διαδυμα
ΔΙΑΧΕΙΡΙΣΗ ΑΠΟΡΡΙΜΜΑΤΩΝ
ΔΥΤΙΚΗΣ ΜΑΚΕΔΟΝΙΑΣ Α.Ε.

Life M3P
Material Match Making Platform

Circular economy in fur and wood industry: Material Match Making Platform (M3P/LIFE15/IT)

Periklis Kafasis

Director of Supplies-Services-European projects

DIADYMA S.A.

26 June 2019

Life M3P
Material Match Making Platform

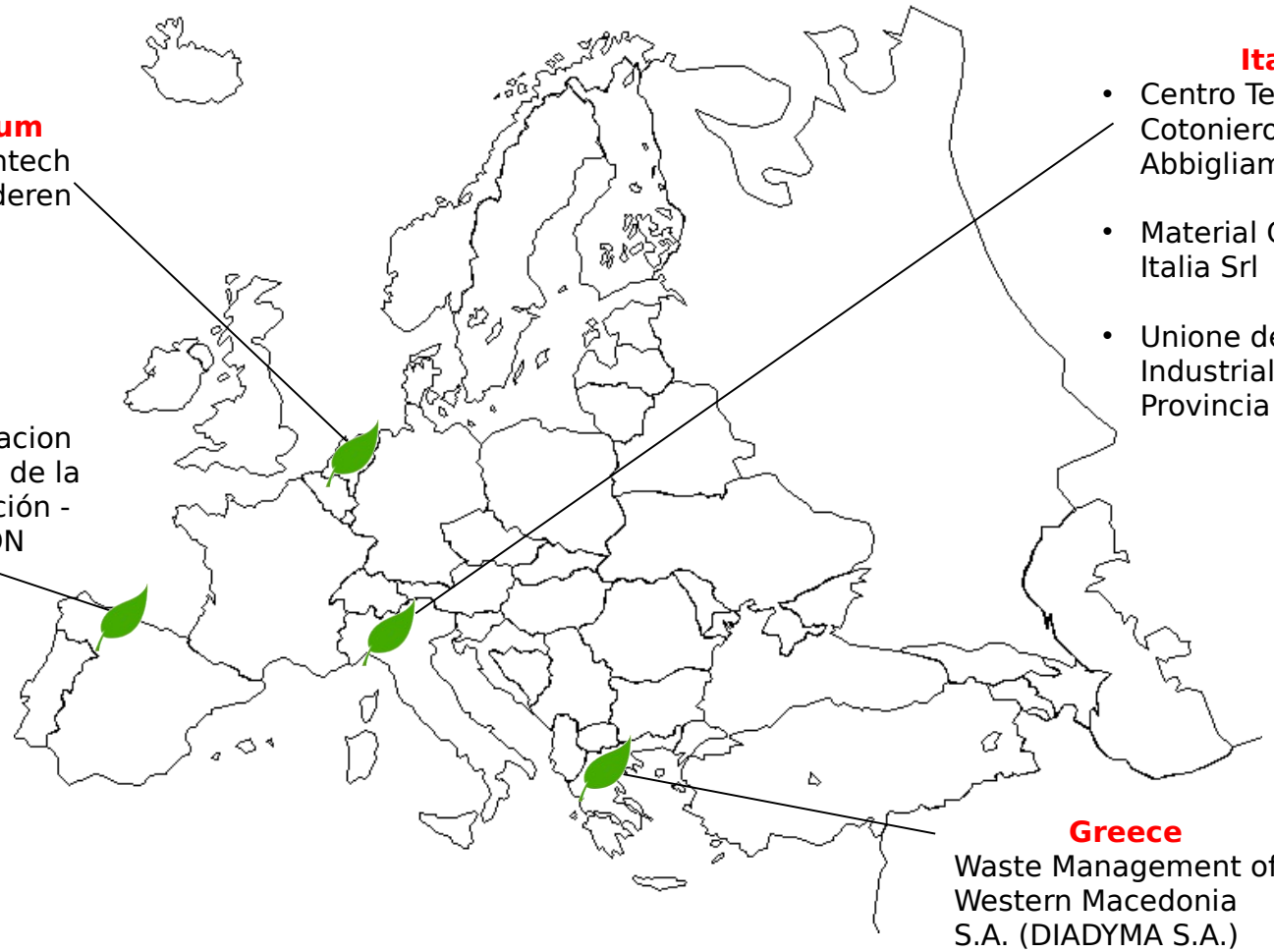
Life

LIFE M3P – Material Match Making Platform
Project Objectives

Material Match Making Platform for promoting the use of industrial waste in local networks

- develop local networks to improve the treatment of industrial waste
- promote industrial waste use in other local businesses
- reduce industrial waste processing, storage and transport needs.
- demonstrate the utility of a digital online platform at European level for the recording, use and exploitation of industrial waste

M3P's Local Networks



Belgium
- i-Cleantech Vlaanderen

Spain
- Confederacion Asturiana de la Construcción - ASPROCON

Italy
- Centro Tessile Cotoniero e Abbigliamento Spa
- Material Connexion Italia Srl
- Unione degli Industriali della Provincia di Varese

Greece
Waste Management of Western Macedonia S.A. (DIADYMA S.A.)

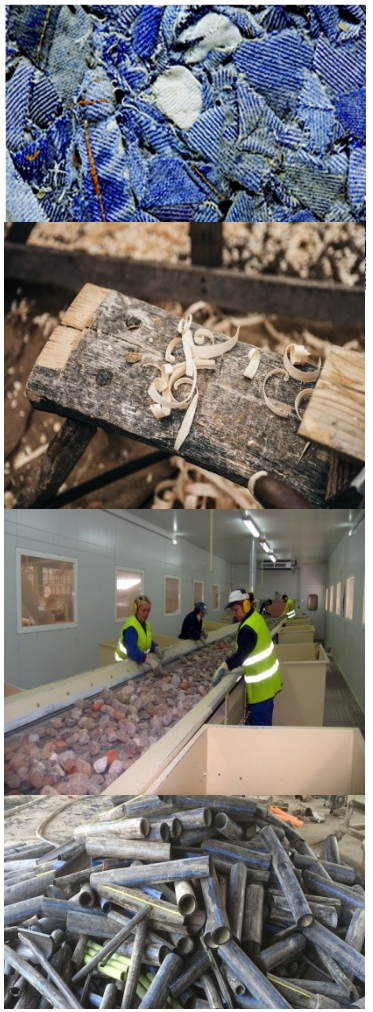
Business segments by region

Italy/ Lombardy
Textiles and clothing
Plastic articles
Wood

Spain/ Asturias
Construction

Belgium/ Flanders
Multiple Sectors

Greece/ Western Macedonia
Fur
Wood



Local network research and waste identification

Research on the industrial areas (networks and clusters) to which the partners belong will allow optimization of industrial waste management at local level and overall lower environmental impact.

Data:

- Interviews with 230 SME's (Western Macedonia: 25)
- Identification of 500 wastes (Western Macedonia: 30)

Local network research and waste identification

Ambitious targets…

How the SME’s will Involve???

Crucial issues

Identification of companies - low participation

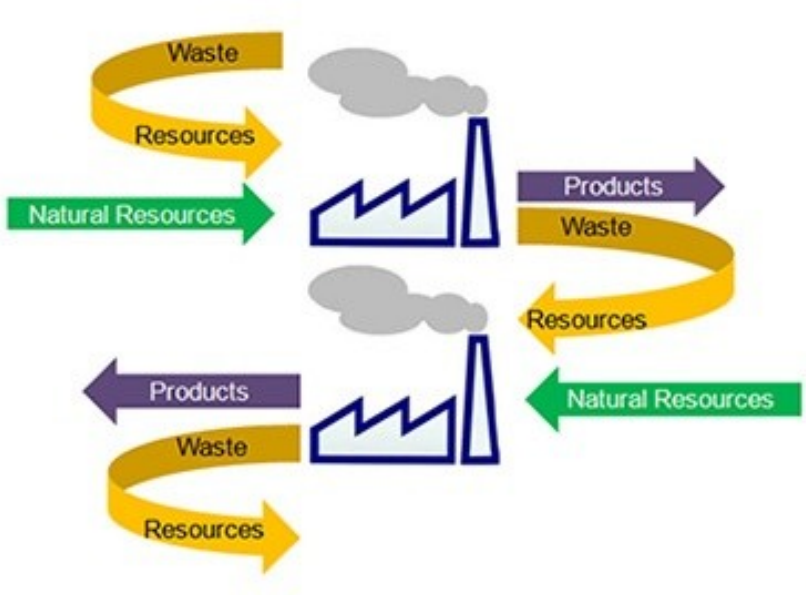
Identification of waste (substances / objects)

Identification of finished products that could be manufactured with recycled materials

Transferability to other industrial environments / geographical areas / technology clusters

Action B1-2

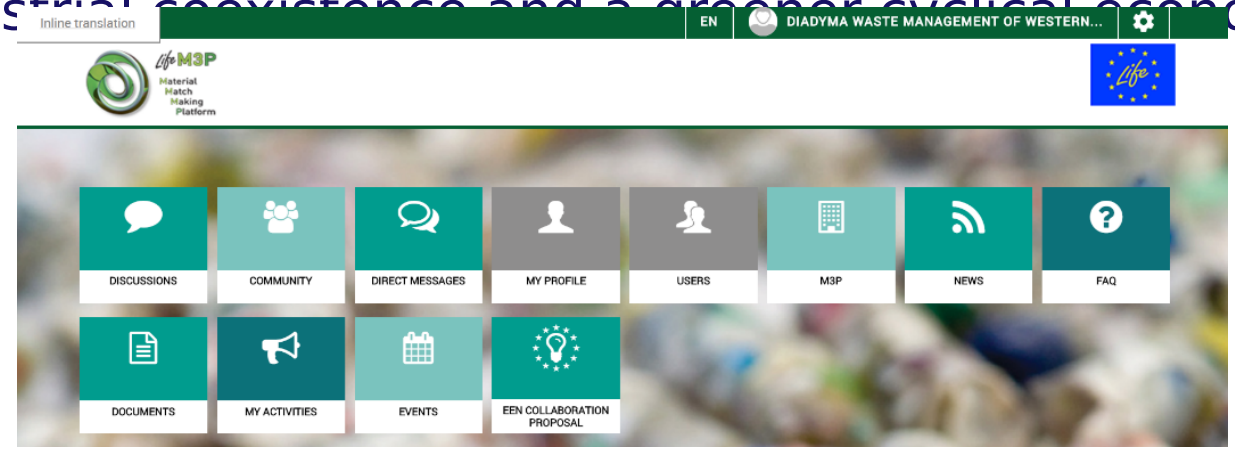
- Interviews and fulfilling of questionnaires
- Workshops with SME's for match making
- Target groups in the sectors of fur and wood



… in a few words: **Industrial Symbiosis**

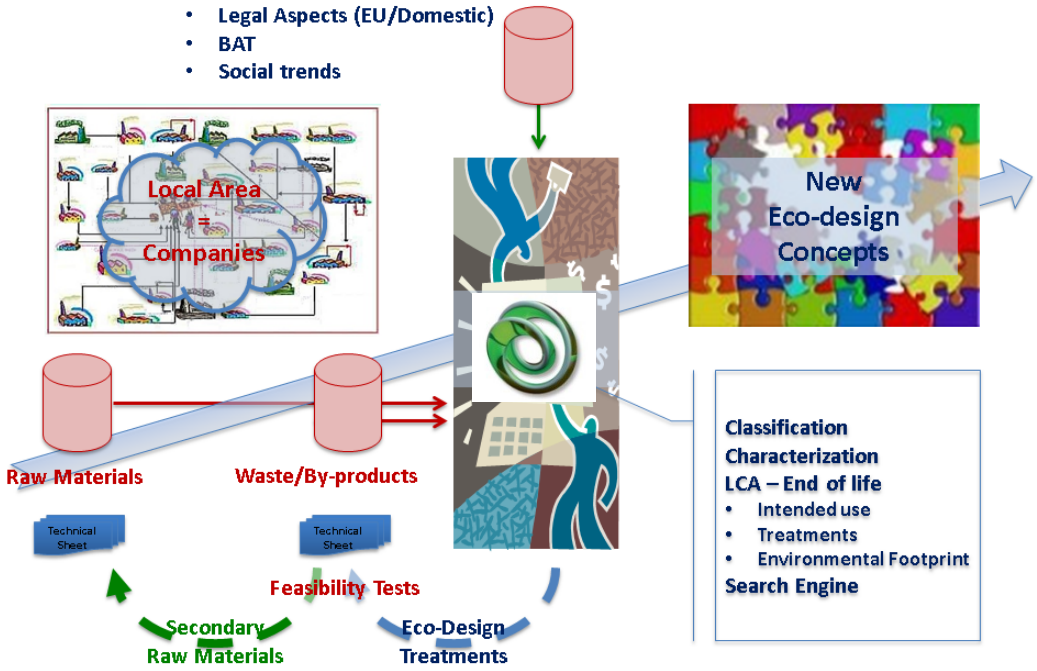
E-platform

- One of the pillars of the LIFE M3P project is the development of the online Material Match Making Platform that will enable SMEs to exchange information to find alternatives to their waste.
- The online platform is the basis on which local networks will develop and companies will interact.
- It forms the basis of a "digital ecosystem" that strengthens the self-provision of local networks and allows for real industrial coexistence and a greener cyclical economy.



E-platform

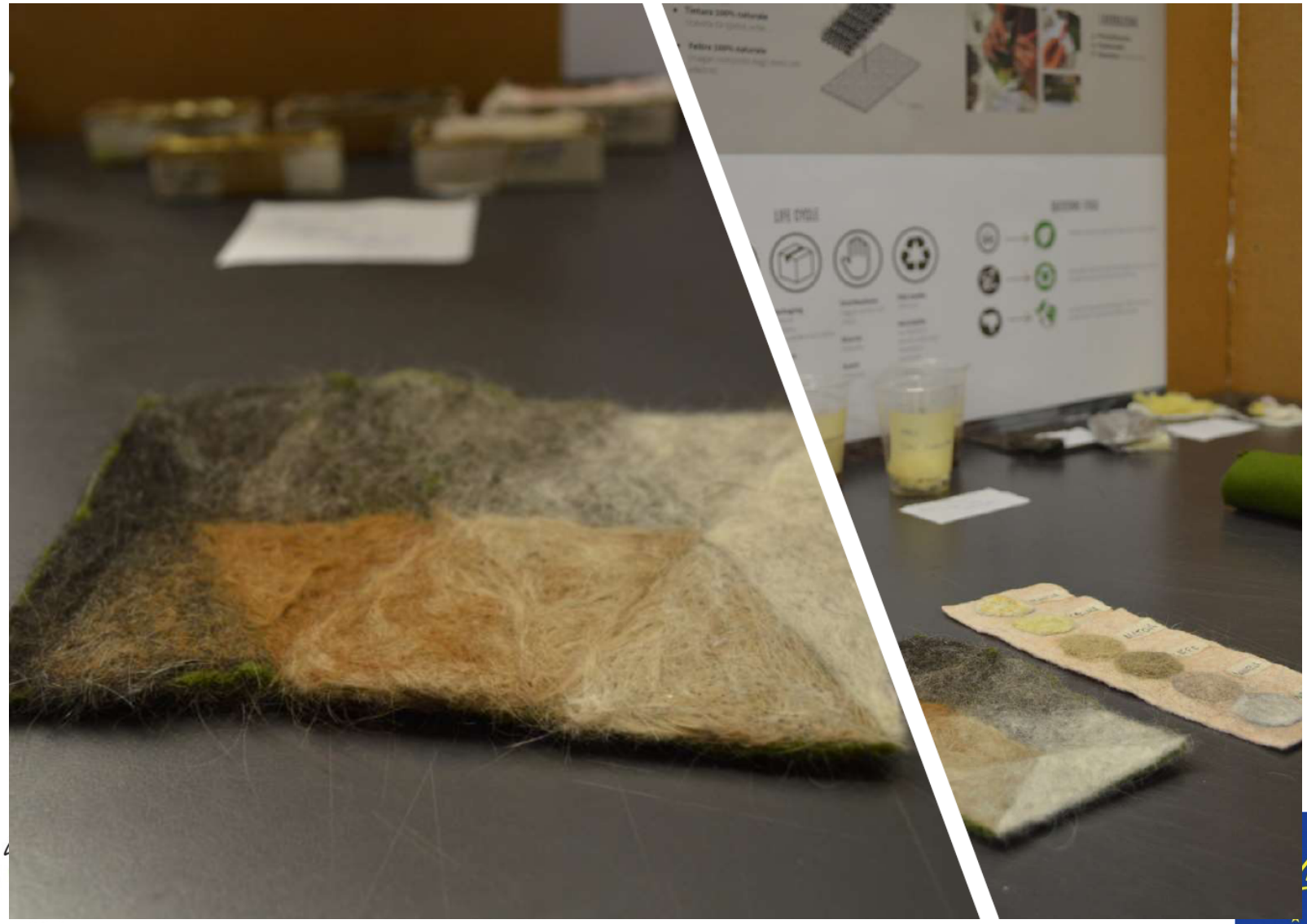
- Data base
  - SME's
  - Products/Waste
  - Technologies
  - Good examples
- Auto search engine
  - Labels/tags (tree of tags)
  - Search by tags
- Advanced search engine
  - Smart search
  - Search with the help of specialists



https://materialmatch.eu/

Creative Concepts

Creative Concepts



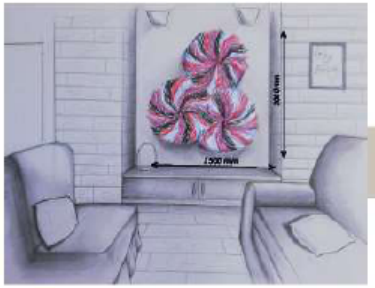
Creative Concepts

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT DESCRIPTION

Essenza

Fur trimmings are the waste of a cruel and useless process. We believe we can give our material a new, glorious life.
Our concept is a product without a specific function, a carpet or a tapestry, something really sensorial and enjoyable in a more abstract way.
It will be "wild" but also naturally chic.
Fur Trimmings can be dyed using different herbs and spices in order to have a double result: the final product gives off a nice scent, fresh and spicy, and also can be coloured in a natural and soft way.
Fur trimmings can be united in some patches, each one dyed differently: the final result has unique visual and olfactory properties.
Various combinations of colours and perfumes risult in different patterns.
Human senses are playing the major role: you can look at it, touch it, smell it, feel it.

Grigio Naturale 50%
Grigio Naturale 80%
Curcuma
Cannella



CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT APPROACH

Essenza

LIFE CYCLE

Scarti della lavorazione della pelliccia: rinnovabile
Risorse: acqua energia

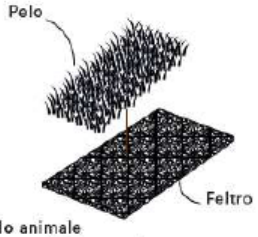
Lavorazione: tintura naturale, tessitura
Scarti: acque

Packaging: cartone riciclato, rinnovabile e riciclabile
Risorse: acqua energia

Distribuzione: negozi, arriva con mezzi
Risorse: nessuna
Scarti: nessuno

Vita media: 100 anni
Riciclabile: se ridotto in piccoli pezzi può diventare compost

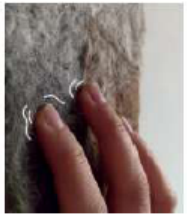
MATERIALI

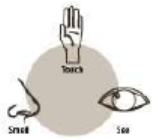


- Pelo animale
- Tintura 100% naturale ricavata da spezie, erbe...
- Feltro 100% naturale (magari composto dagli stessi peli infeltriti)

LAVORAZIONE

- Procedimento (sx)
- Punteruolo (dx alto)
- Spazzola a setole dure (dx basso)





STUDENT MATRICE or GROUP REFERENCE
Breda Chiara / Di Leo Irene / Gianni Isabella
Gianaldo Elena
Metaprogetto > Professoressa M. Celi
Politecnico di Milano > 2nd year

Creative Concept

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT DESCRIPTION

Sänky

The idea and story

Sänky is a cat bed inspired by the Scandinavian style. Not only it does its work by harbouring your pet, it is also a nice coffee table that can be placed in every living room.

Few elements are designed to be easily assembled together: three legs and two shelves, both made in pine wood, some metallic connections and the bed. The latter is made entirely of felt, which came from the compacting and felting of fur trimmings, a waste of the fashion industry.

The concept is "back to basics", with the creation of a product for animal from a material that came from the same animal world.

1 Three metal bars connect the legs to each other.

2 The legs are anchored to the shelf with the same metal link.

3 Some screws are needed to secure the structure in place.

STUDENT MATRICE or GROUP REFERENCE
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Martelli Giorgia / Villari Stefano
Laboratorio di Metaprogetto > M. Celi, V. Regnoli
Politecnico di Milano: Design del prodotto industriale > 2018/19

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT APPROACH

Sänky

The lifecycle

Sänky is made only with materials that can be both reused or recycled, so after its life cycle is complete it can be disassembled, not causing any waste.

The product

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Laboratorio di Metaprogetto > M. Celi, V. Regnoli
Politecnico di Milano: Design del prodotto industriale > 2018/19

Creative Concepts

Creative Concepts

Creative Concepts

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT DESCRIPTION

MATERIC LAMP

HERO SHOT:

PRODUCT DESCRIPTION:

Materic Lamp made with real animal skin. It is a product created with an industrial waste material and reused for a design object. They are small size offcuts, beige colour, thin and light. The lamp may be placed in an indoor environment and hung from a ceiling. It can be made of different sizes depending on the available space. It is a very bright object because the thin thickness of the skin lets the light penetrate and illuminate the environment in which it is placed. The lamp is made of animal skin, Vinavil, water and a plastic support. Vinavil is a water-based glue, very resistant and has the particularity of becoming transparent once dry, this makes it easier for the light to filter. The realization process develops in various phases. First of all one has to dilute the Vinavil with water to make the glue more liquid and easy to spread. Then the skin must be immersed, piece by piece, in the glue. The waste material is then placed on two plastic hemispheres. Only one layer of skin is placed, otherwise the light may not pass through. The two hemispheres are left to dry for 48 hours in a cool place. Then a bulb is inserted inside the sphere which is then closed and ready to be hung from the ceiling.
Materic Lamp is a very special lamp as it is made of an original and certainly unusual material.

CONCEPT DETAILS:

PIECES OF ANIMAL SKIN

SKETCH

PRODUCT REALIZATION:

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT APPROACH

CONTENT:

CIRCULAR ECONOMY

The reuse of the industrial waste material has been redesigned for an innovative design model, able to respect the environment in the following way:
-Reuse of remaining industrial materials
- Minimization of the energy used
- Biodegradable material
- Recycled plastic sphere structure
- Low consumption LED lights
- Less production steps
- Less waste durig the production

Pieces of animal skin:
Height: varius; Length: varius;
Thickness: 0,5 mm;
Colour: beige

BUSINESS MODEL:

KEY PARTNERS
The main partner is the industry that uses leather for its standard production. During this production it makes scraps that become the raw material we used to produce Materic Lamp. The producers of leather goods could be willing to supply the waste material at no cost, if we will collect it.

KEY RESOURCES
The key resource for the production of Materic Lamp is a workshop held in any artistic schools, which is supplied with a spherical base in transparent plastic and waste material that is leather. This type of production maintains the idea of a craft product and allows students to carry out activities useful for their course of study.

KEY ACTIVITIES
The key activity of the production of Materic Lamp is the reuse of waste material according to predefined instructions and models.

VALUE PROPOSITIONS
The proposal of intrinsic value in the products that use a recovery material is in the interest of the buyer to be an active part in avoiding waste that reduces the resources of our planet and of future generations.

COSTUMER SEGMENTS
The clientele interested in Materic Lamp is the one who likes to have an alternative product of design because it uses unusual and recycled materials and for this it is unique. It is a clientele who likes to think to take part at the environmental protection.

COSTS
The production costs are very low because the raw material is at no cost, the plastic base bought in bulk has a low cost and its production is limited to the time taken by the students of the artistic high school to complete the product. The sale of Materic Lamp is foreseen through stores of household objects.

Course: Design - Group A
Veronica Bandini, Alice Casella, Enrico Ferrari
Tecnologie dei Materiali II > Professor Tamar Ben David
NABA, Nuova Accademia di Belle Arti > A.Y. 2017/18

Creative Concepts

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT DESCRIPTION

PHONE LIGHT

HERO SHOT:

PRODUCT DESCRIPTION:

The project is Phone Light where the energy source is the cell phone that is placed under those objects, light diffusers, that create a sophisticate atmosphere. The various diffusers were made first creating the forms with the Ciba, an easy material to be modelad, then by means of thermoforming, a hot plastic molding technique starting from a transparent plastic plate, under pressure or under vacuum, were made the casts of the various forms. Subsequently, these forms were covered with industrial waste of leather using Vinavil glus mixed with water, imitating the decoupage technique. At the end of the procedure, the lamps were exposed to open air to dry for about 48 hours. Once the glue has dried, the skin becomes transparent and solidifies, creating a compact but at the same time light layer. The shapes are various: some are parallelepipeds with various facets that take inspiration from mountains, others are rounded with a smooth surface similar to a river stone. A simple object with mainly aesthetic function, which favors an easily transportable light that does not require electricity but only a source of light such as the mobile phone. Lighting thus becomes a game of composition that everyone can modify according to people's tastes. It has a great scenography effect and it is able to create a particular atmosphere. It's a low-cost product, accessible to everyone, that is distributed in any stores, in particular the ones that sell gadgets and household.

CONCEPT DETAILS:

PIECES OF ANIMAL SKIN

SKETCH

PRODUCT REALIZATION:

Course: Design - Group A

Veronica Bandini, Alice Casella, Enrico Ferrari

Tecnologie dei Materiali II > Professor Tamar Ben David

NABA, Nuova Accademia di Belle Arti > A.Y. 2017/18

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT APPROACH

CONTENT:

CIRCULAR ECONOMY

The reuse of the industrial waste material has been redesigned for an innovative design model, able to respect the environment in the following way:
- Reuse of remaining industrial materials
- Minimization of the energy used
- Biodegradable material
- Structure of the base in recycled plastic
- Less production steps
- Less waste during the production

Pieces of animal skin:
Height: varius; Length: varius;
Thickness: 0,5 mm;
Colour: beige

BUSINESS MODEL:

KEY PARTNERS

The main partner is the industry that uses leather for its standard production. During this reduction creates waste/scrap materials that become the raw material that we used to produce Phone Light. The producers of leather goods could be willing to supply the waste material at no cost, if we go to collect it.

KEY RESOURCES

The success factor for the production of Phone light is a small industry, which owns machinery for thermoforming. This type of production facilitates industrial production in series.

KEY ACTIVITIES

The key activity of the production of Phone Light is the reuse of waste material according to predefined instructions and models.

VALUE PROPOSITIONS

The proposal of intrinsic value in the products that use a recovery material is in the interest of the buyer to be an active part in avoiding waste that reduces the resources of our planet and of future generations.

COSTUMER SEGMENTS

The clientele interested in Phone Light is the one who likes to have an alternative product of design because it uses unusual and recycled materials and for this it is unique. It is a clientele who likes to think to take part at the environmental protection.

COSTS

Production costs are low because the raw material is close to zero and its industrial production does not have high structural costs but only costs linked to the machinery. This means that the sale of Phone light takes place in stores of gadgets and household items, such as Tiger and the sale price is cheap.

Course: Design - Group A

Veronica Bandini, Alice Casella, Enrico Ferrari

Tecnologie dei Materiali II > Professor Tamar Ben David

NABA, Nuova Accademia di Belle Arti > A.Y. 2017/18

Creative Concepts

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT DESCRIPTION

LEATHER MASH

HERO SHOT:

PRODUCT DESCRIPTION:

The project is Leather Mash, it is inspired by the technique of papier-mâché with the variant that is used instead of paper. The leather used is industrial waste with a very thin thickness that allows you to work them as if they were sheets of paper. The project is about the creation of containers empty-pockets of different shapes with smooth or faceted surface. These empty pockets were made first creating the forms with the Ciba, an easy material to mold, then by thermoforming which is a technique of molding hot plastic materials starting from a transparent plastic plate, under pressure or vacuum, the casts of the various forms have been made. Then these containers were covered with leather scraps using Vinavil glue mixed with water. At the end, the formed containers were exposed to the open area to dry for about 48 hours. Once the glue has dried, the skin has become transparent and has solidified creating a compact and even layer. The objects have a practical use as they can be placed on a piece of furniture at the entrance of the house, allowing people who come into the house to store the items they bring with them, such as: keys, telephone, currency, etc. With a few raw materials we have created a modern and innovative aspect to an object of common use, with the aim of combining functionality with the aesthetics of the object. The process of realization is quite simple and does not involve excessive costs even though it is a design object covered in leather. This fact allows it to be put on the market at a competitive price.

CONCEPT DETAILS:

PIECES OF ANIMAL SKIN

SKETCH

PRODUCT REALIZATION:

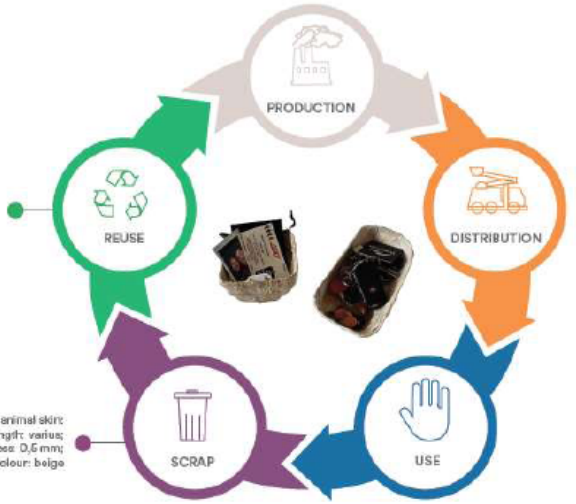
Course: Design - Group A
Veronica Bandini, Alice Casella, Enrico Ferrari
Tecnologie dei Materiali II > Professor Tamar Ben David
NABA, Nuova Accademia di Belle Arti > A.Y. 2017/18

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT APPROACH

CONTENT:

CIRCULAR ECONOMY

The reuse of the industrial waste material has been redesigned for an innovative design model, able to respect the environment in the following way:
- Reuse of remaining industrial materials
- Minimization of the energy used
- Biodegradable material
- Structure of the base in recycled plastic
- Less production steps
- Less waste durig the production



Pieces of animal skin:
Height: varius; Length: varius;
Thickness: 0,6 mm;
Colour: beige

BUSINESS MODEL:

KEY PARTNERS

The main partner is the industry that uses leather for its standard production. During this production creates scrap materials that become the raw material to produce Leather Mash. The producers of leather goods could be willing to supply the waste material at no cost, if we go to collect it.

KEY RESOURCES

The key resources for the production of Leather Mash is the production in elementary schools which the support in plastic and waste material is supplied (leather). This type of production maintains the idea of a craft product and allows children to carry out useful and fun activities

KEY ACTIVITIES

The key activity of the production of Leather Mash is the reuse of waste material according to predefined instructions and models.

VALUE PROPOSITIONS

The proposal of intrinsic value in the products that use a recovery material is in the interest of the buyer to be an active part in avoiding waste that reduces the resources of our planet and of future generations.

COSTUMER SEGMENTS

The clientele interested in Leather Mash is the one who likes to have an alternative product of design because it uses unusual and recycled materials and for this it is unique. It is a clientele who likes to think to take part at the environmental protection.

COSTS

The production costs are very low because the raw material is at no cost, the plastic base bought through wholesale has a low cost and its production is limited to the time taken by elementary school children. The sale of Leather Mash is foreseen through stores of household items.

Course: Design - Group A
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Tecnologie dei Materiali II > Professor Tamar Ben David
NABA, Nuova Accademia di Belle Arti > A.Y. 2017/18

Creative Concepts

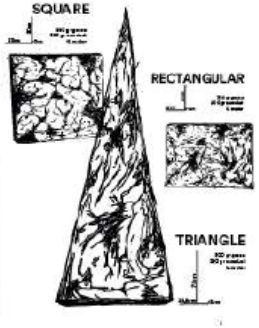
Creative Concepts

Creative Concepts

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT DESCRIPTION

Vallo

Our concept is born from an experimental research started with the idea to show the intrinsic sawdust sensations, modifying its structure. From the beginning, the concept was designed to suggest a product relate to a primitive world, unrefined and raw, like the consistence of the material itself. Taking the inspiration from the huts of ancient tribes, we explored different combinations of sawdust and filling materials, in order to create a more consistent and compact one.
Eventually, plaster and sawdust mixture allowed us to realize a tile with a coating purpose. We knead different compositions of forms, colors and textures to perfect the initial prototype. The final product is a tile with a classic shape, in which the roughness of the dough is highlighted by the irregular surface.



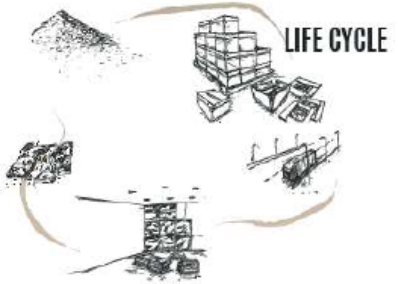
GROUP 11
Bertelli Marcello / Boschello Alessandro
Garavelli Davide / Romanazzi Elio
Laboratorio di Metaprogetto > Celi Manuela
Politecnico di Milano > 2nd year of Bachelor

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT APPROACH

Vallo

The concept was inspired by the working waste of the product, and its peculiarities. Indeed, sawdust is a thermal and acoustic insulator, which in combination with a plaster mixture allows the creation of a coating. Thanks to their natural origins, and the quality of the gesso being a completely recyclable material, we designed a product that can be recovered after its disposal. Vallo can in fact be destroyed and re-kneated just adding water.

When the lifetime of the product is completed, it can be reduced into a fine dust, allowing the separation of the materials. With these elements and the addition of water, then it will be possible to re-employ it in the creation of new products.



GROUP 11
Bertelli Marcello / Boschello Alessandro
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Laboratorio di Metaprogetto > Celi Manuela
Politecnico di Milano > 2nd year of Bachelor

Creative Concepts

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT DESCRIPTION

Building blocks for infants

1. Putting to use the materials which are discarded as particle wood waste by giving it a new meaning in the context of toys for children.

2. Short Description

The particle wood have different textures, colours, and patterns. This property can be utilised to make creative solution using transparent natural resin. Binding these particles together in a various shapes using moulds can create building blocks for children. These blocks are interesting to be looked at as there is an interplay of lights passing through it. And to these resins even tints can be added to give it any exclusive translucent effect. End of the day, we get a premium looking product with waste reused as new raw material.

3. Advantage of material in this context

Material benifit:

1. Naturally non-toxic.
2. Distinct Colour & texture.

WHAT People look for:

1. Friendliness
2. Safety
3. Engagement

STUDENT MATRICE or GROUP REFERENCE
Gopalakrishnan Girish
Master of Innovation and Strategy > Gisele Leiva de Rio
IED Istituto Europeo di Design > 2018

> PROJECT APPROACH

Building blocks for infants

4. Process of manufacturing

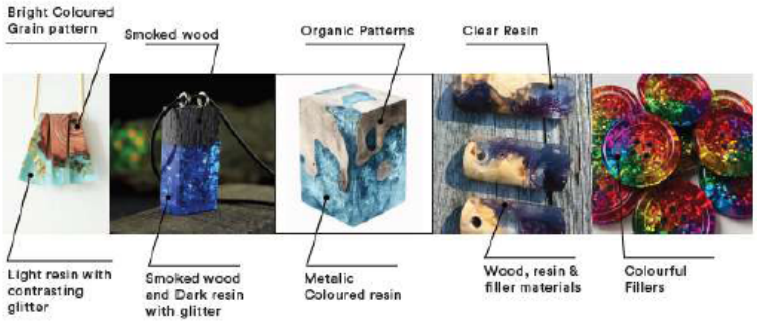
Filling: Identifying the required type of wood particle to be filled together with clear natural resin/glue.

Casting: Cast out the respective shapes in resin/glue using desired moulds

Finish : Cleaning and getting rid of the unwanted parts and dirt. Adding fixtures if necessary & painting.

Polishing : Polish the surfaces for the necessary gloss and shine and apply double side sticker.

5. Reference of colour, material and finish visualised for end product



6. Why this concept ?

1. Degree of Innovation : Building blocks exists as a concept since ages, but has never been looked at from aesthetical point of view.

2. Feasibility : The company probably has the technical know how to execute this concept within its facilities.

3. Desirability : Eco-friendly, Can replace Plastic toys, Very attractive in appearance, Can improve the company's image.

4. Viability (Business) : With investments in labour and die-casting materials generates values by creating products for a new market keeping in mind also the ethical eco-friendly aspects.

STUDENT MATRICE or GROUP REFERENCE
Gopalakrishnan Girish
Master of Innovation and Strategy > Gisele Leiva de Rio
IED Istituto Europeo di Design > 2018

Creative Concepts

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT DESCRIPTION

Acoustic Décor blocks

1. Looking from particle wood's physical property, e.g. sound dampening, combing it together with aesthetic application for household and workplaces.

2. Short Description

The acquired particle wood have three different tonal varients and sizes. This property can be utilised to make creative solutions combining transparent natural glue or resin. Binding these particles together in repetitive shapes using moulds it can be mass produced for decorative and functional purposes. These blocks can be arranged in a specified pattern to create artistic decoration on walls of home and false panels of workplaces.

3. Advantage of material in this context

Material benifit:

1.Acoustic, Sound Absorbing

2.Distinct Colour & texture.

WHAT People look for:

1.Aesthetics

2.Customizability

3.Integrated Solutions

STUDENT MATRICE or GROUP REFERENCE
Gopalakrishnan Girish
Master of Innovation and Strategy > Gisele Leiva do Rio
IED Istituto Europeo di Design > 2018

CIRCULAR DESIGN CHALLENGE for LIFE M3P > PROJECT APPROACH

Acoustic Décor blocks

4. Process of manufacturing

Filling: Identifying the required type of wood particle to be filled together with clear natural resin/glue.

Casting: Cast out the respective shapes in resin/glue using desired moulds

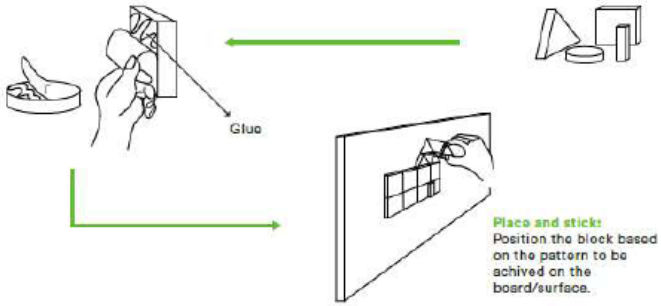
Finish : Cleaning and getting rid of the unwanted parts and dirt. Adding fixtures if necessary & painting.

Polishing : Polish the surfaces for the necessary gloss and shine and apply double side sticker.

5. Concept Details

Peel the cover: Peel the protective cover of the sticker to expose the glue area.

Selection : Select a preferod shape of acoustic block with required texture and tone.



Place and stick: Position the block based on the pattern to be achived on the board/surface.

6. Why this concept ?

1. Degree of Innovation : Exists as a solution for decoration but at exactly in this combination for a specific purpose with acoustics.

2. Feasibility : The company probably has the technical know how to execute this concept within its facilities.

3. Desirability : Eco-friendly, Bio-Degradable, Can replace Plastic & Barky of Wood, Very attractive in appearance.

4. Viability (Business) : With investments in labour and die-casting materials generates values by creating products for a new market through mass production, keeping in mind also the ethical eco-friendly aspects.

STUDENT MATRICE or GROUP REFERENCE
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IED Istituto Europeo di Design > 2018

Thank you!

More Information:

http://www.lifem3p.eu/en/

To get in the e-platform:

https://materialmatch.eu/