



NEW PERSPECTIVE FOR INTERIOR DESIGN: USING RECYCLED MATERIALS FOR ENVIRONMENTALLY FRIENDLY FURNITURE DESIGNS

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ABSTRACT

DUE TO THE IMPACT OF INDUSTRIALIZATION AND URBANIZATION IN THE GLOBALIZING WORLD, RESOURCES ARE USED UNCONSCIOUSLY AND HIGH RATES OF WASTE ARE GENERATED AS A RESULT OF HUMAN CONSUMPTION. AN INCREASING AMOUNT OF WASTE PROBLEM AFFECTS SOCIETY, FAMILY AND THE INDIVIDUAL. RECYCLING AND RE-USE OF PREVIOUSLY USED MATERIALS HAS AN IMPORTANT SET IN TODAY'S WORLD. IT IS KNOWN THAT FURNITURE COMPANIES ARE REACHING FOR SUSTAINABILITY GOALS BY USING RECYCLED MATERIALS AND MAKING THEIR PRODUCTS MORE RECYCLABLE. THIS STUDY TRIES TO DRAW ATTENTION ON WASTE TYPES, WASTE MANAGEMENT AND RECYCLING, IN THE SAME TIME AIMS TO EMPHASIZE THE IMPORTANCE OF RE-USE CONCEPT IN THE CONTEXT OF FURNITURE DESIGN. THE CONCEPT OF RE-USE UNDER THE HEADING OF RECYCLING REFERS TO THE MAIN FUNCTION OF A MATERIAL OR MULTIPLE USES IN DIFFERENT FUNCTIONS. IN THIS CONTEXT, RECYCLING OF WASTE MATERIALS, WHICH HAVE BOTH ECONOMIC AND ENVIRONMENTAL IMPORTANCE, IS DISCUSSED WITH FURNITURE PRODUCTION AND RECLAMATION OF SPACES USING RECYCLING MATERIALS USING EXAMPLES FROM ABROAD. WITHIN THE FRAMEWORK OF ENVIRONMENTAL CONCERNS, RECYCLING CREATES TWO STRONG REASONS FOR NOT POLLUTING NATURAL RESOURCES AND RECOVERING SCRAP MATERIALS. IN THIS RESEARCH, A LITERATURE REVIEW WAS UNDERTAKEN TO DISCOVER THE IMPORTANCE OF RECYCLE AND RE-USE OF FURNITURE DESIGN MATERIALS FOR ENVIRONMENTAL FRIENDLY INTERIOR DESIGN.

KEY WORDS: RECYCLE MATERIALS, RE-USE, FURNITURE DESIGN, INTERIOR ARCHITECTURE, SUSTAINABLE LIVING

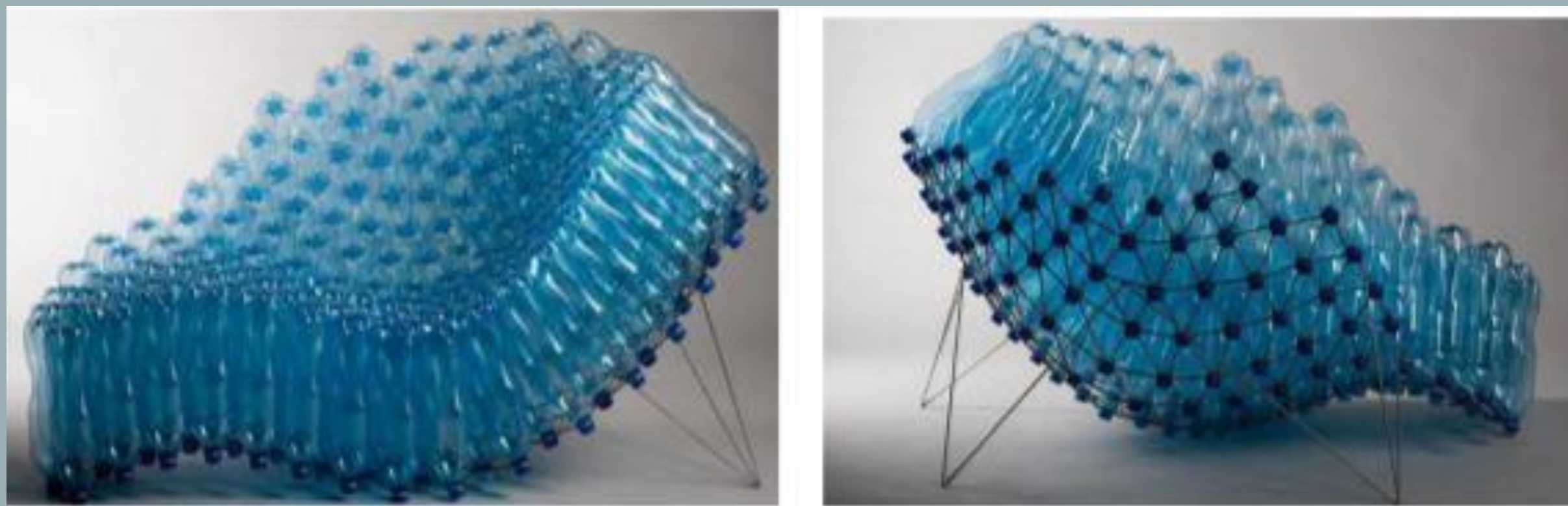


Figure 1: Example of Re-use of Pet Bottle Material in Furniture Design SIE43 (Grunert, 2009).

INTRODUCTION

THE CONCEPTS OF RECYCLING AND REUSE ARE OFTEN GET MIXED WITH EACH OTHER. UNLIKE RE-USE, MATERIALS ARE TURNED INTO RAW MATERIALS IN THE RECYCLING PROCESS AND THEY ARE SENT TO THE FACILITIES WHICH WOULD PROCESS THEM FOR USE IN THE PRODUCTION OF NEW PRODUCTS. WHEN WE CLEAN AND USE A METAL TIN CAN AS A FLOWER POT ETC. WE WOULD BE REUSING IT. HOWEVER WHEN WE CLEAN THE SAME METAL PACKAGING AND PUT IT TO THE RECYCLING BINS WE ARE RECYCLING IT. THE IDEA OF REUSING SOLID WASTE MATERIALS GENERALLY EXPLAINS THE 'REUSE CONCEPT' REUSE OF A PRODUCT BY THE CONSUMER FOR THE SAME OR DIFFERENT PURPOSES WITHOUT ANY CHEMICAL OR BIOLOGICAL TREATMENT CAN BE DESCRIBED AS REUSE. APART FROM CHEMICAL AND BIOLOGICAL PROCESSES, THE PRODUCT CAN BE REUSED UNTIL IT COMPLETES ITS ECONOMIC LIFE BY UNDERGOING PHYSICAL PROCESSES SUCH AS CLEANING, SHEARING, BREAKING, GLUING AND COMPACTING. THEREFORE, IT IS EXPECTED THAT THE MATERIAL TO BE REUSED WILL CONTAIN FEATURES THAT WILL SURVIVE THROUGH A CERTAIN PROCESS SUCH AS BEING COST EFFECTIVE, READY FOR A NEW TO BE INSTALLED AND WILL REDUCE ENVIRONMENTAL POLLUTION. WITH BOTH ITS BENEFITS AND PREJUDICES THE REUSE PRACTICE IS PREFERRED BY DIFFERENT DESIGNERS IN VARIOUS DESIGN FIELDS. ESPECIALLY IN THE FIELDS OF ARCHITECTURAL DESIGN AND PRODUCT DESIGN, RE-USE AND RE-FUNCTIONALIZATION CONCEPTS ARE VERY COMMONLY USED. IN THE CONTEXT OF REUSE CONCEPT IN THE FIELD OF PRODUCT DESIGN, IT IS AIMED THAT DURING THE DESIGN AND PRODUCTION PERIOD, IN THE LIFE CYCLE OF THE PRODUCT AND AFTERWARDS ENVIRONMENTAL ISSUES ARE INCLUDED. IN THIS CONTEXT, RE-USE IN FURNITURE DESIGN CAN BE DESCRIBED AS THE USE OF MATERIALS PRODUCED FOR DIFFERENT PURPOSES CAN BE TAKEN BACK TO A LIFE CYCLE AND CAN BE DESIGNED AS FURNITURE TO BE REUSED. THE CONCEPT OF RE-USE IN FURNITURE DESIGN STAGE SHOULD BE DEVELOPED IN VIEW OF HOW THE FURNITURE CAN BE RECOVERED AFTER ITS LIFE ENDS. A FURNITURE THAT IS DESIGNED WITH THE CONCEPT OF RE-USE, THE PRODUCTS AND / OR MATERIALS THAT MAKE UP THE FURNITURE HAVE LOST THEIR ORIGINAL FUNCTION AND HAVE BEEN USED FOR OTHER PURPOSES OR HAVE BEEN REUSED AS A RESULT OF VERY LITTLE OPERATION. PLASTIC, METAL, GLASS, PAPER, CARDBOARD, WOOD, TEXTILE AND VARIOUS COMPOSITE MATERIALS ARE MATERIALS THAT CAN BE REUSED AND USED IN FURNITURE DESIGN. THE ENERGY CONSUMED DURING THE RE-USE OF THE MATERIAL AND THE PRODUCT IS LOT LESS THAN THE ENERGY CONSUMED DURING THE PRODUCTION OF FURNITURE FROM SCRATCH USING THE SAME MATERIALS AND TOOLS.

IN THIS STUDY, PRODUCT DESIGNSS THAT ARE COMPOSED OF WASTE MATERIALS AND DESIGNED AND PRODUCED BASED ON THE PRINCIPLES OF REUSE, ARE DISCUSSED. THE AIM OF THE STUDY IS TO CREATE AWARENESS THAT ENVIRONMENTAL POLLUTION MAY BE AVOIDED THROUGH REUSE. MATERIALS, METHODS, OUTPUTS AND RESULTS ARE PRESENTED UNDER THE RELEVANT HEADINGS.



Figure 2: Example For Using Recycle Materials For Furniture Designs

MATERIAL AND METHODS

IN THE FRAMEWORK OF THIS STUDY DATA WERE COLLECTED BY ANALYSING THE SPATIAL TRANSFORMATION AND FURNITURE PRODUCTION IN THE CONTEXT OF INDOOR SPACE BY USING RECYCLING MATERIALS.



RESULTS AND DISCUSSION

THE POPULATION OF THE WORLD, WHICH HAS BEEN GROWING AT AN EVER INCREASING PACE SINCE THE INDUSTRIAL REVOLUTION, HAS CONSUMED THE RESOURCES ON THE WORLD WITH GREAT SPEED AND STILL CONTINUES TO CONSUME. THE WASTE PRODUCED WITH THE RESOURCES CONSUMED HAS STARTED TO GIVE SIGNS OF DANGER BY DISRUPTING THE ECOLOGICAL BALANCE OF THE WORLD. UNEXPECTED CLIMATE CHANGES, GLOBAL WARMING, THE DECREASE IN ANIMAL AND PLANT DIVERSITY ON THE EARTH SHOWS THE NECESSITY OF TAKING SOME MEASURES. EVERY INDIVIDUAL LIVING ON EARTH HAS RESPONSIBILITY IN EVERY STEP OF SAVING THE EARTH FROM THIS CRITICAL SITUATION. GOVERNMENTS, LOCAL ADMINISTRATIONS, SCIENTISTS, NON-GOVERNMENTAL ORGANIZATIONS, UNIVERSITIES, PROFESSIONAL ORGANIZATIONS MUST COLLABORATE WITH EACH OTHER AT EVERY ISSUE. DESIGNERS HAVE AN IMPORTANT ROLE IN THIS COLLABORATION. BECAUSE, DURING THE PRODUCT DESIGN AND PRODUCTION ACTION, THE HUMAN CONSUMPTION IS THE BIGGEST. IN ORDER TO TRANSFORM THE EFFECTS OF THIS CONSUMPTION ON THE WHOLE ECOSYSTEM FROM NEGATIVE TO POSITIVE, IT IS NECESSARY TO IMPLEMENT ENVIRONMENTALLY SENSITIVE ARCHITECTURAL METHODS STARTING FROM THE DESIGN STAGE. THE FRAMEWORK OF SUSTAINABLE DESIGN REVEALS MEASURES THAT CAN BE TAKEN BY DESIGNERS. DESIGN IS PERHAPS ONE OF THE MOST IMPORTANT FACTORS IN THE FACE OF THE INCREASING ENVIRONMENTAL POLLUTION AND THE MENTAL POLLUTION THAT CONSTITUTES BOTH THE SOURCE AND THE RESULT OF THIS SITUATION. WHEN VIEWED SUPERFICIALLY THE PRODUCTS THAT ARE PRODUCED AND CONSUMED RAPIDLY APPEARS TO BE AN OPPORTUNITY FOR A DESIGNER. IN FACT THEY REVEAL SOME DIMINISHING POSITIVE QUALITIES. CLASSIFYING A MATERIAL AS WASTE WHEN IT HAS NOT COMPLETED ITS PHYSICAL LIFE; HAS A NEGATIVE IMPACT ON ECONOMY AS WELL AS BEING DISTRUCTIVE TO ENVIORNMENT. THEREFORE, IN THIS RESPECT THE DESIGNS THAT ARE DESIGNED AND PRODUCED ON THE BASIS OF RE-USE AND WHICH WILL BREAK THE PREJUDICES THAT MAY OCCUR IN THE USER PERCEPTION ARE VITAL.

THIS STUDY DEALS WITH THE PROCESS OF DESIGNING PRODUCTS USING WASTE MATERIALS AND THUS A PROCESS AIMED AT RECYCLING AND PRODUCTION. FOR THIS REASON, INCREASING THE AWARENESS IN THIS DIRECTION AND DIRECTING THE FUTURE STUDIES ARE THE MOST IMPORTANT TARGETS. THE CONNECTION DETAILS USED TO ASSEMBLE RECYCLED MATERIALS CAN BE MORE COMPLEX THAN THE CONNECTION DETAILS IN ANY OTHER PRODUCTION PROCESSES. THE COMBINATION OF DIFFICULT-TO-ASSEMBLE MATERIALS (SUCH AS PAPER ROLLS AND PACKAGING WASTE) NECESSITATES DIFFERENT SOLUTIONS. IT HAS BEEN ESTABLISHED THAT THE AMOUNT OF WASTE MATERIAL THAT CAN BE REACHED ALSO AFFECTS THE SCALE AND FUNCTION OF THE PRODUCT.



Figure 2: Recycle Materials With Indoor Use

Author (year)	location	Research
Milan Sijaković, Ana Perić, c (2017)	BARCELONA, SPAIN	RECYCLING DESIGN PRINCIPLES
Majid Aziz, Nemat Mohebbi, Fabio De Felice b,* (2016)	FLORENCE, ITALY	SUSTAINABLE DEVELOPMENT OF WOODEN FURNITURE
Carolyn S. Hayles (2015)	UK, LONDON	ENVIRONMENTALLY SUSTAINABLE INTERIOR DESIGN
Anand M. Hiremath, Sachin Kumar Pandey, Dinesh Kumar and Shyam R. Asolekar (2014)	INDIA	INDUSTRIAL ECOLOGY AND ECO-INDUSTRIAL
Maria Calero Pastora*, Fabrice Mathieux and Daniel Brissaud (2014)	FRANCE	EUROPEAN PRODUCT POLICIES
Zhenyu Zhang, Qingjin Peng, Peihua Gua,* (2015)	CHINA-CANADA	IMPROVEMENT OF USER INVOLVEMENT IN PRODUCT DESIGN
Filipa Costaa, Sharon Prendevilleb, Katharine Beverleya*, Giulia Tesoc and Chris Brookerc (2015)	UK, LONDON	SUSTAINABLE PRODUCT
S M Ibbotsona*, S Karaa (2018)	AUSTRALIA	PRODUCT AT THE CONCEPT DESIGN STAGE
Fernando Miguel Marques* (2015)	PORTUGAL	RECYCLED GLASS CRYSTAL
Domingues J.a, Marques T.a*, Mateus A.a, Carreira P.a, Malça C.a.b (2017)	PORTUGAL	TO PRODUCE BIG GREEN PARTS FROM TIRES AND RECYCLED PLASTICS
Wilson R. Nyemba*, Alten Hondo, Charles Mbhwaa, Luxmore Madye (2018)	SOUTH AFRICA	SUSTAINABLE FURNITURE MANUFACTURING THROUGH RECYCLING AND REUSE OF SAWDUST
P. Lumskul*, L. Sheldirc, S. Rahimifard (2018)	UK, LONDON	THE SUSTAINABLE CO-DESIGN OF PRODUCTS AND PRODUCTION SYSTEM
Claudiu Actu*, Dana Adriana Iltiu-Varvara, Daniela-Lucia Manea, Yvette-Anna Orban, Florin Babota (2017)	ROMANIA	RECYCLING OF PLASTIC WASTE MATERIALS
Mauro Cordella*, Carme Hidalgo, (2017)	BARCELONA, SPAIN	DESIGN AND LABELLING OF FURNITURE PRODUCTS
Irina Turkua,*, Timo Kärkia, Ari Puurtinenb, (2018)	FINLAND	DURABILITY OF WOOD PLASTIC
Marzia Mortati, Stefano Maffei, (2017)	MILANO, ITALY	RESEARCHING DESIGN POLICY ECOSYSTEMS IN EUROPE
Hamza Çınar, (2005)	ANKARA, TÜRKİYE	ECO-DESIGN AND FURNITURE

Table 1: Basic Characteristic Of Reviewed Publications On Recycle Materials For Furniture Designs

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