

# Application of Exposed Concrete Decorative Elements in Interior Design

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**Abstract:** Exposed concrete, as a finish material eschewing superfluous adornments and centering on raw texture, transcends conventional interior ornamentation through its austere grain patterns, primordial palette, and singular artistic articulation. It has emerged as a defining element in contemporary interior design—articulating individuality and artistic style. This paper takes the core characteristics of exposed concrete decorative elements as the entry point, deeply explores the application principles, specific application scenarios and practical strategies of exposed concrete decorative elements in interior design, analyzes the challenges in the application process and proposes optimization pathways, aiming to provide theoretical and practical reference for the scientific and reasonable application of exposed concrete decorative elements in interior design, and drive interior design toward a paradigm of minimalist forms, unadorned material authenticity, and expressive spatial autonomy.

**Keywords:** Exposed Concrete; Decorative Elements; Interior Design; Application Strategies; Raw Texture

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## 1. Introduction

As contemporary interior design philosophy evolves, spatial aesthetics shift from ornamental excessiveness toward essentialized materiality—embracing natural, unadulterated, and cozy spatial experience. Exposed concrete, with its monolithic casting process and rejection of secondary claddings, directly manifests the material's inherent grain, mineral chromaticity, and haptic veracity—transcending the industrial “coarse and sterile” stereotype to emerge as a critical mediator between industrial aesthetics and natural aesthetics. In contemporary design styles such as minimalism, industrial style, and wabi-sabi style, exposed concrete decorative elements have been extensively used due to their unique artistic value and functional advantages. This paper focuses on the application of exposed concrete decorative elements in interior design, and delves deeply into the application logic and practice considerations, providing more targeted reference for interior design practice.

## 2. Core Characteristics of Exposed Concrete Decorative Elements

### 2.1 Authenticity of Raw Texture

The most distinctive feature of exposed concrete is the authenticity of its raw texture. It rejects secondary claddings such as applying paint or pasting ceramic tiles, and directly manifest the textural topography, striation patterns, and formwork imprints generated during the concrete casting process, preserving the material's unadulterated state. This textural dimensionality emerges not as contrived ornament, but as naturally formed textural hierarchy—each grain pattern and color & luster bearing irreducible uniqueness, which makes interior space emancipate from decorative artifice, showing an artless but high-class aesthetic. Unlike traditional decorative materials that strive for “perfect and flawless finish”, exposed concrete readily accepts the natural minor pores and color variations generated during the concrete casting process. These seemingly “imperfect” details actually give the space a unique narrativity and artistic tension, aligning with contemporary people's pursuit of nature and true life <sup>[1]</sup>.

### 2.2 Plasticity of Color Tone and Surface Grain

Exposed concrete is not monotonous grey. By adjusting the ratio of cement and aggregate, selecting formworks and the managing construction technology, exposed concrete can achieve a wide range of color variations from light grey, medium grey to dark grey. Even by adding natural mineral pigments, it can manifest warm grey, cyan grey and other stratified colors. Concurrently, it has extremely strong plasticity too. By using formworks of different materials, natural grains, such as wood grain and bamboo grain, can be left on the concrete surface. Or through processes like

acid washing and sanding, aggregate can be faintly discernible, presenting a striking contrast between roughness and delicacy in the tactile sensation. This plasticity enables exposed concrete to adapt to various design styles. It can manifest rugged industrial style, interpret introverted minimalist style, and align with unvarnished wabi-sabi style [2].

### ***2.3 Eco-Effectiveness and Service Life Assurance***

During the production and use of exposed concrete, secondary claddings are rejected, reducing the use of chemicals, such as paint and adhesive substance, and reducing environmental pollution, which aligns with the green environmental protection concept of contemporary interior design. Concurrently, it has extremely strong service life assurance—excellent crush resistance, resistance to corrosion and fire resistance. It is unlikely to have problems such as peeling or detachment. Its service life is much longer than that of traditional decorative materials [3]. In addition, exposed concrete surface is smooth and flat, and easy to clean and maintain. It does not require complex maintenance procedures. It is suitable for both private spaces such as homes and public areas such as museums, libraries, and commercial space, integrating aesthetic value with use value.

## **3. Application Principles of Exposed Concrete Decorative Elements in Interior Design**

### ***3.1 Holistic Design Principle***

The application of exposed concrete decorative elements should follow the holistic design principle to align with the holistic design style, functional requirements and spatial layout of the interior space, preventing visual fragmentation: ensuring tectonic coherence in material application. During the design process, it is essential to synthesize exposed concrete with furniture, soft furnishings, and luminaires into a cohesive material narrative. For instance, in minimalist space, exposed concrete operates as the primary tectonic finish for vertical planes and horizontal planes, synergizing with unadorned wooden furniture and soft lighting—accentuating spatial clarity and visual permeability. In industrial-style space, exposed concrete can synergize with elements, such as metal and glass, to enhance the ruggedness and individuality of the space, ensuring consistency in the holistic design style.

### ***3.2 Functional Performance Principle***

The core of interior design lies in meeting the functional requirements of the space. The application of exposed concrete decoration elements should not only focus on aesthetic effects but also account for functionality. Different interior space has different functional requirements, and exposed concrete needs to be reasonably used in accordance with the functionality of the space [4]. For instance, as the core area for guest reception and relaxation, exposed concrete walls of living rooms can synergize with concealed luminaires to create a comfortable communication atmosphere. As reading and working space, exposed concrete floors of studies must prioritize slip resistance and abrasive resistance. Concurrently, its primordial palette can help people calm down. The exposed concrete walls in bathrooms should make waterproofing to ensure the safety and practicality.

### ***3.3 Human-Centric Design Principle***

Exposed concrete, while inherently imbued with mineral rigor and rigidity, demands to follow the human-centric design principle in its application in interior design—through tactical material juxtapositions and spatial orchestration to temper its industrial chill and cultivate cozy space. By synergizing with ligneous matter with emollient tactility, and soft decorative fabrics, or introducing natural light, exposed concrete can neutralize with warm decorative elements to create a high-end and cozy space atmosphere. Simultaneously, it is essential to account for ergonomic requirements. For instance, the corners of exposed concrete walls should be polished to avoid potential safety hazards caused by sharp edges. The grain patterns of floors should be moderate to avoid being too rough, thereby affecting the walking experience [5].

## **4. Specific Application Scenarios of Exposed Concrete Decorative Elements in Interior Design**

### ***4.1 Private Residential Space***

In private residential space, the application of exposed concrete decorative elements mainly focuses on core

areas such as living rooms, bedrooms, and studies, aiming to create minimalistic, natural, and personalized living environment. As the showpiece of a residence, the living room can use exposed concrete as the main wall finish, and retain the natural grains left by formworks, and synthesize with unadorned fabric sofas, wooden coffee tables and green plants to make the space with both rough industrial style, and warm and cozy atmosphere of life. In the bedroom space, the exposed concrete background wall can synthesize with warm-toned lighting and soft bedding to soften the starkness to cultivate a sanctuary of tranquil comfort. Concurrently, its parsimonious texture can help people relieve fatigue and relax their mind. In the study space, the exposed concrete floor and walls can create a steady and quiet atmosphere, synthesizing with bookshelves and desks to accentuate the cultural ambience of the space, enabling readers to focus solely on the books themselves.

In detail design of residential space, exposed concrete can also play a unique role. For instance, exposed concrete can be used for vertical planes and horizontal planes of the hallways to craft a concise and grand arrival narrative, for the background walls of restaurants, synergizing with wooden dining tables and chandeliers to cultivate a minimalistic yet elegant dining atmosphere, and for the floors and walls of balconies, working in concert with natural landscape outside to create leisure space that is close to nature.

#### **4.2 Public Space**

In public space, exposed concrete decorative elements are extensively used in museums, libraries, commercial space, office space, and other areas due to their service life assurance, practicality and artistic articulation. Museums and libraries serve as venues for cultural transmission. The simple and unadorned texture of exposed concrete can align with their cultural atmosphere. Exposed concrete can be used as decorative material for walls, floors and display stands to foreground the historical patina and artistic resonance of exhibits. Simultaneously, its primordial palette can enable visitors to calm down and appreciate the charm of culture. In commercial space, exposed concrete can be used for the door headers, walls and floors of shops to forge an eye magnet with semiotic singularity to captivate consumer attention. For example, in coffee shops, art galleries, designer shops, etc., the raw texture of exposed concrete can cultivate an upscale and minimalistic atmosphere, elevating the brands' semiotic aristocracy.

In office space, exposed concrete decorative elements can be used for the walls, floors and partition walls of the office areas to create minimalistic, high-efficiency and cozy office environment. Its parsimonious texture minimizes visual clutter, facilitating sustained attentional engagement. Concurrently, its endurance and low-maintenance profile align with workplace efficiency imperatives. In addition, exposed concrete can also be used in public corridors, stairwells, and other areas to enhance the holistic texture and coherence of public space through concise design.

### **5.Challenges in the Application of Exposed Concrete Decorative Elements in Interior Design and Optimization Pathways**

#### **5.1 Main Challenges in the Application Process**

Currently, there are still some critical challenges in application of exposed concrete decorative elements in interior design, which directly affect the manifestation of their application outcomes and the wide promotion within the industry. On the one hand, certain designers have a limited understanding of the core characteristics of exposed concrete. They merely regard it as a “showpiece” to manifest their designs' individuality. During the application process, they overly overemphasize the form beauty and visual impact, while neglecting the functional requirements and human-centric needs of interior space. As a result, exposed concrete is seriously disconnected from the holistic atmosphere and usage requirements of the space. Not only does it fail to leverage its raw texture advantages, but it renders the space with a pronounced sense of starkness and coldness due to its excessive use or improper combination, and reduces the space's comfort level, failing to meet people's pursuit of warm and cozy space. On the other hand, exposed concrete puts forward extremely high requirements for the construction technology. However, current level of construction technology varies greatly within the industry, and some construction teams lack professional operational skills, and fail to maintain unified standards in key components such as concrete casting,

maintenance, and surface treatment. During the concrete casting process, the material ratio is not accurately controlled, and the concrete casting speed is uneven. During the maintenance phase, the temperature and humidity is improper, and the maintenance time is insufficient. During the surface treatment phase, construction technology is also unreasonable. These problems result in cracks, chromatographic inconformity, chaotic grain, and other defects on the surface of exposed concrete, seriously affecting its artistic articulation, which transgress the autogenous aesthetic essence of exposed concrete. Furthermore, entrenched in perceptual inertia, a segment of the populace still perceives exposed concrete through the tactile-auditory dissonance of ‘textural crudity, coldness, and value diminution’, relegating its application to non-residential space such as industrial plants, while remaining oblivious to its aesthetic value and use advantages in interior design. This epistemological barrier substantially constrains the dissemination of exposed concrete decorative elements in interior design sector.

## **5.2 Optimization Pathways**

In response to the problems in the above-mentioned application process, it is necessary to make precision efforts and take various measures to systematically optimize the application of exposed concrete decorative elements from three core dimensions: design, construction, and cognition, adequately realizing their aesthetic value and use value. At the design level, designers need to first deeply delve into the tectonics of exposed concrete: material ontology, grain metamorphosis, and chromogenic logics, repudiate the aesthetic hegemony in favor of ontological pragmatism, and integrate the application of exposed concrete with the functional requirements, design style and holistic atmosphere of the space to make a scientific and practical application plan. In matching design, designers must place emphasis on the organic combination of exposed concrete with ligneous matter with emollient tactility, soft furnishings, green plants, and other elements to soften the starkness in the contrast of materials and enhance the comfort level and holistic coherence of the space. Simultaneously, they must refine the details, finely polish the corners of the walls to avoid potential safety hazards caused by sharp edges, choose soft warm light to highlight the textural hierarchy of exposed concrete, and synchronize tectonic grain with spatial functionality to achieve aesthetic-pragmatic symbiosis, holistically amplifying applied efficacy.

At the construction level, it is essential to establish a sound construction standard system, enhance the professional competence and operational skills of construction personnel, and strengthen the whole-process quality control on key components such as concrete casting, maintenance, and surface treatment. Before concrete casting, it is necessary to strictly select the raw materials such as cement and aggregate, precisely control the material ratio, determine the concrete casting speed and methods according to the design requirements to evade from problems such as pores and cracks caused by unbalanced ratio or improper concrete casting. During the maintenance phase, it is necessary to adjust the maintenance plans scientifically according to the ambient temperature and humidity, and maintain appropriate temperature and humidity to extend the maintenance period, ensure that the strength of the concrete reach the standards, and simultaneously, protect the surface grain and color from damage. In the surface treatment phase, it is necessary to select appropriate processes based on design requirements to precisely remedy surface defects, guaranteeing grain legibility and chromatographic homogeneity in exposed concrete, fully unveiling its telic aesthetic essence.

At the cognitive level, it is imperative to strengthen the dissemination of exposed concrete decorative elements and unveil its unique aesthetic value, eco-effectiveness advantages, and endurance comprehensively through various means such as industry exhibitions, design case sharing sessions, and new media dissemination to undermine the perceptual inertia that exposed concrete is rough and cold. Simultaneously, it is necessary to organize excellent examples of interior design using exposed concrete to present the application outcomes in various space visually, enabling the public to clearly immerse in the minimalistic, natural and high-end spatial experience brought by exposed concrete, and guiding more people to understand, accept and proactively use exposed concrete decorative elements to cultivate favorable cognitive environment for its extensive use in interior design.

## 6. Conclusion

Exposed concrete decorative elements, with their raw texture, plasticity, eco-effectiveness and service life assurance, occupy an important position in contemporary interior design. Their application not only enriches the aesthetic expression of the interior space, but also aligns with people's pursuit of natural, minimalistic and personalized space. This paper conducts an in-depth analysis of the core characteristics, application principles, and specific application scenarios of exposed concrete decorative elements, discovers that there are challenges, such as design misalignment, non-standard construction, and insufficient understanding, during its application process, and proposes corresponding optimization pathways. The application of exposed concrete decorative elements in interior design is not merely ornamental superposition, but the integration of material properties, design philosophy, and spatial functionality, prioritizing spatial holism, functional integrity, and anthropocentric ergonomics. In the future, with the continuous renewal of design philosophy and the continuous improvement of construction technology, exposed concrete decorative elements will be used in interior design more extensively, injecting new energy into the development of the interior design industry and propelling the indoor space to develop toward more natural, minimalistic and personalized.

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