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Eco Luxury Elegance: Transforming weddings with eco-conscious design and decor, setting a new standard.

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Abstract : This dissertation explores the environmental effects of weddings, with a special emphasis on the use of fiberglass decor and flower design in the wedding industry. This study, which was carried out at one of the luxury wedding event decor & design companies in Bengaluru, Karnataka, India, discusses the environmental impact of existing practices and promotes a change to more environmentally friendly options. Using the Action Research methodology, the study examines the unsustainable and wasteful elements of traditional methods in an effort to promote a paradigm change in wedding design & decor experience. The study highlights the pressing necessity of environmental stewardship in the wedding business, stressing how important it is to incorporate sustainable methods. This study attempts to both reduce environmental harm and redefine luxury in the context of weddings by looking at the environmental effects of flower design and fiberglass-based decor. This study explores eco-friendly practices and provides insights, strategies, and a road map for turning luxury event decor companies into proponents of eco-luxury elegance. It presents environmentally conscious decor and design as a basic reaction to environmental issues rather than just a fad. In the end, this research proposes a new benchmark for luxury event design experience that places an emphasis on sustainability without sacrificing style or luxury.

Keywords: *Eco conscious design, Action Research, Fiberglass (FRP), Environmental stewardship, Luxury Elegance, Sustainability*

I. INTRODUCTION

Although weddings play a big role in the lives of many people, the environment is frequently negatively impacted by them. In the wedding business, eco-friendly design and décor are becoming more popular as couples look to match their festivities with sustainable principles (Amatulli et al., 2017). The purpose of this dissertation study thesis is to investigate the possibilities of incorporating eco-conscious design and décor into weddings in order to redefine the concept of eco-luxury elegance. Through an analysis of case studies of successful eco-friendly weddings and an examination of current practices and trends in the wedding industry, this research aims to uncover the critical elements and strategies involved in designing eco luxury weddings (Moscardo, 2017).Additionally, taking into account variables like cost, the accessibility of sustainable materials, and customer preferences, it will examine the viability and difficulties of introducing eco conscious design and décor on a bigger scale in the wedding sector. In order to create luxurious eco-conscious weddings that are also environmentally sustainable, the ultimate goal of this research is to offer insights and recommendations to wedding planners, designers, and couples (Kunz et al., 2020). This will help to create a more sustainable wedding industry. The extravagant and resource-intensive nature of conventional practices necessitates a shift towards sustainable alternatives. The incorporation of sustainable practices into floral design and décor is not just a fad; rather, it is an ethical reaction to the events industry's urgent need for environmental stewardship. This study aspires to offer insights, strategies, and a roadmap for becoming champions of ecoluxury elegance. This research will contribute to the growing body of knowledge on sustainable luxury by providing practical and actionable recommendations for incorporating eco-conscious design and decor in the wedding industry.

II. NEED OF THE STUDY

Current research paints a worrying picture. Research by Adema & Roehl (2010) and Roth (2013) highlighted significant differences in sustainability in the wedding decoration industry. Invariably resource-intensive management creates a gap between business models and the growing demand for environmentally friendly options. But there is hope in the work of Hanani and colleagues. (2023). Their research reveals a trend towards eco-friendly decorating, driven by more environmentally conscious couples seeking eco-friendly options for their wedding celebrations. This change reflects the broader community's movement towards sustainability

and presents a great opportunity for the wedding decoration industry to grow and meet this consumer responsibility. Valid and stable information has become important, especially in special situations. Although many environmental scientists have been telling people about the consequences of global warming and rapid resource depletion for years, there is a global interest in the surrounding environment, from family to large corporations. The American Institute of Physics (AIP, 2013) estimates that the first serious speculation about the causes of global warming occurred at a conference on the causes of climate change held in Boulder, Colorado, in 1965. It took nearly 40 years for the public to realize that global warming is a real and serious problem. Scientists agree that reducing the personal "carbon footprint" and the impact of all companies on the world is a small but meaningful step. As Dickson and Arcodia (2009) state, "If managed well, these activities can efficiently and effectively recycle materials and excess materials, and do so voluntarily using methods that have the least impact on the environment" (p. 236). As major events such as the Olympics and international conferences begin to challenge planners' green standards, the technology used in weddings can also make an impact without affecting our vision. There are many tweaks that can reduce your wedding's carbon footprint and encourage your guests to incorporate these practices into their daily lives. The organization is slowly acknowledging the negative impact it has on the planet, but if we do not use these practices, we cannot ensure a healthy and safe future from now on.

Event planners can make some progress in their field to investigate event sustainability. Research in this area is scarce; However, research providing advice and conclusions on "green cleaning" in the public and private sectors is publicly available. Recent global attention to environmental health has led to a sense of how destructive and wasteful it can be. That's why many organizations are using new guidelines that require specific documents or regulations that support sustainable activities without compromising design or implementation. This literature review will provide an understanding of the importance of promoting good conditions, sustainable facilities and management facilities in the industry and will identify factors that lead to being beneficial and effective.

Business terms are frequently used in both private and public spaces, and people who may not have understood their importance have become aware of the integration of the situation. However, the introduction of environmental friendliness is a new concept. Morelli (2011) defines environmental sustainability as "a state of balance, resilience and harmony that enables human life to meet its own needs without the ability to support ecosystems that continue to reproduce the services needed to meet these needs... (para. 23)) This new knowledge , has attracted many people, including scientists and researchers. According to Dickson and Arcodia (2009), "Business conditions have attracted attention and there is now a growing international debate about how to encourage business to become more productive" (p. 236). Many suggestions were made that would contribute to the sustainability of the event; However, it can be difficult to ensure that businesses and projects comply with these recommendations. In the wedding market, designers have the freedom to choose to use these rules and ultimately decide whether to use them in their weddings. Having rules that must be followed to become a member of a professional organization is one way to control this. Dickson and Arcodia (2009) stated that "not all practitioners believe that all recommendations in these guidelines are feasible or economical" (p. 242). Many venues, especially wedding venues, prohibit changes to their setups or equipment and refuse to plan according to these guidelines. Adema and Roehl (2010) remind planners that it is important to know that event design is not static.

Each situation requires consideration of 4 different factors. And not all planners want to be more sustainable. Dickson and Arcodia (2009) explain: Reading instructions and information such as this may have a negative impact than expected as some may be excluded from the required effort/task or create the perception of higher value. than the actual situation. (p. 242). However, simpler methods that can be adapted to a specific situation may be a more valid option. Benjamin (2011) added: "…consumers are now choosing to include sustainability in the process when discussing events" (p. 30). Increasing education on this topic could lead to greater decisions on international policy and "green" economic activity without progress. While many aspects of event planning can be modified to meet sustainability standards, remote locations are the best way to reduce the event's carbon footprint. Koukiasa (2011) echoes this point: "The location of an event is arguably the place that has the greatest impact on its overall sustainability" (p. 218). Many places have started taking steps to green their facilities, and many conferences and hotels in the corporate world are promoting their sustainability and getting customers interested in green conferencing. Taks, Chalip, Green, Kesenne, and Martyn (2009) concluded that "the experience of the place will often lead to tourism" and that "actors" should make the destination event – (p. 123). This means integrating security into your theater is probably the most important aspect of your event; because this will make the event memorable and increase results by attracting people back to the site.
Another benefit, as Koukiasa explains, is that "establishing a sustainable place can broaden and strengthen the place's involvement in society by strengthening the reputation of the place, encouraging local business, encouraging regeneration and delivering heritage value - (Page 219) Sustainable because it gives advantages to sites and projects (2009) describes how to create cost-effectiveness and ecological awareness as follows: "Measurement, monitoring, targets, reporting and evaluation and quality work" (p. .17). 222). Measurement, monitoring and analysis are the elements of measuring and generating data that will demonstrate the effectiveness of green cleaning. Reports and reviews can show potential customers how valuable the site is for what it offers and how it compares to other similar sites. This environmental performance report is also evaluated by organizations that can prove that the site meets sustainability standards. The results can mean reaching a wider customer base and revealing effective investment opportunities that save money and time. Draper, Dawson and Casey (2011) emphasized the importance of sustainable events when discussing the five key factors in events; The second is location selection. may change as necessary to indicate the stability of the event.

There are many incentives, but not all companies want people to comply with security measures; instead they focus on financial stability. Merrilees and Marles (2011) stated that "7 motivations for adopting or not adopting environmental practices in business fall into two categories, such as moral or ethical considerations" (p. 362). Demand for sustainable events is growing, but not all planners will see the ethical or economic benefits of green cleaning events. Lawton (2011) explains, "Managers attend to physical and safety risks while ignoring other risks (e.g., surrounding social and environmental)" (p. 17). 313). Particularly at events with large numbers of attendees, planners seem to bypass good practices out of fear that they will have to sacrifice the creative to earn

that reputation. Looking at wedding examples, many couples believe that green weddings are not economical or necessary because they consist of a single event. But in a city filled with weddings every weekend, waste and carbon emissions can skyrocket. What drives many planners or companies to organize green events is their desire to gain a reputation for being beautiful and sustainable. to. Lawton (2011) discusses major corporate events “designed to increase customer satisfaction and visibility” (p. 314). He stated that "there was no evidence of greenwashing as the project did not claim or describe it as green in its policy, marketing materials, or website" (p. 314). In such examples, it is clear that many companies want to achieve the same results or business regardless of adapting their business technologies to manage or create new customers.

Integrating sustainable technology into the market is important to ensure that existing and profitable products are attractive to new companies. However, some organizations persistently succeed and attract large businesses based on such advertising. Laing and Frost (2010) examined the 8th International East Coast Blues and Roots Festival in Byron Bay and found that they pursued six main objectives: impact, a celebration that respects, transforms and enhances the local celebration." Theaters for the community, waste-free festivals, carbon neutral leaders and work, healthy and natural – (p. 262) This festival is a unique example of ideas and techniques designed to make it a successful event. There are many things that can help create a green event, but making small changes is a great start to clearly improving your reputation in the industry. Practices for achieving sustainable events, the need for the use of green spaces, and many other ways to influence the event planner or company to move towards sustainable events are useful ways to create a good environmental management system. Sustainable events are the future of the events industry and these articles provide a starting point for strategic planning for companies and event planners alike

2.1 Analyzing the current state of sustainable practices in wedding decor

In recent years, the impact of human activities on the environment has attracted the attention of people around the world. India is no different as more and more people want to live in an eco-friendly way and use wedding marketing techniques. Eco-friendly weddings are becoming popular in India, and for good reason. Weddings in India are often big and lavish, but as people become more aware of the environmental impact of these events, more and more couples are choosing a good and effective alternative. Every aspect of your wedding can be customized, including venue, decor, food and clothing. There are environmentally friendly options. Some couples choose outdoor venues such as parks, forests and beaches to reduce their carbon footprint. Eco-friendly decor can also reduce a wedding's environmental impact, and can include: Using recycled or natural materials like bamboo, paper, and wood instead of plastic Using flowers and plants as decor, which can be donated or replanted after the wedding Using biodegradable decorations Promoting minimal waste.

Sustainable Venue: One of the most important ways to reduce the environmental impact of your wedding is to choose a sustainable venue. Many couples prefer to hold their wedding outdoors, in places such as parks, forests and beaches. This not only reduces the carbon footprint of the wedding but also provides a beautiful and beautiful display for the ceremony.

Eco-friendly Decor: Another way to reduce the impact of a wedding on the environment is to use environmental control. This may include reconstructing or natural materials such as non-biodegradable bamboo, paper and wood. While flowers and plants can be used to decorate, they can also be left loose or planted after the wedding. 7 Technology and Social Media Integration

Technology and Social Media Integration: The advancement of technology has changed the way Indian weddings are planned and experienced. Couples are using social media platforms, wedding websites, and mobile apps to enhance wedding planning, share updates with guests, and create interactive experiences. Media coverage of the ceremony allowed family and friends who were

unable to attend the ceremony to attend properly. Wedding hashtags, personalized filters and social media campaigns have also become ways to engage guests and capture unforgettable moments.

Luxury experience combining technology in Indian weddings What is a luxury wedding?
A luxury wedding is a luxurious, high-end celebration that goes beyond a traditional wedding. Wonderful details, colorful activities, beautiful setting and personalized service create an unforgettable experience for the couple and their guests. Luxury weddings are carefully planned and executed, often involving the services of top wedding planners, designers and vendors to ensure everything exudes luxury and sophistication. different? Here are some key differences.

Venue Choices
Luxury weddings are often held in beautiful and unique locations such as private properties, beach holiday venues or luxury hotels. These places provide a special backdrop and have special amenities and services, creating a good atmosphere. Each site also features detailed high-end designs and has dedicated staff who work with other teams you hire to suit your needs.

Personalization
Luxury weddings place emphasis on personalization and customization to reflect the couple's style and preferences. Every detail, from custom-designed invitations to personalized decorations, is carefully planned to create a unique experience and highlight the couple's story.

High-end Decoration and Design
Luxury decor and design elements, which often include beautiful flowers, luxurious linens, elegant lighting and intricate table lamps, are a must-have for any high-end event. The aim is to create a beautiful and beautiful look.

Gourmet and Luxury Catering Services
Food and beverages play an important role in weddings. Gourmet menus, special cocktails and first-class service prepared by famous chefs create a gastronomic experience that makes the hearts happy. Most couples choose gifts with creative elements that meet their needs. There are demonstrations, demonstrations and even celebrities. This adds an extra layer of glamor and excitement to the celebration that guests will talk about forever. The cost of a luxury wedding can vary greatly depending on many factors, including location, number of guests, location and the level of customization required. A few budgets easily exceed six figures and sometimes reach millions.

Luxury Weddings Driven by Technology
It would not be an exaggeration to say that Indian weddings are the symbol of luxury. Indian weddings are full of celebrations, ostentatious rituals and often lavish, extravagant and large scale rituals. Known as one of the largest industries in India, the multi-billion dollar wedding industry is growing at an astonishing pace with more and more people opting for luxurious and unique weddings. In addition to beautiful decoration details and beautiful food, most weddings today use relevant equipment to create a wonderful experience for guests. Wedding planners have used many creative and fun ways to incorporate technology into weddings, turning them into spectacles of tradition. With technology that allows you to travel through wedding venues, 3D software to visualize decorations, Instagram or Snapchat filters, and even AI-powered chatbots for guests to find vendors, we can safely say that Indian Wedding is the new tech industry for weddings - Technology plays an important role in weddings today. We have entered a period where creating a unique wedding has become important.

What is Mixed Reality or Augmented Reality and Virtual Reality?

Virtual Reality: Virtual reality, or VR, takes people away from the real world and allows them to enter the virtual world using a headset or headset. In a virtual world of images and sounds, users can move in various directions, control objects, and more. VR is often used in healthcare, construction and education. Augmented reality applications, when run from mobile devices such as smartphones or tablets, are the best way to get an AR experience in manufacturing and business environments where users do not have hands, glasses or headsets.

Mixed Reality: MR combines imagination and reality, allowing users to see and interact with the real world and virtual environment simultaneously. Imagine playing a virtual video game while drinking real coffee and giving coffee to an avatar in the game; You are confusing reality

Augmented Reality in Luxury Weddings One of the main ways intelligence is helping luxury weddings and designers improve the planning and design process. With the help of AI-powered tools and software, many difficult and time-consuming tasks usually performed by planners and designers, such as data entry, planning, and financial management, can be accomplished. This allows more time for creative projects like custom wedding designs and decorations. Interactive wedding venue and design allows clients to imagine their special day in a way that was previously impossible. It is easy to observe the huge impact VR (VR) has on other new technologies available in many industries, including weddings. Although artificial intelligence and virtual reality have captured people's imagination, another beautiful tool that has been quietly transforming wedding scenes in the last few years is augmented reality (AR). The advantages of using AR to beautify your wedding are as endless as the technology itself, but the two main problems technology solves are: how to creatively save money and how to make guests see everything and leave the wedding. unforgettable experience. in their hearts.

Real World Learning - Advantages of AR in Wedding Invitations

Consider how AR technology is changing the game in the wedding industry, especially when it comes to invitations. AR is now also present in the main content, as the cost has become simple and functional enough for the consumer to use effectively. Picture this: your guests receive your beautiful invitation in the mail, and when they take it to their phones, hummingbirds fly, confetti showers, flowers bloom, and butterflies dance around the text on your invitations while your music plays. Designing interactive wedding invitations developed with AR has become a very simple yet striking mechanism that provides great tools with practice. There are many design and programming agencies that create these experiences for both couples and clients

All AR designers should be able to deliver interactive animations that include customized audio (viewers will hear your music when they view the invitation), 3D messages, links to your wedding website, or RSVP directly from your phone. Make sure any AR design company you choose has access to your regular invitations and is willing to send you free samples to try first. The use of AR-powered interactive wedding invitations has been on the rise in recent years as most users agree that it is the best thing to happen to the invitation business since colored paint!

Augmented Reality (AR) and QR Code Invitations

These Indian wedding invitations use augmented reality technology to provide an interactive experience. Guests can use their smartphones to scan the invitation to reveal a secret message, photo or 3D animation related to your story. A unique and fascinating way to invite your loved ones to your special day.

QR code invitation is one of the best ways to invite guests. Guests can instantly access all wedding information by scanning the QR code with their smartphones. This is a simple option that reduces the need for physical invitations and RSVP cards, making it more efficient and effective. Review the music memories in the photo album in person, then use your smartphone to fill the album with video memories and moments. When you share your wedding photos with anyone, you can hover your phone over your first dance photo and watch the newlyweds start dancing on the album in front of you.

Wedding Projection Mapping: A cheaper risk

Although projection mapping has been used at many events for years, it was first popularized by Disney in 2014 when their picture show movie about a wedding cake went viral on YouTube. After a while, this process can only be seen at weddings and special events for presentation purposes. While you can reveal everything with design details and carefully crafted designs, using wedding photography can also suit every budget. It is actually cheaper than traditional decoration. Video mapping has the ability to change the look of any venue and turn your wedding into an unforgettable experience. Augmented reality is a 3D video projection technology that uses light and color to create a virtual image of a different space. It creates a great experience for event attendees by using projectors to display images, videos and animations. Projection mapping is a technology that turns objects into interactive objects. Buildings, tracks, stage, even water replaced the work of art. By leveraging the shape and texture of the surface, video mapping can create an intuitive lighting experience.

Projection mapping is a multistage process - Once a venue is decided upon, a team of creative developers will assess the location and digitally map the space. Then artists can custom design vivid images and visual effects that are specifically created for the surface in consideration. The object can be virtually anything from a small statue to the entire building. Then, the visual assets are specifically mapped to match the shape and dimensions of the object’s surface. This process involves meticulously aligning the digital content to match the perspective of the object, creating a stunning optical illusion.

In weddings, projection mapping can be used to create customized 3D experiences for guests. Wedding planners can work with couples to customize the projections, which can include 3D logos rotating on a wall, or taking the audience on a spaceship through the Milky Way.

What is fiberglass and how is it used?

The manufacturing and recycling process of fiberglass is not as energy intensive as other materials such as aluminum and produces less carbon dioxide. Plant pots, insulation, boats and cars. Because of its durability and stylish design, fiberglass is a very popular material and has more options than other plastics and metals. with polymer resin. The most common plastics are epoxy resin and polyester resin. Most FRP uses reinforced glass fiber, but a large portion also uses carbon fiber. Since FRP is a composite material, it presents unique challenges. When it comes to materials such as metal or simple plastic, the materials are not the same and you only need to consider the requirements of individual products. For example, scrap metal can be thrown into the same crucible, melted and reused. FRP is made of two completely different materials chemically bonded together. There is no easy way to separate

the reinforcing fibers from the plastic and ensure that they can be processed separately. Instead, any recycling process must address both and pay attention to the advantages of both.

How long does it take for fiberglass to biodegrade?
However, the rate of decomposition depends on many factors, including: 1. Fiberglass Types There are different types of fiberglass at different prices. The larger and thicker the fiberglass, the longer it takes to break. Lightweight fiberglass breaks faster than heavy fiberglass. Environmental Conditions Harsh weather conditions can expose fiberglass to the elements and shorten its service life. However, fiberglass products will last longer if stored indoors or in a dry place. Care and maintenance Although fiberglass requires little maintenance, it is very important to take care of your plants. Fiberglass products will not last long if care is not taken.

Composition

Fiberglass	**Resin**
Fiberglass is made from fine glass fibers that are woven together to create a flexible material.	Resin, on the other hand, is a synthetic polymer that is used as a binder for other materials.

Is Fiberglass Sustainable?
Sustainability is becoming increasingly important in the face of growing climates. The good news is that many businesses consider fiberglass to be a durable material for 3 reasons: the material, the manufacturing process, and its durability.

What is the history of fiberglass?
However, these early efforts were limited in scope, only raw fiber was being produced, and the true potential of glass fiber had not yet been realized. John Player developed a revolutionary process for the production of large glass, primarily for thermal insulation. In 1880, Herman Hammesfahr patented fiberglass fabric intertwined with silk, making it both durable and flame retardant. These developments form the basis for future innovations

A discovery made in Toledo, Ohio in the 1930s changed the course of fiberglass history. Researcher Dale Kleist of the University of Illinois at Owens accidentally created a bath from thin glass while trying to weld the glass. Realizing the potential of this incredible discovery, engineers perfected the process to produce a good, inexpensive glass fiber and patented it in 1933. (Air filter) was published and introduced in 1932. FRP means fiber reinforced plastic; The language used depends on the location and the business or industry using the word.

How Is Fiberglass Made?
Waste glass or broken glass can also be used as raw material. Ingredients are carefully measured and mixed before being placed in the oven (this step is called blending). This furnace is necessary to melt raw materials into molten glass at temperatures up to 1,371°C (2,500°F). Temperature control is maintained to ensure the homogeneity and continuity of the molten glass. Fused glass is indicated for a variety of processes depending on the type of fiberglass required. Fibers can be made using a variety of processes, including direct smelting, in which molten glass is formed into fibers directly from the furnace, or by using glass pellets about 1.6 centimeters (0.62 in) in diameter that can be detected visually. for foreign substances. Examples of this technique include passing molten glass through an electrically heated cannula with small holes to form filaments. The continuous filament process requires filaments to be wound at high speeds to produce long, continuous fibers. In the staple fiber process, air jets are used to rapidly cool the filaments and break them into short pieces. Shredded fibers are obtained by cutting long fibers into short fibers.

The main characteristics of fiberglass are as follows:

- Durable and strong.
- Stiff.
- Lightweight.

- Fire resistant.
- Excellent insulation material.
- Exceptional chemical resistance.
- High corrosion resistance.
- Dimensionally stable material.
- Insensitive to temperature and humidity changes.
- Resists warping, bending, distortion, or shrinking.
- Moisture resistant.

Different types of Fiberglass

E-Glass Fiber

E-glass or electronic glass has excellent electrical properties. It is widely used in aerospace and industrial applications due to its lightweight and heat resistance. It was originally designed for electrical purposes and is now used in many industries. Its ingredients include: silica, soda, potash, lime, boron oxide, magnesium oxide and aluminum oxide.

D-Glass Fiber

D-glass is known for its low dielectric constant, making it suitable for use in fiber optic cables, cookware, and appliances. The main ingredient in its composition is boron trioxide.

R-Glass Fiber, T-Glass Fiber, or S-Glass Fiber

This high-performance glass fiber has superior structure, acid resistance, wet properties and tensile strength than non alkali glass. They are used in specialized industries such as aerospace and defense, with special components designed to increase their performance.

A-Glass Fiberglass

Also known as soda-lime glass or alkaline glass, is often used in glass containers such as bottles and jars, and in window panes. It is chemically stable, cost-effective and suitable for glass recycling as it can be softened and recycled. Its main components include: lime, alumina, dolomite, soda, silica and some coating materials such as sodium sulfate.

Advantex® Glass Fiber Advantex®

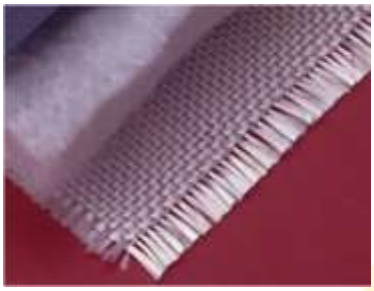
This fiberglass is acid-resistant and can withstand high temperatures; This makes it ideal for use in corrosive environments such as mining, the oil industry, power plants and garbage. Its composition contains a lot of calcium oxide.

C-Glass Fiber

Type C glass, also known as chemical glass, has good chemical resistance and impact. Due to its calcium borosilicate content, it can be used as a texture in corrosive environments and in the outer laminates of pipes and tanks containing water and chemicals. Its ingredients include: silica, soda, potash, lime, boron oxide, magnesium oxide and aluminum oxide.

ECR Glass Fiber

ECR glass fiber, also known as electric glass fiber, has the advantages of alkali resistance, acid resistance, good heat resistance, low leakage and high mechanical strength compared to E glass. It is environmentally friendly and can be used to create durable, pure fiberglass reinforced panels. Its composition is made of alkali-resistant, acid resistant, heat-resistant, waterproof and strong materials



Z-Glass Fiber

Z-glass has applications in many industries, including reinforced concrete and 3D printing fibers. It is known for its resistance to acids, alkalis, UV rays, mechanical stress, scratches, salt and damage. Its composition includes selected materials to protect various environments.

S2-Glass Fiber

S2-glass fiberglass type has the best performance and has the characteristics of high temperature resistance, high pressure resistance and excellent impact resistance. It is frequently used in the composite and textile industries with its special compositions that provide excellent strength.

AR-Glass Fiber

AR glass or alkali-resistant glass is designed to be used in concrete to prevent cracking and provide durability and flexibility. It is highly stable, water resistant and unaffected by pH changes. The main ingredient added to its composition is zirconia.

AE-Glass Fiber

This type of glass fiber is alkali resistant and suitable for applications requiring alkali resistance. It also has low electrical conductivity. The high porosity of this filter ensures effective removal of particles as small as 1.0 microns.

Different Forms of Fiberglass

Woven Fabrics

Woven fiberglass fabric is woven from thin, continuous fiberglass threads to create a flexible yet strong material. This fabric is available in a variety of weaves such as white, twill and satin, each with different properties such as durability and surface finish. Woven fabrics are often used in applications requiring strength, stability and smooth surfaces, such as boathouses, vehicle parts and surfboards.

Chopped Strand Mat

Chopped strand mat (CSM) consists of short glass fibers randomly dispersed and held together with adhesive. This form of glass fiber is popular in hand lay-up and spray coating techniques for manufacturing. CSM provides good service and is ideal for applications where wetness is important and thickness and strength are important, such as the construction of fiberglass boats, tanks and pipelines.

Tow and Roving

Tows and rovings are continuous bundles of interconnected fiberglass filaments. This type of fiberglass can be made into spools that can be drawn and cut as needed, or can even be put into a filament winding machine. This material is used where high and consistent strength is required, such as in pultrusion or filament winding processes. Towing and rovings are versatile and can be used in many industries such as aviation, construction and marine.

Veil Mats

Veil mat, also known as water mat, is a lightweight fiberglass mat used as a coating in composite applications. They improve surface coverage, add texture and reduce the visibility of root fibers. Veil mats are often used in the production of panels, automotive components and highly anti-corrosion equipment

2.2 Problem Statement

Inadequate adoption of sustainable practices in wedding decor poses environmental threats, urging a transformative shift in the industry.

2.3 Research Questions

1.What are the predominant sustainable practices currently utilized in wedding decor?
2.What specific obstacles or challenges do wedding decor businesses face when attempting to implement eco-conscious design principles?
3.What effective strategies can be recommended to luxury wedding decor businesses for transitioning towards sustainable design and branding?

2.4 Objectives

1.To analyze the current state of sustainable practices in wedding decor.
2.To identify challenges hindering the incorporation of eco-conscious design.
3.To propose strategies for transforming luxury wedding decor businesses into luxury sustainable wedding design brands.

2.5 Scope

- **Environmental Impact Assessment:** Research how wedding traditions impact the environment, especially flower arrangements and fiberglass decorations.
- **Identification of bad practices:** Finding and identifying specific wedding practices that have a negative impact on resources and harm the environment. Beautify the road and process to reduce environmental damage.
- **Generate insights and ideas:** Generate best practices, ideas and insights to help the wedding industry promote the importance of scalability and availability, as well as ecoluxe elegance

2.6 Limitations

This study mainly focuses on floral design and fiberglass decorations in the wedding industry;

- **Availability of information:** The depth of research and ability to draw conclusions will be limited due to the lack of information on environmental practices and wedding industry impacts.

- **Time Constraints:** Time constraints in the research process may limit the scope of the research and the level of relationships between participants, which may affect the success of the results.
- **Subjectivity and Bias:** When researchers and participants are involved in the research process, biases or biases may arise in the interpretation and analysis of data that may affect the validity of research results.
- **Capacity constraint:** The use of specific interventions or efforts to promote ecological creation and decoration will be affected by capacity constraints, particularly related to finance, transportation and human resources.
- **External factors:** Over time, the feasibility and effectiveness of solutions can be seen to be affected by changes in people's consumer preferences, good business practices and management processes.

III. RESEARCH METHODOLOGY

The use of Qualitative research & Action research methodology in this study was beneficial in several ways. By examining complex situations such as the environmental impact of the wedding industry in detail, we gain a deep understanding of the thoughts, knowledge and behavior of the parties. Qualitative research helps collect interesting information using techniques such as observation, interviews, and data analysis. The document provides insight into the possibilities, challenges and motivations for ecologically conscious design and decoration. Moreover, through the use of qualitative methods, this study can understand relationships, discover hidden patterns, and capture the emotions of human behavior to better understand the context.

Methods: In-Depth Interviews, Observational Studies, Content Analysis, Ethnographic Research, Visual Methods, Open-Ended Surveys, Thematic Analysis.

3.1 Population and Sample

Purposive Sampling Method is a qualitative research method that requires the deliberate selection of participants with specific characteristics or experiences relevant to the research topic.

Online survey: On understanding the opinions and observations regarding various aspects of weddings, especially in terms of decor elements, design themes, sustainability practices, waste management, and any changes people have noticed over the years. Total Respondents = 33 Interviews = 10, Total Sample Size = 43.

3.2 Data and Sources of Data

For this study primary & secondary data has been collected. Taarini Weddings and SDC, in the context of examining the environmental impact of wedding events and environmentally responsible design and decoration, this approach offers options to those with an experience in wedding decoration & people who have been a part of weddings from different eras. All of the secondary data have been collected from the trusted sources as mentioned in the reference section. These data have been collected for a duration of five months starting from January 2024 to May 2024.

3.3 Table 1: Mechanical Properties of Fiberglass

Physical Property	Density (g/cm3)	Tensile Strength (GPa)	Young's Modulus (GPa)	Elongation	Coefficient of Thermal Expansion (10-7/°C)
E-glass	2.58	3.445	72.3	4.8	54
C-glass	2.52	3.31	68.9	4.8	63
S2-glass	2.46	4.89	86.9	5.7	16
A-glass	2.44	3.31	68.9	4.8	73
D-glass	2.11-2.14	2.412	51.7	4.6	25
R-glass	2.54	4.135	85.5	4.8	33
EGR-glass	2.72	3.445	80.3	4.8	59
AR glass	2.7	3.241	73.1	4.4	65

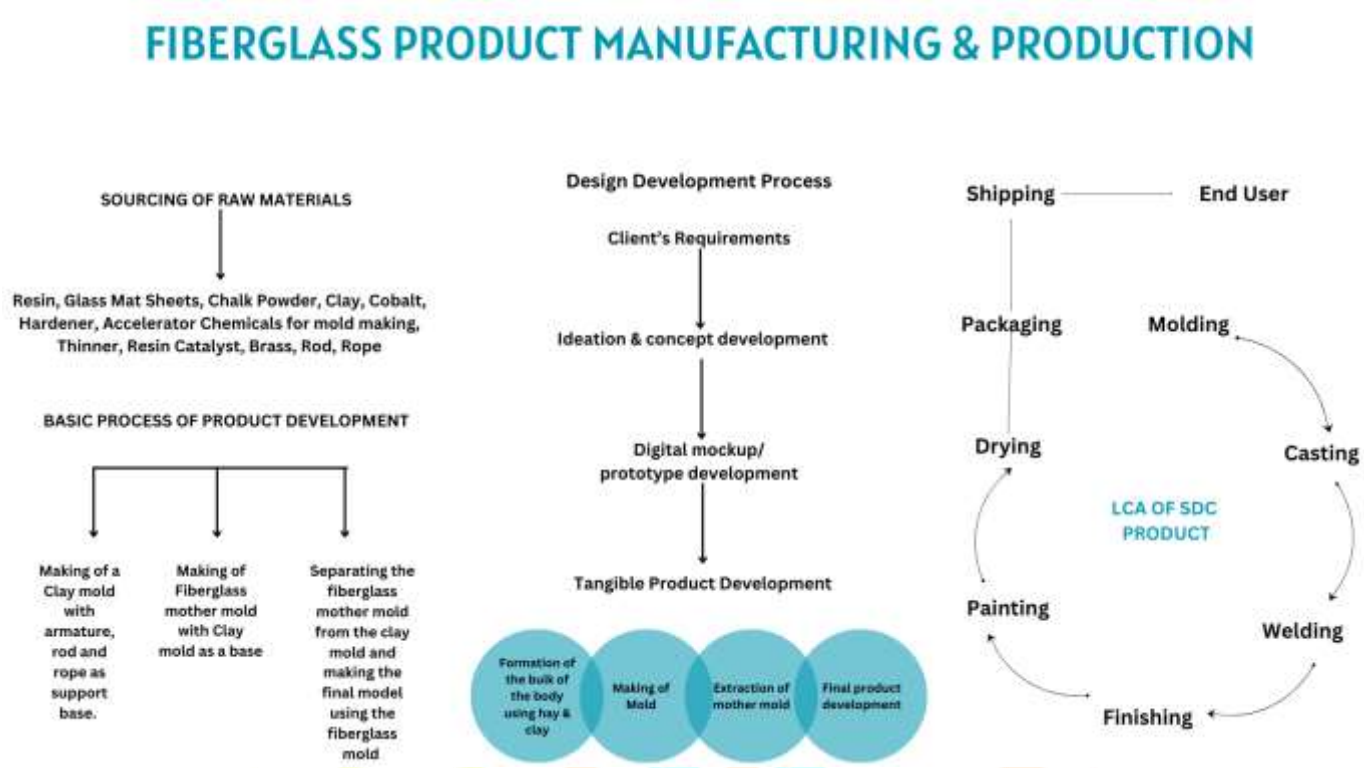
3.4 Table 2: Physical Properties of Fiberglass

Physical Property	**Description/Value**
Density	2.4–2.76 g/cm^3
Melting Point (°C)	500–750
Boiling point (°C)	~1,000 °C
Tenacity	6.3–6.9 gm/den
Elongation at break	3%
Elasticity	Poor
Moisture regain (MR%)	0%

These sectors require composite materials, especially glass and carbon fiber-reinforced polymer (FRP), due to its high strength, lightness, and corrosion resistance over time:

- Composite materials are desirable for design engineers in the construction sector to build elaborate and irregular envelopes and facades.
- In the wind energy sector, as turbine blades become longer than 50 m, the use of polymer matrix composites is the most sought-after solution.
- The automotive industry also uses composite materials to produce sheet molding compound (SMC) and dough molding compound (DMC), as well as boat hulls.
- In the aeronautic sector, with increasingly demanding flight distance and CO2 reduction targets, the use of composites is of increased importance.

Polyester Resin - It is cost effective and has good water and chemical resistance. It is commonly used in fiberglass products such as boat hulls, automotive parts and construction panels.
Epoxy Resin - It has excellent properties, chemical properties and adhesion. It is often used in high-performance fiberglass products such as aerospace parts, marine structures and composites for advanced engineering applications.
Vinyl Ester Resin - Compared with polyester resin, it has strong corrosion resistance, heat resistance and fatigue resistance. Glass fiber products are used in applications such as chemical products, seafood, oil and petroleum products.
Resin Matrix- Creating a resin for fiberglass products involves combining the resin with additives and catalysts to achieve the desired properties and properties.
Ingredients: Resin (e.g., polyester resin, epoxy resin, vinyl resin) Catalyst (e.g., peroxide catalyst for polyester resin, hardener for epoxy resin) Additives (e.g., fillers, thickeners, pigments)



3.5 Signs of Fiberglass Exposure
Respiratory issues
Eye irritation
Allergic reactions
Itching and skin irritation

3.6 Selection of a process for production
1. Shape to be produced
2. Quantity to be produced
3. Type of material
4. Surface finish and dimensional tolerance
5. Technical viability of the process
6. Economic consideration

3.7 Classification of Patterns:
There are many types of patterns. But the choice of pattern depends on the type of manufacturing process, the shape and size of the required.
a) Single piece pattern: Single piece pattern, also known as solid pattern, is the simplest type of piece with no seams or loose parts. It is used in simple and large shaped castings. This is easy to make.
b) Split pattern: It is made of two halves of a pattern connected by pins. It is used to prepare molds by hand. It is widely used in hand molding. Partitions can be in two or more planes. Classification in simple forming patterns.
c) Loose piece pattern: The model has a large body to which small protrusions are added. After the main body is removed, the product can be removed from the mold. This type of pattern is used to provide the bottom part in castings.

3.8 Major Ingredient in the making is pre-accelerated PET Resin which speeds up the drying process (3-6% gets mixed with the resin matrix).
ADVANTAGES
It is unbreakable, does not react on contact with food or water and has a high strength/weight ratio. Lightness also provides cost savings during transportation in PET containers. PET is highly hygroscopic at low temperatures. For glass fiber reinforced PET materials, bending deformation is a very easy phenomenon at high temperature. The product liquefies at high temperatures (as opposed to burning), making it ideal for recycling.
DISADVANTAGES
The material has lower heat resistance when compared to other polymers. Resins made from PET can oxidize, resulting in a degradation in the taste of food and beverages when the items have a long shelf life and are stored in PET packaging. PET is not a biodegradable plastic, which may be a disadvantage depending on the intended application.

IV. Results

The research done through primary and secondary data analysis revealed that there are a lot of things that business and government authorities need to do in order to encourage sustainable design solutions in luxury weddings. It was observed that during such events there is considerable waste left behind from decorations which is not recycled or repurposed indicating the necessity for enhancing waste management systems and pollution controls. Although luxury weddings are generally associated with glamor and glitter, sustainability has become a buzzword. Due to increased knowledge among individuals about sustainable décor options, waste management practices, and technology use needs to be considered. However, it was also noted that despite the fact that fiberglass looks like a durable & sustainable choice, it is problematic in the long run because it contains plastic resin and glass fibers such as PET-resin which includes high levels of volatile organic compounds such as styrene. It is thus advised that there should be a change to UV curable resins which release fewer chemicals into the environment and are less harmful to people's health. Besides this, conscious use of resources and manpower within the manufacturing process contributes significantly towards minimizing waste production while achieving cost-effectiveness and time optimization. In conclusion, the luxury weddings design and décor industry has great potential for sustainability transformation on its product lines as well as services delivered making them friendlier to nature thus contributing to greener healthier future.

4.1 Table 3

Type of Wall	Size	Manpower	Time	Total Layer of Resin matrix coating	Total cost of 1 sheet	Total cost per sq. feet
Pattern	10 x 5.5 sq.ft	2	1 hour	2	Rs. 1787.64	Rs. 32.47
Plain	11 x 8 sq.ft	3	1 hour	1	Rs. 1406.24	Rs. 15.98

This instrument (Table 3) used in the research is to gather data on the total amount of material used, personnel utilization, total time taken, waste generated, and overall cost involved in building two walls. The purpose of this is to collect comprehensive data on different wall construction features so that various wall kinds can be thoroughly compared to one another. Using the instrument, it was clear that even though the pattern wall was smaller, its complex construction required more materials, which increased material waste and overall cost. Furthermore, even with two workers assigned to the project, the pattern wall took longer to build than the plain wall, which took the same amount of time to finish with three workers despite being larger in size. Based on these results, it was determined that the pattern wall's double layer of resin matrix coating had no appreciable impact on the structural integrity. Consequently, it was found that building the wall would only require one layer of resin, providing a more economical option and reducing resource waste. Based on the comprehensive study made possible by the tool, which offered insightful information for enhancing construction methods and advancing sustainability in the sector, this result was reached. To obtain comprehensive details, kindly consult the appendix that includes the table that displays the comparative statistics between the two walls.

4.2 Table 4 - Online Survey - Thematic Analysis

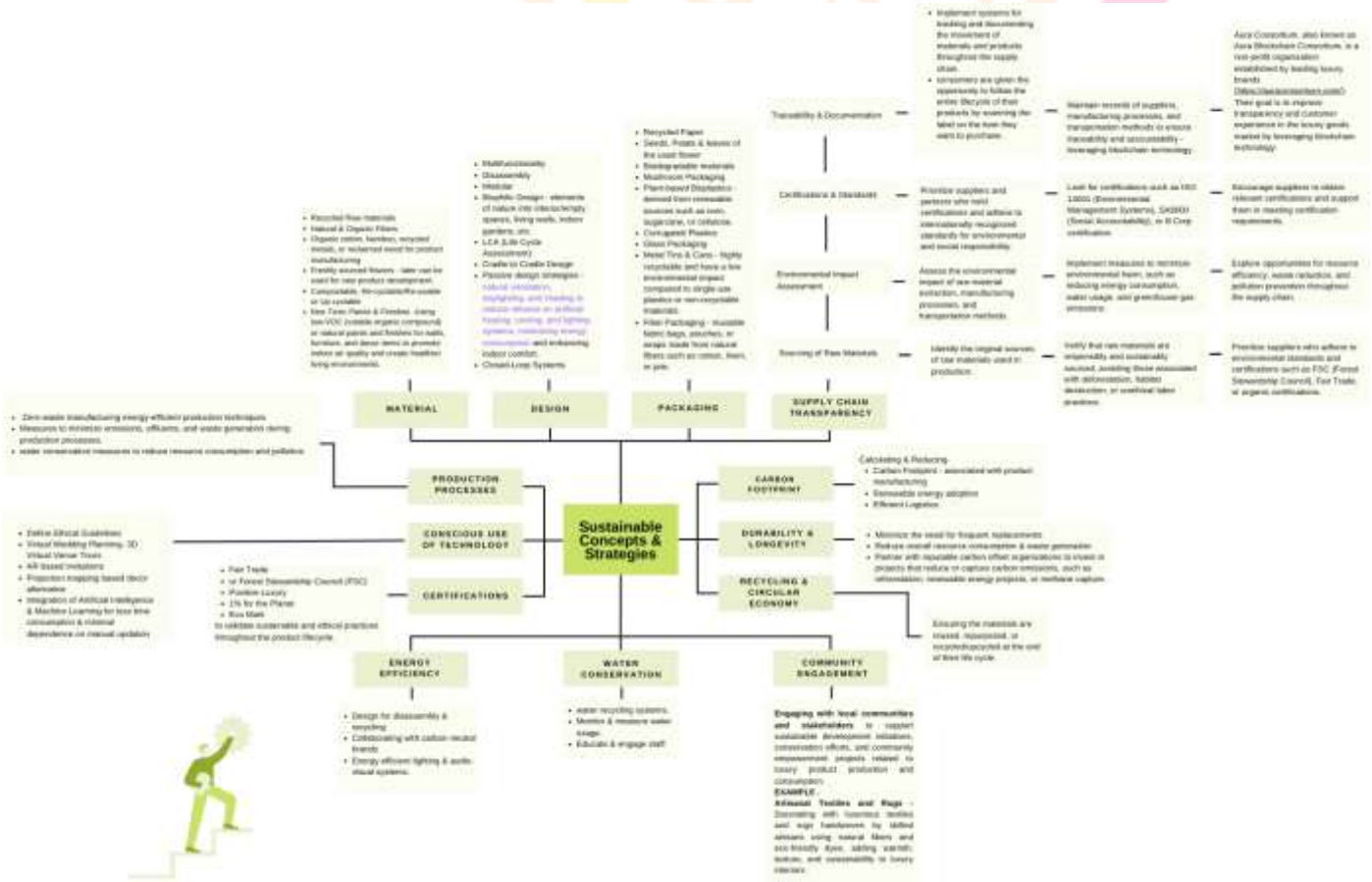
Theme	Subthemes	Examples
Wedding Era Preference	Present Time (2010 onwards), Earlier Years (Before 2010), Both	Present Time (2010 onwards): Majority identify with this era. - Earlier Years (Before 2010): Older participants tend to identify with this era. - Both: Some participants relate to both eras.
Wedding Decor Preferences	- Traditional elements - Contemporary elements - Personalization - Timelessness - Eco-friendly materials	Combination of traditional and contemporary elements - Classic and timeless themes - Modern and minimalist aesthetics - Incorporation of eco-friendly materials such as bamboo and jute
Design Themes Appreciation	- Classic and timeless themes - Personalized and unique themes - Minimalist aesthetics	- Preference for classic and timeless themes - Appreciation for personalized and unique themes - Preference for modern and minimalist aesthetics
Sustainable Practices in Decor	- Use of eco-friendly materials - Emphasis on reusability and recyclability - Incorporation of local elements	- Increase in the use of eco-friendly materials like bamboo and jute - More emphasis on reusability and recyclability of decorations - Incorporation of organic or locally sourced elements
Destination Weddings Trend	- Excitement towards exploring new destinations - Indifference towards destination weddings	- Excitement towards exploring new destinations for weddings - Indifference towards destination weddings
Environmental Hazards Awareness	- Plastic decorations - Floral waste - Paper and cardboard	- Plastic decorations being a concern - Floral waste generation - Paper and cardboard usage
Improvements in Waste Management	- Introduction of waste segregation - Collaboration with waste management companies	- Increased segregation of waste bins for recycling - Collaboration with waste management companies for efficient disposal
Technological Integration in Weddings	- Digital wedding invitations - Live streaming of ceremonies - Projection Mapping experiences - Interactive websites - AR/VR experiences	- Adoption of digital wedding invitations - Live streaming of ceremonies for remote guests - Projection Mapping experiences - Interactive wedding websites - AR/VR experiences
Overall Satisfaction with Evolution	- Mixed satisfaction levels	- Mixed satisfaction with the evolution of waste handling and sustainable solutions in weddings
Technological Changes in Weddings	- Observance of technological advancements	- Observations include advancements like digital wedding invitations, live streaming, and AR/VR experiences
Cultural Preservation	- Preference for traditional decor - Importance of cultural significance	- Preference for traditional decor without much technological integration - Emphasis on preserving cultural significance in weddings
Miscellaneous Observations	- Wedding budgets - Minimalist aspirations - Recycling efforts	- Observations on wedding budgets influencing choices - Aspirations for minimalist weddings - Positive reception

		towards recycling efforts during weddings

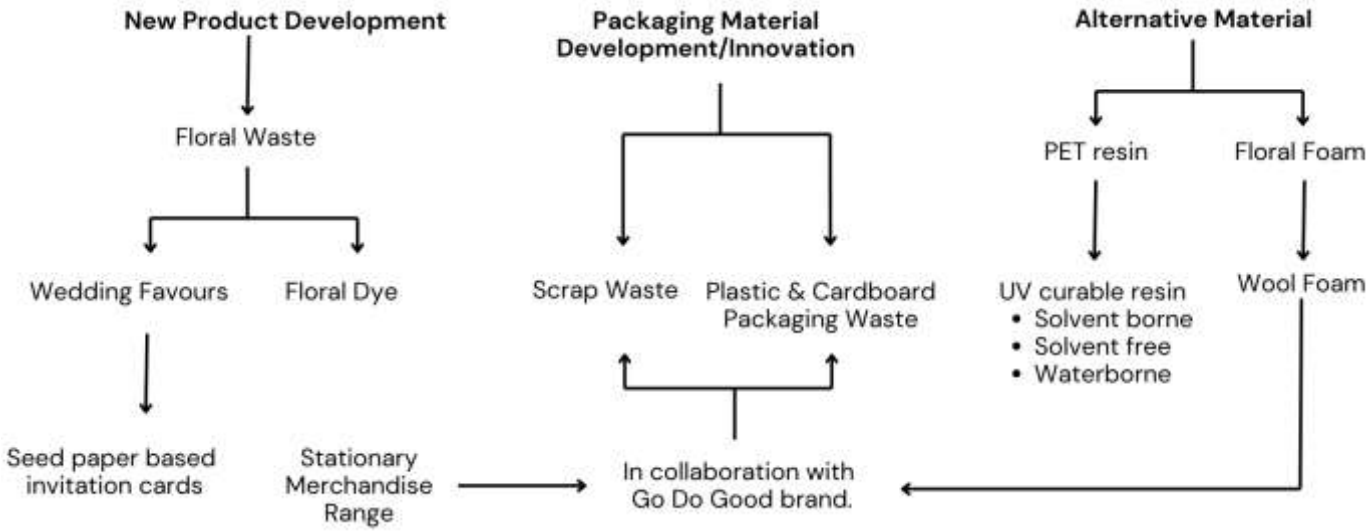
4.3 Table 5 - Interview Thematic Analysis

Theme	Subthemes
Process of Making Fiberglass Props and Sets	Molding and Casting, Finishing and Detailing
Health Impact of Working with Fiberglass	Respiratory Issues, Skin Irritation
Safety Measures and Precautions	Protective Gear, Ventilation
Challenges and Pain Points	Physical Discomfort, Health Concerns
Coping Mechanisms and Adaptations	Work Breaks and Rotation, Health Monitoring
Company Support and Policies	Employee Wellness Programs, Safety Protocols

4.4 Strategies for transforming wedding decor businesses into sustainable design brand



4.5 Outcomes



V. Recommendations

Emphasize the Circular Economy: Consider the importance of adopting a circular economy approach in the wedding industry, where waste from floral decor is repurposed into new products like seed paper invitations. This approach minimizes waste, reduces environmental impact, and adds a unique, eco-friendly touch to wedding stationery. Creative Application of flower Waste: Look into creative applications of flower waste that go beyond seed paper invitations. In order to highlight the elegance and adaptability of sustainable materials in opulent wedding design, think about generating natural dyes from leftover flowers to print on invitation cards and other decorative fabrics. Integration of Technology: Consider the integration of technology as an alternative decor element to further enhance the eco-luxury experience. LED lighting systems that are fueled by renewable energy sources, for instance, can minimize energy use and produce breathtaking visual effects. For wedding guests, interactive and immersive experiences can also be offered through virtual reality or augmented reality installations. Implementing environmentally aware design and décor not only to support sustainability but also to elevate the entire luxury wedding experience. Carefully incorporating sustainable components into weddings to give it depth, significance, and exclusivity, making them accessible to couples that value environmental responsibility without sacrificing style or refinement. 58 Partnership with Eco-Conscious Businesses: Stress the value of partnerships with eco conscious businesses for material sourcing and waste management. Consider meaningful collaborations that have produced creative ways to recycle wasted flowers and find eco-friendly materials for wedding décor. Embrace the need of industry cooperation and group efforts in bringing about positive change and a more sustainable future for opulent weddings. Educate and Inspire: Educate about the potential and advantages of eco-conscious wedding design with couples, vendors, wedding planners, and industry stakeholders. Give helpful advice, case studies, and success stories to show how eco-friendly wedding planning can be incorporated into opulent events in a way that inspires others to do the same.

Conclusion

The study project's findings highlight the transforming potential of eco-conscious design for opulent weddings, especially when it comes to addressing the environmental effects of trash from floral arrangements and non-biodegradable decor pieces like fiberglass sets. Couples can drastically lessen their environmental impact while still creating lavish and unforgettable wedding experiences by switching to sustainable and eco-friendly solutions. In addition to adding a distinctive touch of elegance, recycling floral decor waste into creative goods like seed paper invites and using natural colors made from leftover flowers helps reduce waste and conserve resources. In addition, using eco-friendly substitutes for non-biodegradable décor pieces like fiberglass sets reduces long-term environmental damage while enhancing the opulent feel of weddings. Cooperation with environmentally concerned businesses on waste the environmentally beneficial effects of luxury weddings are further enhanced by management and material procurement. In the end, couples may celebrate their love in a way that not only reflects their values but also leaves a positive legacy for future generations and the environment by giving sustainability top priority while designing and decorating for their wedding.

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