

Use of Recyclable Materials in the Interior Design

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Abstract

This paper is the subject of the Bachelor's Degree by Albina Dervishi under the guidance of the lecturer Dr. Otjela Lubonja. Through this study, it is intended to show what is recycling, what is its impact on nature and society. As an efficient process for the handling and reuse of materials, which promotes innovation and an important and long-term economic growth. Equally important are both social and environmental benefits because it promotes the sustainable use of our natural resources and fosters community development, saving of new land use, pollution prevention, energy conservation and reduction of greenhouse gas effects. To tell us at what stage of our recycling is our country and whether we have it or not as a culture. To explain what it means to use indoor and outdoor recyclable materials and what these materials are. The paper continues to detail how recyclable materials are selected in detail from their chemical and structural composition as these materials can be applied to the interior and exterior. In practice, it is unlikely to achieve this ideal in the near future most of the construction companies in Albania. However, a significant contribution that the society itself, but also the construction industry can do, is to link design and ecology to building buildings and buildings without harming the environment. So use the design in such a way as to make possible the reuse and recycling of the materials used. *The work* at the current stage was supported by secondary data, the study at a second stage could be extended to public policy presented as a project for its realization, in public institutions such as municipal units, city hall. *Through this paper*, UET draws the attention of the country's scientific opinion and beyond to the opportunities created for in-depth studies in the field of Architecture and Design Sciences.

Keywords: *recycling, impact, society, environment, ecological, material, composition, interior, exterior.*

Introduction

Student Albina Dervishi managed to work during this time in a company that deals with the recycling of various materials (especially wood pallets) using them in interior and exterior. This was one of the main impulses that she made this study and I as a leader of her graduation thesis. The work started with the concept of the term "recycling" based on the ending and resumption of the life cycle of a material or product. How does the recycling process affect the environment, especially in the environment of a developing country such as Albania where pollution is high because it promotes the sustainable use of our natural resources and fosters community development, saving new land use, preventing Pollution, energy conservation and reduction of greenhouse gas effects. I could not leave without including the impact it has on the economy as the recycled materials and facilities have lower costs but also create opportunities for more jobs. The use of recyclable materials in architecture would bring a lot of benefits by reducing the effect of concrete. While society values the improved living standards that the best buildings bring, it also sees that environmental impacts can have a detrimental effect on our overall quality of life. To clarify what is meant by the use of recyclable materials in the interior and exterior and what these materials are.

The paper continues to detail how recyclable materials are selected in detail from their chemical and structural composition as these materials can be applied to the interior and exterior. One of the most commonly used materials in Albania but massively larger in the exterior, is the wood pallet used for import / export of goods.

The main reason is that this material is easily recyclable and without the need for a recycling company anyone can create objects and furniture as desired and environment by creating a modern and innovative decor. The main idea of this work is that you can create and make art with any material, just have the will and the desire.

Purpose and Objectives: The main purpose of this study is to analyze and recognize more closely the recycling and use of recyclable materials in interior design as it affects the environmental life of our society. In this way, this study contributes to the awareness of society, as the first study in the field of interior design in Albania.

Presentation of the problem: Recycling and its use in interior design. We have found that recycling is in slow pace in Albania, creating problems in developing the country and creating a broad game in the field of architecture.

This study takes a deep analysis of recycling in interior design. It explores and highlights many other elements by analyzing precisely the factors that influence the selection of recyclable materials in interior design as well as improving the lifestyle of the individual and the environment.

-First, the study aims to critically evaluate and analyze recycling.

-Secondly, he intends to draw on some of the data obtained as to how recycling in the environment and in the life of each individual affects.

-Third, find out what are the recyclable materials used in the interior and where the focus is on people's tendencies and preferences. And recently, the aim is to provide valuable knowledge, conclusions, and suggestions to each individual regarding recycling and intertwining it in interior design. In this context, this study will be of interest not only to the design architects but also to the entire population, which requires more detailed information on the use of recyclable materials in everyday life and mainly in home furnishings or space their free.

ORGANIZATION OF THE STUDY

The entrance, which is the prelude to the study. Here are the reasons for selecting the topic "Using recyclable materials in interior design. Purpose and objectives of the study, research questions and hypotheses raised in this paper.

Literature: taken into consideration, setting out the main points on the concept of recycling, foreign literature and various objects.

The recycling process (history) The recycling process in Albania is being developed and whether or not culture is in our country, it also poses some points to why it is in the interest of society.

Methodology: It examines in detail what are the recyclable materials, how the recycling process of these materials is used in the building industry used in the interior and exterior, coupled with examples and a work in the interior, also included a case study .

Conclusions and Recommendations: In this chapter we have attempted to carry out a qualitative and quantitative empirical analysis by conducting a questionnaire dealing with the analysis and interpretation of data, the statistical techniques used in the study.

RESEARCH QUESTIONS AND HYPOTHESIS

Main research question:

How Does Recycled Materials Affect in Interior Design?

RESEARCH QUESTIONS:

What is recycling and how does it affect the environment?

What are recyclable materials?

What recycled materials can we use in the interior?

Can we use recycled materials in the exterior?

HYPOTHESES

Hypothesis 1: The recycling term is quite popular in Albania and its impact on the environment is great.

Hypothesis 2: The most recyclable material in Albania is wood. Hypothesis 3: The most rare material in recycling is glass.

Hypothesis 4: Recyclable materials in Albania prefer to use more in exterior than in interiors.

REVIEW OF LITERATURE

Recycling as Concept.

Recycling is a series of activities that include: collection, separation and waste return process as raw material in the process of producing useful products, saving energy.

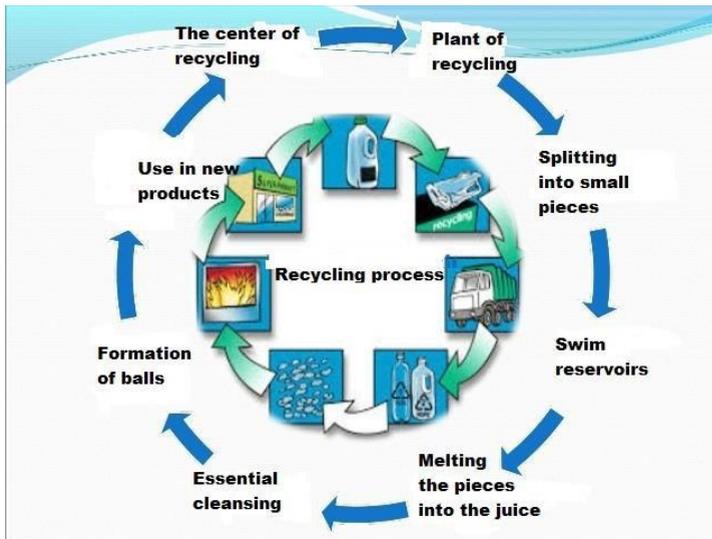


Figure 1.1. Recycling process

Source (Guri. M. 2008)

Recycling means that procedure, with the help of which old materials and waste are prepared so that they can be used in a new material (recyclable) or in combustible energy-efficient combustion devices. So recycling is the process of refining the waste into a new product and without changing the chemical structure of the material. But recycling is not a new concept. Recycling practice has been used for thousands of years. However, it has been largely affected by the supply and demand as it is today.

For example, archaeological evidence shows that mosques from Byzantine imperial times were recycled in the ancient town of Sagalassos, located in Turkey today. There is also evidence that the early Romans recycled bronze coins and used them to build statues that were sold at an even higher monetary value than the original coins. In difficult times (for example, in war time), metals from everything, like jewelery and coins, melted into weapons or other necessary goods. Archaeologists concluded from the remnants of recycling history - that recycling was a practice used during difficult times.

IS RECYCLING NEEDED?

The dominant reason for the reuse or recycling of materials and goods is to reduce the impact of our society on the environment - the world we live in (Berge, 2001). Construction industry activities, in response to the company's demand for a better standard of living (new housing construction and renovation of old ones), have been seen to have a major impact on the environment.

THIS IMPACT CAN BE MANIFESTED IN MANY WAYS

In the exhaustion of non-renewable natural resources - of minerals and fossil fuels

In air pollution from production processes and road transport

In degradation of the natural landscape - quarries, loss of forest surfaces, landfill sites.

While society values the improved living standards that the best buildings bring, it also sees that environmental impacts can have a detrimental effect on our overall quality of life. In recent years, this conflict has led to increased pressure from many directions, both inside and outside the construction industry, to increase the reuse and recycling of goods and materials.

Four Reasons Why Recycling Is Necessary:

Recycling saves energy. Recycling saves energy, as the manufacturer does not need to take and consume the first natural resource to create a product. Using recycled production materials contributes to reducing energy consumption, which lowers the cost of production.

Recycling protects natural resources as well as wildlife. By recycling, we reduce the need for raw material, which deals with destroying the natural habitat of animals, especially wild ones. Moreover, paper recycling protects millions of trees from destruction.

Recycling is a positive factor for the economy. Recycling and buying recycled products also leads to increased demand for such products. During their production, products made up of recycled materials need less water, create less pollution and consume less energy. How and saves taxes.

Recycling helps in climate issues. Recycling produces a very low level of carbon, a fact that significantly reduces the level of gas emissions that create the effect of the greenhouse, not at all healthy for us and our planet.

RECYCLING AND COMMUNITY

The impact society plays in raising awareness and improving the environment is enormous. Which means that the more informed about the recycling and the benefits it offers, the more they are willing to recycle. Many people consider recycling to be something that we all need to do. It's good for the environment, reuse materials instead of creating new ones, reducing storage, and the list goes on. But a great benefit that people often underestimate is the impact of recycling programs that they may have in a community.

Strong programs of recycling can contribute to a healthy, united community. Some of the many benefits of recycling are the prevention of greenhouse gases and supporting local economies by creating jobs and tax revenues. Recycling programs can also help improve the quality of water, air and building sustainable blocks for Growing communities. The main reason is that recycling programs encourage people to recycle. The easier it is for community members to recycle, the more likely they are to commit to recycling.

Therefore, if a community invests in a solid and reliable recycling infrastructure, more material can be recycled instead of being burned or going to landfills that have adverse environmental impacts. While waste disposal simply points to their transfer to storage, recycling gives new life to these materials, thus creating opportunities for new jobs. The more a recyclable material has been used before, the greater the number of jobs that can be created. These jobs also include some industries and include a variety of skills, such as commodity marketing, material separation, handmade furniture etc.

METHODOLOGY

To accomplish this paper, this working methodology was used: *Primary research* - which is based on data and field information. The source of this information is the closer observation of the implementation of recycled materials in the interior, based on information obtained from real data. *Secondary research* - which is used to study theoretical concepts of the construction industry regarding recycling and its involvement in interior design. Numerous study articles have been used for this purpose.

ANALYSIS, DATA INTERPRETATION- ALBANIA IN RECYCLING PROCESS

Albania's economic and social development over the last decade has recognized and increased the recycling industry. Today, there are counted over 30 companies of considerable size mainly concentrated in the Korça - Elbasan - Tirana - Durrës axis, but also other regions such as Berat, Shkodra, Gjirokastra, Fieri or Dibra have been reclaiming the recycling process. These companies are associated with large collection centers which are their primary suppliers.

Municipal waste generated in Albania is not formally separated into recyclable components, although efforts are being made. This situation has brought about a system organization with at least four links (albeit not all formalized) in the recycling industry chain which includes several sectors such as: ferrous metals (aluminum, copper, bronze, zinc, lead), metals Ferrous

(iron, stainless steel), plastics (polyethylene, polypropylene, PET), paper and batteries, electrical and electronic equipment (re-use only), glass (reuse only). The most developed sector is that of metal recycling, but other sectors have also developed in recent years (although glass recycling still lags behind). In Albania, about 386,728,650 kg of waste is generated per year, which means that on average each person generates 126 kg mixed waste a year. The composition of municipal solid waste in Albania is: 5.66% metals, 8.97% paper, plastic 10.72%, glass 4.55, organic 51% and the rest of other waste. There is a growing tendency to generate waste and, consequently, recyclable materials. The simplified linkage scheme in the recycling industry is composed of: recycling or exporting companies, large collection centers of recyclable materials, small collection points and individual, mostly individual collectors.

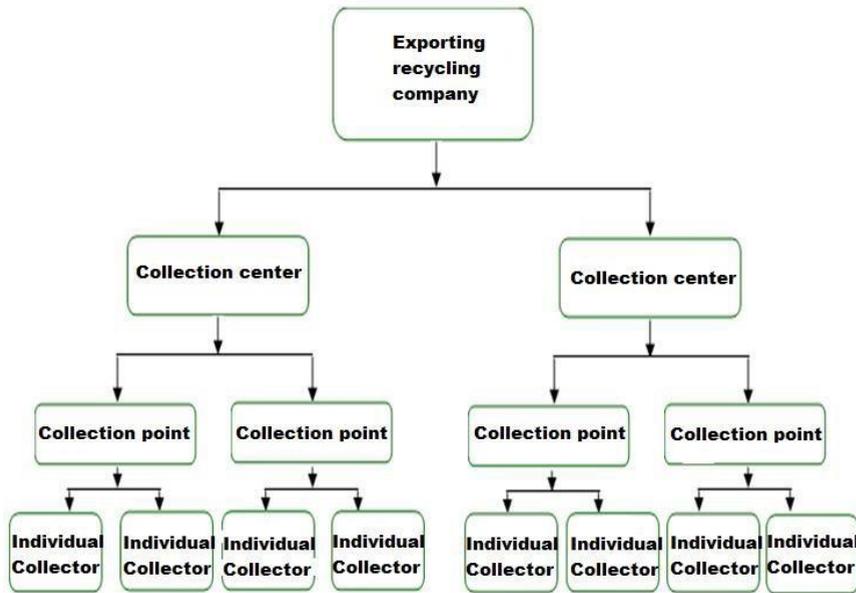


Figure 2.1 Simplified linkage scheme in the recycling industry

Source (Guri. M. 2008)

Large collection centers of recyclable materials (about 5,000 m2) are large private companies distributed throughout the territory of Albania that collect and trade these materials depending on the best price either to the recycling companies or to the exporting companies. They also have their own basic tools and equipment needed for loading, unloading, cutting or transporting recyclable materials. Almost all these large centers also have their collection points ranging from one to several points for a center.

The collection points (or scrap yards) typically about 500 m2 each, are mostly family businesses that serve as a link between individual collectors and large collection centers coordinating their activity. Each collection point also has a dedicated number of individual collectors who supply it regularly, although they are not always sustainable because they tend to leave and sell their materials to the point that also offers the highest prize.

3.1. A IS RECYCLING CULTURE IN OUR COUNTRY?

Waste management in Albania is at a very low level. Solid waste collection systems have been provided only by cities, but not by rural areas. Very little recycling is practiced. Most of the waste is disposed of on site. There are no collection systems in rural areas and small towns. Much of the waste in these areas is deposited on rivers or roadways

that are transported by the waters and thus relocated to another part of the land and finally to the watercourses. Today's waste management system is controlled by local government. Waste collection and removal systems are inefficient and ineffective. Decisions for their collection and removal can not be made in the absence of reliable information. There is no genuine tradition of treating and removing waste. Financial and technical resources are very scarce. The society lacks information regarding the risk that is caused by waste management. Environmental specialists explain that the biggest problem in waste management in Albania is not lack of laws but lack of planning of institutional, technical, human capacity, financial resources, infrastructure investments, lack of economic tools used for Waste management, poor communication between local and central government on waste issues, lack of networks to collect and process them. There is a fee type for waste known as the "Cleaning Fee" set by local government units under the Local Tax Law. These taxes are different for municipalities in different countries and only concern the cleaning of the city, collection, transportation and removal of urban waste from the respective holes.

3.2. RECYCLING IN THE INTEREST OF SOCIETY.

It is a fact that many natural resources and our Earth are not renewable and this is one of the main reasons why recycling is an important process in our lives. As an efficient process for the handling and reuse of materials, it promotes innovation and an important and long-term economic growth. Equally important are both social and environmental benefits because it promotes the sustainable use of our natural resources and encourages community development, saving of new land use, pollution prevention, energy conservation and reducing greenhouse gas effects. Approximately 60% of our waste can be recycled today but there are still many people who do not know, eg., That the plastic bottles of water that we drink are made from oil. This is the same diesel used to produce benzene, it is the same diesel for which there is great demand and is not an unlimited source. But it is the same fuel that, when burned, causes the emission of greenhouse gases.

Today, most commonly recycled products are paper, cardboard, plastics, glass and aluminum products. Recycling can be done at home as well as in conjunction with local government programs, associations and business. Many businesses pay for iron scraps or beverage cans we use every day, thus increasing the cost of their products. Aluminum recycling saves 95% of the energy it needs to produce from raw materials. The energy saved from recycling an aluminum ton is equal to the amount of electricity that a household uses for almost 10 years. Recycling an aluminum cans saves energy by using a 100 watt bulb for 20 hours, a computer

for 3 hours, or A TV set for 2 hours. Put another way, recycling 20 cans requires the energy of producing a new can. So one in twenty (EPA-Environment Protection Agency, 2008). By recycling a plastic bottle, it not only saves 100-1000 years on landfill storage but also saves greenhouse gas emissions from the production of new bottles and the oil to be used in the environment Produce these bottles. A ton of plastic materials to be recycled are equal to the amount of energy used by two people for a full year, the amount of water used by one person over two months and the saving of oil. 26 PET bottles, if recycled, are equal to the production of a polyester suede. 5 PET bottles are enough to produce a synthetic sweatshirt.

RECYCLED MATERIALS.

The materials range from their recycle properties, such as paper, glass, plastic, metal pieces and waste tires. The most recyclable are the metal remnants in a relatively clean form, so the metals are melted and reused in other useful components. Among the least recyclable materials are mixed polymers or ingredients that can not be separated. The chemistry of some of the polymers is such that once formed of monomers can not be dissolved and re-formed in another useful form. We divide these materials into three categories:

The first category of recycled materials consists of elements that are not retail but used in different forms hinder recycling. Wood is a typical example. At least those pieces of wood that are used in buildings that are then damaged can and should be recycled. The best example of this class is the letter. Paper fibers can be recycled over five times and are of such a nature that facilitates recycling. More than a third of the world's paper product is recycled and this fraction will increase over 50% in the coming decades. The main cause of paper recycling is not the need for wood to produce virgin paper but the growing need for waste paper storage. Factors that complicate paper recycling include adhesives, paints, caps, grease and other impurities as well as tendons that have recycled paper fibers to become more stretched, less solid and drier than new- Produced from trees.

The second category of recyclable materials consists of those elements, mainly metals, whose world stocks are low. Chromium, platinum and the whole group of precious metals are examples of these elements. By giving maximum

recycling opportunities, especially through high-priced mechanisms, it appears that natural resources of these metals will not be exhausted thanks to recycling in the near future.

The third category of materials to be considered in recycling consists of parts and appliances such as parts of the machinery discussed above (the category of metals). In many cases these parts are repaired and reused even if this is not possible, deposits for these products serve as a recycling supply point.

10. RECYCLING OF PLASTICS

Since World War II, plastics have become a major problem in urban waste. Much of the plastics do not biodegrade well or at all and their contribution to solid waste is great in the areas of garbage collection even after biodegradation of other wastes. Due to the variety of composition, impurities, constituent pigments and other factors, recycling plastics in solid urban waste is a promising goal. Post-consumer recycling technology has been developing faster than recycling technology for other half-century materials. However, only the last five years of the last decade, high-density polyethylene (HDPE) and polyethylene terephthalate (PET) post-consumer products are considered recyclable. These two products, especially the HDPE bottles of milk bottles and clean PET, now in the market occupy an important place. The plastic market is less developed between recycling markets due to late recycling capabilities. However, many plastics are coated, rolled, bundled or chopped and later sold to converters. Plastics are divided into two classes, which greatly influences their recycling.

Thermoplastics are the ones that become fluid when heated and harden when cooled. While they can be heated, melted and reshaped many times, thermoplastics are highly recyclable. Recycled thermoplastics include:

Polyalkenes (polyethylene and low and high density polypropylenes), Polyvinylchlorides (PVC), used in large quantities to produce plastic tubes, household products and other resistant materials. Polyethylene, polystyrene and terephthalate. Plastic packaging mainly is made of thermoplastic and potentially recyclable. Fortunately from the point of view of recycling, thermoplastics make up the largest amount of used plastics.

Thermo-resistant plastics are plastics, which are formed by the bonds between polymeric units when heated. These bonds form the edges of plastics that do not soften when heated. Although thermoresistant plastics can not be recycled they can be burned to obtain heat from them. An important class of thermosensitive plastics are epoxy resins that are characterized by an oxygen atom located between two neighboring carbon atoms (1,2-epoxide or oxirane). Epoxides are widely used in mixed materials combined with glass fiber or graphite. Other thermosensitive plastic materials include phenolic crosslinked polymers, some types of polyesters and silicones. Plastic contaminants should be considered, for example, the color used to paint plastic objects is a typical pollutant, different types of dressings of different types may be behaving as pollutants. Materials of this type can weaken the recycle properties of the material or become gas when plastics heat up for recycling.

SKIN

A recyclable material is also the skin. Synthetic polymers that are already manufactured produce large amounts of leather and rubber stored in different locations. Synthetic rubber and synthetic leather is a hydrocarbon polymer that can also contain other materials such as black filler carbon. Some types of skins can be buried / recycled. A major complication in burning and recycling of leather and tires is the presence of iron rings in many radial tires. Iron present hampers shredding equipment and conveyor mechanisms both in recycling and combustion processes.

CARDS

Corrected letters and manufactured papers are purchased and sold between a network of local processors and commissioners and put these materials on sale and export to paper factories. Factories also buy materials directly from collectors. As improved (regenerated) paper are classified:

newspaper papers, corrugated cardboard,

mixed papers (newspapers, jars and boxes of cards), high level of whitening (white paper of offices), and dough substitute (usually thick cardboard).

Paper mill manufacturers, the majority of improved paper users, use raw materials to produce recycled paper and paper products, such as newsprint, cardboard shreds, average paperboard, letterheads money. Shredded paper can be used to make animal layers, hydro-products, the late-produced paste of dough, as well as cellulose insulators or protectors.

GLASS

Recycled glass markets provide little pollution. The recycling program organizers should aim at the high quality of recycled glass. Alternative glass markets include glass-asphalt, glass art, sand and post-industry melting, window glass, and glass coatings (protection). Improved glass markets are centered and insist on brown glass and clear packaging.

METALS

Iron or non-ferrous metals can be prepared for sale through some combination of treatments by laminating, bunding, and shredding. Through a well-laid, well-grounded treatment and recycling network, recycled metals are used for household uses and exported over the last century. Iron residues include those of cars, household appliances, various equipment and appliances, bridges, and other iron and steel products. Non-ferrous waste includes aluminum, copper, lead, cans, and precious metals. Iron, iron and non-ferrous metals can be prepared for sale on the market by combining the processes by rolling, bending and shredding. In some cases, handlers melt iron in molds or lingo before selling it to the final market.

TIRES AND CARS

Car tires represent a new challenge to solid waste and recycling program management. In the past, most of the tires were retraced, but with the occurrence of the radiant steel belt and the newest cheaper tires, there are fewer tires today. The use of broken tires or parts of them as a source of fuel is growing. Energy regeneration enterprises, paper and cellulose factories, and cement kilns are the most common users of these auto tire waste.

Recycling in Interior

When materials are recycled their new life begins as a raw material for a production process and the main concern is to know the ingredients or the chemical composition of the material. For this reason, an essential requirement for recycling is that the materials should be clean, durable and as unpolluted as possible, for example a crushed masonry that does not contain any wood or plastic composition. With the exception of the crushed aggregate used to make concrete that the recycling of materials is not done at the construction site. Wood, plastics and metals are all recyclable, in specialized or industrial factories, outside the construction industry. In the case of recycled materials there should be no link between first and second use. Wooden window frames can be recycled and used to make kitchen cabinets; Plastic bottles can be recycled to make plastic drainage pipes and car tires can be used to make acoustic insulation. Reclaimed materials from a destroyed building or construction waste can be recycled and used outside the construction industry, and recycled materials used in construction products may have been reclaimed from outside the construction industry. Circumstances in which recycling can be a practical proposition vary from material to material and product to product (Rayner, 2002). Many large producers recycle post-industrial waste as a normal part of their process and have been doing since the start of production. For example, the waste materials generated have been used in the manufacture of plasterboard wall used in the interior And that can be recycled at the plant. It's a different kind of recycling process when plasterboard surpluses are back from the factory building site and re-enter the production process. This can be done depends on how clean and unpolluted the material is.

WOOD

Wood is used in a wide variety of building components and building elements, the material is used in various shapes that differ from structural wood that can be hundreds of years old, of modern products such as chipboard and fibreboard, which Are made from small wood particles tied to a resin adhesive.

The function of wood products is widespread, from substantial beams and roofs to create elements such as rails. Large quantities of wood used in building construction and the ease with which it can be evaluated makes it a good candidate for reuse and recycling.

As wood, the use of wood to mold concrete accounts for a substantial part of all wood cut board products (such as plywood) used in building construction. Opportunities for reuse wood in construction vary greatly depending on the type of wood product and its intended use. Softwood is very prone to be damaged during the deconstructive or demolition process.

However, reclaimed timber has many opportunities for reuse and recycling, depending on its shape: it is sold on the basis of the length or volume for reuse as a structural or non-structural timber; reuse to make casting and shuttering in

the construction of concrete; recycling for use in furniture or kitchen production; recycling like wooden ballast and used as an enhancer.



Figure 3.1. Kitchen with recycled wood **Figure 3.2** Recycled work desk with recycled pallets

Source:

https://www.google.al/search?q=interior+recycling&source=Inms&tbn=isch&sa=X&ved=0ahUKEwiv8Kiu9t3UAhVHuBQKHbNTBEsQ_AUICigB&biw=1024&bih=638

RECYCLED WORK DESK WITH RECYCLED PALLETS

Old wood can often be of higher quality than modern wood with few defects, seasoned and available in size, length and composition that today can be difficult to produce from sustainable sources (Ross, 2002 Yeomans, 2003).



Figure 3.3. Bedroom with Recycled Pallets.

The newest interior trend is now the use of recycled pallets.

Metals

All metals require a lot of energy to extract them for minerals and their production in facilities. This results in higher prices compared to non-metallic materials used in building construction. Metals are often easy to separate from each other and from other materials. Some metals are easy to separate from mixed wastes - iron and steel can be separated by electromagnetics as well as aluminum and copper can be separated using other electromagnetic processes.



Figure 3.4. Coffee table made from metal parts of an outdated tractor

Source: https://www.google.al/search?q=interior+recycling&source=lnms&tbn=isch&sa=X&ved=0ahUKewiv8Kiu9t3UAhVHuBQKHbNTBEsQ_AUICigB&biw=1024&bih=638

Finally, metals can often be separated from each other and other materials using a fluidized bed that isolates the materials by density. Finally, metals are easy to recycle simply by melting in metal furnaces. For these reasons only a small amount (but still important) of metal finds its way to the warehouses; Metals that are highly related to other low-value materials that make non-economic separation, for example some composite panel products and lightweight devices.



Figure 3.5. The coffee with metal flooring

In the re-melting process, metal properties have been fully restored, though not always easily, regardless of their physical or chemical form. The final product, thus the metal obtained, is effectively new and this means that the metals can be recycled indefinitely. Metals are divided into two categories: ferrous and non-ferrous metals.

Ferrous Metals (Colored)

Ferrous metals include hundreds of different iron bonds, including wrought iron, cast iron, soft steel, stainless steel, erosion steel, high-elastic steel, and so on. Different bonds include at least 80 percent iron with up to about 5 percent carbon. The remaining percentage consists of other elements such as copper, chrome, manganese and many more.



Figure 3.6. Recycled steel bar

Generally steel has high value reuse or recycling. One reason is that structural steel is divided into standard parts. This means it is likely to be used for second-hand use. Also, steel sections are very versatile and structural beams from buildings and can be reused in projects of various interiors and exteriors. There are widespread environmental benefits in reusing steel beams and columns as energy is stored twice - initially the energy that will be needed to remelt steel in an oven, and secondly, energy stored without having the components made of new steel.

Non-ferrous metals (colorless)

Copper, brass, aluminum, zinc, tin and lead tend to have a higher value than ferrous metals and thus have a great potential for recycling. However, a similar story applies to the use of non-ferrous recycled metals, as applied to steel - relatively little metal is cast as waste and the demand for new metals exceeds the supply of used metals. There is still a requirement for virgin metal even if it is mixed with recycled metal.

Mosque

There are three general types of luster that can be a source for reuse and recycling of glass - from windows to a single sheet of glass and glass panels made of toughened or laminated glass from facade or dressing systems. In addition to the risk of damage, the most difficult obstacle to overcome is the demand for increased thermal and acoustic insulation in building construction. This means that the only 4-6mm glass sheets are no longer likely to meet the thermal performance requirements. Dual-glass units can be disintegrated, cleaned up, united, allowing proper insulation, if necessary.



Figure 3.7. Office with recycled glass

Source: https://www.google.al/search?q=interior+recycling&source=Inms&tbm=isch&sa=X&ved=0ahUKEwiv8Kiu9t3UAhVHuBQKHbNTBEsQ_AUICigB&biw=1024&bih=638

An important obstacle to the reuse of glass sheets is the potential for accidents during its removal. Often the amount of glass that is shifted to reuse or recycle proves to be insufficient to justify the cost of a split product and this

rarely proves to be cost-effective to recycle glass waste. This may change when buildings that have followed the recent fashion for large glass facades require replacing or recycling their façades when they are damaged.



Figure 3.8. Recycled glass sink.

Glass is one of the easiest materials to recycle though its rewriting is a process that requires intense energy. Also, there are many different uses for recycled glass. Today most of the recycled glass is crushed and used in the production of new glass containers or for fiberglass insulation. Very few such products are used in the construction industry.

Plastic



Figure 3.9. Furniture made of recycled plastic

The industry of construction is a large user of plastics, accounting for about a quarter of the annual consumption and second only to the packaging industry. Although some plastics can not be recycled (because of their chemical composition), many can and the plastics industry is already along the way to having a developed recycling sector.



Figure 3.10. Chairs made entirely of recycled plastic.

Many products are available for use in the industry of construction that are made entirely or mainly of recyclable plastic. Among this wide range of recycled plastics products currently available are: geotextile and land maintenance products; insulation materials; window frames; roof covering materials; various types of pipes and ducts; panel products for making cupboards and cupboards; carpets, tiles and other floor coverings; street, park, outdoor furniture and accessories made of plastic lumber; Synthetic surfaces for sports grounds and sports fields; acoustic screens and barriers made from recycled rubber tires.

Regarding the use of recycled materials in the interior Albina has presented her first work in this field as follows.



Figure 3.11. Programming office with recycled pallet Source: (Author)

This project consisted on recycling of pallets, which means: demolition, grinding, building them in different objects and painting depending on the requirements (here also included their painting). In this project we have built an office desk for six people, a small corner table, an angle, a closet, a lampshade with flower pots and palettes, we used the pallets as a separating wall in the office environment and placed it on the wall constructed in various forms) for decor.

Recycling in the exterior

Outdoor furniture is needed to be safe, time resistant and durable. The outer landscape of a building is often open to public use and thus the materials must be as durable as standard installations. Some recyclable outdoor cast iron furniture are available painted with graphite for low maintenance cases.



Figure 3.12. Exterior furniture constructed with recycled pallets.

Safety is also an important issue that equipment and furniture can not be stolen and transported. Reusing a component is appropriate depending on the condition of the object. Most components will require visual, structural, and safety testing to determine the work required before installation. A full specification is needed to ensure that appropriate work is done and the complications that may arise with the costs. The component will be required to be safe, low maintenance, and resistant to climate change. Roads and parking areas around the buildings offer the opportunity to use recyclable materials. Their sub-base can be made using crushed walls recycled from ruins. Coated surfaces can be made using mixed concrete with recyclable aggregates, concrete blocks made with recycled aggregates, or recycled asphalt with crushed glass filling. Asphalt is available to contain a small proportion of recycled asphalt (10-15 percent), which will reduce the demand for virgin oil aggregates used to make asphalt. Recycled car tires can be included as a cord in order to increase the content of recycled material up to 30 percent or more. Children's play areas and artificial surfaces for various sports can be made from products that include recyclable gums that are usually taken from car tires and wooden pallets.



Figure 3.13. Recycled and used dummy car tires.



Figure 3.14 Car tires used as vases.

A large number of recycled products for outdoor use are available with recyclable polymer materials. These are often called "plastic materials" and are available in a variety of colors.



Figure 3.15. Exterior with recycled pallets

Source; https://www.google.al/search?biw=1024&bih=638&tbm=isch&sa=1&q=exterior+recycling+home+decor&oq=exterior+recycling+home+decor&gs_l=img.3...5345.7510.0.7848.0.0.0.0.0.0.0.0...0...1.1.64.img..0.0.0.UB3B5C8C1D0

Examples include hedge fencing, barriers, armchairs, picnic tables, playground equipment, playgrounds and sports grounds and decorations.

Some typical examples are:

Synthetic surfaces made up of used tires (85-95 percent of the tire after consumption) which are available for outdoor and sports areas, for tennis, hockey, soccer and so on, as well as for children's playgrounds.

A wide variety of garden furniture such as fences and doors, decoration and decorative features used in garden settings can be made with 90-100 percent recyclable polymer materials. This plastic or plastic wood material is very durable, Available in many colors and does not require maintenance. Producers often point to the economic benefits of woody plastic products compared to natural wood or alternative metals. Its strength and hardness

varies according to the type of polymer used. Density and strength can be increased by including up to 50 percent of post-industrial wood fibers with recycled polymer. An even stronger material is obtained by mixing 20 percent of recycled polymer glass fiber to create a reinforced plastic fiber.

Recycled polymer products, made from old carpets for example, can be used for various applications in car parks, such as wheel, traffic and pedestrian barriers. They have advantages over concrete because the cars are not damaged by small blows.

Case study by Bill Addis.

(Building C.K Choi, University of British Columbia, Canada)



Figure 3.16. Externally reclaimed bricks, C.K Choi Building

During the short preparation of the project for the building C.K. Choi at the home of the Asian Research Institute, the University of British Columbia decided it should be a green building demonstration that would set new standards for sustainable design, construction and operation. Building materials were one of the seven green design categories and the targets were determined that 50 percent of building materials should be reclaimed or recycled and that 50 percent of the materials should be recyclable.

It was accomplished soon enough to accomplish this objective it would be important to include a considerable amount of reusable material on a large structural and surface level of the building. Architects established a connection network with local demolition contractors and buildings visiting and planning looking for potentially useful materials. Once the materials are available, then research is needed to determine their suitability and acceptability within existing building codes, material testing, long-term sustainability, and technical

aspects detailed with older or alternative products. The design process is necessary to be flexible to accommodate materials to be reused as in the previous building. Actual sizes, quantities, and orientation are often not known until materials are taken. Therefore, the design process is prone to resemble the process of renovating a building. For each element used in construction as reuse / recycling, there was evidence to test their durability. The reasons why some options are excluded for Choi's construction (but may be applicable to other projects) include:

Inadmissible by the university building department, for example crushed glass for filling, carpet made of recycled polyethylene terephthalate (PET);

Unknown to the local construction industry, for example the use of crushed concrete as filling;

Lack of information about recyclable materials, such as aluminum window frames;

The product is not approved by the contractor's association, therefore it is not acceptable for the construction of the university department, for example roof insulation using recyclable plastics

Inadmissible performance, for example wind from carpet carpet; New materials used in preference to reclaim and provide warranty.

CHAPTER IV (EMPIRICAL DATA ANALYSIS)

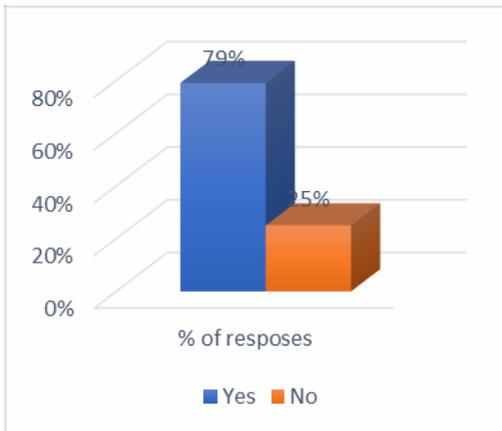
Questionnaire

Have you ever encountered the term "Recycle"?

	Yes	No
% of responses	75%	25%

Table 1 % of responses to the term "Recycling"

Graph:



Graph 1. % of responses to the term "Recycle"

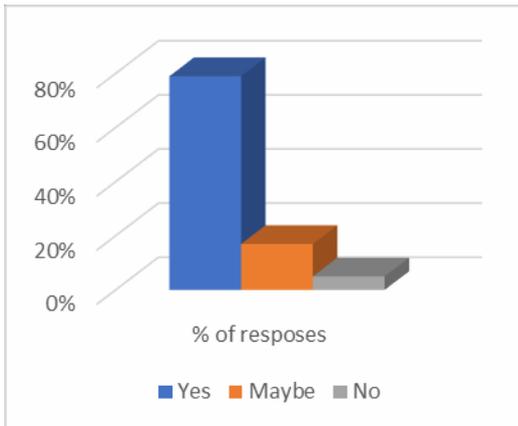
Conclusions: According to the graph above, about 75% are familiar with the recycling term and its function, while 25% have not previously heard this term or what function it has.

Do you think recycling affects the environment?

	Yes	Maybe	No
% of responses	79%	16%	5%

Table 2. % of responses to the impact of recycling in the environment

Graph:



Graph 2. % of responses to the impact of recycling on the environment.

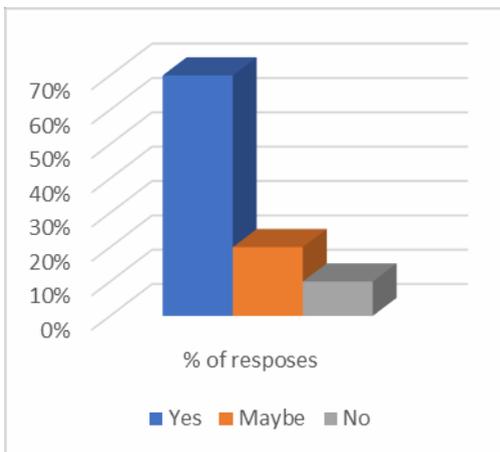
Conclusions: Based on statistics, 79% confirm that the impact of recycling on the environment is very important, 16% think that the impact is minimal and 5% that recycling does not cause any kind of impact on the environment.

Do you know what are recyclable materials?

	Yes	Maybe	No
% of responses	70%	20%	10%

Table 3. % of material-related responses

Graph:



Graph 3. % of responses to material recognition

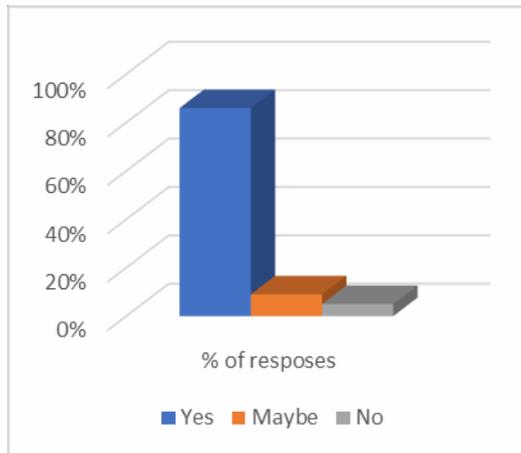
Conclusions: As can be distinguished from the above study, 70% are aware of the materials that can be recycled, 20% confirmed they knew very little of such material, while 10% had no information.

Do you think that Albania, as a developing country, should use recyclable materials in the interior and exterior?

	Yes	Maybe	No
% of responses	86%	9%	5%

Table 4. Table of % response to the use of interior and exterior materials

Graph :



Graph 4. % of responses to the use of interior and exterior materials.

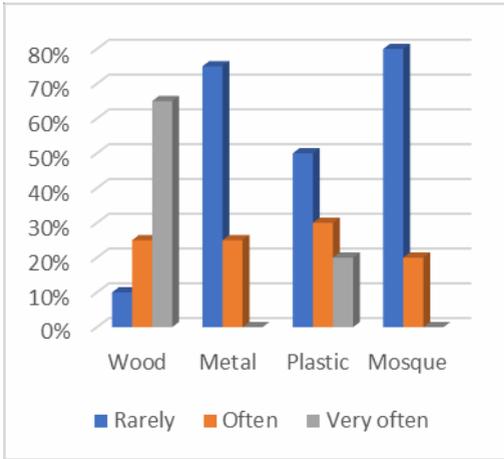
Conclusions: As can be distinguished from the study above, 86% think that Albania should use recyclable materials in architecture, then we have 9% who think it is difficult to realize but not impossible. Lastly, 5% Are against the use of these materials.

What recycled material is most often used in wood, metal, plastics or glass?

	Rarely	Often	More often
Wood	10%	25%	65%
Metal	75%	25%	0%
Plastic	50%	30%	20%
Mosque	80%	20%	0%

Table 5. % of the answers for most used materials

Graph:



Graph 5. % of responses for most used materials

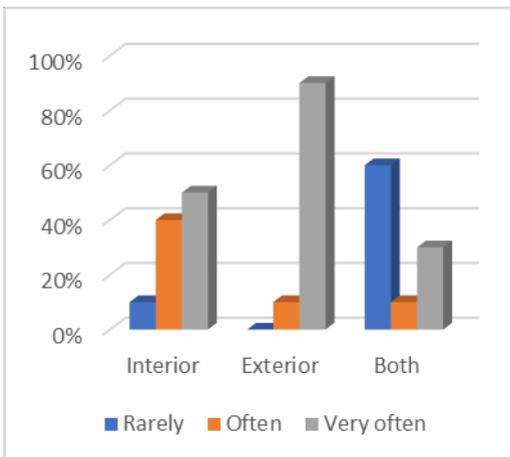
Conclusions: According to the statistics obtained from this interview, the most used materials are wood with 65% and plastics with 20%. This is because of the ease that these materials offer during the recycling process. While 75% metal is very rare in its use in interior or exterior, with glass which has 80% of use very rarely.

Is the use of recycled materials preferable to interior or exterior?

	Rarely	Often	More often
Interior	10%	40%	50%
Exterior	0%	10%	90%
Both of them	60%	10%	30%

Table 6. % of responses to where the use of recyclable materials is preferred

Graph:



Graph 6. % of responses to where the use of recycled materials is most preferred

Conclusions: As it seems, the Albanian population is still preferring the use of recyclable materials. Based on static statistics, 90% prefer the exterior of recyclable materials without leaving the interior with 50%, it is also worth noting that a 30% share of the population preferred to use recyclable materials both in the interior and exterior.

Questionnaires:

Number of respondents: 100 persons, who were of different professions. Number of women 58 and men 42. Their average age of 37 years.

CONCLUSIONS AND RECOMMENDATIONS

The recycling policy has been used for thousands of years and continues to be used today, has been largely affected by the supply and demand as it is today.

It is evident that recycling as a process has an impact on the environment. This impact can be manifested in many ways: the exhaustion of non-renewable natural resources - of fossil minerals and fuels: in air pollution from production processes and road transport: degradation of the natural landscape - quarries, loss of forest areas, Landfill sites.

Recycling saves energy. Recycling saves energy, as the manufacturer does not need to take and consume the first natural resource to create a product. Using recycled production materials contributes to reducing energy consumption, which lowers the cost of production.

Recycling protects natural resources as well as wildlife. By recycling, we reduce the need for raw material, which deals with destroying the natural habitat of animals, especially wild ones. Moreover, paper recycling protects millions of trees from destruction.

Recycling is a positive factor for the economy. Recycling and buying recycled products also leads to increased demand for such products. During their production, products made up of recycled materials need less water, create less pollution and consume less energy. How and Saves Taxes.

Recycling helps in climate issues. Recycling produces a very low level of carbon, a fact that significantly reduces the level of gas emissions that create the effect of the greenhouse, not at all healthy for us and our planet.

Albania's economic and social development over the last decade has recognized and increased the recycling industry. Today, there are counted over 30 companies of considerable size mainly concentrated in the Korça - Elbasan - Tirana - Durrës axis, but also other regions such as Berat, Shkodra, Gjirokastra, Fieri or Dibra have been reclaiming the recycling process.

Materials should be clean, durable and as unpolluted as possible. Wood, plastics and metals are all recyclable, in specialized or industrial factories.

From the completed questionnaires, we conclude that around 75% are familiar with the recycling term and its function, while 25% have not previously heard this term or what function it has.

As can be distinguished from the study above, 86% think that Albania should use recyclable materials in architecture, then we have 9% who think it is difficult to realize but not impossible. Recently, 5% Are against the use of these materials.

The most used materials are wood with 65% and plastics with 20%. This is because of the ease that these materials offer during the recycling process. While 75% metal is very rare in its use in interior or exterior, along with the glass which has 80% of the use very rarely.

Albanian population is still preferring the use of recyclable materials. According to static statistics, 90% prefer outdoor materials with recyclable material without leaving the interior with 50%, a share of 30% of the population prefer to use recyclable materials both in the interior and exterior.

Reclaimed materials from a demolished building or from construction waste can be recycled and used outside the construction industry, and recyclable materials used in construction products may have been reclaimed from outside the construction industry.

RECOMMENDATIONS

It is recommended to be possible to improve the programs of external facade objects that should be seriously invested by the Albanian state, enabling the assessment of relations and possible correlations to external architectural changes to improve appearances of existing buildings and the economic effect of these changes.

It is recommended to design a program around facades of different objects, to enable the creation of a more advanced technological environment for human needs.

In the Albanian reality, it has become necessary to restore some of the exterior façades of different buildings, the need to expand the restoration work and the restoration profession.

In the present historical conditions, when Albania hosts more than ever foreign visitors or tourists, it is necessary to care for the preservation of buildings, mainly of their external façades, the good administration and restoration of the monuments of our cultural heritage.

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