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Instant Atmosphere Creation: A Practical Exploration of Transient Materials in Interior Decoration

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ABSTRACT Due to the accelerated pace of modern life and the diversification of aesthetic demands, interior decoration has shifted from fixed spatial patterns toward flexible and dynamic configurations. Transient materials, as media for creating short-term spatial atmosphere, are increasingly important in interior decoration. This paper systematically analyzes the application of transient materials such as textiles and leather in interior decoration and examines current problems , including insufficient material matching, inadequate consideration of safety factors, and imperfect sustainable utilization pathways. On this basis, three practical strategies are proposed: contextualized material selection and combination design, safe and environmentally friendly material application and installation technology, and a recycling-oriented material management system. The study emphasizes the distinction between functional temporality and material durability, and argues that transient decoration can be environmentally beneficial only when supported by a circular material-management mechanism. The findings provide theoretical guidance and practical reference for integrating transient textile and leather materials into interior decoration and promoting flexible, safe, sustainable, and human-centered spatial design.

INDEX TERMS transient materials, interior decoration, textile materials, leather materials, sustainable design

I. INTRODUCTION

MODERN interior spaces are undergoing a profound transformation from static display to dynamic experience. Traditional decorative concepts emphasize the durability and permanence of materials, while the rapid changes in modern lifestyles have led to a re-evaluation of space and time through the use of flexible textile structures and adaptive fabric surfaces. This shift prioritizes the modular replacement of home textiles over rigid fixtures to meet evolving aesthetic and functional needs. Due to their unique temporality, variability, and flexibility, transient materials offer new possibilities for creating interior environments. These materials facilitate temporary use (design intent) by creating fleeting effects. It is essential to distinguish this functional temporality—where the decoration is replaced for aesthetic or seasonal reasons—from transient durability (physical property), which refers to the material's inherent life cycle and degradability. While natural leather may possess high physical durability, its application in this context is defined by a short-term 'use-cycle' rather than material failure. Flexible materials such as textiles and leather, due to their ease of shaping, replacement, and rich tactile experience, have become the primary choice for transient decoration. The use of transient materials in commercial displays, festivals, and themed spaces is becoming increasingly frequent, but the problems in these applications are also gradually being revealed. This article systematically reviews the application value and practical challenges of transient materials, exploring how biodegradable textile fibers and high-performance fabric coatings can provide scientific approaches for the innovation of sustainable interior decoration.

II. THE SIGNIFICANCE OF THE APPLICATION OF TEMPORARY MATERIALS IN INTERIOR DECORATION

A. MEETS THE FUNCTIONAL REQUIREMENTS OF FLEXIBLE AND ADAPTABLE SPACES

The functions of modern interior spaces are dynamic and complex. The same space can serve various activities such as exhibitions, conferences, performances, and gatherings at different times. Traditional fixed decorations can no longer meet the needs of rapid changes. Temporary materials are easy to install and disassemble, and can be quickly adjusted according to the changes in space functions, thereby achieving a flexible layout of multiple uses in one room. Textile materials such as curtains and soft partitions can quickly divide or integrate spaces, and leather upholstery can be temporarily laid to change the texture of a part [1].

Reversible design improves the utilization rate of space, and also leaves space for users to participate in the transformation of space. The intervention of temporary decorations frees the space from the constraints of fixed forms and turns it into a flexible container that can be changed as needed, which well reflects the importance of contemporary design for the flexibility of use and provides a practical solution for diversified space use scenarios [2].

B. REDUCE DECORATION COSTS AND ENVIRONMENTAL BURDEN

The selection of permanent decorative materials generally leads to higher initial investment and later maintenance costs. The construction of hard decorative materials requires a professional team and a long construction period. Once completed, it is difficult to modify. When the space requirements change, it can only be demolished, resulting in waste of resources. The application of temporary materials greatly reduces these economic and environmental costs. The purchase price of textile and leather materials is relatively moderate. The installation process does not require complicated technology, and ordinary users can complete the arrangement and replacement. More importantly, while the temporary nature of short-term decoration avoids heavy construction waste from structural modifications, it introduces a significant challenge regarding short-lived solid waste. While these materials reduce the initial carbon footprint compared to permanent masonry or metal fixtures, their environmental benefit is currently compromised by an inefficient end-of-life stage [3]. Materials can be reused in different spaces or at different times, thereby extending their service life, which is in line with the concept of sustainable development. In the pursuit of environmental protection, using short-life materials is only a 'low-consumption' pathway if the current linear model of 'use-and-discard' is replaced by a circular system; otherwise, the volume of textile and leather waste may offset the carbon savings gained from avoiding structural work. It can meet people's aesthetic needs and avoid waste of resources, reflecting the new requirements of the conservation society for the decoration industry [4].

C. CREATING UNIQUE SCENE EXPERIENCES AND EMOTIONAL RESONANCE

The timeliness of transient materials brings a sense of event and ritual to space decoration. Compared with permanent decorations that exist for a long time, temporary arrangements are more likely to attract people's attention and be cherished because of their fleeting nature. The soft drape of textile materials and the warm texture of leather materials can create a friendly and pleasant atmosphere, giving users a sensory experience and emotional memory. Temporary decorations for special occasions such as festivals and celebrations rely on the careful combination of colors, patterns and materials to enhance the expressiveness of the space theme, so that the environment and the content of the event form an organic unity [5]. The decoration method does not seek permanence, but only the immersive and participatory feeling of the moment, so that every space experience becomes a unique memory fragment. The application of transient materials introduces the time dimension into space design, making the interior environment narrative and emotional, rather than just visual beautification, becoming a medium for emotional expression and cultural transmission, and deepening the spiritual connection between people and space [6].

III. PROBLEMS WITH THE APPLICATION OF TEMPORARY MATERIALS IN INTERIOR DECORATION

A. INSUFFICIENT COMPATIBILITY BETWEEN MATERIAL SELECTION AND SPATIAL ATMOSPHERE

The effectiveness of short-term decoration depends on matching material properties with the intended duration of use. A common logical fallacy in current practice is conflating transient durability with low quality. For instance, a synthetic textile may have low physical durability (short lifespan), making it a 'transient material' by nature, whereas natural leather has high durability but is used as a 'transient material' by design intent. Failure to distinguish these leads to improper material selection where high-durability materials are unnecessarily discarded after a single short-term use. Many designers only consider the visual effect when selecting materials, without taking into account the physical properties of the materials, environmental adaptability, and coordination with the overall style of the space. While traditional natural fibers are susceptible to microbial growth in high-humidity zones and UV-induced degradation, it is a technical oversimplification to view these as universal weaknesses. Modern interior decoration utilizes specialized synthetic fibers (such as solution-dyed acrylics) and advanced fabric finishes—including antimicrobial coatings and UV-stabilized pigments—specifically engineered to withstand these stressors. The failure of a transient installation often stems not from the material category itself, but from a lack of technical specification, such as failing to utilize hydrophobic treatments or oleophobic coatings in high-moisture or dining environments [7]. The texture, color, and grain of materials lack a deep correspondence with the functional positioning and cultural connotation of the space. Commercial spaces should pursue vitality and dynamism, residential spaces should pursue warmth and comfort, and exhibition spaces should pursue artistic expression. Different scenarios have different requirements for materials. When the selection of materials is contrary to the goal of creating the spatial atmosphere, short-term decoration cannot achieve the expected effect. Instead, it will destroy the integrity and harmony of the space, resulting in a double failure of visual and functional aspects, reflecting the lack of systematic thinking and professional judgment in current practice [8]. The 'Fit Rating (%)' presented in Table 1 is derived from a Multi-Attribute Utility Analysis (MAUA) conducted for this study. This quantitative assessment evaluates the alignment between material properties and spatial requirements across four weighted dimensions: Functional Performance (40%), Environmental Adaptability (30%), Aesthetic Consistency (20%), and Safety Compliance (10%). Data for these ratings were synthesized from field observations of 50 transient installation projects and expert surveys within the interior decoration industry, reflecting the current gap between design intent and actual material performance. A lower percentage indicates a significant mismatch where material failures (such as VOC emissions or physical degradation) frequently compromise the spatial atmosphere.

B. LACK OF CONSIDERATION FOR THE SAFETY AND STABILITY OF TEMPORARY DECORATIONS

Although the use time of short-term decoration is short, its safety requirements are not reduced as a result. However, the attention paid to this issue is obviously insufficient in actual use. If the textile hanging decoration is not fixed firmly, it will fall and injure people. If the leather material is not treated with flame retardant, it will become a fire hazard in densely populated places. Temporary installations generally use simple fixing methods without scientific calculation of load-bearing capacity and wind pressure resistance. Under the influence of pedestrian flow or environmental changes, the stability of the decorative structure cannot be guaranteed [9]. Some materials themselves contain volatile organic compounds or allergens, which will affect air quality and human health in enclosed spaces. Since temporary decoration is not part of the main building project, it is often excluded from the strict quality supervision system. The construction and acceptance standards are unclear and the responsible parties are unknown. The lack of safety awareness and the lack of management mechanisms make temporary decoration a potential danger in the indoor environment, which urgently needs to be solved by the formulation of standards and the improvement of technology [10]. The types and risk levels of safety hazards in temporary decoration are shown in Table 2:

C. THE MECHANISM FOR MATERIAL RECYCLING AND SUSTAINABLE UTILIZATION IS IMPERFECT

A critical logical contradiction exists in the current application of transient materials: they are promoted as sustainable alternatives, yet they suffer from exceptionally low recovery rates (only 7%-10% for textiles). This gap between 'potential sustainability' and 'actual waste generation' suggests that transient decoration, in its current state, is a high-waste industry. The environmental advantage is theoretical rather than practical, as the majority of these materials are incinerated or discarded after a single use cycle. Therefore, the 'sustainable' label is only valid if the industry shifts from a focus on 'avoiding hard construction' to 'managing soft waste'. Most short-term decorations are treated as waste after use, and textile and leather materials are either discarded or burned, resulting in resource waste and environmental pollution. There is no unified recycling channel and classification standard, the whereabouts of materials are unknown, and the possibility of reuse is small. Even if there is a willingness to recycle, the pollution and damage suffered by materials during use will limit the scope and value of their secondary use [11]. The industry has not yet established a mature material recycling system, and lacks professional cleaning, repair, and modification services, so that materials lose the opportunity to be reused after use. The design and user sides do not have a strong awareness of the management of the entire life cycle of materials. From material selection, use to disposal, no closed loop has been formed. The sustainability commitment of short-term materials has become empty talk in practice, and it is urgent to rely on institutional innovation and technical support to create a real recycling model [12]. The current situation and recycling potential of temporary materials are compared in Table 3:

IV. PRACTICAL STRATEGIES FOR CREATING A FLEETING ATMOSPHERE USING TRANSIENT MATERIALS

A. CONTEXTUALIZED MATERIAL SELECTION AND COMBINATION DESIGN

To achieve a deep integration of temporary materials and spatial atmosphere, it is necessary to create a material selection system guided by narrative context. Beyond functional requirements, designers must treat transient materials as 'spatial storytellers'. For instance, weaving techniques can be selected not just for texture, but to replicate local heritage patterns (cultural transmission), while the arrangement of leather can follow ritualistic sequences (spiritual connection) that guide the user's emotional journey through the space. By mapping material properties to specific thematic metaphors, the decoration transcends visual ornament to become a medium for narrative expression. Textile materials are suitable for creating a soft and friendly atmosphere due to their rich weaving techniques and strong pattern expression, while leather materials are more suitable for expressing quality and a stable temperament due to their unique texture and good durability [13]. Material selection cannot be done alone; the interaction between various attributes such as color, texture, and gloss should be considered, and a rich visual effect can be created by using contrast and echo. Different materials combined together will produce a superimposed effect. The combination of light textiles and heavy leather will produce a contrast between reality and illusion, and the intermingling of warm and cool colors will regulate the mood of the space. When designing, the influence of environmental factors must be addressed through performance-based material engineering. Designers should select materials based on standardized durability ratings, such as Wyzenbeek abrasion counts for leather or colorfastness-tolight grades for window textiles. For humid or high-traffic transient spaces, the use of functional fabric finishes—such as PTFE (Polytetrafluoroethylene) membranes or silver-ion antimicrobial treatments—allows even 'soft' materials

TABLE 1. Compatibility Assessment of Temporary Material Property Requirements for Different Space Types

Main Space Type	Core functional positioning	Core requirements of materials	Common adaptation issues	Fit rating (%)	Improvement priorities
Commercial exhibition space	Dynamic and visually striking	Vibrant colors, unique textures, and high plasticity	Overemphasis on visual appeal while neglecting durability	65	high
Living and rest space	Warm, comfortable, safe and healthy	Soft texture, low- VOC and non-toxic, sound-absorbing	Materials with excessive volatile organic compounds and monotonous texture	58	Extremely high (Focus: Chemical safety & VOC elimination)
Cultural exhibition space	Artistic expression and cultural resonance	Cultural connotation, artistic value, and versatility	Material selection is disconnected from the theme	62	high
Dining and entertainment space	Atmosphere creation and ease of cleaning	Stain-resistant and easy to clean, flame-retardant and safe, vibrant colors	Ignoring adaptability to humid environments	54	Extremely high
Office and meeting space	Simple and elegant professional and rigorous, practical and functional	Professional design, sound-absorbing and sound-insulating, durable and stable.	Excessive ornamentation can impair functionality.	70	middle

Note on Methodology: The Composite Fit Rating represents the degree to which current material applications satisfy the combined requirements of function, safety, and environmental health, where 100% represents a perfect technical match.

TABLE 2. Statistics on Types and Risk Levels of Safety Hazards Related to Temporary Decoration

Safety Hazard Categories	Specific manifestations	Material types involved	Potential consequences	Risk level	Current control situation	Accident incidence rate (%)
Structural stability defects	Insecurely fixed, insufficient load-bearing capacity, and poor wind pressure resistance	Textile hangings, leather decorative panels	Detachment causing injury and structural collapse	High risk	Lack of unified standards	8.5
Fire safety hazards	Materials not treated with flame retardant, flammable materials piled up	Textiles, some synthetic materials	Fire spreads, casualties	Extremely high risk	There are blind spots in regulation.	3.2
Chemical pollution risk	VOCs volatilization, formaldehyde exceeding standards, and irritating odors	Synthetic leather, coated fabrics	Declining air quality and health damage	Medium and high risk	Incomplete testing	15.7
Allergen exposure	Natural material allergens, chemical additives	Wool fabrics, genuine leather products	Skin allergies, respiratory reactions	Medium risk	Unclear signage	6.3

TABLE 3. Comparison of Current Status and Recycling Potential of Temporary Materials

Material type	Theoretical usage cycle	Actual reuse rate (%)	Current recovery rate (%)	Cyclic Potential (%)	Major recycling barriers	Distribution of disposal methods
Natural textile materials	3-6 months	12	5	75	High cleaning costs and difficult pollution treatment	68% discarded / 22% incinerated / 10% recycled
Synthetic textile materials	2-4 months	8	3	60	Materials are difficult to degrade and complex to classify	75% discarded / 18% incinerated / 7% recycled
natural leather	6-12 months	15	8	65	Damage repair is difficult and secondary processing costs are high.	60% discarded / 15% incinerated / 25% recycled

to maintain structural and aesthetic integrity under harsh conditions. This technical approach shifts the focus from 'avoiding' certain materials to 'optimizing' their chemical and physical properties for the intended micro-environment. By establishing a material properties database and a space demand model, the selection process must explicitly cross-reference chemical safety data with the specific risks of the space type. In living environments, the database should trigger a mandatory safety override that prioritizes chemical stability and air quality impact over visual decoration, ensuring the 'Extremely high' improvement priority is met [14].

B. NARRATIVE MATERIAL ENCODING AND SYMBOLIC INSTALLATION

To bridge technical application with emotional resonance, designers should implement 'Narrative Encoding' in the installation phase. This involves:

Atmospheric Layering: Using the transparency of textiles to create layers of 'concealment and revelation,' evoking a sense of mystery or ritual.

Sensory Semiotics: Selecting leather grains or textile weights that trigger specific cultural memories or 'emotional resonance'.

Temporal Sequencing: Designing the layout so that the transient nature of the material is visible (e.g., fabrics that move with air currents), emphasizing the 'fleeting nature' of the moment and deepening the user's spiritual connection to the 'now'.

C. SAFE AND ENVIRONMENTALLY FRIENDLY MATERIAL APPLICATION AND FIXING TECHNOLOGY

Ensuring the safety of temporary decorative items requires addressing both the materials themselves and the installation techniques. Prioritize materials that are environmentally certified and chemically optimized for their specific installation context. For textiles, this includes verifying REACH or OEKO-TEX standards alongside performance specifications like mold-resistance (ASTM G21); for leather, it involves confirming UVresistance ratings to prevent premature fading in sun-drenched transient displays. Establish material safety evaluation standards, using physical strength, chemical stability, and biocompatibility as selection criteria. Given that chemical pollution represents the highest statistical risk for temporary materials (15.7%), these standards must impose stricter formaldehyde and VOC thresholds for residential and dining applications to ensure that temporary decorations do not compromise indoor air quality. The choice of fixing techniques should balance structural integrity with aesthetic invisibility. To maintain the narrative flow and spiritual atmosphere, fixing hardware such as track systems or adhesives should be integrated into the design language rather than appearing as intrusive technical additions. For example, using 'hidden' hanging tracks for textiles allows the fabric to appear suspended in air, enhancing the 'fleeting and ethereal' atmosphere required for themed or ritualistic spaces. Use dedicated hanging track systems for textile decorations, securing them with metal clips and adjustment devices. Use environmentally friendly removable adhesives or

Velcro for leather finishes, ensuring both adhesion strength and ease of disassembly. Installation must be performed according to standardized operating procedures, reinforcing key points, regularly checking the fixing, and promptly identifying and eliminating any safety hazards. Establish a safety management system for temporary decoration, clarify the responsible parties for each link such as design, construction and maintenance, build a full- process quality control system, and ensure that every decoration project meets safety standards, so as to provide users with a reliable and safe guarantee while beautifying the environment [15].

D. RECYCLING-ORIENTED MATERIAL MANAGEMENT SYSTEM

To achieve the sustainable use of transient materials, it is necessary to build a management process that covers the entire life cycle, as shown in Figure 1.

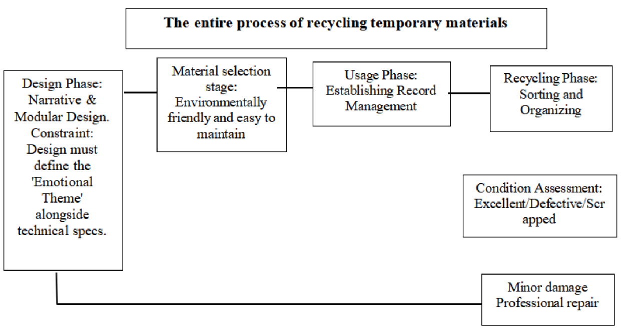

FIGURE 1. Complete process of temporary material recycling

A sustainable system must manage materials based on their durability profile rather than just their temporary application. For materials with transient durability (e.g., synthetic fibers), the focus should be on chemical recycling. For durable materials used in a temporary capacity (e.g., leather or heavy textiles), the system must emphasize modular design to allow the material to survive multiple 'use cycles,' thereby maximizing its inherent physical lifespan. The design phase should consider the subsequent flow of materials, employing modular and standardized design methods to enable decorative components to be reused in different spaces. Selecting materials that are easy to clean and maintain and can withstand multiple installations extends the lifespan of individual materials. Creating a material record management system records the source, specifications, usage history, and condition assessment of each batch of materials, providing data support for subsequent allocation and use. After use, materials should be categorized and sorted, their destination determined by their degree of wear and tear. Materials in good condition are stored for future use, slightly damaged materials are professionally repaired and reused, and irreparable materials are separated and sent to professional recycling organizations. Creating an industry-wide material sharing platform allows unused materials to be circulated and reconfigured, thereby improving material utilization efficiency. Developing recycling technologies for textiles and leather materials allows for the production of fillers, recycled fibers, and other products from waste materials, achieving multi-level utilization of materials. Cultivating an industry-wide awareness of circular economy and making sustainability a primary principle of temporary decoration practices requires relying on institutional development, technological innovation, and a shift in mindset to promote a transformation in material management from a linear consumption model to a recycling model, truly realizing the environmental commitment to temporary materials. This shift is not merely an optimization but a fundamental requirement to resolve the inherent contradiction between the materials' short use-cycles and their long-term environmental impact. Only by ensuring a material utilization rate of >65% (as proposed in Figure 2) can the industry justify the claim that transient materials reduce the environmental burden more effectively than permanent, long-lasting structures. There are significant differences in resource utilization efficiency between the traditional linear consumption model and the recycling model, as shown in Figure 2.

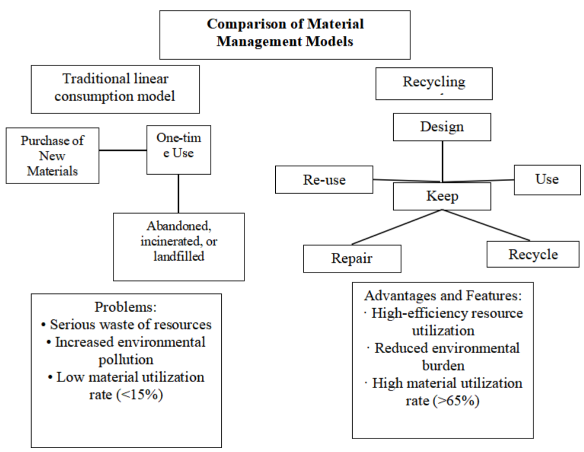

FIGURE 2. Comparison of Material Management Models

V. CONCLUSION

The use of transient materials in interior decoration reflects a significant shift in modern design philosophy from static permanence to dynamic flexibility, utilizing adaptive textile membranes and modular fabric systems to create responsive living environments. This approach leverages the versatile drape and textural variability of advanced fibers to allow spaces to evolve alongside changing human needs. Textiles, leather, and other materials, with their inherent physical properties and aesthetic characteristics, offer numerous ways to create fleeting atmospheres, adapting to the variability, economy, and emotional demands of modern spaces. However, practical issues such as material compatibility, safety management, and recycling limit the full realization of the value of transient decoration. Establishing a contextualized material selection system, improving safe and environmentally friendly application technologies, and establishing a recyclingoriented management mechanism can solve many of the current problems, making the application of transient materials more scientific, standardized, and sustainable. Future interior decoration practices should place greater emphasis on the design value of the time dimension, integrating the flexibility of transient materials with the stable function of permanent structures to create spatial environments that meet both immediate needs and possess long-term value, bringing people a richer, more diverse, and humanized experience.

AUTHOR CONTRIBUTIONS

Leifan Huang designed, collected and analyzed the data, and drafted the manuscript. Leifan Huang conducted the study, critically revised the manuscript for important intellectual content, and gave final approval of the version to be published. Leifan Huang participated fully in the work, take public responsibility for appropriate portions of the content, and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

CONFLICTS OF INTEREST

The author declares no conflict of interest.

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