

BIODEGRADABILITY

Stage Two 2018

BA Interior Architecture and Design

CAID5011 // Projects 03

Gabrielle D'Errico

Contents:

Define

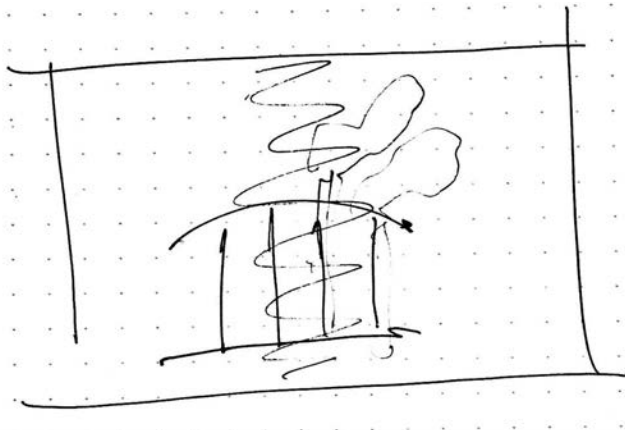
Research

Precedent

Visual

Colour

Iterate



SI-FI
- SCIENCE FICTION
- FUTURE
- SPECULAR

VERNALCULAR
- HISTORY
- FAMILIAR
- LOCAL

° EXPLORE ~~THE~~ YOUR INTERPRETATION OF SI-FI VERNACULAR

WE CHANGE THE IDEA OF VERNACULAR

FACEBOOK
- IT IS SPACE
- FAMILIAR (VERN.)
- ~~THE~~ CYBER SPACE

BE REALLY CREATIVE

TELL A STORY

↓
NARROW YOUR IDEA OF BIODEG.

↓
INHABITATION

TIME - IS A KEY COMPONENT TO BIODEG.

↳ HOW TO SHOW A PASSING OF TIME

VISUAL REPRESENTATION OF BIODEG.

TO DO

READ: RE-THINKING ARCH. (40 pgs)



START PORTFOLIO



FINISH PROJECT PACKAGE



PHASE 2 - RESEARCH

- DEFINE SU-FI VERNACULAR



- FIND PRECEDENTS



- CREATE NARRATIVE ON BIODEGRAD.



- FIND ART OR PHOTO OF BIODEGR.
USED AS CONCEPT



- COME UP WITH RULES AROUND BI.
CONCEPT



- FIND COLOUR STORIES
OF BIODEGRADABILITY



- LOOK AT DIFF REPRESENTATION
METHODS W/ COLLAGING + PHOTO





Initial Research Notes

"Biodegradability is the ability of organic substances and materials to be broken down into simpler substances through the action of enzymes from microorganisms."

<https://ecozema.com/en/why/biodegradability-compostability/>

"Key characteristics of a compostable material:

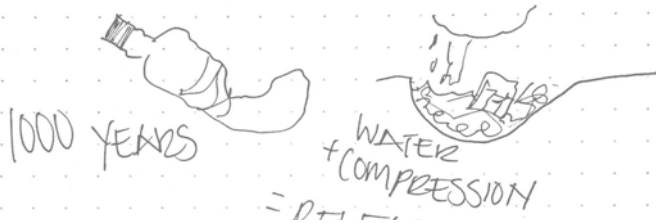
- *Biodegradability*: chemical breakdown of materials into CO₂, water and minerals (at least 90% of the materials have to be broken down by biological action within 6 months)
- *Disintegrability*...
- *Chemical composition*...
- *Quality of the final compost and ecotoxicity*..."

<http://www.swedbrand-group.com/blog/biodegradable-vs-compostable-packaging-materials-4>

- CAPABLE OF BEING DECOMPOSED BY BACTERIA OR OTHER LIVING ORGANISMS

PROCESS BY WHICH ORGANIC SUBSTANCES ARE BROKEN DOWN INTO SMALLER SIMPLER ORGANIC MATTER

BIO DEGRADABLE
TED TALK
PLASTIC - STRANDS OF POLYMERS
- THROWN IN LANDFILL



Biodegradable

"Compostable and biodegradable are often used interchangeably. But they're not the same thing. Biodegradable means that a product can be broken down WITHOUT oxygen and that it turns into carbon dioxide, water, and biomass within a reasonable amount of time. Now, reasonable is not really defined, but WAY less than 1000 years, which is how long it takes some plastics."

Composting

"Compostable means it breaks down to carbon dioxide, water, inorganic compounds, and biomass at a rate similar to paper and breaks down into small pieces in about 90 days, so that you don't even recognize the original compost, and it leaves no toxic residue."

<https://earth911.com/earth911tv/e911tv-compostable-biodegradable-recyclable/>

How they are made?

Biodegradable polymers can be based on a variety of environmentally sustainable materials, or a combination of different biomass, and also from **bacteria**. The most basic material that is used is starch which is abundantly available, large quantities present in corn and potatoes but also all vegetables, and at a low price. Cellulose is another commonly and easily accessible material that is being used to produce bioplastics.

<https://www.ukessays.com/essays/chemistry/biodegradable-polymer.php?vref=1>

Biodegradability

Gabrielle D'Errico

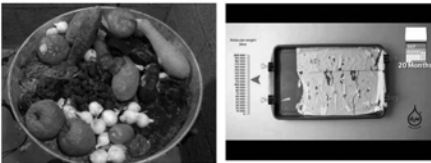
What is Biodegradability?

Biodegradable
Biodegradable means that a product can be broken down WITHOUT oxygen and that it turns into carbon dioxide, water, and biomass within a reasonable amount of time.

Composting
Compostable means it breaks down to carbon dioxide, water, inorganic compounds, and biomass at a rate similar to paper and breaks down into small pieces in about 90 days, so that you don't even recognize the original compost, and it leaves no toxic residue.



How does Biodegradability work?



Why is Biodegradability important?





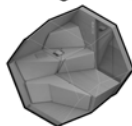
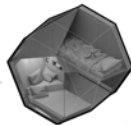
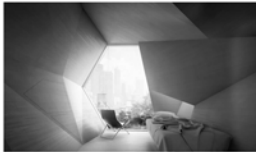
"We want to show that there might be alternative construction materials that don't get as in trouble with our world, but that need to go together with some kind of discipline," explained Block.

"In order to show the potential of an alternative material, particularly weak materials like rice straw, we need to get the geometry right. Then we can demonstrate something that can actually be very stable, through its form, rather than through the strength of the material."



The housed shelters would be lined with plywood to create a "warm and friendly" environment. Structures, including bed frames and storage units would be 3D printed from bioplastic – a plant-based polymer that can biodegrade when disposed of.

All fittings will be built in modules, allowing the residents the ability to customize units to their needs.



presentation slides
oct. 5 2018

Presentation Notes

- Interesting 3D Printed BioPlastics
- Presentation good use of multimedia
- good organization
- good mention of application to Interior Design
- Is biodegradability good or bad?
- Are bioplastics accessible?
- How much do they cost?
- Timeline of Bio Plastic?

MULTI
GOOD OF
OF THE
APPLICATION
GOOD
ACCESSIBLE
COST? \$
TIMELINES

Feedback reflection:

Lucy enjoyed the presentation! Yay!

Things to look into more:

Good or bad? -honestly no idea what that note could mean. I think because I brought up the question of the trade off of sustainable products and how sometimes although its sustainable in one way might mean its less sustainable in a different way (ie. Longer + more strenuous fabrication process, transportation, etc.)

Accessibility? - how accessible are biodegradable products at this point in time? How and should it become more accessible?

Cost? - what is the cost of biodegradable products? Is the cost the reason why these products aren't more common?

Timelines of BioPlastics?- is the timeline of biodegradable products something that is attractive or unattractive to society? Is the idea of something decomposing in a short time span something that deters the consumers- especially business'? Unless a business is one that prioritizes and markets their sustainability morals - would other business' avoid bio products to save money and/or maintain a "sterile, new, clean, fresh" reputation?

While these are all excellent questions to ask- going forward with my project I am personally more interested in investigating the look, feel, and aesthetic that might go with biodegradability- to find how i can best visually represent it.

define

Before we can truly understand the definition of biodegradability, we must compare as many definitions as we can to come to the best conclusion.

Usually when I first try to understand the definition behind a word- i look at its synonyms- but since biodegradability is more of a name of a scientific term- it has no words that can that can replace it. Through looking through multiple definitions of the word I hope to find many words to thoroughly describe biodegradability.

| bio·de·grad·able |
\,bī-(,)ō-di-'grā-də-bəl \
/,bAɪə(v)dɪ'greɪdəb(ə)l/

key descriptors:

Decomposed

Bacteria

Avoiding pollution

Decay

Naturally

Not Harmful

Breaks down

"without any special scientific treatment"

Innocuous

By action of living things -
through action of living - from
life

GOOGLE : adjective
(of a substance or object) capable of being decomposed by bacteria or other living organisms and thereby avoiding pollution.
"consumers have forced a shift to more biodegradable products"

OXFORD : adjective
(of a substance or object) capable of being decomposed by bacteria or other living organisms and thereby avoiding pollution.
'consumers have forced a shift to more biodegradable products'

CAMBRIDGE : able to decay naturally and in a way that is not harmful:
Biodegradable packaging helps to limit the amount of harmful chemicals released into the atmosphere.

COLLINS : adjective
Something that is biodegradable breaks down or decays naturally without any special scientific treatment, and can therefore be thrown away without causing pollution.
...a natural and totally biodegradable plastic.

MERRIAN WEBSTER - adjective
: capable of being broken down especially into innocuous products by the action of living things (such as microorganisms)biodegradable trash bags

DICTIONARY.COM: adjective
capable of decaying through the action of living organisms:biodegradable paper; biodegradable detergent.

etymology

1962, from *bio-* + *degrade* + *-able*.

bio-

"word-forming element, especially in scientific compounds, meaning "life, life and," or "biology, biology and," or "biological, of or pertaining to living organisms or their constituents," from Greek *bios* "one's life, course or way of living, lifetime" (as opposed to *zoe* "animal life, organic life"), from PIE root **gwei-* "to live." The correct usage is that in biography, but since c. 1800 in modern science it has been extended to mean "organic life," as *zoo-*, the better choice, is restricted in modern use to animal, as opposed to plant, life. Both are from the same PIE root. Compare *biology*."

degrade (v.)

late 14c., *degraden*, "deprive of office, dignity, or honors; reduce from a higher to a lower rank," from Old French *degrader* (12c.) "degrade, deprive (of office, rank, etc.)," from *des-* "down" (see *dis-*) + Latin *gradi* "to walk, go, step" (from PIE root **ghredh-* "to walk, go"). From 1640s as "lower in character, cause to deteriorate." Intransitive sense of "degenerate, deteriorate" is by 1850. Related: *Degraded*; *degrading*.

From <https://www.etymonline.com/word/degrade?ref=etymonline_crossreference>

Bio = Life

Degrade = death

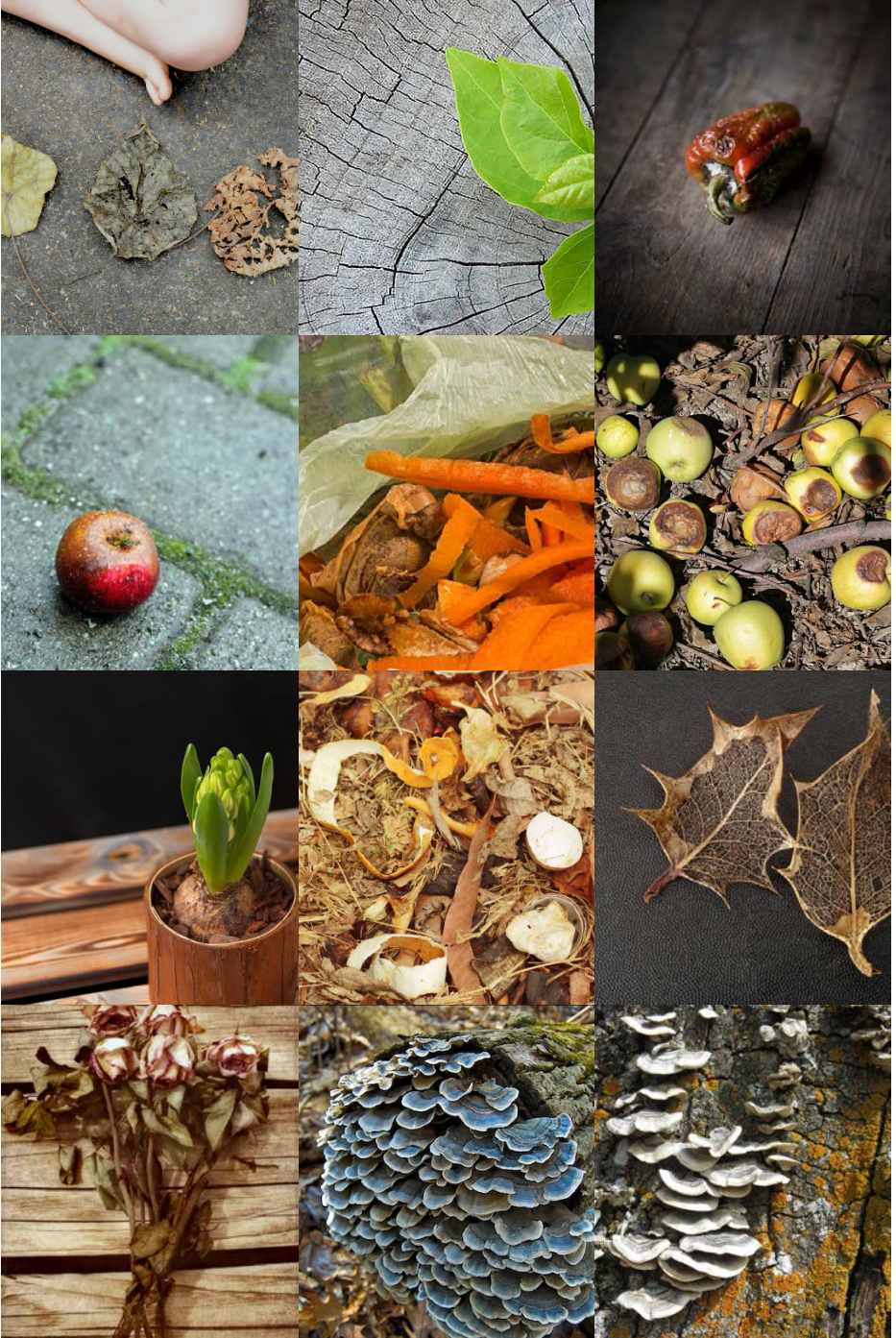
Bio+degrade = Life+death

my definition




Bio-degradable = Life from death

Biodegradability is a term which implies both life and death. It means that from the death of one thing- another living organism can form or that the life of one thing eats away at the death of another.

In any form- the integration of life and death.

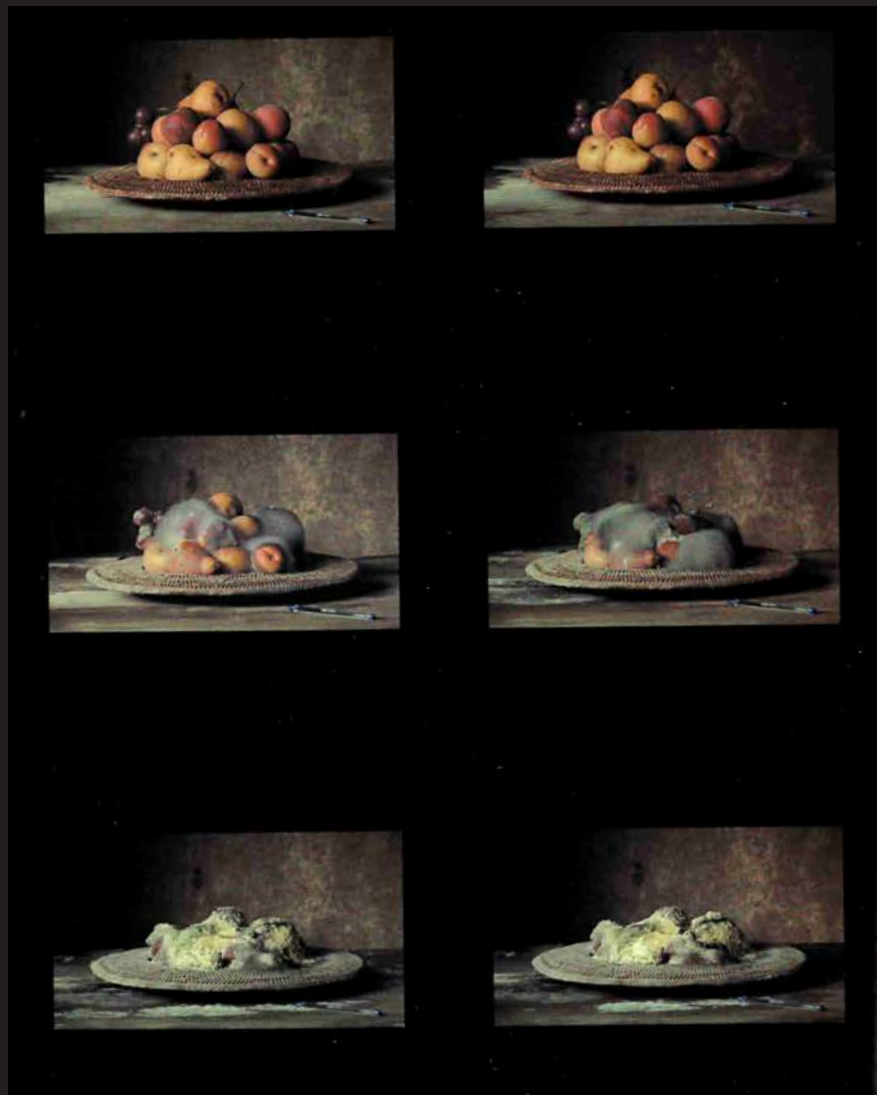


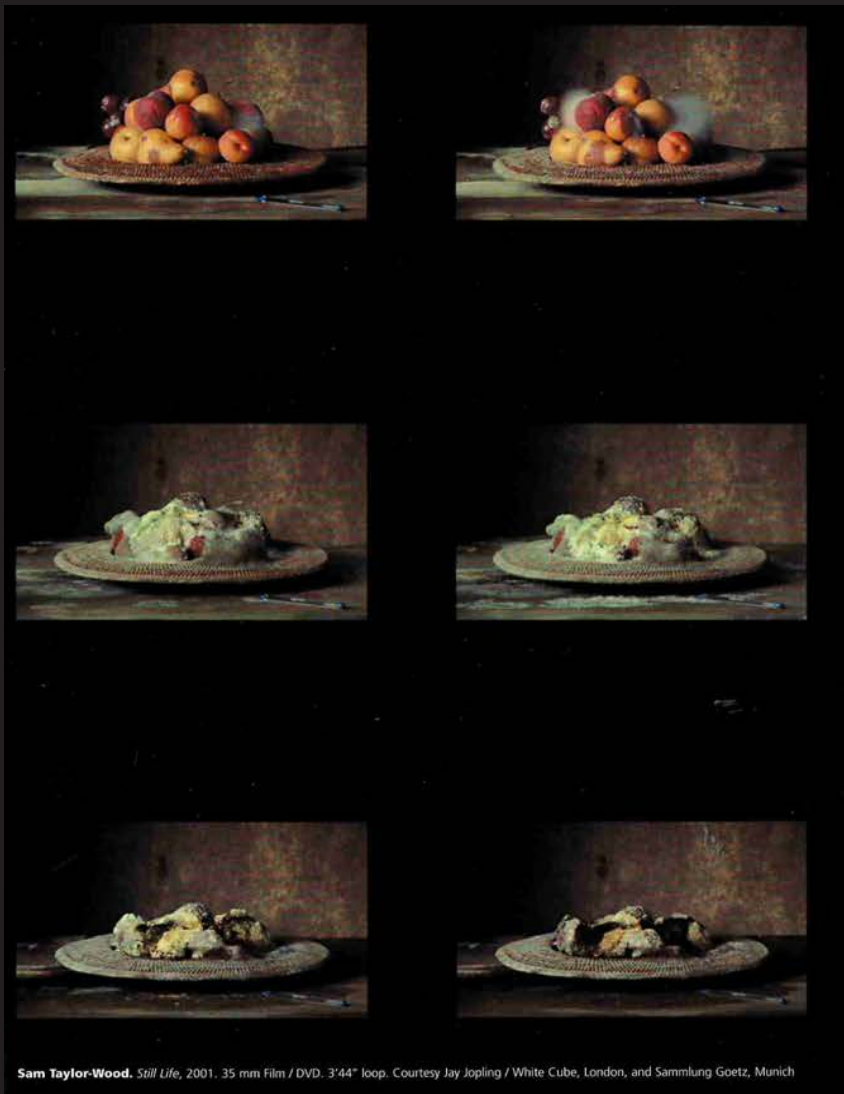


Biodegradability   

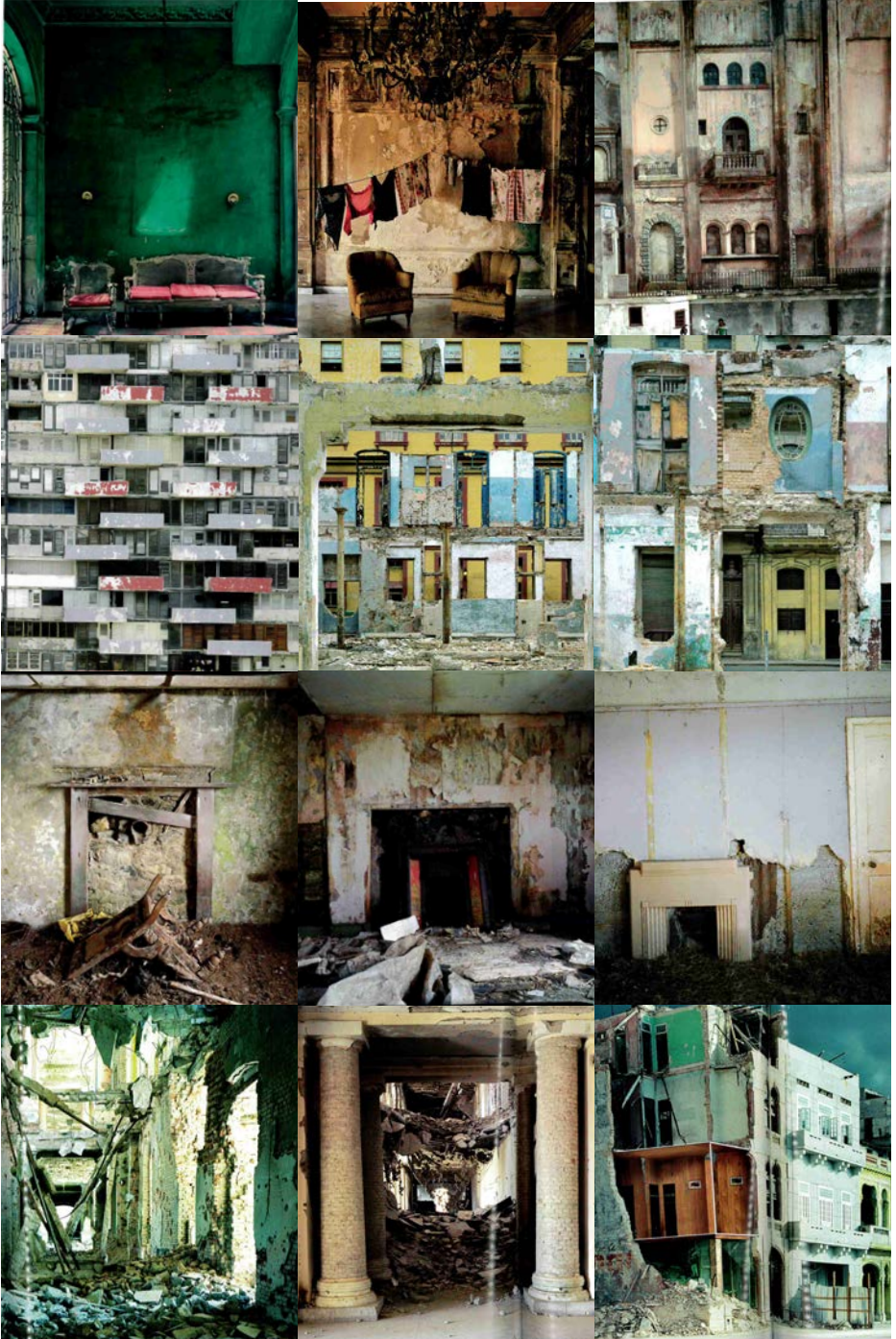
- biodegradability
- biodegradability **test**
- biodegradability **of plastics**
- biodegradability **meaning**
- biodegradability **chart**
- biodegradability **definition**
- biodegradability **standards**
- biodegradability **testing uk**
- biodegradability **of pla**
- biodegradability **test for polymers**

Report inappropriate predictions





Sam Taylor-Wood. *Still Life*, 2001, 35 mm Film / DVD. 3'44" loop. Courtesy Jay Jopling / White Cube, London, and Sammlung Goetz, Munich

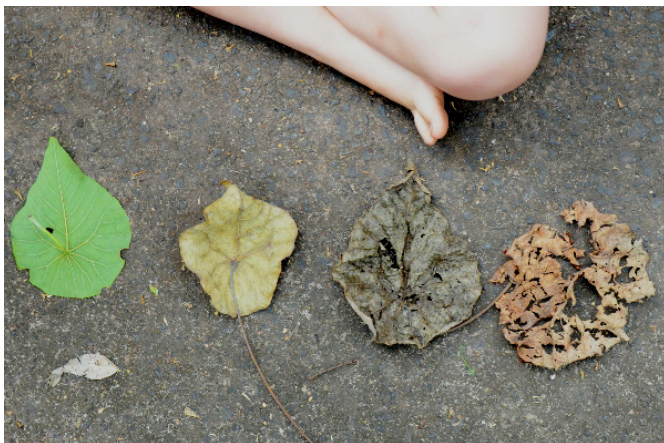


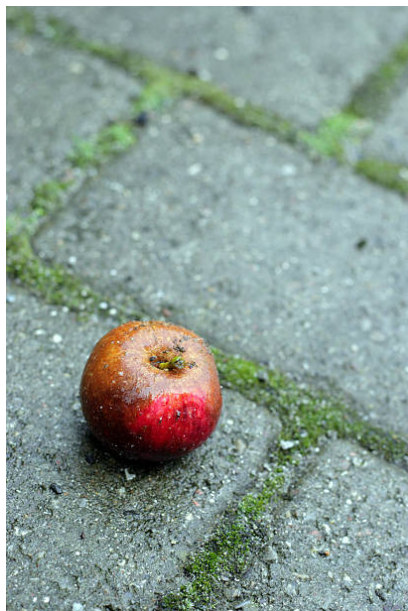


biodegradable colour analysis



an important aspect to any visual piece- is colour. to create the most accurate narrative for biodegradability i must investigate from other references what colours are used to communicate the life & death of biodegradation.











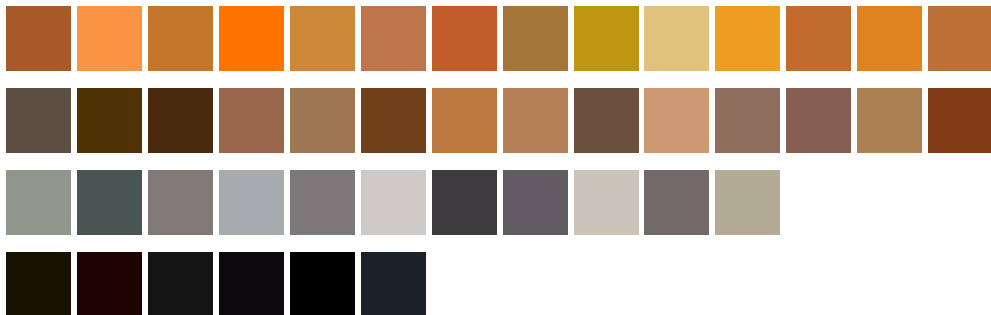




green.

being that green is the colour of the healthiest of plants , as well as being the main colour of most natural plants- green is symbolic for life and nature.

"Since the beginning of time, green has signified growth, rebirth, and fertility. In pagan times, there was the "Green Man" - a symbol of fertility. In Muslim countries, it is a holy color and in Ireland, a lucky color. It was the color of the heavens in the Ming Dynasty." Colormatters.com. (2018). Green. [online] Available at: <https://www.colormatters.com/the-meanings-of-colors/green> [Accessed 12 Nov. 2018].



orange. yellow. brown. grey. black.

These other colours that were also often used in all the images are used to depict death and decay.

Black is a tone which "lacks light" or lacks life- making it symbolic for death.

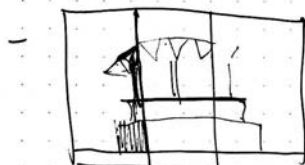
Brown is symbolic for earth, dirt and age.



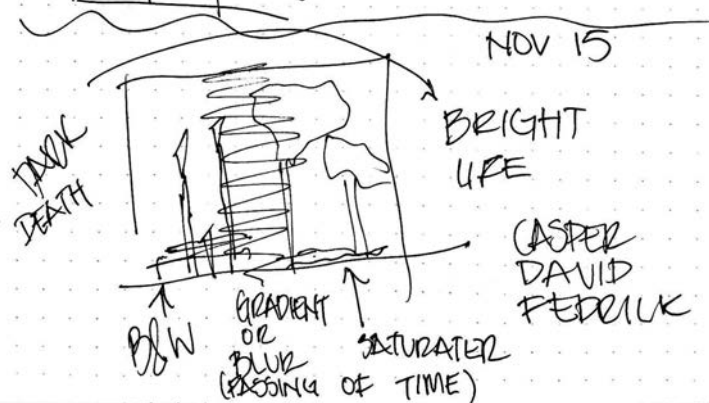
NOV 5

BIODEGRADABLE - VISUAL REPRESENTATION

- CANOPY/PAVILLION COLLAPSING/FALLING INTO ITSELF
- TURNING INTO DUST PARTICLES
↳ SERIES OF IMAGES ~~BY~~ SHOWING PASSING OF TIME
- GROWING MOLD/FUZZ OR MOSS/LICHEN THAT SLOWLY EATS AWAY AT STRUCTURE
- SHOW SKELETON OF STRUCTURE BY IDENTIFYING ^{MOST} DENSE AREAS
- IDENTIFY WHAT CAUSES DELAY OF STRUCTURE
↳ USERS? - STUDENTS TAKING APART



LICHEN





NOV 15 - IDEAS TUTORIALS

COLOUR PALETTES - BARTLETT

PHOTOSHOP - ATMOSPHERIC, ^{BLURRY} DEPTH, ^{TEXTURE}

ILLUSTRATOR - BLOCKY - CLEAR

DESIGN AN ATMOSPHERE

NARRATIVE + CHARACTER = LAST PERSON ON EARTH

LIFE AFTER DEATH

PHOTO BLENDING AT DIFFERENT TIMES OF DAY

THINK ABOUT DEPTH

PLANTS ARE FRIENDLY

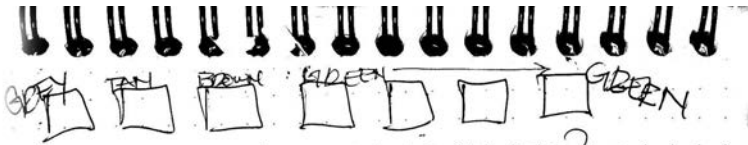
LICHEN

CASPER DAVID FEDRICK

ASSUMED WORKFLOW

↓ PDE → IL → PHOTOS → LINES
CAD ILUS.

PAY ATTENTION TO SCALE



- WHAT DECISIONS BASED ON CLIMATE?
- WHAT HAPPENS TO STRUCTURE?
- INSIDE

INHABITATION

↳ SERIES OF PHOTOS

1 BARE LAND 2 PLYWOOD ~~IDEAS~~

↳ GRASS GROWING
(MORNING LIGHT
↳ NEW BEGINNING)

3 JUST TREE TRUNKS
+ BENCHES
NEW TREES GROWING
(SUNSET?)

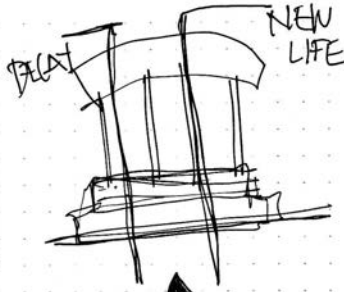
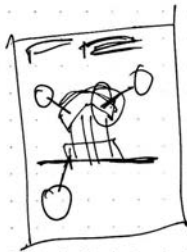
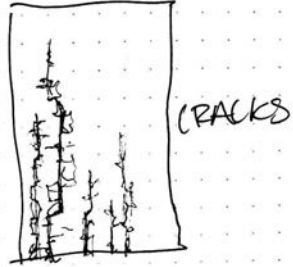
4 TREES + STRUCTURE
BLENDED
TOGETHER

- B&W IMAGES OF PLYWOOD w/ WATER
- ADD COLOR PALETTE TO CAD DWG.
- PLASTIC SHEETING - RAIN DROPS, REPLETIVE
- PLAN - SAME PALETTE

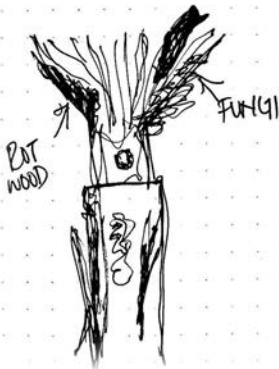
IFLOOR PLANS

- IFDETAIL - JUNCTION - BIRD NEST
INHAB.
- MATERIALS FITTING

DEVISING FLEXIBILITY



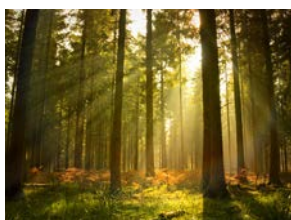
↑
DEVEL. OF
LIFE
(BECOMING)

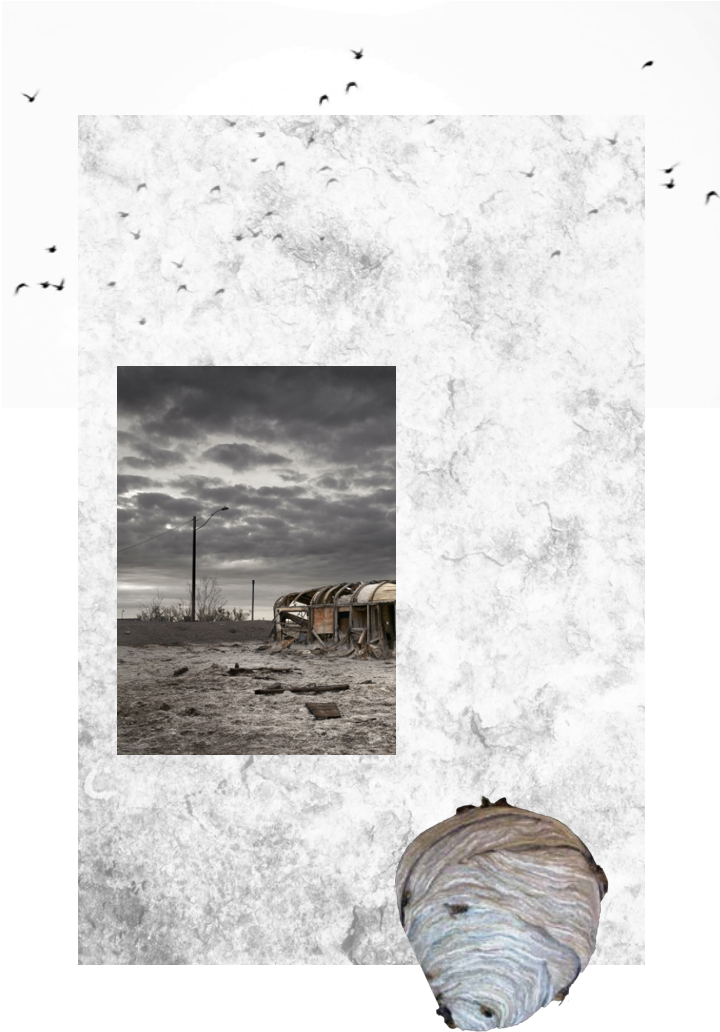








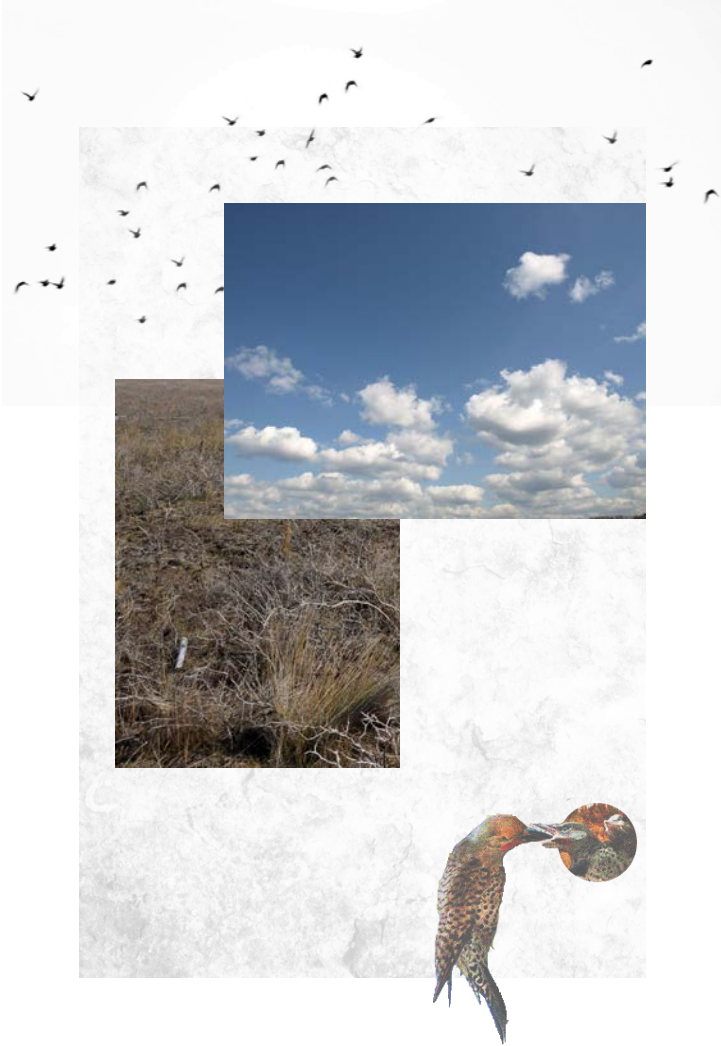








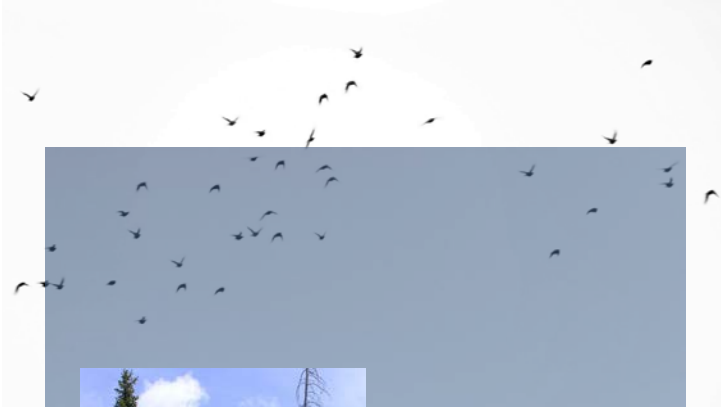




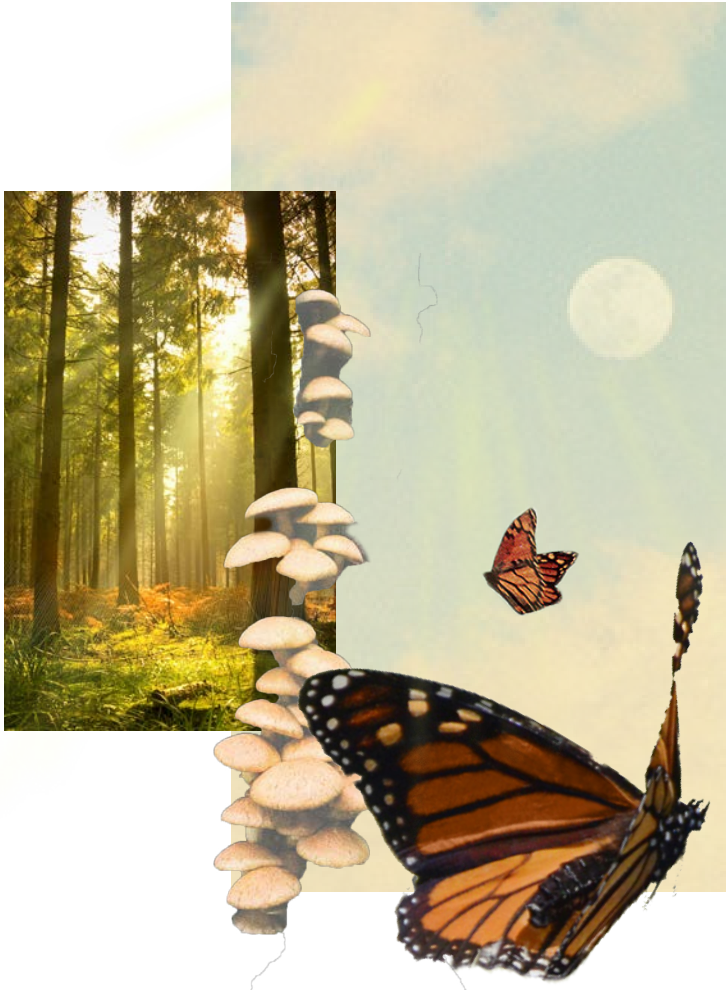
















BIODEGRADABILITY

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Oliviare and Associates. (2000) Exit: 24. Ruins. Madrid.