translation.

Within many landscapes are conflicting forces that are inevitably susceptible to time. The markings of landscapes produced in stills denies
that these boundaries and temporary and ever changing.

Species may take combat with colonisers and contaminaters. Like mycelium, "The People" are resistant and will to search for the substrates of life.
$+$

LANDSCAPES OF RESISTANCE

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REISHI STRAIN CONTAMINATED PETRI
DISH: LINES OF COLLISION BETWEEN
CONTAMINANTS AND HEALTHY MYCELIUM


## _MATERIAL TRANSFERS: <br> CONSERVING HEALTHY MYCELIUM



MAZATAPEC STRAIN CUT
IN AN AGAR
TRANSFER TO
CONSERVE
HEALTHY
MYCELIUM IN A
CONTAMINATED
SUBSTRATE

## _GENERATIONAL PORTRAITS


REGENERATIVE
PARENT TRANSFER
TO KEEP AND
MAINTAINGENETIC
LIBRARY


## WORKING WITH <br> THE FLOW OF NATURE: EMBRACING TENSION



CONTAMINANTS

Although the healthy mycelium $\frac{+}{163}$ dishes were useful in the continuation to the fruiting stage of the process, the petri dishes that were contaminated ${ }^{+}$ held much more use in understanding the resiliency of + the network when undergoing pressure.

Some of the dishes portrayed illustrate a willingness for growth within the mycelium despite competitors of space and territory.



## _THE <br> ELEMENT

Documenting in real time, the varying changes and daily progressions of the petri dish landscapes offer clarity in the time it would take to produce a unit of mycelium, or a unit of soil, as that will be the substrate for growth.

TIMELAPSE SET-UP STATION FOR CULTIVATED MYCELIUM LIBRARY


## MYCELIUM TO SUBSTRATE

Substrate mixtures can come in many combinations with some that work better depending on a particular species. Substrates can be sterilized into any form, so long that the substrate and container are sterilized. One could use a pressure cooker to boil and soak the substrate itself and the container if the container is a nonmelting material. Materials that can melt can be sterilized with 24 hour exposure to UV light.


PROCESS IMAGE SETUP:

## LaNDSCAPES WITHIN A HOME

Using the home to produce the project became fundamental to the projects understanding of the home not only as an architectural program, but a space for production, contemplation, relaxation, and spirituality. Appreciating the small components of what made my home a home, frees the mind to feel more at ease with being and producing the CALL to ACTIONS the project promotes in the first place.


# _WORKING WITH THE ELEMENTS DURING FRUITING. 

preparing the sterile
ENVIRONMENT (FRUITING
TUB)
After the tub container is sterilized, clay pebbles are
placed at the bottom of the container to serve as a material that will be able to retain the moisture from the container and prevents the environment from getting too water.

AERATION .
Similarly to the previous step, the clay pebbles are then
compiled with water in a device that will allow water and moisture to fill the tub in an aerated way.
birthing the cake.
The mycelium substrates or cakes are soaked in water after they are fully cultivated with mycelium so that they can hold enough moisture to induce the fruiting process.
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FRUITING.
169
After a day of soaking, the cakes are placed within the $+$ original container so that the mycelium can then pin. +
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hUATLA STRAIN PSILOCYBE MUSHROOMS
FRUITED WITH HELP OF RYAN THOMPSON

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As a designer trained in 2Ist century, it is easy to become consumed with the anxieties of being able to produce "good" work, which very often I miscontrued through the thought that good work was clearly good if the drawing was "good". This to scale section drawing was critical in the imagining of the architecture.

Architectural students may sometimes surrender the
project to the capabilities and the guidelines of the mediums to which they use within the scope of a design project. At this point in the process, the design was hindered by my use of Rhino6 to design "the object". My intentions had been jumping early towards my internal wish to make a perfect model so that I could essentially render everything "beautifully", crisply, and maintain the clean vectors that

would essentially make the drawing.

This very intention plagues the process.

Bringing back the hand, and the touch, and the coordination and rhythms it takes as an intuitive architect, reminded me of the very important lo-tech means of production neccesary to allow form to follow the larger theoretical
values of the "project".

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Rejecting Modernity through Zapotec Futurism

Presentation Link
https://
miceliummexicanus.
myportfolio.com/welcome

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