

DESIGN
RESIGN
SASS
AAS
MESSENGER

Stella Femke Rigo

May 2023

Design as a messenger

Stella Femke Rigo

Thesis supervisor: Victoria McKenzie

Wordcount: 5.959.

Submitted to Master Institute of Visual Cultures, St. Joost School of Art & Design, Avans University of Applied Sciences, s' Hertogenbosch The Netherlands

In partial fulfilment of the requirements for the degree of Master of Art in Fine Art & Design

s' Hertogenbosch, The Netherlands

WHY CAN'T THE DESIGNER BE THE BRIDGE
TO THE GAP THAT HAS FORMED OVER YEARS
BETWEEN ECONOMY AND ENVIRONMENT?

WHAT KIND OF AWARENESS CAN DESIGN
CREATE?

CAN DESIGN LIMIT THE DISTANCE
BETWEEN MAN AND THE DESTRUCTION
OF LANDSCAPES AND HABITATS, LIMIT
THE LOSS OF THE BIODIVERSITY AND
THE REDUCTION OF TOTAL ANNUAL
GREENHOUSE GAS EMISSIONS?

ABSTRACT

This thesis is part of a continuous research on sustainability within the world of design and new sustainable materials: a new way of designing through food waste and paper waste. Why can't the designer be the bridge to fill the gap that has formed over the years between the economy and the environment? What kind of awareness can design create? Can design limit the distance between man and the destruction of landscapes and habitats, limit the loss of biodiversity and the reduction of total annual greenhouse gas emissions?

In my theoretical and practical research, I aim to better understand the evolution of the circular economy, how materials can be transformed and how the designer lives this new situation. Instead of focusing on the aesthetics of the design product, I focused on the material and the story that the product can pass to people, so the goal of this thesis is to "take care" of the future of the product to become more aware of our surrounding environment, educate and bring people closer to the green and sustainable world. In particular, I focused on the concept of recycling, starting from the most common and simple materials. I approached substances derived from perishable materials such as food waste, fruits and vegetables, and packaging waste such as paper.

This project is an invitation to explore new sustainability tactics: the ability to maintain ecological balance through design; the circular economy: an economic system based on reuse and regeneration, within the framework of the policies established by the European Parliament. I therefore design using the experience of great designers who have made history and I explore new ways of producing materials through innovative, almost scientific methods, to establish relationships with objects and people through product design, the technique of storytelling to create a relationship between man and object.

TABLE OF CONTENTS

DESIGN AS A MESSENGER

I. Abstract	P. 5
II. Introduction	P. 8-11
III. Today's problem	P. 12-15
IV. Background	P. 16-29
A. Eco Design	
B. Bio-Material	
C. Approach to Circular Economy	
V. Translation of the research into a design methodology	P. 30-41
A. Design as a messenger Color	
B. Design as a messenger Materials	
C. Design as a messenger Objects	
D. Design as a messenger Installation	
VI. Conclusion	P. 42-43

CH.

||

(P.8-P.11)

INTRODUC TION

Introduction

All my products follow the principles of the circular economy, which are: reuse, reduction of the consumption of raw materials, designing products with a sustainable life cycle, recycling and – lastly – collaboration. If we can create waste, we can also design with it. My mission is to build and promote a healthy future for mankind and our planet. My strength lies in combining sustainable materials with a design that adapts to people's needs, in harmony with the Earth. I develop biomaterials and products, and I provide a new method for learning circular economy.

Sharing the knowledge is an important element of my strategy. I think design creates beautiful things when it dares to connect with environmental issues and people.

I see many empty people around me, I see many words spoken with good intentions, without any action. I, too, was one of them, I was living in our environment without taking care of it.

This thesis is part of a continuous research on sustainability within the world of design and new sustainable materials: a new way of designing through food waste and paper waste.

Why can't the designer be the bridge to fill the gap that has formed over the years between the economy and the environment? What kind of awareness can design create? Can design limit the distance between man and the destruction of landscapes and habitats, limit the loss of biodiversity and the reduction of total annual greenhouse gas emissions?

In my theoretical and practical research, I aim to better understand the evolution of the circular economy, how materials can be transformed and how the designer lives this new situation. Instead of focusing on the aesthetics of the design product, I focused on the material and the story that the product can pass to people, so the goal of this thesis is to "take care" of the future of the product to become more aware of our surrounding environment, educate and bring people closer to the green and sustainable world. In particular, I focused on the concept of recycling, starting from the most common and simple materials. I approached substances derived from perishable materials such as food waste, fruits and vegetables, and packaging waste such as paper.

The concept of design in 2023 is changing, as is the figure of the designer: it is hard to define what is or what should be, today, the function of the designer in our society, given the complexity of our world and the ceaseless transformations to which it is subjected. In any case, this is a crucial matter we have to reflect upon.

I am the new "model" of designer that protects the environment from the ecological crisis that Earth is facing, and creates new materials and products from waste.

This project is an invitation to explore the new themes of sustainability, the new circular economy – which is the foundation of the new requirements of the European Parliament and, above all, a necessity for the Earth.

I therefore design using the experience of great designers who have made history and I explore new ways of producing materials through innovative, almost scientific methods, to establish relationships with objects and people through product design, the technique of storytelling to create a relationship between man and object.



Figure 1: Design as a messenger -objects - Picture of the objects taken on the 5th March 2023.

CH.

III

(P.12-P.15)

TODAY'S

PROBLEM

Today's problem

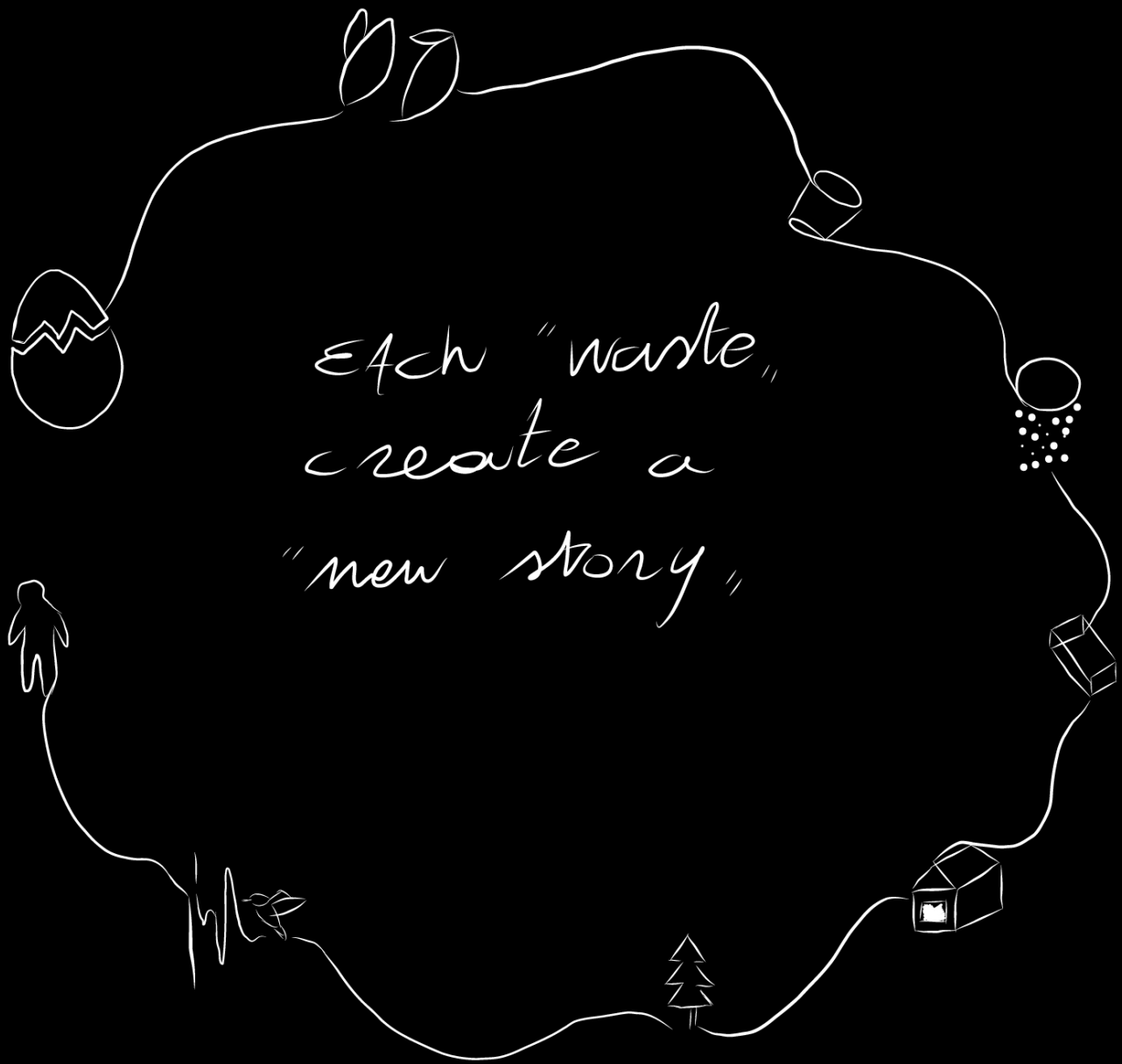
Today we are facing a post-pandemic era, a triple environmental crisis through climate change, the decline in quality of water, air and soil, and a loss of biodiversity. Therefore, we need to start acting globally and quickly to ensure the survival of the Earth and stop the suppression of the ecosystem.

What is the real value of design if – as designers and, above all, as people – we do not protect life and the environment as a whole? Wealth, development and an economy based on capitalism can no longer be our only goal, with no respect for the environment and for all living beings. So for me, the designer must try to process, teach and design differently while safeguarding our ecosystem.

The concept of design no longer has to focus solely on the object, but “the design” is part of the change. This is my role at present: I am no longer tied to the aesthetic of the product, the concept of “beauty” and the shape of the product are not fundamental, but I am interested in studying and using different sustainable materials that have a minimal or perhaps no environmental impact, while maintaining the functional part of the product.

Therefore, the goal of my research will be to not only make people aware of the environmental crisis we are facing, but also to provide them with the ability and the answers to implement environmentally-friendly behaviors, because we are all part of the system and people can help improve it.

The starting point of this artistic research is the question: why can't design be the bridge to fill the gap that has formed over the years between the economy and the environment?



CH.

IV

(P.16-P.29)

BACK

GROUND

“Earum partium Neutra per se esse habet, nec per se producitur vel corrumpitur, nec ponitur in praedicamento Nisi reductive ut principium substantiale.”^[1]

“Neither raw material or substantial form has being through itself, nor is produced, or is corrupted through itself, nor is it posited in predicaments (which are the various expressions of reality), except reductively, as a substantial principle.”

[1] Aristotele (384-322 BCE), *Ontology of things*, in particularly *Categories 5* where he introduces an account of structure, unity and persistence of objects and then how matter is 'transformed'.

Greek philosophers – Aristotle above all – were the first to assume that in the mutation of things in the material world nothing is created and nothing is destroyed, but everything is transformed. And so, mankind has been designing for centuries, creating magnificent artifacts and architecture well before the times of Greek philosophy, but what I want to underline is that it has always been done without thinking about the consequence and therefore, this concept – which in my case is “beyond above all” – serves to underline the importance of the transformation of matter and a primitive awareness.

The transformation can be substantial or accidental. In the substantial transformation, for example, after the death of any living being, a transformation of substance takes place, so that in the decomposition a certain type of chemical change takes place, or each one of us by eating transforms ingested and digested food into a part of ourselves as a living body.

In accidental transformations, some substances take on new characteristics: iron that heats up and liquefies can take various forms that differ from the original, wood carved by a carpenter becomes a different object, or glass, which, once produced and heated, takes on different shapes.

There is also a particular word that describes how different things can be seen in place of the original object: pareidolia^[2] (from the Greek para + eidolon). This can happen when observing objects that in our imagination are seen as already transformed: the cloud in which you can see an object, or an animal, or a face.

Even in synesthesia you can imagine colors and objects from sounds or air movements, an artifice that often occurs in poetry (for example, “green silence”, “ringing color”, “warm voice”). What becomes essential therefore is the substrate, which remains as the weight-bearing structure of a new and different form, the one that from Aristotle onwards will be called raw material, indestructible, but modifiable. The raw material is therefore the principle of potential multiplicity: in the breakdown and reorganization of the raw material there is a different form from the previous one, but conforming to the material of which it is composed. So, for me: in the raw material there is an object, or a fruit, or a food, a waste derived from the refining process to make it edible or usable, which can be further transformed into something useful, avoiding that it remains in the environment as a pollutant.

I therefore think that certain conceptions on design, too, must be overcome.

If we catapulted ourselves back to the 70s we would say that design is the English term that defines industrial design, which referred to the design process of any object: a piece of furniture, a machine, a coffee maker, an electronic device.^[4] But today we could never be so restrictive. Today, design spans a multitude of fields that if we stopped and ask ourselves “What is design?” we would never be able to give an answer. We cannot really find a single definition for design. One thing that unites design today is: a planning phase, capable of predicting the practical functionality of the product, its quality and, consequently, its success on the market

But I want to go beyond this simple concept, the reason why I recognize the potential of my role as a designer and starting from my academic background with the addition of creative awareness, I propose to provide further tools and practical methods to understand the world of the circular economy and the material potential that man-made waste has to counter the environmental crisis that humanity and our planet are experiencing.

[2] “Pareidolia,” March 3, 2023, <https://dictionary.cambridge.org/it/dizionario/inglese/pareidolia>.

[3] “Synesthesia,” March 3, 2023, <https://dictionary.cambridge.org/dictionary/english/synesthesia>.

[4] “Design”, March 25, 2023, https://www.treccani.it/enciclopedia/design_%28Enciclopedia-dei-ragazzi%29/

A. Eco Design

In the last few years, the environmental problem has become extremely serious and the concept of environmental sustainability has become important also in the life of each individual. To promote environmental consciousness and encourage the design and realization of sustainable products numerous methods and instruments of ecodesign have been developed. However, their use within our lives is still rather scarce, due to their complexity, the expenditure of time and the need for specific knowledge. From these considerations arises my need to create a new approach that allows effective environmental actions to be implemented in a simplified, quickway. Faced with the awareness of the limits of excessive and destructive consumerism, the global economic crisis and the great problems associated with the limitation of natural resources and global pollution, design, too, is beginning to discover an ecological awareness. And to rethink one's approach to everyday objects. I believe a new design of goods and services is needed, more sustainable, able to produce without destroying, capable of imagining the products that surround us by thinking about their future, when they will no longer be needed.

Eco-design and circular economy are the two key elements of my research. The goal of eco-design is to "completely delete the negative impact on environment through a smart and sensible design". Sustainable design involves principles such as reduction, reuse and recycle, assembly/disassembly/self-construction, the use of renewable energy, the reduction of harmful emissions, the choice of materials, analysis, certification and dematerialization of the product-service. Eco-design is a project based on the efficient use of resources and materials, which makes it possible to reduce the environmental impact linked to the production, but also contributes to reduce the amount of waste generated, by intervening on the durability, reparability, possibility of updating, and recyclability of the products themselves. A good design, to be defined as such, therefore puts the principles of the circular economy at the center.

To be clearer, eco-design is defined as the whole process of conception and design of commonly used objects that have the purpose to reduce at minimum the environmental impact during their life cycle: from the study, to the production, to the sale on the market. Eco-design is the economic model that actually wants to design in an ecological and sustainable way, from start to finish.

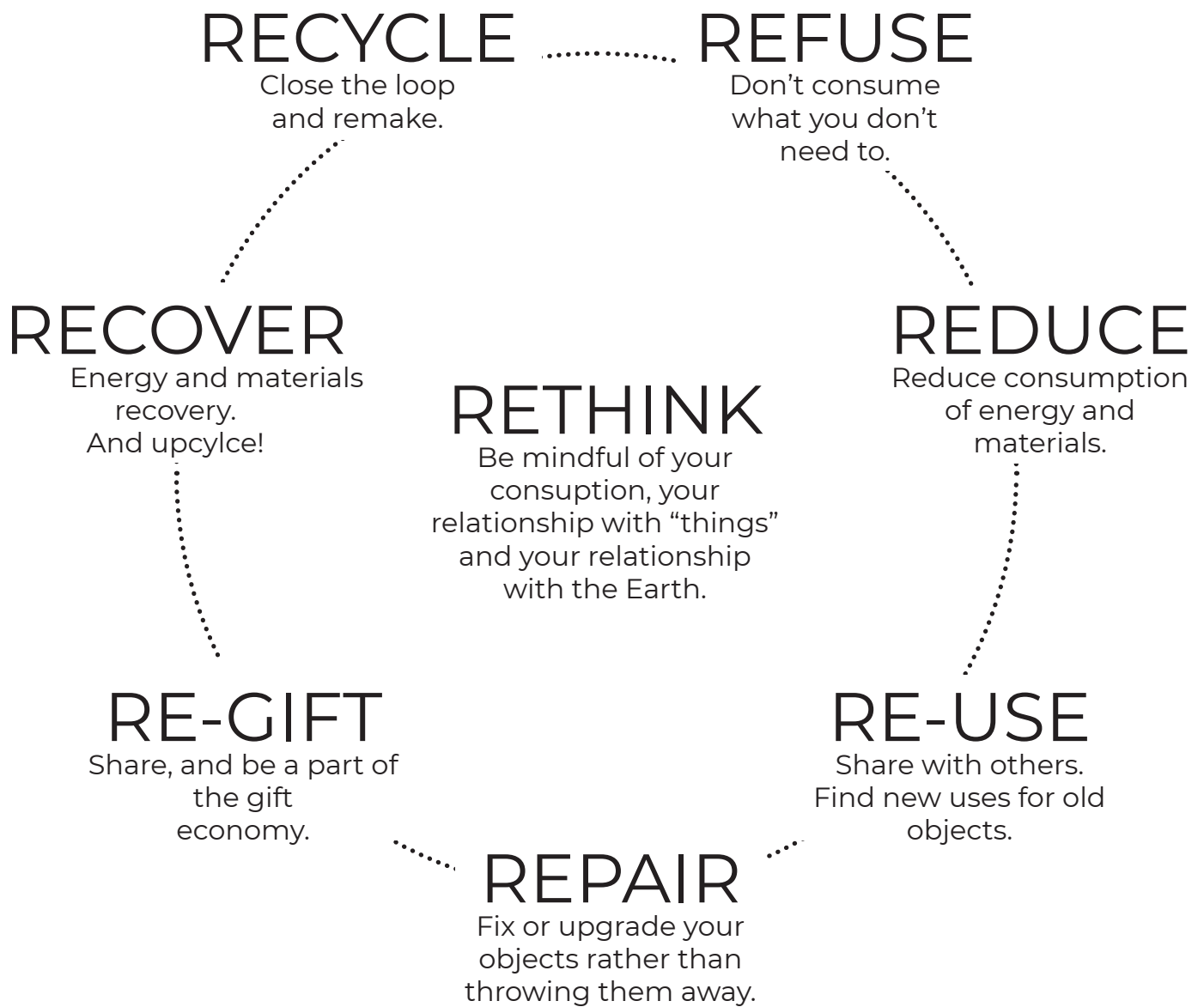


Figure 3: Scheme of the Circular Economy.

Artista e designer



Figure 4: Artista e Designer, picture of the book.

Bruno Munari (Italian designer, sculptor and writer), considered one of the greatest protagonists of art, design and graphics of the 20th century, explained in 1971 that “the designer is a planner with an aesthetic sense, who works for the community”.^[5] Today I consider the designer a figure who, in addition to having an aesthetic sense and working for the community, has set environmental protection as an objective and works for the environment. Starting from this definition I introduce my point of view as a designer, that is, all of this brings us to a new branch of design: eco-design. Eco-design was influenced by the Arts and Crafts movement (1859-1900), the first to have reported and criticized environmental degradation and where one of the founders, William Morris, dealt with the relationship between industry and craftsmanship, defining an ideal society in which nature, sites of production and homes would find a balance and craftsmanship would gain a new reason for being. During the 20th century, Alvar Aalto (1898-1976) placed the respect for the environment at the center of his work, too. Many other designers did the same, following what are now indicated as the basic rules for a design that takes environmental sustainability into account. From the point of view of design and production, the 70s were marked by Enzo Mari (1932) with interesting initiatives from the point of view of teaching and research. In the 90s, the focus was on growth and development, seen as improving our quality of life worldwide. The result was, therefore, a design attitude aimed at factors of control and efficiency of technologies, materials and products, while the return to austerity remained undisputed.

The exhibition “The garden of things”, curated by Ezio Manzini and presented at the Triennale di Milano in 1992, proposed the metaphor of a world that is possible because it is sustainable. The reflections on the strategies concerning the “quality of the material” suggested approaches that have become essential characteristics of good contemporary design today: the reduction of the material and the energy necessary to lengthen the life cycle of the products, but also, alternatively, the production of objects with a short life cycle, highly recyclable, and the “make and unmake” strategy, where the single parts of the products can be valorised within new production cycles. Lastly, Gunter Pauli and Heitor Gurgulino de Souza, founders of the Zero Emission Research and Initiatives (ZERI) research institute in 1994, where a method was proposed which allows for the incorporation into progress of both respect for the environment and the techniques used from nature itself, effectively making the production process part of an ecosystem. Academic research is focusing in this direction: the Politecnico di Torino, for example, has developed a methodology for design and production with a systemic approach that makes it possible to manage quantitatively and qualitatively everything that is actually involved in a process, in order to coordinate each stage of the production process, to verify relations with other production cycles and to avoid waste of all kinds.

Finally, the UN created the term “ecodevelopment” during the UN conference on the environment held in Stockholm in 1972, replacing it with “sustainable development”, sanctioning the shift from the local to the global level: the environmental problems due to development not only have consequences on the territory in question, but affect the entire planet and require a global approach for their resolution.^[6]

[5] Bruno Munari, *ARTISTA E DESIGNER*, 1971.

[6] Green Cluster, “DESIGN SOSTENIBILE - LA STORIA | Green Cluster,” December 18, 2018. <http://greenccluster.it/design-sostenibile-la-storia/>



Figure 5: Anima project of Kosuke Araki ,picture by Kosuke Araki

The designer today knows how to grasp the historical changes in technology, science, the environment and social customs and then convert them into objects and ideas that people can actually understand and use: a pro-active, or even activist attitude, in which one seeks to reveal the hidden and toxic ecosystems that support a consumer economy and their geopolitical consequences, or examples of circularity and integrity, making a constructive and regenerative vision of the future desirable.

The designer Kosuke Araki^[7] in his collection “Anima” transformed food waste from the landfill into elegant vases to embellish living spaces.

Araki’s intention with the development of this unusual material is to highlight the destructive approach that prevails in modern industrial societies towards the living world that sustains us. For his second collection of food waste, Anima, Araki kept a log of all the non-edible food waste produced in his home over a period of 2 years, among those zests, peels, shells and bones. The total quantity weighted about 315 kg. For this product, the creation of a powder from dry or charred food waste and the addition of “urushi” – the sap of the urushi tree (or lacquer) which is used in traditional Japanese lacquer processing – is experimented with. This provides both practical strength and attractive sheen.

Araki uses his innovative procedure to recycle food waste to transform them in design objects. The designer also speaks to the people who want to try their hand directly at the production of objects, in fact in his latest exhibition he also produced a real instruction booklet on how to transform food waste into products.

Or we can look at the work of Studio Nienke Hoogvliet, a design studio for materials research, and experimental and conceptual design. Nienke founded her studio in 2013 and has since followed her heart by focusing on materials that can contribute to a more holistic world. Her projects raise awareness of social and environmental issues in the textile, tanning and food industries. By creating innovative alternatives she hopes to change perspectives and systems. HERBS is a project in which Nienke’s herbal dyed textile samples were subsequently tested in the laboratory. It has been proven that essential oils can be transferred to fabrics through the dyeing process. Since everyone reacts differently, it’s hard to say how dyes will contribute to overall human health. Installing HERBS is an experience that continues at home. After a ‘discarded’ shirt has been dyed with the herbal dye of your choice, you can take it home and wear it to experience the possible beneficial effects. What strikes me about this work is their coherence in research and the way they build their installations: they constantly try to create a relationship between people and the project.

[7] Kosuke-araki, “ANIMA (2018) | Kosuke Araki,” n.d. <https://www.kosuke-araki.com/anima>. Anima is a sequel to Food Waste Ware (2013) were on show in the exhibition, Food Revolution 5.0 - Design for the Society of Tomorrow, held at Kunstgewerbemuseum (Museum of Applied Arts) in Berlin, Germany and at Gewerbemuseum Winterthur in Switzerland.

[8] “H.E.R.B.S. Quilt - Studio Nienke Hoogvliet,” Studio Nienke Hoogvliet, August 11, 2021, <https://www.nienkehoogvliet.nl/portfolio/h-e-r-b-s/>.

B. Bio-materials

“Natural” materials, such as soil, wood and its “natural” derivatives, for example different fibers, fabrics and papers, are in fact associated in eco-logical design. The ecological term applied to design refers to the natural material par excellence, wood, which has always been identified as the most used raw material to create most everyday objects.^[9] In recent decades, with the advent of plastic products and the international “Hi-Tech” style, the potential and aesthetics of this material have been kept aside, perhaps in favor of “fake” wood, or made such by plastic finishes that have completely distorted it. Yet in visits to the various “museums of memory”, we can only be amazed by the originality and extreme relevance of everyday objects made of “real” wood even a few hundred years ago. This exceptional material for its malleability, resistance, curability, its colors and its infinite textures and shades, has been “rediscovered” and re-evaluated by the more traditionalist current of new ecological design. It has also given new life and new forms to other natural materials widely used in the past, such as bamboo, vegetable fibers (coconut, sisal, rattan, etc.), natural fabrics and papers (parchment, rice paper, cellulose pulp, etc.). All these “raw materials” have a common characteristic which marks their absolute eco-friendliness, that is an extremely closed life cycle. This means that in all phases of their existence they are not harmful to the environment, and therefore also to humans. They are produced in a natural way (they are all “products” of the same substance), they are workable and easily malleable (and, therefore, without a great expenditure of energy), they are in most cases resistant and long-lasting and once discharged they are as -fully biodegradable.

[9] LifeGate. “Il design ecologico e i materiali tradizionali,” January 11, 2018. https://www.lifegate.it/il_design_ecologico_e_i_materiali_tradizionali/.

But what does biomaterial mean? The definition ‘biomaterial’ belongs to the world of chemistry and describes a material that interacts positively in an organic environment, therefore the definition ‘biomaterial’ is used for any substance which, in contact with a natural environment or an organic system, does not pollute and it does not create imbalances. A material capable of dissolving and returning to be part of nature. The keyword is regeneration, and the best quality of biobased materials is that they don’t need to be processed in landfills to be able to re-enter the natural cycle. They decompose spontaneously if placed in the right conditions, they are compostable. There is no better argument than perishability in favor of ecological choices. All the plastic we’ve used and thrown in the trash to date has a life of its own ahead of it that we may never have bothered to see. Mountains of plastic, islands made of plastic, and a non-functional recycling phase. If we thought about making the majority of ours today with sustainable materials, they can fertilize nutrient-hungry soils and feed hungry plants. If the item ends up in the ocean, it degrades and becomes fish food.

We will no longer see the object as “another piece of pollution” but as an opportunity for the environment. To date, the new branch of biomaterials is continuously growing and many of the products and materials that surround us are made with ingredients harvested in the surrounding environment: food waste from local homes and businesses and waste data from the environment. At the end of their life, products are recycled into new products or composted into fertilizers to feed the soil on which we all depend. Just like my produce that becomes nourishment for the soil, and the local ecology is nourished by the nutrients that flow back into the system.



Figure 6: Organico by Philipp Hainke.
Philipp Hainke is a product designer that combines an artistic background with technical solutions.
His project Organico utilises traditional and renewable resources for the development of a new, innovative material.
An adhesive, composed of calcium hydroxide and casein is used to press hemp fibres and shives into solid forms.

C. Approach to Circular Economy

“All living beings produce scraps, but only Homo sapiens produces waste”, with this quote from Antonio Massarutto ^[10], Italian economist and author of some popular books on the economy, I want to investigate, respond and demonstrate how design can influence and educate mankind to safeguard the environment. A concept of ecstasy given by pareidolia, in which the designer already “sees” what the waste material can become and indeed, in addition to setting to work by himself, also teaches others how to obtain design and useful as well as reconvertible objects, and in the end they can return to Nature without harming the environment. The push towards the circular economy represents one of the key actions of the European Union which is investing in a transition based on a productive and economic model representing the alternative to the current linear one, as demonstrated by the European Union action plan for the circular economy in 2015 and reaffirmed in the new circular action plan in 2029. ^[11] The linear economic model that has been the protagonist from the Industrial Revolution to today was based on the perception that the raw materials and the spaces in which to pour the waste produced were almost infinite. The linear economy was characterized by the “produce, earn, use and throw away” principle, causing significant pressures on ecosystems, resources and society. The circular economy that is proposed today is a production and consumption model that involves sharing, lending, reusing, repairing, reconditioning, and recycling existing materials and products for as long as possible. This extends the life cycle of products, helping to minimize waste. Once the product has completed its function, the materials from which it is made are reintroduced wherever possible through recycling. Thus they can be continuously reused within the production cycle, generating additional value.

[10] Massarutto, Antonio. *Un Mondo Senza Rifiuti? Viaggio Nell'economia Circolare*, 2019.

[11] European Commission, (2015). *The missing link - European Union action plan for the circular economy*. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52015DC0614>.

Antonio Massarutto

Un mondo senza rifiuti?

Viaggio nell'economia circolare



Figure 7. Antonio Massarutto "Un mondo senza rifiuti? Viaggio nell'economia circolare", picture of the book.

CH.

V

(P.30-P.41)

TRANSLATING

RESEARCH

INTO A

DESIGN

METH-

-ODOLOGY

Design as a messenger

“Design as a messenger” is a project that was created to counter the philosophy of linear economy and food waste, and it is a way to educate people on the topic of sustainability. Tons of products are thrown away every day. With this starting point, the goal is to launch an awareness campaign that stimulates people to lead a lifestyle that respects the environment. At first this project was to create an archive of information, a book containing the definition of circular economy, the key words used, a series of data on the production of waste from Italy and, finally, the section about ingredients. For each scrap I created a technical data sheet where you can find instructions on how many scraps are created in a year and what can be done with them. From the analysis of eight food scraps and the waste caused by paper, I created different materials, all of an organic type with a lifespan of over 6 months and which can be “thrown away”, or rather, they can be reinserted into the cycle of life of the earth and have a function of “fertilizer”, apart from paper. This project inspired me to do in the last part of my course of study: create products of “design” using my materials. These products, as stated before, do not have the goal to be “beautiful”, but to arouse people’s curiosity. I started the project inside my home where fruits, vegetables and paper scraps were collected. After an initial phase of material creation and critical thinking about new materials, I started a collaboration with the shops in my city by collecting waste and establishing a participatory collaboration.

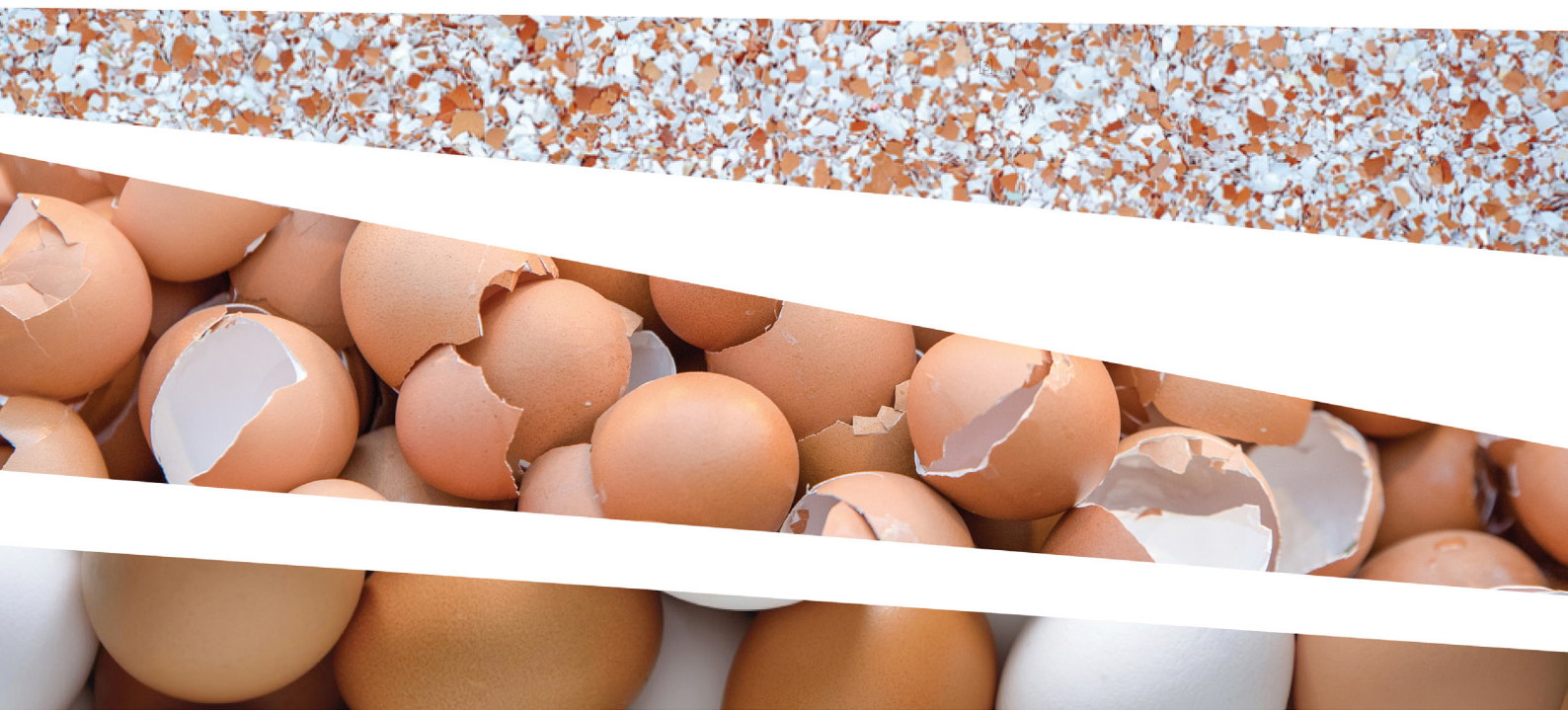
Most of the activity managers were enthusiastic and willing to participate in the initiative, and so two days a week have been established for waste collection and related production of dyes and bio materials.

By exploiting the overabundance of damaged or gone-bad food waste, it is possible to create biomaterials with a robust consistency, but at the same time they can be molded into “forms”. The materials produced have excellent qualities and combined with imagination can be used in a multitude of products.

The project was divided into phases: first step was to create the materials, at this point the creative process is dealing with the theme of “inclusion” and making people participate in the project, thus creating a community. Based on my experience, influenced by my family, I decided to better define my target audience. The collection of waste materials initially based on home-produced scraps, influenced by the project of Kusuke Araki, who collected his scraps to produce vases at home, simply gave me the opportunity to experiment with materials, but caused technical barriers to the final work because I cannot produce all this waste by myself. Subsequently, based on the objective of influencing people through my project, I decided to integrate my community into my work. The shops close to my house gave me the opportunity to collect waste materials and explain my project. To date, there are three users involved: Laura, owner of a poultry shop who supplies me with egg packaging (about 8 per day), Alessio, the greengrocer who produces about 30 kilos of vegetable waste every 2 days, Amaro, the pastry shop owner which provides me with eggshells (about 60 eggs per day). This allowed me to create interest in the project and to create my own community.

Moreover, during the process of the creation of materials, I have the support of my family, who helps me create materials and with them new products, creating a continuous dialogue about the project.

The final goal will be to create an installation of products divided into three parts: the first part will be defined by the research, the presentation of the theoretical part of the circular economy and how design can help this theme through the display of data based on my community; the second part will be linked to the materials and colors that can be created, giving the user the opportunity to get information and recipes to try and create things themselves at a later time; the third part will be the display of the products. I will say it one more time: the products will not have the aim to be beautiful, instead, the goal will be to create a bond with the user, each product will have a story and will explain how it was created and from what.



Design as a messenger.

Pathway between circular economy, design and the community.



> AT THE TOP ARE THE PROJECT PARTICIPANTS.



THE REASON.

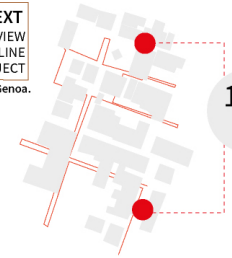
The interest in eco-sustainability has always been present in my years of study this is because in my family on my mother's side, who is Dutch, started educating me from an early age about putting in place recycling and taking care of one's environment Earth while my father influenced me from the creative sphere, he always pushed me to find new solutions with the materials I had available.

Why can't design be the bridge to that gap that has formed over the years between the economy and the environment?



THE BEGINNING.

CONTEXT
GENERAL VIEW
INITIAL OUTLINE
OF THE PROJECT
Sestri Ponente, Genoa.



1.3 Kg
per person
per day.

> THIS PART REPORTS HOW MUCH WASTE IS PRODUCED.



> THIS PART REPORTS THE RESULTS.



ALCHIMIA
RECIPE BOOK
AND
EXPERIMENTS.

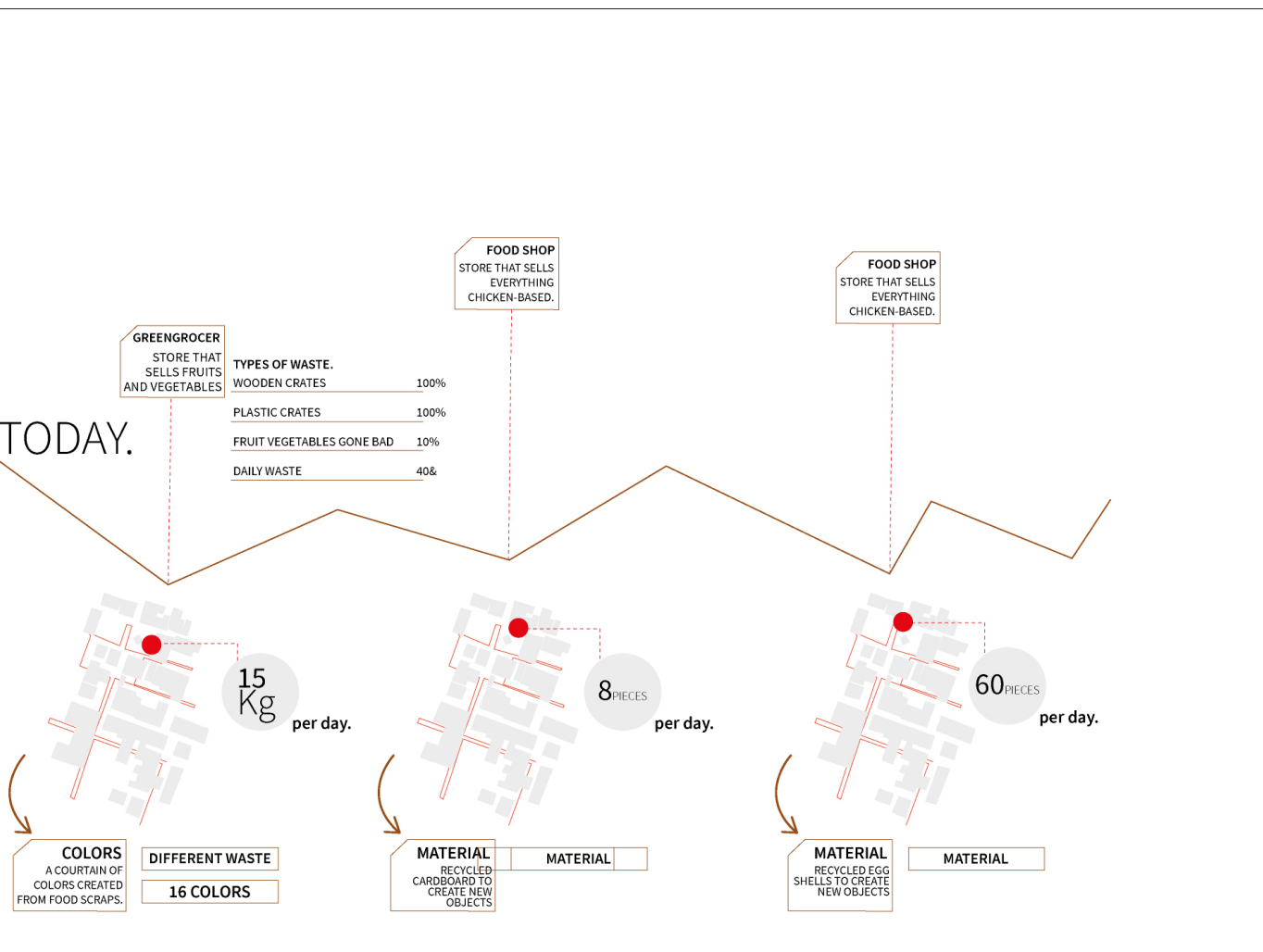
15 INGREDIENTS

16 MATERIALS



Figure 9: Design as a messenger -community - Illustration by Stella Femke Rigo

Figure 9-10: Design as a messenger -community and project - Picture by Stella Femke Rigo



“If we can create waste,
we can also design with it.”

A. Design as a messenger | What color are you?

The idea of collecting colors from food waste stems from the fact that to create each single material the scrap is first boiled. The final goal of the colors is to create a curtain where people can enter and interface with the color or the very meaning of the pigment, how these colors can be created and the possibilities that can be had with these dyes. The pigment obtained is then poured into different containers, which are recorded and stored in the refrigerator.

For the production of natural dyes there are many steps: the first step consists of identifying the chosen waste; the second step consists of filling a pot with water and bringing it to the boiling point; the third step is about inserting the scraps; fourth step is inserting alum – the mineral that maintains the color (alternatively, you can use coarse salt or white wine vinegar); fifth step consists of leaving the waste on low heat for about an hour; sixth step is to let the dye cool.

Depending on how long the waste is left in the water it disperses color, so if you want a more intense dye you have to leave it for a longer period of time. The doses are: for 100 grams of food waste, 15% of alum is used. About the liters of water used, it must be considered that $\frac{1}{3}$ of food waste is needed for 1 liter of water.



Figure 7. Design as a messenger -color-, picture by Stella Femke Rigo



Figure 8: Design as a messenger -color-, picture of the color's card taken on the 5th March 2023.

B. Design as a messenger | Materials

How can we eliminate waste? As designers, how can we move towards a more sustainable future? There is no doubt about the interest in materials in the field of design. Materials are fundamental to everything around us. The materials collection was created primarily for me and was born out of my curiosity about materials and my passion for graphics. This collection can be used in the future by students and people curious about sustainable materials. This initial stage of the project is just a starting point that aims to make materials. This project focuses on material innovations from a design point of view, based on bio-based materials and their possibilities, considering the importance of preserving the natural ecosystem. The goal is to provide recipes and data on waste materials. Educating ourselves on these current issues is the first step towards improving the future. In recent decades, a new chapter in materials design is being written, driven by the exploration of unconventional materials and production methods. The fusion of ideas from science, biology, art, craftsmanship and technology has allowed designers and creatives to generate different approaches to materials. New paths, which include the development of materials and design projects, promote disruptive approaches, offering people original material experiences, and the emergence of creative tools and ways of production. Through the contemporary methods of DIY materials and self-production, this collection of materials was created. The materials related to my project are those given by egg shells, peanut shells, waste derived from oranges and egg packaging.



Figure 9-10: Design as a messenger -material-, picture by Stella Femke Rigo.

C. Design as a messenger | Objects

The goal of the objects is to demonstrate to people the potential of the individual materials given by a very suggestive design. All products tell the story of the project. The keywords are recycling, uniqueness, emotion. Unique pieces are born, ecological and design objects that find their essence in ecology. What does my project use to bring light to my goals? How do you create curiosity in people? Why should they see and care about my work? Ever since I started studying design, I've been taught that in addition to designing an object, you have to be able to create a story.

It is the storytelling technique: narrating stories, an ancient tool for understanding and organizing meanings; anyone who works in the field of entrepreneurship has a story. It's all about knowing how to tell it. Storytelling is the art of telling your own story to create curiosity in customers to take a certain action through narration and creative communication. But what are the storytelling objectives of my project? The objectives will be the following: standing out from the design products made under the so-called capitalism; exciting the public, the object will have to create an imprinting with the person, the object itself will tell its story; capturing the attention, through organic shapes that will have to remain imprinted in people's minds; creating a relationship, you will create not only curiosity but also a relationship based on the theme of sustainability, and it has to bring the person closer to the theme of recycling and reusing; increasing the rate of communication between people.

The art of storytelling is used by leading figures of design such as Alessi, a company recognized as an "Italian design factory" that has made beauty its own work. Deeply rooted in the Italian tradition, it specializes in shaping kitchen utensils, household appliances, office accessories, jewelry, eyewear and many other products from the most diverse materials, poised between art and industry, which create astonishment, emotion and are against the tide. Mine will be objects of common: a vase, a lamp, a fruit bowl, coasters.

The core of all this is to understand that everything can be transformed without becoming a mess, or worse, creating damage to the surrounding environment. And above all that this transformation can also take place in a simple way and with little impact in terms of pollution. From my previous research I was able to ascertain and standardize through the creation of processes – or even actual "recipes" – how to bring new life by reproducing colors, fabrics, plastics, or building materials from waste.

The shapes of the objects are given by organic and simple forms: this is to resume the natural forms given by nature and to underline the ease of production of the products, meaning that each of us can be part of the project and create our own products. My products have a personal connection to my family so that for each "branch" of objects each collection will have a name of a family member or friend and the reason for choosing the names will be justified.



Figure 11-12-13: Design as a messenger -object-, picture by Stella Femke Rigo

D. Design as a messenger | Installation

The installation for my project will reflect the path I followed to build “Design as a messenger”. There will be a first part dictated by the research on the circular economy and how much waste is produced within the community I have created in my city. A second part, where the color samples that have been obtained from waste will be exhibited with attached color cards and specifications, a part focused on materials, where waste, finished materials, a book on the history of the material (what it was, how it became and which object it would like to be) and a video will be exhibited, while the last part will be the collection of design products “Andrea, Jolanda, Femke and Stefano”. The user will be able to observe the research, get lost in the colors and take home the color charts, touch the materials, read and listen to stories, observe the products created.

CONCLUSION

I began this journey asking myself what the circular economy is for me and what I can do to understand it and how to make people understand it. Through the exploration of the circular economy and the new figure of the designer, I have come to explore new materials, new media and new ways to educate. This study tried to answer the question: "Why can't the designer be the bridge to fill the gap that has formed over the years between the economy and the environment?". For this purpose, a quantitative research was conducted on the production of food waste in the city where I live. In addition, the various reuses of these large quantities of food were considered, for example for the production of biomass, fertilizer. I outlined my role, defined my circular economy and created a new way to educate people. The goal of my project was to find a solution to avoid this waste and be able to rework it into an innovative product, capable of giving waste products a second life. The union of different ideas and design methods has made it possible to create a project that uses food waste to its full potential. At present, I feel that this research has brought me a solid foundation for my discourse and practice. I do not want to make big changes: I aim at the education of small realities. From here, I can continue to explore a myriad of themes and knowledge to broaden my discourse and practice.

BIBLIOGRAPHY
WEB SITE

DESIGN AS A MESSENGER

Pelizzari, A., Genovesi, E. *Neo materiali 2.0 nell'economia circolare*. Ed. Ambiente, (2021).

Massarutto, Antonio. *Un Mondo Senza Rifiuti? Viaggio Nell'economia Circolare*. Bologna: Società editrice il Mulino, 2019.

Trabucco, Francesco. *Design*. Turin : Ed. Bollati Boringhieri, 2015.

De Fusco, Renato. *Storia del Design*. Bari: Ed. Laterza, 2009.

Munari, Bruno. *Da cosa nasce cosa. Appunti per una metodologia progettuale*. Bari: Ed. Laterza, 2010.

Munari, Bruno. *I Prelibri*. Bari: Ed. Laterza, 2002.

Kääriäinen, Pirjo. Tervinen, Liisa. Vuorinen, Tapani. Riutta, Nina (toim.) *The CHEMARTS Cookbook*. 2020.

Conran, Terence. *La casa ecologica*. Italy: Ed. Guido Tomasi, 2009.

Aristotele, *Ontology of things* , Categories 5.

Bruno Munari, *ARTISTA E DESIGNER*, Bari: Ed. Laterza, 1971.

Myers, William. *Bio Design: Nature, Science, Creativity*, 2018.

"Pareidolia," March 3, 2023, <https://dictionary.cambridge.org/it/dizionario/inglese/pareidolia>.

"Synesthesia," March 3, 2023. <https://dictionary.cambridge.org/dictionary/english/synesthesia>.

"Design" , March 25, 2023. https://www.treccani.it/enciclopedia/design_%28Enciclopedia-dei-ragazzi%29/

Green Cluster. "DESIGN SOSTENIBILE - LA STORIA | Green Cluster," December 18, 2018. <http://greencluster.it/design-sostenibile-la-storia/>.

Kosuke-araki. "ANIMA (2018) | Kosuke Araki," n.d. <https://www.kosuke-araki.com/anima>.

"H.E.R.B.S. Quilt - Studio Nienke Hoogvliet," Studio Nienke Hoogvliet, August 11, 2021, <https://www.nienkehoogvliet.nl/portfolio/h-e-r-b-s/>.

European Commission, (2015). The missing link - European Union action plan for the circular economy. Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52015DC0614>.

Domus, <https://www.domusweb.it/it.html>

