A

Project Report

On

The Process of Designing Thinking with Special Reference to " (Plastic Block Manufacturing) "

SUBMITTED BY

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As the Partial Fulfillment of IE -2 for the subject of Principles of Management

UNDER THE GUIDANCE OF

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To

Department of Computer Engineering

Division:A Semester:5

Batch

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Certificate

This is to certify that Ms.Sakshi Ninad Divakar , a bonafide student of PCETs Pimpri Chinchwad College of Engineering, Pune studying in Computer (Branch) Division A, Roll No. TYCOA37 PRN No. 120B1B037 has completed her Mini - Project Work under my guidance. This is her original work and not submitted to any other Academic Pursuit.

Date : 04/11/2022

Name of the Guide :Mrs. Ashwini Shenolkar

Introduction

Plastic is one of the daily increasing useful as well as hazardous materials. At the time of need plastic is found to be very useful, but after its use, it simply thrown away, creating all kind of hazards. Plastic is non-biodegradable, so it will continue to be hazardous for centuries. The idea of this paper is to use the Waste Plastic as a Building Materials such as Bricks. So as to reduce the Plastic Waste and Save the natural resources like Yamuna which is degrading due to Waste Plastic. As more the cities become industrialized surplus problem of the plastic waste management comes along with it. Technological and economic advancement has made the type and kind of plastic very diverse and their management much more complex. The Outbreak of disease like cholera, diarrhea etc. is becoming more due to this waste Plastic. Furthermore the changing economic trends and rapid urbanization disarrange plastic waste management in developing countries.

This refers to the process of emergence of design concepts and includes activities such as problem-finding, decision-making, creative thinking, sketching, designing prototypes, and evaluation....

One of the most intriguing recent uses of plastic concerns incorporating recycled plastic into an unusual construction project. Recently, a social enterprise called Bamboo House India used 1,000 plastic water bottles to build a bus stop hub in Swaroop Nagar colony in Hyderabad.It only took around 15 days to build the bus stop, which now stands 8-feet high with its core metal frame and over 1,000 scrap plastic bottles. Due to bad weather in the area, the company knows it may not stand up to harsh storms, but they have aspirations to create a “permanent recycled bus shelter” in the future.

The plastic is classified in 7 types all are written below:-

1. Polyethylene tere phthalate also Known as polyester (PETE).
2. High density Polyethylene (HDPE).
3. Polyvinyl chloride (PVC).
4. Low density polyethylene (LDPE).
5. Polypropylene (PP).
6. Polystyrene (PS)
7. Other type of plastic including acrylic, acrylonitrile, etc.

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Product Profile

The decline in the availability of skilled in the construction industry led to a need for a brick that could overcome the problems of poor workmanship. This led to the development of Plastic bricks. Plastic brick is another type of brick which can be made from the plastic waste. This bricks are the solution of the pollution from the waste plastic. This bricks are easy to make and the pollution from the brick kilns can also be stopped using these bricks as there is no requirement further for the brick kilns. This brick have more strength than normal bricks and having light weight which can give further benefits to sustainable structures.

Fig XX: Global Waste Plastic Bricks Market Size, Forecast and Y-o-Y Growth, 2018-2028

By Application	By Source	By Business Type (Original Equipmen	By End-Industry
• Maintenance	• Packaging	• Original Equipment Manufacturer	• OEM Contractors
• Landscaping	• Plastic Products	• XXXX	• Municipal Authorities
• Construction	• Domestic Use	• XXXX	• XXXX
• XXXX	• XXXX	• XXXX	• XXXX

Presentation,Analysis& Interpretation of the Data

1. **Empathise Phase-** The present invention concerns a manufacturing process and a related product constituted of a tile in plastic material. The process comprises the following operative stages: crushing a thermoplastic material of recovery; injecting quality plastic material into a mould (3) with a primary punch (1A) and a matrix (2) associated to enable the formation of the first layer (4) of the tile (5) between them; rotating the mould (3) to reverse the reciprocal position of the matrix (2) and of the primary punch (1A); replacing the primary punch (1A) with a secondary punch (1B) to mark out, in its association with the matrix (2), between the first layer (4), supported by the matrix (2) and the secondary punch (1B), a cavity (6) to contain the thermoplastic material of recovery; injecting thermoplastic material of recovery into the cavity (6) with the formation of a second layer (7) of plastic material arranged inside the tile (5)

2. **Define Phase-** According to analysis, up to now, there's no laborious and quick rule for formal combine style of e-waste, and in this respect no laborious procedure for casting the bricks. Thus, during this analysis, some laboratory tests were performed to get some mechanical properties of e-waste.

The e-waste, that was collected, cannot be utilized directly. E-waste was cut with help of cutter into small pieces. These pieces were used in mixture.

3. **Ideate Phase-** Hard plastic block construction is a growing trend in sustainable building materials. Waste plastic is collected, processed, recycled to create rigid bricks, planks, and other forms that can be used in conventional construction applications. A growing number of companies are exploring waste recycling methods that aim to reduce the amount of plastic that enters the environment and also create reliable and economical building materials. Plastic block construction has been proposed for use in all types of structures, including walls, fencing, and other structural elements.

4. **Prototype- Execution of the project, feasibility checks for the project.**

ByBlock is a construction material created by waste recycling company, ByFusion. They are made using the Blocker system, which is carried out through a combination of steam and compression. The result is a dense building material made from shredded waste plastic. ByBlocks are designed to interlock. They are

stabilized with the addition of metal rods and pins.

They require no fillers, mortar, or adhesives. As a potential alternative to concrete cinder blocks, ByBlocks might offer some advantages by installing faster and with fewer labor demands. Plastic's inherent resistance to moisture, insects, and cracking may make the ByBlock a more enduring building material in addition to being eco-friendly.

5. Testing-Blocks and bricks made from construction plastic have been shown to be a strong and useful option for certain structures. A number of startups and recycling companies have created construction plastic bricks that are used for walkways, fencing, walls, and other structures.

Using plastic brick for houses is not as common, but new and experimental homes built from these materials are in the works. Building homes from plastic bricks could present a faster, simpler, and more eco-friendly solution for the future.

Conclusion

Blocks and bricks made from construction hard plastic have been shown to be a strong and useful option for certain structures. A number of startups and recycling companies have to create construction plastic bricks that are used for walkways, fencing, walls, and other structures.

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Annexures

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