

BIOFABRIC FUTURES

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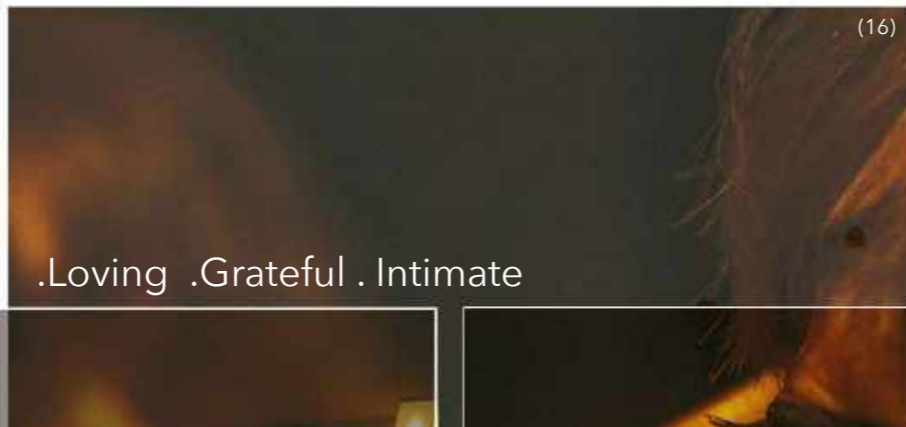


How are WE to survive in the MESS WE created?

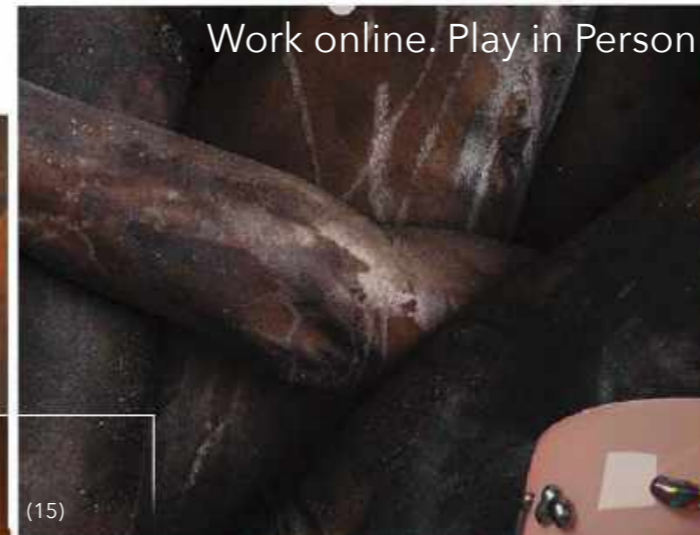


ECO ANXIETY
“A Chronic Fear of Environmental Doom”

2030 Consumer



.Loving .Grateful .Intimate



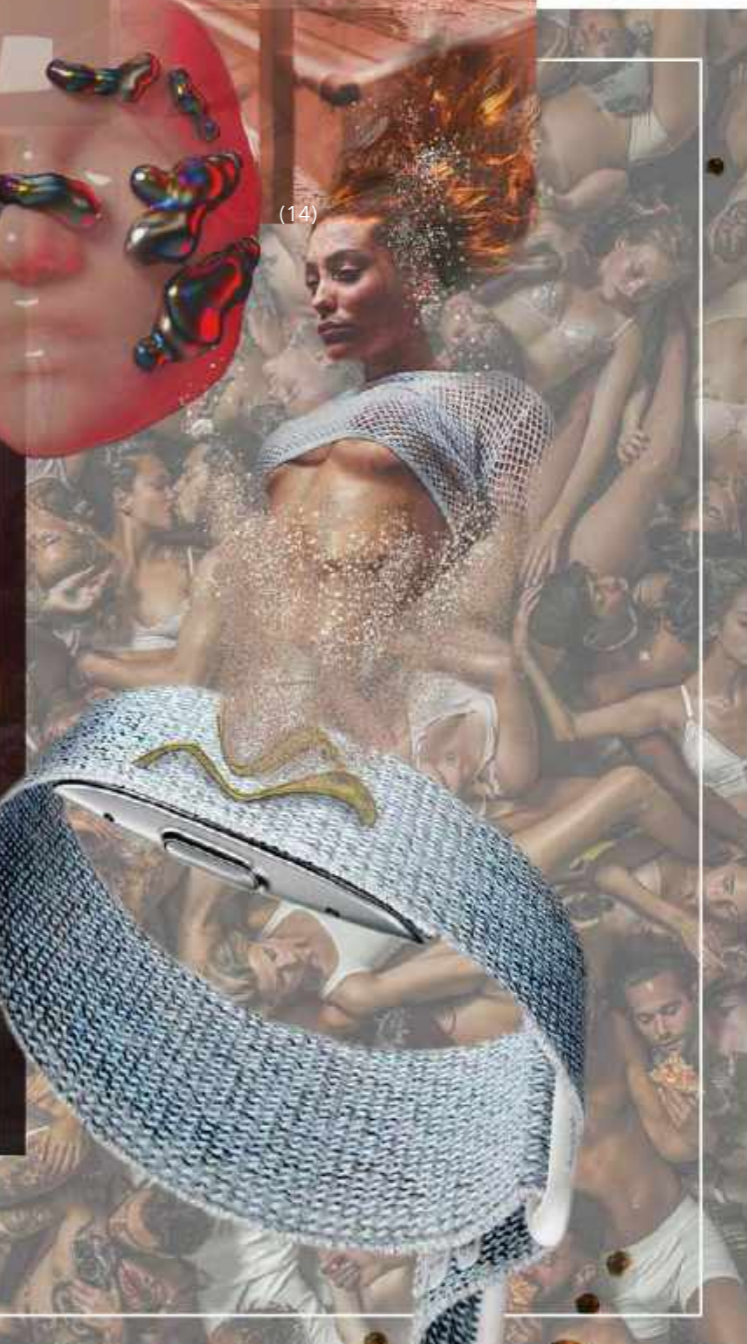
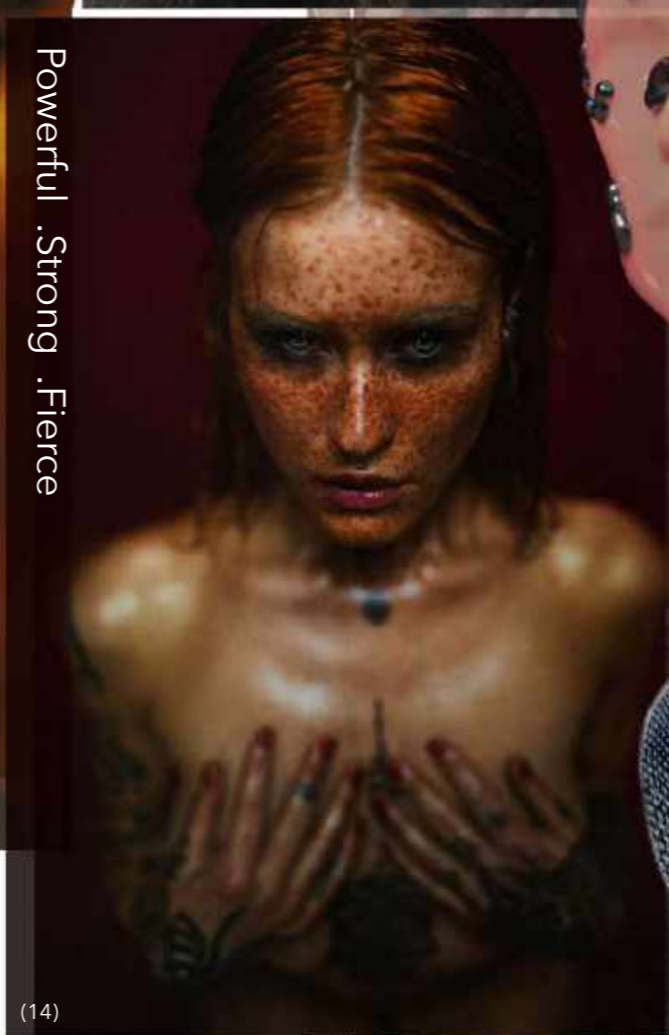
Work online. Play in Person



- .Caring
- .Connection
- .Community Driven
- .Freelancer
- .Indoor Farmer
- .Functional



Powerful .Strong .Fierce



.Owns transparent iPad and hologram watch

.Alexa / Siri provide information about the air and water quality in her home

. Has reduced lung scar tissue and reduced capacity after surviving Covid in 2020

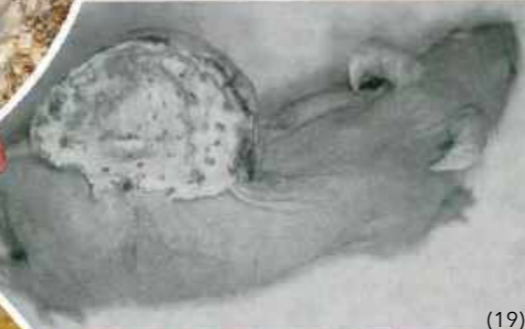
.Requires practical versatile pieces for in person and online

. wants to feel safe but don't dull her style

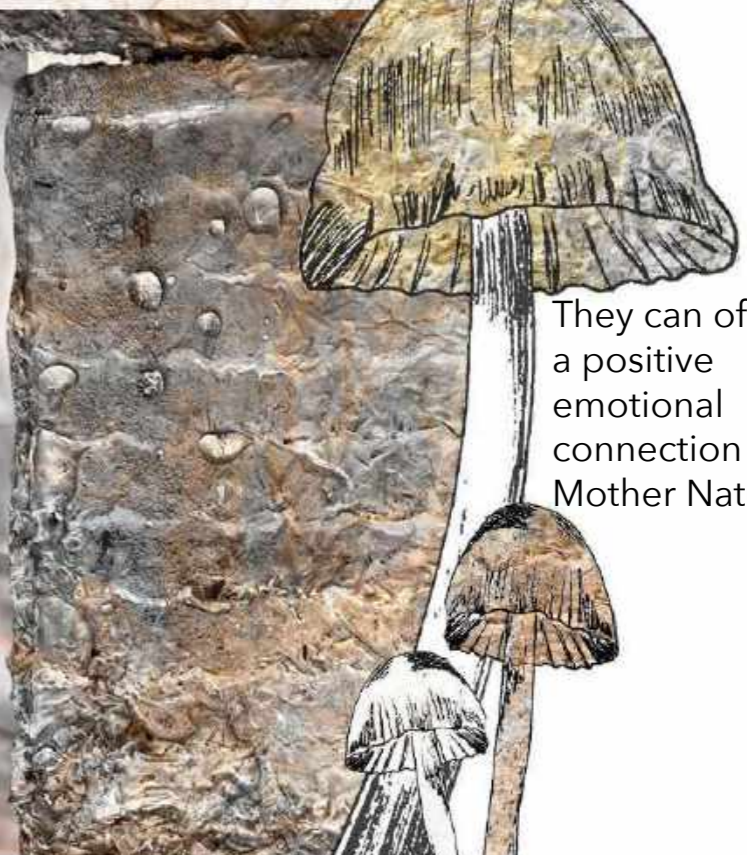
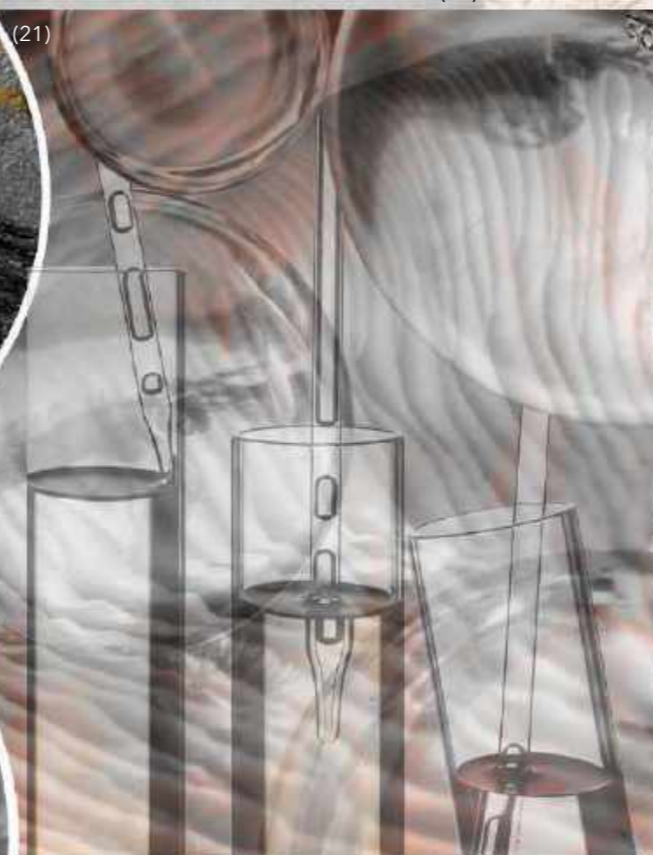
. Fucking concerned about the climate and its impact on the future.

Textile Direction BIOFABRICATION

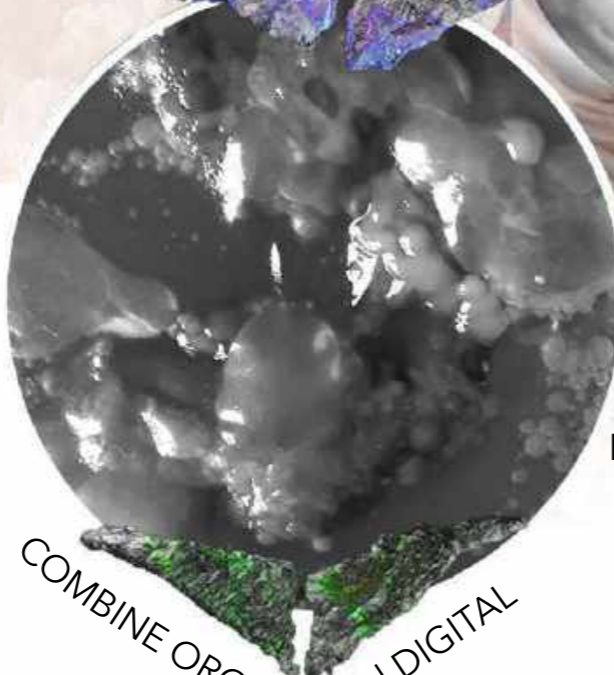
SCIENCE
WILL SAVE US FROM THE
MESS WE CREATED?



Biofabricated materials = natural organisms (bacteria and fungi = biodegradable (can provide nutrients to the environment that they decompose in)



They can offer a positive emotional connection to Mother Nature



Biofabrication presents possibilities of new, non polluting textiles through GENE EDITING and biohacking materials.

COMBINE ORGANIC and DIGITAL

Growing bacteria to turn into a sensory

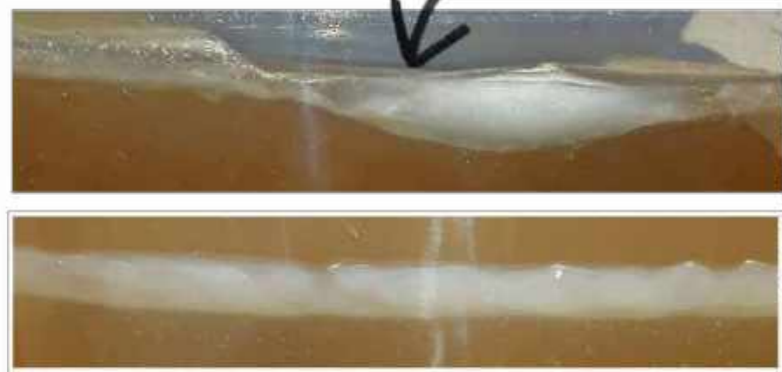


A SCOBY can be grown to specification from bacteria as a leather-like material. It takes 8 - 12 weeks, requires minimal water, space and produces no greenhouse gases.

This is a more economical and ecological method of textile production than raising a cow for 5-7 years for slaughter, during which time it requires land, feed and water.



Layers of a scoby



leather like material.
Challenges = temperature fluctuation and lack of sterile environment.



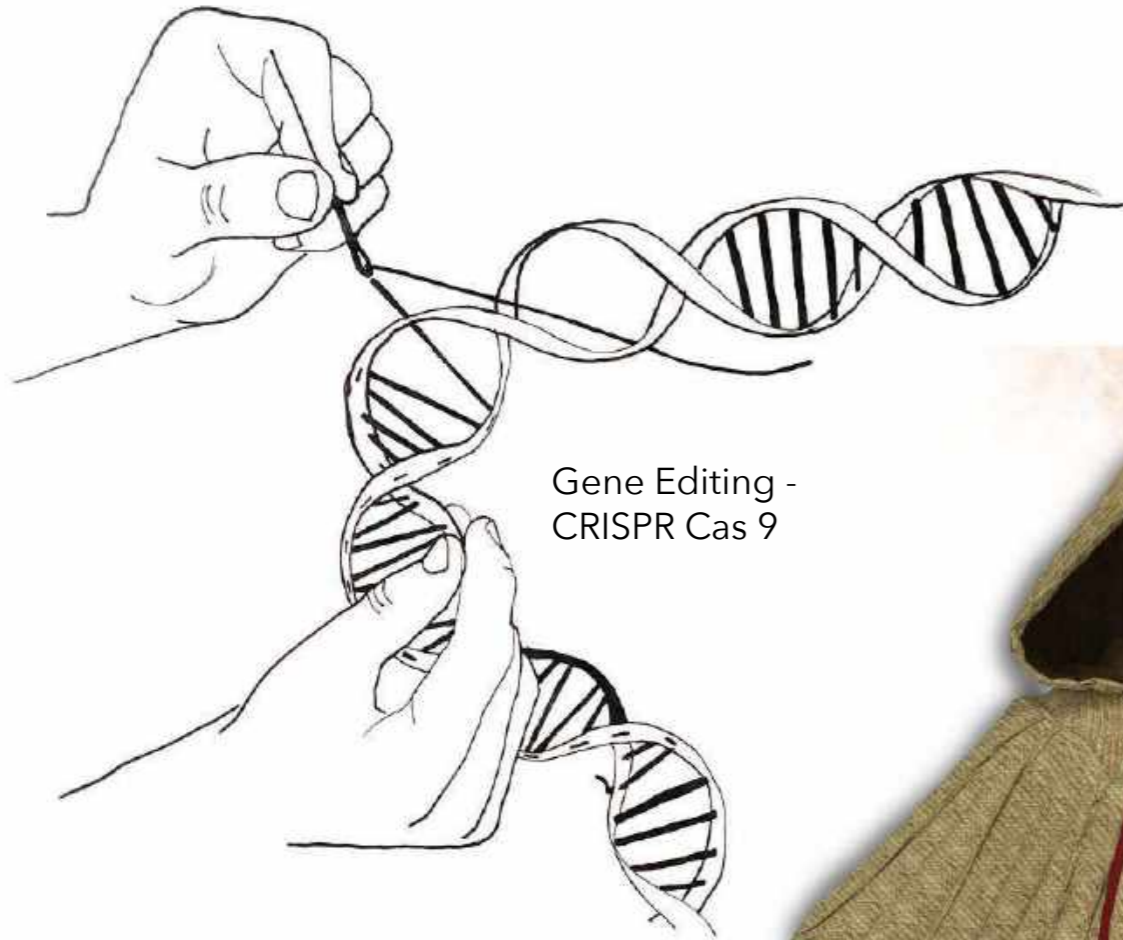
A final water proof scoby textile



Used in small sections throughout the collection



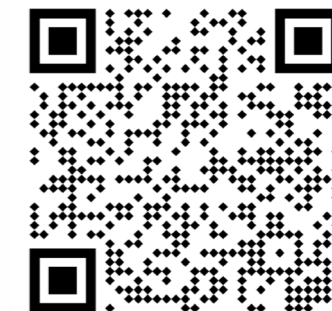
Scoby Speculation



Gene Editing -
CRISPR Cas 9



With a rise in gene editing, a scoby textile could identify a shift in the surrounding environment and respond to it, thus protecting the wearer; changing colour when there is a rise in air pollution or radiation.



Mycelium

Connection is manifested by creating products from biomaterials. Hats from Mycelium (mushrooms).

RETURN TO NATURE

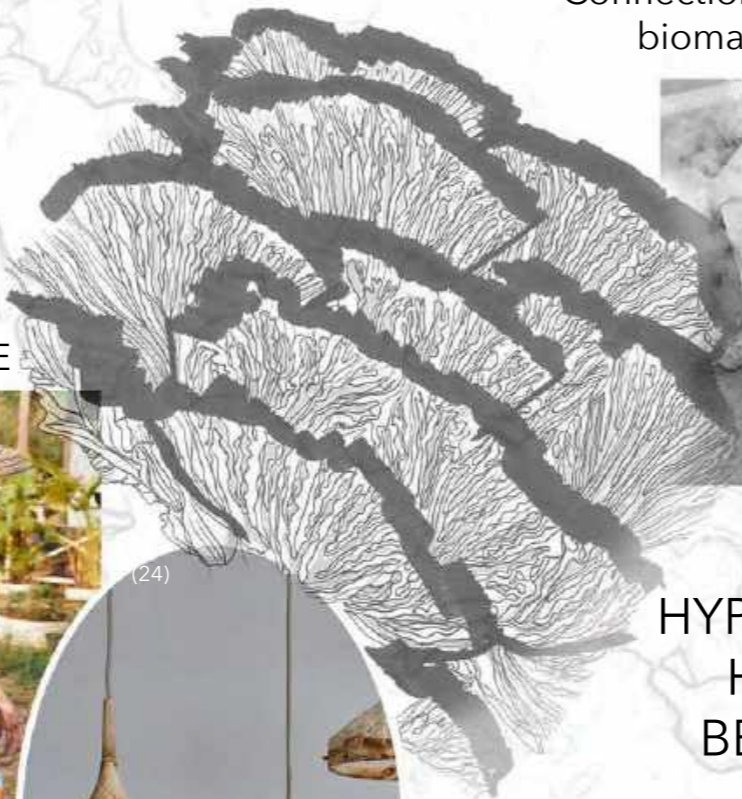
Erratic climate change driven events fuel a desire for a calmer side of nature.

Connection to Mother Earth will be wanted to sooth the soul, calm the mind and work to reduce eco-anxiety



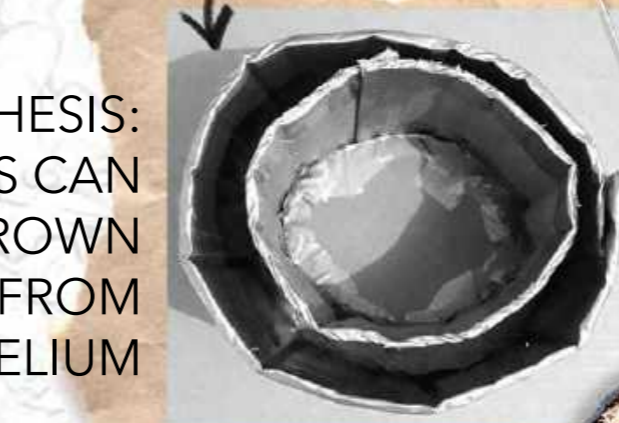
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HYPOTHESIS:
HATS CAN
BE GROWN
FROM
MYCELIUM

1. Create the hat mould
2. Grown the mycelium on wood chips
3. Break into small pieces
4. Mix with flour
5. Place in a hat mould and grow for 5 days
6. Remove hat from mould and bake



Mycelium is an adaptable textile, being used for products from packaging to leather and as a plastic alternative. This changeability enables it to be used for short and long life cycle pieces, with guaranteed biodegradability at the end.

HYPOTHESIS: VERIFIED

Hats developed and integrated within the final collection to create a direct positive connection to Mother Earth

The quick growth of this textile gives the potential for customisable pieces, enabling the consumer to have unique items, encouraging and connection to the products and to nature.



Collaboration with Magical Mushroom Company (MMC) to grow a hat - first mushroom packing company in the UK to grow hats from MycoComposite



Material Sourcing

Eco anxiety + Security & Protection

= Protective textiles

Collaboration with the South Wales Fire and Rescue Service whose decommissioned uniforms were no longer fit for purpose and must be disposed of.

6 jackets and trousers were saved from land fill and patchworked together to create fabric for the



South Wales Fire and Rescue Service

Chunky zips

TÂN FIRE

PAINTED WITH AIR POLLUTION

Sketches created with ink made from air pollution

Patch pockets - practical

Big buckles - strong and practical

Upcycling clothing that has already been worn and patched

Using technology-based textiles to battle eco-anxiety will help the wearer feel safer and emotionally attached to their clothing by manifesting a positive bond between the protection service and their jackets.

This will empower them to continue undertaking their day-to-day activities with the knowledge that they are safe and protected from increasingly aggressive environments.



Reflective Strip

Lining

Lining

Outer

Insulation

PBI Matrix Outer Shell / 205gm/sqm.
100% Polybenzimidazole Fiber

Lining Meta Aramid Felt 210 gm/sqm
100% Meta-phenyleneisophthalamide Fiber

The materials are heat resistance, flame resistant, waterproof, strong and breathable.

Goretex Fireblocker 140 gr/sqm
100% Polytetrafluoroethylene Fibre



The use of second-hand textiles also ensures that less fabric is going into land fill which would otherwise take centuries to rot away.

Design Development



Stage 1



Mycelium provides a starting point for silhouettes through collage which are used as references for draping. Voluminous shapes with tight sections provide a feeling of protection with draping keeping this organic.

Speed Sketching

Stage 2





Protective coat



Responsive sensory fabric



Gilet for layering



Pleated trousers = ease of movement



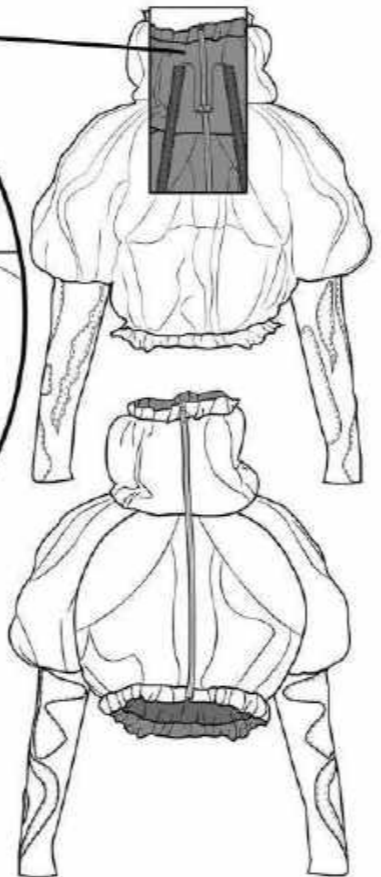
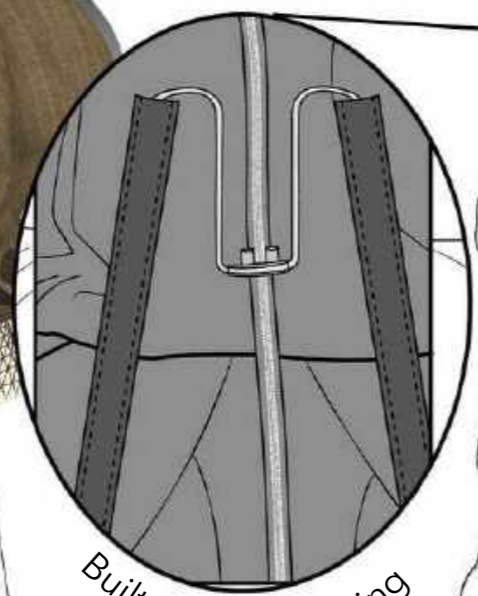
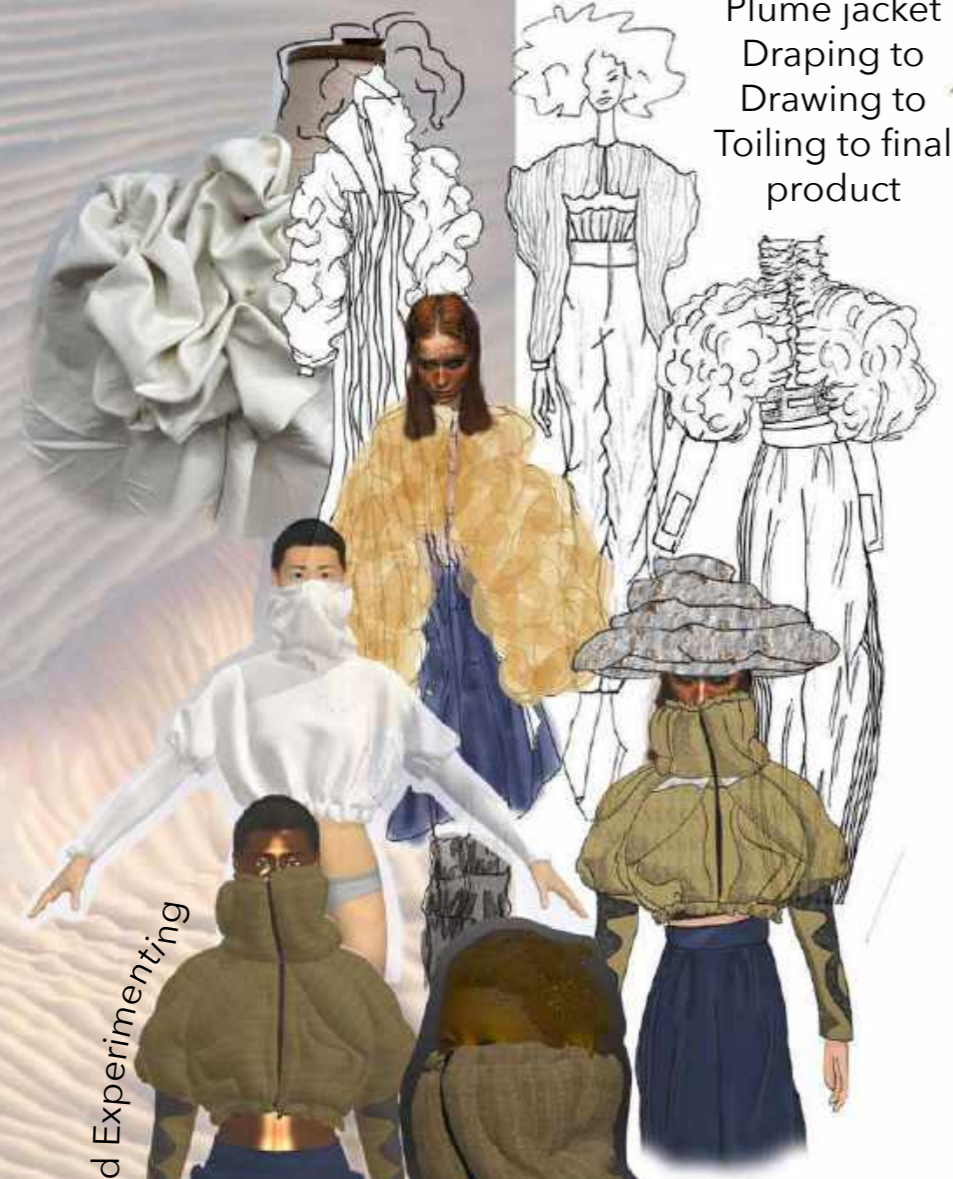
Plume jacket
Draping to
Drawing to
Toiling to final
product

Mycelium hat

Clo3 d Experimenting

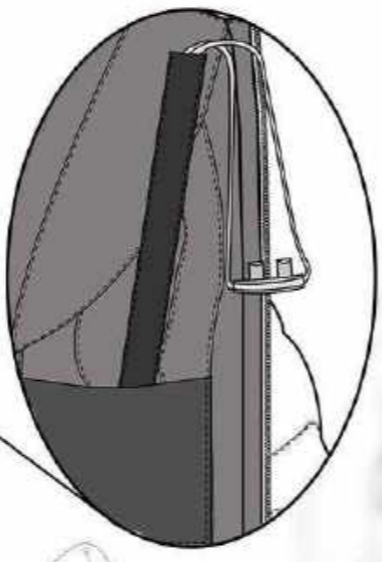
Scoby - Colour
changing
responsive
textile

Built in oxygen tubing
for breathing support





Oxygen tubing for breathing support in extreme environments



Colour changing

Shredding gortex layers of fabric to make wadding



Drawstring ties to tighten or loosen sections = enclosed sensation

Development from draping to drawing to clo3d toiling



Oxygen tubing for breathing support in volatile spaces



Responsive fabric



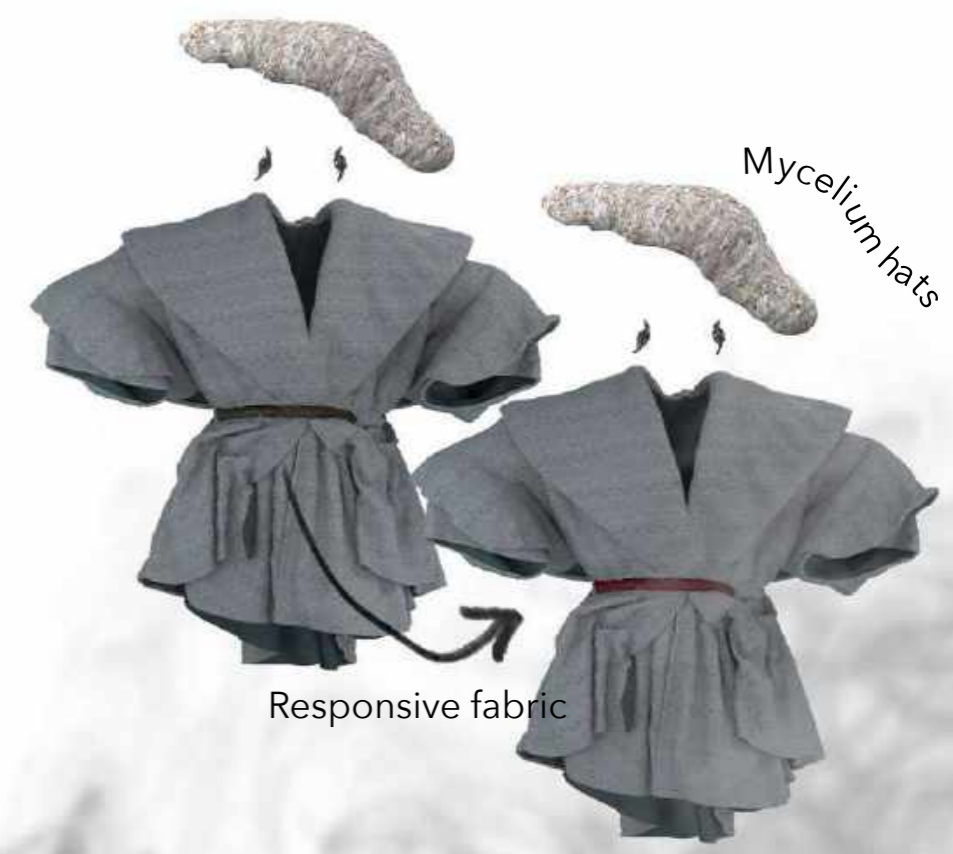
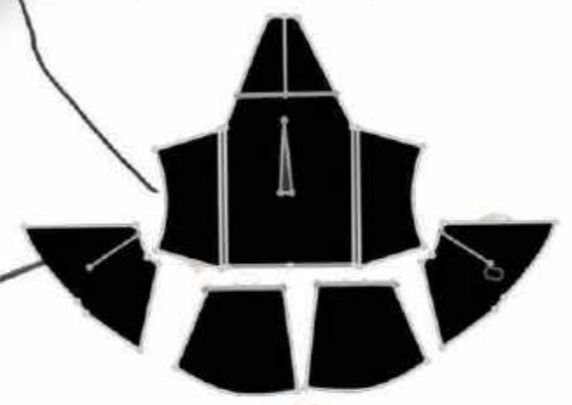
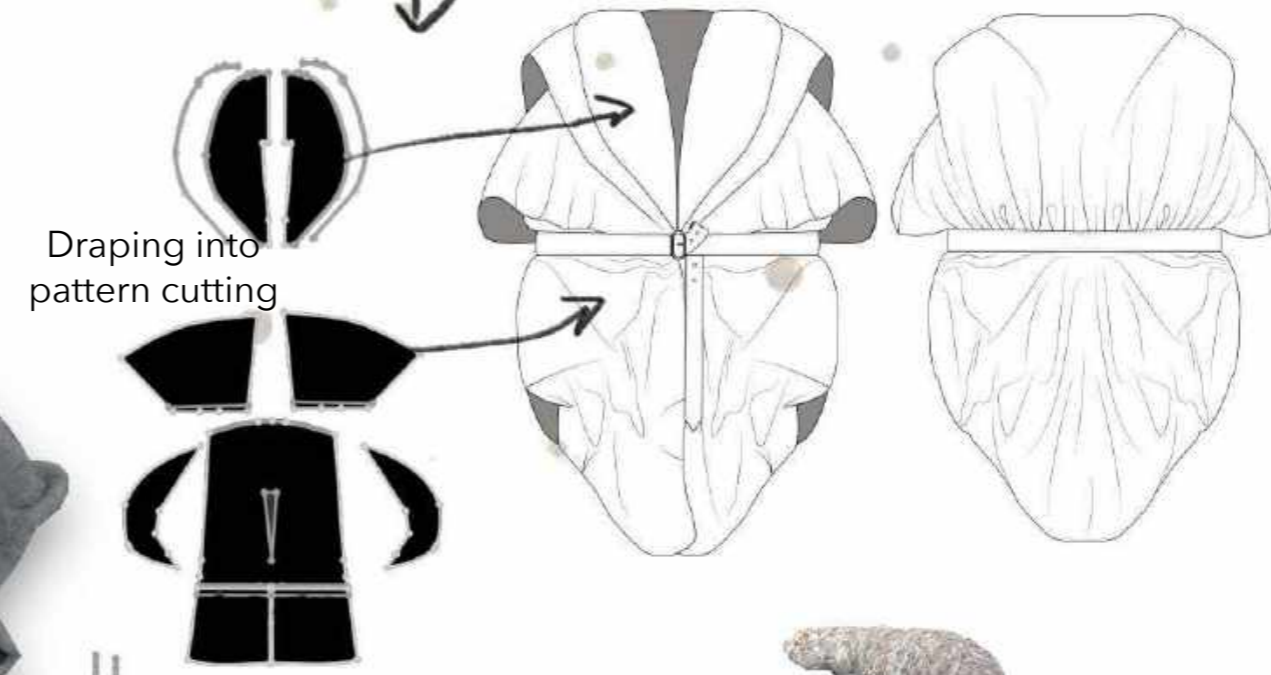


Sensory Fabric



Big coat for protection







BIBLIOGRAPHY

CONCEPT PAGE

1. Evans. J (2020) Sydney Smoke [photograph]
2. Castelloe. M. S (2018) Coming to terms with Eco-Anxiety, Available at: <https://www.psychologytoday.com/gb/blog/the-me-in-we/201801/coming-terms-ecoanxiety>
3. Fawbert. D (2019) Eco-anxiety: how to spot it and what to do about it, [Https://www.bbc.co.uk/bbcthree/article/b2e7ee32-ad28-4ec4-89aa-a8b8c98f95a5](https://www.bbc.co.uk/bbcthree/article/b2e7ee32-ad28-4ec4-89aa-a8b8c98f95a5) Last accessed: 29.04.2021
4. Burning building, (2020) Getty Images [photograph] Available at: <https://people.com/human-interest/map-of-australia-brush-fires/> Last accessed: 29.04.2021
5. Fear and fire steadily spreading in the forest, [photograph] Available at: <http://ottertooth.com/Temagami/History/fire-1977>, Last accessed: 29.04.2021
6. Elizavetaporodina (2020) But when do you REALLY KNOW someone?, [photograph] Available at: <https://www.instagram.com/p/CEtzVrlgJUG/> Last accessed: 29.04.2021
7. Buytene. J. V (n.d.) Time is Different, [photograph] Available at: <https://timeisindifferent.com/jkvmvq9zr0wr4lymj1qfiofwkddv0dz> Last accessed: 29.04.2021
8. McGreal. C (2019) So much land under so much water: extreme flooding is drowning parts of the Midwest, [photograph] Available at: <https://www.theguardian.com/us-news/2019/jun/03/so-much-land-under-so-much-water-extreme-flooding-is-drowning-parts-of-the-midwest> Last accessed: 29.04.2021
9. Shalvanikvashvili (2020) SEARCHING [Video] Available at: <https://www.instagram.com/p/CB2ceRBgjcY/> Last accessed: 29.04.2021
10. STACHE. S (2016) Opposite Poles Show 'Mirror Images' of Climate Change on Earth, [photograph] Available at: <https://www.nationalgeographic.com/photography/article/magda-biernat-adrift#/dipytch-15-16> Last accessed: 29.04.2021
11. Wang. Z (2017) Crafts UNDEFEATED x Nike Air Max 97 into a Mask [Photograph] available at: <https://hypebeast.com/2017/11/zhijun-wang-undftd-nike-air-max-97-hbx> Last accessed: 29.04.2021
12. MCSWEENEY. R (2020) Analysis: The climate papers most featured in the media in 2019, [photograph] Available at: <https://www.carbonbrief.org/analysis-the-climate-papers-most-featured-in-the-media-in-2019> Last accessed: 29.04.2021
13. FRAYER. K (2018,) Smoke billows from a large steel plant in China. The World Health Organization estimates nine in 10 people around the world breath bad air, Getty Images, [Photograph] Available at: <https://www.nationalgeographic.com/environment/article/news-air-quality-brain-cognitive-function> Last accessed: 29.04.2021

com/environment/article/news-air-quality-brain-cognitive-function Last accessed: 29.04.2021

14. Black Merle (n.d) [Photograph] available at: <https://www.wgsn.com/library/results/0/%20blackmerle> Last accessed: 29.04.2021

CONSUMER

15. Hunger Magazine (2017) Alt photographer Haris Nukem debuts "humans", a photoseries about animalism, Available at: <https://www.hungertv.com/feature/alt-photographer-haris-nukem-debuts-humans-a-photoseries-about-animalism/> Last accessed: 29.04.2021
16. Nukem. H (2020) Together, [Photograph] Available at: https://www.instagram.com/p/b_ptfacfs-z/ Last accessed: 29.04.2021
17. Nukem. H (2019) Narcista, [Photograph] Available at: <https://www.instagram.com/p/byietpefapv/> Last accessed: 29.04.2021
18. Nukem. H (2019) Faith, [Photograph] Available at: <https://www.instagram.com/p/BwPv44khLob/> Last accessed: 29.04.2021

TEXTILE DIRECTION

19. Y.Cao, M.D, Ph.D. Vacant i . J.P, M.D, Paige. K . T, M.D, Upton. J, M.D, Vacant i . C. A , M.D (1997) 'Transplantation Of Chondrocytes Utilising a Polymer-Cell Construct to Produce Tissue-Engineered Cartilage in the Shape of a Human Ear ', Plastic and Reconstructive Surgery, p.g 297
20. Zurr. I, Catts. O, (2002) The Aesthetic of Parts: Humans and other animals are 'becoming' each other, Available at: <https://www.tca.uwa.edu.au/pig/parts.html> (Accessed: 04.05.2021)
21. Modern Meadow (2018) 'The Beauty of Science' [Photograph] Instagram

1ST MYCELIUM BOARD

22. WGSN (n.d) Vouge India, [Photograph] Available at: https://www.wgsn.com/fashion/article/88020#page_9 Last Accessed: 29.04.2021
23. Hendrikx.B (2020) Bob Hendrikx designs "living coffin" from mushroom mycelium , [Photograph] Available at: <https://www.dezeen.com/2020/09/16/bob-hendrikx-living-cocoon-mycelium-coffin/> (Accessed:27.10.2020)
24. Cox. S, Ivnova. N (2017) MYCELIUM+TIMBER, [Online] Available at: <https://www.sebastiancox.co.uk/news/mycelium-timber-exploring-biofacture-in-a-new-collection-of-grown-furniture> (Accessed: 27.10.2020)