

## Abstract book

The 2nd  
international conference

IIDT 2025

# Inspiration and Innovation Design Trends

27-28 January 2025





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### **Forward:**

It is with immense pride that I reflect on the success of the 2nd International Conference in Interior Design and Architecture, held on January 27-28, 2025. This event, themed “Inspiration and Innovation: Design Trends”, has not only showcased the remarkable talent within our community but has also highlighted the critical role of interior design and architecture in shaping our environments and experiences.

The IIDT 2025 conference provided a unique platform for scholars, professionals, and students to engage in meaningful dialogue about the future of interior design. With an impressive lineup of speakers and a diverse array of topics, the conference fostered an environment of collaboration and creativity, encouraging participants to explore new ideas and challenge conventional practices.

In an era where design is increasingly intertwined with technology, sustainability, and cultural narratives, this conference underscored the importance of innovation in the field. The insights shared by our esteemed presenters and participants have the potential to inspire future generations of designers, equipping them with the knowledge and tools necessary to create spaces that are not only aesthetically pleasing but also functional and inclusive.

I would like to extend my heartfelt congratulations to the organizing committee, speakers, and attendees for their contributions to this landmark event. Your passion and dedication to the discipline of interior design are commendable, and I am excited to see how the ideas generated during this conference will shape the industry in the future.

**Prof. Abdullah Al Hawaj**  
Founding President, Ahlia University



### **Introduction:**

It is my honour to introduce the collection of abstracts from the 2nd International Conference in Interior Design and Architecture, themed “Inspiration and Innovation: Design Trends” (IIDT 2025). This event, held on January 27-28, 2025 by Ahlia University, has brought together leading experts, emerging talents, and passionate students from around the globe to explore the transformative power of design.

The abstracts compiled in this volume reflect the diverse perspectives and innovative ideas that emerged during the conference. Each contribution highlights the critical role that inspiration plays in driving design innovation, addressing contemporary challenges, and envisioning the future of our built environments.

As we delve into these abstracts, you will find a rich tapestry of topics, ranging from sustainability and technology to cultural narratives and user-centred design. These insights not only enrich our understanding of the field but also inspire us to think critically about the spaces we create and inhabit.

I am grateful to all the participants for their dedication and creativity, as well as to the organising committee for their tireless efforts in making this conference a success. It is my hope that this collection serves as a valuable resource for all who are passionate about interior design and architecture, and that it sparks further dialogue and exploration in this ever-evolving discipline.

Thank you for being a part of this exciting journey.

**Prof. Mansoor Alaali**  
President, Ahlia University



## **Acknowledgments**

College of Arts and Sciences and the interior design department at Ahlia University, wishes to extend our heartfelt gratitude to all those who supported and encouraged the 2nd International Conference in Interior Design and Architecture (IIDT 2025).

First and foremost, we would like to express our sincere appreciation to our founding president for their unwavering support and vision, which have been instrumental in bringing this conference to fruition. Your dedication to fostering an environment of creativity and innovation has inspired us all.

We are also profoundly grateful to the president of Ahlia University for their encouragement and leadership, which have played a vital role in our preparations. Your support has provided us with the resources necessary to create a meaningful and impactful experience for all participants.

Additionally, we would like to thank our esteemed speakers, presenters, and panelists for sharing their insights and expertise. Your contributions have enriched our discussions and illuminated the path forward for our field.

Thank you to the organizing committee and all the volunteers for your incredible hard work and dedication. From planning to execution, your commitment and attention to detail made the conference a smooth and successful experience for everyone.

Finally, we acknowledge all participants, attendees, sponsors, and partners, whose enthusiasm and engagement made this conference a vibrant success. Your presence and participation have truly brought the spirit of IIDT 2025 to life.

Thank you all for your support and commitment to advancing the field of interior design and architecture.

**Prof. Imad Assali**  
Dean College of Arts and Science  
Ahlia University



### **Preface:**

I would like to take this opportunity to thank you for your interest in the 2nd International Conference in Interior Design and Architecture, themed Inspiration and Innovation Design Trends (IIDT 2025), which will be held on January 27-28, 2025, at Ahlia University.

At Ahlia University, we believe it is essential to strengthen the connections between academia and industry early in the educational process. This event gathered a diverse group of professionals, scholars, and students worldwide to explore the dynamic relationship between inspiration and innovation in architecture and interior design.

The theme of this year's conference encapsulates the essence of our field—drawing inspiration from diverse sources while embracing innovative practices. Over two days, participants engaged in vibrant discussions, workshops, and presentations that highlighted the dynamic relationship between inspiration and design innovation.

Our keynote speakers—renowned designers, thought leaders, and industry pioneers—shared their insights on how inspiration shapes innovative practices, fostering environments that are not only functional but also deeply resonant with human experience. Workshops and panel discussions provided opportunities for attendees to collaborate, challenge conventional thinking, and cultivate new ideas.

We hope this collection of abstracts and insights reflects the vibrant conversations that took place during the conference and inspires further exploration and innovation in architecture and interior design. Thank you to all participants for contributing to a thought-provoking and inspiring event.

Together, let us continue to shape the future of interior design through the lens of inspiration and innovation.

### **Dr. May Al Saffar**

Department of Interior Design, Chairperson  
IIDT 25 conference chair





# KEYNOTE SPEAKERS

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## Why Creativity is Resisted? A Tale of A Mosque, A Library and A Museum.

**Prof. Ali Alraouf**

Head of Research and development  
Qatar National Master Plan

The essence of this lecture stems from the crucial duality of CREATE/INNOVATE or EVAPORATE as an essential existential position in the twenty first century. Therefore, the talk calls for adopting The Art of Breaking Boundaries in Design and Architecture. The lecture deals with a foundational question: Why is Creativity Resisted? The current status and challenges facing the global community nowadays, suggest that innovation and creativity are a must to secure the needed community development and prosperity.

A Tale of three building; a Mosque, a Library and a Museum in the State of Qatar will be used to illustrate how understanding the different aspects about the creative process of a specific design, facilitates a much better understanding of the outcome. Hence, instead of rejecting and resisting creative and innovative endeavors, acknowledgement and appreciation can be attained.

The selected three buildings will be holistically analyzed to shed light on its uniqueness, creative contribution and original design process to highlight the significance of refraining from assessing creative designs on merely visual images. The talk elaborated on the notion of The New Paradigm of Creative Cities and Envisioning the Role of Architecture and Urbanism in creating the blueprint for such cities to be realized. The lecture concluded with a matrix of Principles of Creative and Engaging Future Design, Architecture and Urbanism. Concepts including Reject Freezing in the Past, Engaging People and Stimulating Minds, Provocative Designs, Inspire and Educate vis design and Understand the Narrative before Judging, will be holistically introduced, assembled and implemented on the selected case studies.



## **Fusing Timeless Identity and Innovation: Resilient Spaces Shaping the Future of Gulf Architecture**

**Prof. Kheira Anissa Tabet Aoul**

Professor and Chair, Architectural Engineering Department, United Arab Emirates University

As the Gulf region confronts rapid urbanization and environmental challenges, the intersection of cultural identity, adaptive reuse, and innovative design is more important than ever. Reflecting on the conference themes of adaptive reuse, design, culture, and environmental systems, this keynote explores how tradition and modernity can blend to create resilient, sustainable spaces that honor both our past and future. In the context of adaptive reuse in interior design, we see an opportunity to breathe new life into existing structures, preserving cultural heritage while adapting to contemporary needs. This approach not only maintains the historical essence of a place but also responds to the evolving demands of our communities.

Designing with cultural identity at the forefront is essential in the Gulf, where architecture must reflect both the region's history and its dynamic societal shifts. Spaces go beyond mere functionality; they embody shared values, foster social connections, and create a sense of belonging. Integrating environmental systems and technology is crucial in building resilient spaces that support the well-being of inhabitants, while addressing the region's extreme climate conditions and resource challenges.

Innovations in materials, systems, and smart technologies provide new avenues for energy efficiency, sustainability, and adaptability. However, these advancements must be integrated thoughtfully, ensuring they enhance, rather than overshadow, the cultural identity embedded in our built environment. The challenge lies in fusing these elements—preserving cultural identity, embracing technology, and promoting environmental resilience—into spaces that can withstand the test of time.

Ultimately, the goal is to create environments that support both physical and social well-being, ensuring that the built environment remains a true reflection of who we are and who we aspire to be. Through the fusion of timeless identity and innovation, we can shape resilient spaces that promote well-being, celebrate cultural roots, and endure for generations to come.



## Adaptive Reuse Interiors: “Connecting Memory With Modernity”

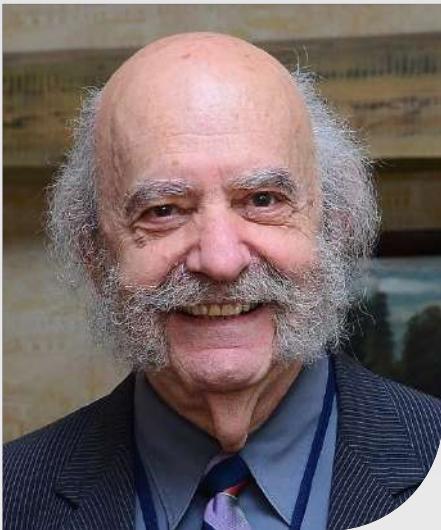
**Prof. Nadia Alhassani**

College of Fine Arts and Design University of Sharjah

Much has been written about the role of adaptive reuse in support of sustainability. Most reiterated the positive outcomes in addressing the basic triad of environment, economy and society. These were further substantiated with globally diverse case studies highlighting the successes of the transformation as both a stand-alone project as well as its positive impact on the surrounding neighborhood. Tangible outcomes have included cutting budget, conserving material and energy, and reducing construction time.

Four decades ago, Kenneth Frampton wrote: “Buildings rooted in the past carry the stories of those who came before us, humanizing our cities by connecting memory with modernity.” The dictum, originally advocating for critical regionalism, holds true today as more buildings are considered for adaptive reuse. These are no longer abandoned structures designated as traditional or historical, but rather many mid-century modern buildings are being saved to preserve the city fabric.

The conceptual approaches taken by designers to activate interiors in existing buildings shall be discussed within the framework of Frampton’s “connecting memory with modernity.” The focus is on effective strategies achieving a balance between respecting the past and accommodating present expectations. Success shall be defined by minimum interventions and displacement against extreme spatial reconfigurations. Arguing for a practice beyond sustainability, the objective is to highlight the role of interiors in preserving a city’s collective memory and articulating message(s) conveyed.



## Democratic Design Without Borders

**Prof. Henry Sannof**

College of Design  
North Carolina State University

Democratic design in forms of citizen participation and community engagement has risen in prominence in areas around the world where community design practitioners and scholars have made significant progress in democratizing environmental design practice in one project after another. First influenced by theory and practice in Europe and North America, these practitioners and scholars have also introduced new techniques and approaches that respond to specific issues and contexts that they face. Community involvement has changed and evolved in definition and scope in the past several decades, from social activism to service learning and more recently to public interest. Each of these concepts, however, has different implications for design education. Principles of democratic design—collaborative decision making, social learning, co-designing, and placemaking—guided a study of community involvement studios in design schools in the US such that it has shown that there is a variety of descriptors of community involvement activities in design education. Educators teaching such studios use different keywords including social activism, service learning, civic engagement, or public interest among others, to define their studios resulting in considerable variation in the focus, learning objectives and participation strategies. The implications of this variation are also significant for practice by shaping professional qualities and worldviews of future designers. The variation of such issues in design education on an international scale is also important to portray the current state of democratic design worldwide and to identify cross-cultural similarities and differences of community involvement in design education. My professional work has focused on the development of new and improved design tools to achieve a goal of social improvement by uniting the goals of student education and professional development. This presentation will illustrate the concept of design games shaping consensus decision-making to implementation.



## Design Pedagogy: Adaptive Reuse

### Dr. Sonia Lamela

Assistant Professor, in the Department of Architecture and Design, at Prince Sultan University

Adaptive reuse, as a process of transforming an existent structure into a new function respecting identity, culture and history, is an underlying character of design often overlooked in practice and teaching. Indeed, it challenges practitioners and educators to create responsive environments for diverse users and activities. Its deep connection to urban revitalisation demonstrates how it can help decrease the intensive pressure introduced by urbanisation trends on environment, infrastructure, and services. Moreover, since it promotes design robustness and resilience, it can reduce the waste and construction environmental impact and advocate memory and identity, nurturing a sense of belonging and a strong connection between past and future.

Therefore, embracing adaptive reuse it is not an option but a necessity. We, as designers and educators, are responsible for integrating teaching and learning strategies into Architecture and Interior Design programs, to prepare learners to respect the historical narratives and holistically deal with pre-existing constraints, creatively reimagining the space through contemporary lenses. By empowering future designers to become adaptive reuse stewards, we ensure that the built environment embraces our contemporary needs in a sustainable way and simultaneously revitalises communities, in perfect synchrony with the United Nations SDG11 sustainability goal and the Vision 2030 aims.



## Artificial Intelligence in the Analysis of Architectural Brands: Towards an Enhanced Process of Meaning-Making

**Dr. Ahmed Agiel**

Assistant Professor of Architectural Engineering  
at UAEU

It is a privilege to address you today on a topic at the intersection of technology, creativity, and cultural expression: the role of Artificial Intelligence in interpreting architectural brands and meaning-making. Architecture has always been more than the mass of buildings people live in. It is a way of sharing experiences, expressing values, and expressing society's dreams. In today's world, where data and technology rule the roost, AI is emerging as the new partner in understanding and strengthening these narratives.

AI enables us to analyse large sets of data; it helps to identify trends in the design and customers' preferences, which were previously unimaginable. This paper discusses how architecture can engage with cultural contexts, values, and even emotions and how it can be designed to engage with cultures in specific ways. With machine learning and neural networks, one will likely notice the shift in how architects and designers interact with branding.

For example, AI enables architects to tailor their designs to align with a product's brand identity and values while respecting the place's culture and history. It assists in redeveloping spaces' identities by creating new narratives for those spaces that include their purpose, design, and significance.

Nevertheless, there are some issues in this integration. Dependency on AI has risks, and we must learn how to incorporate creativity into the process. We also have to consider ethical, cultural, and even architectural issues in the development process.

In the future, I see AI's role as one that does not take over from the architect but enhances the architect's capabilities. In this way, collaboration between architects and AI will be able to change the notions of branding and meaning in architecture and design architectures that are not only functional but also inspirational.



## Our homes: Then and Now

**Dr. Maryam AlKhateeb**

Architecture Department, Al Yamamah University, Khobar, Saudi Arabia

Houses in the Arabian Gulf went from horizontally laid homes with open courtyards designed to host the family's living spaces; to compact vertical structures optimized for urban density. The evolution of residential architecture reveals a profound shift in how we inhabit and experience our living spaces. In the past, homes were not just places to live but adaptable environments that evolved to meet the needs of its occupants, designed with growth in mind. These spaces reflected the cultural, climatic, and social parameters of their regions, embedding local identity within architectural forms.

In contrast, today's homes are often driven by the ideation of functionality and efficiency, emphasizing the maximization of space within increasingly limited urban footprints. This has led to purpose-specific designs, leaving little room for flexibility or organic growth. Referring to Frampton's regional criticism theory, it is noticeable how this shift represents not just a practical response to urbanization but also a walking farther from regionally grounded design principles. This transition led to loss of connection to local contexts, as globalized architectural trends prioritize uniformity over cultural specificity. Consequently, the move from adaptable, multifunctional environments to specialized, static spaces mirrors deeper societal changes, revealing a complex relationship between architectural form, social values, and economic forces across regions.



## What Are We Sustaining?

### Ali Lari

Executive Director at Hassan Lari Group B.S.C.(c)

In contemporary discourse, sustainability has become a predominantly material concept, shaped by a prevailing conception of the world that prioritizes profit and measurable outcomes over meaning and intrinsic value. This presentation challenges the prevailing narrative, asking: What are we truly sustaining?

Today, sustainability is often reduced to metrics, technologies, and interventions that treat symptoms rather than addressing the root causes of disconnection—both from our environment and from ourselves. By focusing on the material and profitable, we risk neglecting the deeper, more fundamental dimensions of sustainability: the social, spiritual, and cultural fabric that underpins human existence.

Drawing from ancient wisdom, which evolved over millennia with nature and community, we will explore how modern approaches to sustainability fall short of fostering the interconnectedness and sense of purpose necessary for a thriving future. This discussion will interrogate whether our built environments and development frameworks reflect human values or perpetuate a cycle of alienation driven by external gains.

# ACADEMICS



**Dr. Fatema Qaed**

Department of Architecture and Interior Design, University of Bahrain, Bahrain



**Dr. Reem Abbass**

Department of Architecture and Interior Design, University of Bahrain, Bahrain

## Fostering Innovation: The Impact of Teaching Entrepreneurship to Interior Design Students Through Design Thinking

Entrepreneurship plays a pivotal role in empowering designers, equipping them with the skills and mindset needed to navigate the complexities of the professional world. Existing literature highlights how integrating entrepreneurial principles into design education fosters creativity, innovation, and a deeper understanding of the value of design in addressing real-world challenges. Recognizing this importance, this study explores the impact of teaching entrepreneurship to interior design students through a structured, three-year design thinking course. The research was conducted once between the years 2022-2024. In each year 40 to 60 students participated in an immersive learning experience that began with a workshop on entrepreneurship and design thinking. This was followed by a practical application phase where students developed and launched real businesses based on their design ideas. This was followed by a practical application phase where students developed and launched real businesses based on their design ideas. The evaluation process involved a panel of external business and design professionals who provided feedback, which was then incorporated into the students' business models before public launch.

A qualitative methodological approach was employed to assess the impact of this pedagogy. Data was collected through open and semi-structured interviews, as well as observation. Analysis revealed a significant shift in students' understanding of the design process, emphasizing the value and real-world applicability of their ideas. Moreover, the experience enhanced their ability to think differently and approach problems with a practical, entrepreneurial mindset. This study underscores the transformative potential of integrating entrepreneurship into design education, particularly in fostering innovative and value-driven approaches to interior design. The findings provide a framework for enhancing design curricula to better prepare students for the demands of professional practice, supporting it with successful design business stories that was launched in real life by students after this course



## The Impact of Innovative Smart Design Solutions on Achieving Smart Sport Interior Design

**Dr. Nehal Almurbati**

Department of Architecture and Interior Design,  
University of Bahrain, Sakhir, Bahrain

The recent decade has witnessed a rapid evolution of Artificial Intelligence (AI) technology solutions on many sectors within smart cities approaches. The adoption of many technological manifestations paved the way for smart interior design solutions within the built environment including sport complex buildings.

Advancing athletes productivity can be linked within their training programs and the capabilities of their sport complex interior design. Many technologies and AI can stimulate the environment for both athletes and designers studying the effect of integrating smart solutions into aspects of sustainable interior design and productive training session.

This research investigates an ideal sport complex design that integrates many AI solutions into its interior designed spaces and Gym interiors. A focus on interactive design that responds to athletes physical and mental needs. A focused study was implemented on the Smart AI gym and simulation was used to address many issues related to athlete's behavior and how can the design accelerate their activity level and mental awareness as well as accelerate their physical performance. On a larger scale, this design method will save global resources and create healthy, beneficial, and comfortable sport environments models and shows tools to integrate technology within Bahrain sport complex structure.

This paper reviews the theoretical concepts behind smart AI and interactive design for physical performance enhancement. The paper also discusses an innovative proposed utopian sport complex solution exploring the benefits of smart interior design that incorporates AI technologies with various anticipated aspects of physical enhancement and programmed athletic acceleration methods. The guidelines outlined can be adopted by many other sports complexes in Bahrain and the region to upgrade sport facilities standards to international ones and help illuminate physical fitness literacy.



## **Adaptive Reuse of Cultural Heritage; a Catalyst for Sustaining Memory and Identity in the Gulf.**

**Dr. Djamel Boussa**

Associate Professor, Qatar University, College of Engineering, Department of Architecture and Urban Planning

Since the discovery of oil in the 1950s, cities in the Gulf have been rapidly modernizing to meet the growing demands for housing, education, and shopping facilities. This modernization process often led to the demolition of significant historic areas and buildings.

By the 1980s and 1990s, people began to feel that something essential was missing—elements that reflected their cultural identity and distinctiveness within the globalized world. The challenge now is how adaptive reuse can act as a catalyst for preserving historic buildings while making cities more livable. The key question is: How can adaptive reuse contribute to keeping historic buildings alive through appropriate interior design approaches?

While many historic buildings have been restored, some fail to remain relevant due to a lack of adaptive reuse strategies. Interior architecture plays a crucial role in this process. This paper explores the importance of interiors in sustaining cultural memory and identity by repurposing heritage buildings to meet contemporary needs. Using a case study approach, several examples from Doha, Qatar, and the Gulf region will be examined and discussed.

## LIVING DESIGNS

### A Biomimicry Design Approach

**Dr. Iman Ibrahim**

Associate Professor  
University of Sharjah



“LIVING DESIGNS” showcases the incredible world of biomimicry design! This innovative approach to sustainable design draws inspiration from nature to create solutions for a variety of design problems. At its core, biomimicry design recognizes the inherent genius of the natural world and seeks to learn from its processes, structures, and systems to create sustainable, efficient, and beautiful designs.

This research explores the outcomes of the “Sustainable Environments” as a new experience for interior design students who learned from nature’s design, using biomimicry principles to create conceptual models representing interior design elements and applications. These students were inspired by nature’s patterns, shapes, colors, and textures, incorporating these elements into their designs to create functional and aesthetically pleasing interior environments emphasizing the beauty of nature designs through an interdisciplinary approach.

Using cutting-edge technology, including AI and 3D printing, students were able to take their nature-inspired concepts and bring them to life in ways that were previously impossible. With the use of filament made from recycled plastic and wood fibers, they were able to create sustainable and environmentally conscious designs that creatively minimize their impact on the planet. In collaboration with Sharjah Sustainable City, who sponsored the wooden frames that were generated from the SSC waste, and fabricated at the College of Fine Arts and Design workshop.

The research aims to inspire the community to think differently about design and consider the many ways in which nature can inform and inspire our creations. By learning from the natural world, we can create innovative solutions that benefit both humans and the planet we call home!



## DesignEase: Revolutionizing Material Procurement through Technology in Interior Design

**Dr. Amani Alaali**

Interior Design, Ahlia University, Manama, Bahrain

The intersection of technology and design has become a vital area of exploration in contemporary interior design practices. This paper introduces DesignEase, a platform designed to streamline the procurement process for flooring and wall materials, targeting interior designers, architects, and construction professionals in the MENA region. As a digital solution, DesignEase addresses critical challenges in material sourcing, including inefficiency, high costs, and limited accessibility to high-quality options.

This paper explores how DesignEase leverages technology to revolutionize traditional procurement methods. By bridging the gap between designers and suppliers, the platform fosters efficiency and sustainability in design projects, offering access to a curated selection of materials such as granite, marble, and vinyl flooring. Furthermore, it emphasizes adaptability and cultural relevance, ensuring solutions align with regional aesthetics and practical needs.

Through a blend of user-centered design and digital innovation, DesignEase aims to empower designers by simplifying decision-making processes and enhancing collaboration within the industry. This paper examines the platform's journey, from concept to implementation, while highlighting its potential to set new standards in the field of interior design. The findings emphasize the transformative role of technology in fostering creative freedom, reducing resource waste, and enabling more sustainable design practices.

By sharing the story of DesignEase, this paper aspires to inspire a broader discourse on integrating digital tools into interior design, making it not only a functional necessity but a sustainable and innovative craft.



## **The Impact of Utilizing the Pre-Designed Podcast on Student's Engagement and Motivation, Case Study Lighting Design for Interior Course**

**Nadia Al Badri**

Interior Design Program, Applied Design

Program

College of Fine Art and Design – University of Sharjah, UAE

Nowadays, education and learning methods are undergoing a significant transformation of the teaching methodologies, especially after the pandemic experience. One of the big challenges that facing educators is the level of student's engagement, while the second one is student's motivation, especially when the contents of the course involve many directions of knowledges, such as scientific materials, calculations, design, products specifications and software simulations.

In the academic year of 2021, student engagement of the course Lighting Design for Interiors was below expectations, necessitating a re-evaluation of teaching methods. To address this issue, a new teaching method has been added to the course materials, to reshape the course and enhance engagements, involvement and interactivity of students.

The research highlights the importance of adapting digital learning environments to foster student learning outcomes, increasing their engagement and motivation. With new generations, traditional approaches of delivering content were no longer sufficient. The challenge in this teaching experience focused on creating a more dynamic learning environment by integration of pre-designed podcast, which allowed for direct, accessible communication with students while encouraging them to engage with the material.

Podcasts can offer content in a format that promotes flexibility and shifts towards more interactive. On the other hand, the assessment methods also have been changed to utilizing video to analyze and evaluate lighting strategies in an existing building instead of using the examples of case studies that are available through books or websites. This type of assignment does not count as an innovative approach only but also improves their critical thinking and observational skills.

By engaging with physical spaces and providing on-site analyses, students develop a more holistic understanding of the built environment. A motivation survey has been distributed to students at the end of the academic semester to indicate the level of their engagement and the impact of utilizing the podcast as part of the teaching materials and assessment methods on student's involvement and motivations.



## The impact of space design on liminal, transitional spaces in educational buildings

**Maryam Aljaida**  
Northumbria University, UK

Liminality refers to the temporal or physical space that falls between two important spaces or times. Liminal spaces — entrances, waiting areas, hallways, staircases, and lounges — are transitional spaces with a potential for socialising. They bridge two functional zones featuring their physical impact on users' behaviour, emotions, and experiences (Hoyt. A, 1970). It is commonly seen as spaces of socialising that sometimes feel unsettling (Sawant. S, 2022b). In education, the significance of transitional spaces often goes unrecognised and is considered liminal. They usually exist in a state of instability between formal learning environments (classrooms and labs) and social zones (student hubs). However, they can create valuable extensions of the learning environment that support students' educational journeys when considering space design.

Data from an extended active study examining liminal transitional spaces is underpinned, aiming to assess the impact of the existing transitional space design on students' experiences, determine the factors impacting them, and give improvement suggestions. It also intended to investigate the potential of these locations to function as break areas and extended classrooms, fostering collaboration and providing breathing space. The insights shed light on these areas' psychological and social influence, revealing how they can enhance student engagement and well-being.

Join me in exploring the potential of the spaces within educational settings to enhance the overall learning experience and foster a stronger sense of community among students. Furthermore, it will inspire interior designers and educators to rethink the value of liminal in-between spaces.



**Mrs. Ayesha Agha Shah**  
Department of Architecture &  
Interior Design, University of  
Bahrain



**Mrs. Layla Karajica**  
Department of Architecture &  
Interior Design, University of  
Bahrain

## Integrating Modern Trends for Future-Ready Design Programs at Schools of Architecture in Bahrain

Introducing inspirational and innovative design trends is essential in design schools to educate forward-thinking designers. This approach encourages students to explore creative solutions to diverse challenges, embrace flexibility, and bring modernity into their practices. It empowers students not only to develop meaningful design proposals but also to enhance their skills and respond adeptly to the industry's evolving demands.

This paper examines educational approaches that foster cultural awareness and inventive design thinking, alongside the tools and strategies employed in architectural education. The aim is to identify methodologies in design education that encourage creativity, promote ecoconsciousness, user behavior and culture of design.

The research adopts a qualitative approach, focusing on educational tools, values, and ideas adopted by four selected architectural schools in Bahrain. Semi-structured interviews were conducted with department heads at each institution, faculty members and students. The findings were analyzed to compare academic practices and institutional policies aimed at fostering innovation, culturally sensitive design, and social and environmental engagement in design. Furthermore, the analysis also includes the students' approaches and their proposals when focusing on tools and new strategies in design-oriented courses.

The findings highlight key learning modules that support innovation, culturally responsive design, and awareness of social and environmental factors to promote future-ready design. The paper also suggests improvements in architectural pedagogy that could advance design programs, preparing students to adapt to modern demands while prioritizing sustainability and cultural compatibility.



**Dr. Fatema Qaed**

Department of Architecture and  
Interior Design, University of  
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**Dr. Hana Aljawder**

Department of Architecture and  
Interior Design, University of  
Bahrain, Bahrain

## Exploring the AEIOU Framework as an Educational Tool in Interior Architecture and Design Pedagogy

Interior designers often struggle to grasp the psychological and behavioural responses elicited by their design choices, largely due to a lack of integration between design theory and environmental psychology. This gap in understanding makes it challenging to analyse design elements such as colour, furniture, and spatial organization in their contextual relationship to the human body, behaviour, and perception of interior spaces. This study investigates the application of the AEIOU framework—Activities, Environment, Interactions, Objects, and Users—as a qualitative tool in interior architecture education. The framework is recognized for its ability to systematically analyse complex interactions within spaces, behaviours, and cultural contexts, facilitating innovative problem-solving and deeper cultural awareness.

More than fifty interior design students participated in this research, focusing on cultural and tourist sites across Bahrain. These sites, spanning historic and contemporary structures listed by the Bahrain Authority for Culture and Antiquities, provided a rich backdrop for exploring the dynamic interplay between architectural elements, interior details, visitor behaviour, and environmental factors. Using the AEIOU framework, students identified how spatial design influences user behaviour and perception. The analysis led students to develop compelling narratives for each site, enhancing cultural relevance for local and international audiences. These narratives were further translated into unique souvenirs, embodying the architectural and cultural essence of each site. The creative outputs enriched the visitor experience and fostered a deeper sense of place.

Qualitative methods such as memos and thematic tables assessed the framework's effectiveness. Findings revealed that the AEIOU framework fosters critical thinking, cultural awareness, and problem-solving skills, bridging gaps between design elements, human interaction, and environmental psychology. By integrating analytical and creative approaches, this research presents a transferable model for blending design education with heritage preservation and tourism development, promoting cultural innovation and educational excellence.



## The Role of Social Media in Fostering Early Career Designers: An Educational Perspective

**Omaimah Alsenani**

Design, Manufacturing & Engineering Management, University of Strathclyde, Glasgow, United Kingdom - Jazan University

Social media platforms have emerged as powerful tools for early-career designers to connect, learn, and grow, particularly in the Saudi Arabian ecosystem. This study, part of a larger PhD project, explores the support needed for early career designers across various geographical regions of Saudi Arabia (Riyadh, Dammam, Jeddah, Jazan, and Tabuk/Yanbu).

This paper explores the role of social media in providing informal yet impactful educational tools and tactics that support the advancement of early career designers in Saudi Arabia. Through semi-structured interviews with designers in Saudi Arabia, asking them, "What is the role of social media within the growth of your design business?" This paper uncovers how social media enables designers to enhance visibility, build professional networks, access peer to peer learning opportunities, and develop entrepreneurial skills critical to flourishing in their local marketplace.

Preliminary findings suggest that social media is an informal yet dynamic platform for lifelong learning, enabling designers to stay updated with global trends, acquire new skills, and build professional networks. For novice interior designers, platforms like Instagram, YouTube, and LinkedIn offer not only inspiration but also avenues for discovering relevant educational resources and events; they provide a transformative space for self-directed learning and creative collaboration (Alawadhi & Al-Zamil, 2023; Muljana & Luo, 2023; Scolere, 2023). Additionally, social media plays a pivotal role in community building, where designers exchange knowledge, seek feedback, and collaborate on projects, further enhancing their learning experience (Sivakumar et al., 2023). It empowers designers to bypass traditional barriers such as gender equality (Akpuokwe et al., 2024).

The study highlights the potential of integrating these informal learning methods into formal design education. By leveraging the accessibility and reach of social media, educators and institutions can create hybrid pedagogical models that combine traditional and contemporary teaching techniques. This integration could empower aspiring early-career designers with practical skills and strategies to support entrepreneurial growth and innovation in the creative economy.



## **Optimizing Community Participation for Socially Sustainable Spaces: A Framework for Sensible Design**

**Dr Omaima Alabbasi**

Assistant Professor, University of Bahrain

The creation of socially sustainable spaces requires a nuanced understanding of community needs, behaviors, and aspirations. This research explores how participatory design processes can be streamlined through the use of post-occupancy evaluation (POE) methods, allowing designers to cluster and analyze feedback efficiently while minimizing engagement resources. By adopting a hybrid approach that bridges top-down expert frameworks with bottom-up community insights, the study demonstrates how contextual feedback can be used to customize spaces that align with user preferences and foster social cohesion.

Through a case study of affordable housing developments, the research identifies critical themes that resonate across demographic groups, such as identity, belonging, and accessibility. It outlines a practical methodology for categorizing feedback into actionable clusters, enabling designers to address community priorities without the need for extensive resources. This approach ensures that spaces are not only functional but also culturally sensitive and responsive to the unique dynamics of their users. Ultimately, the findings advocate for a participatory yet efficient design process that prioritizes inclusivity and social sustainability in the built environment.



# The Architectural And Environmental Indoor Quality Factors And Its Effect On The Perceptual Of Primary School Students

**Yousef Khoja**

King Abdulaziz University, KSA

The research aims to develop the design of current schools and find new standards that are more appropriate for the cognitive characteristics of primary school students in Saudi schools. The research also aims to make the school an environment that helps to raise the academic performance of students and improve mental health and behavior inside and outside the school.

The research looks at the most important concepts extracted from the design of current schools, analyzes and highlights them, and then compares them with the cognitive characteristics of the targeted age group. The research relied on extracting the most prominent characteristics of cognitive development by reviewing previous research, in addition to extracting the most important psychological and behavioral influences. By referring to contemporary theories and standards in school design to extract new standards. The research analyzed the plans and virtual tours provided by the Tatweer Buildings Company website and extracted the main concepts that are provided in the design of the current schools, and then compared them with the characteristics of cognitive development in addition to linking them with the resulting psychological and behavioral influences.

The most important findings of the research are first: the incompatibility of the current school design with the general cognitive characteristics of all age groups, which negatively affects the psychological effects of the child. In addition to the negative behavioral effects resulting from it. Second: The current school design is based on a unified design that is generalized to all school spaces and for all age groups without taking into account the differences in the characteristics of cognitive development and the cognitive characteristics of each age group, which leads to negative effects on their mental health, which also negatively affects the student's behavior within the school. The research needs more field studies in the schools such as: (questionnaires, personal interviews, psychological and behavioral analyzes through observation, graphic analysis, and othermethods). To develop the research, more specific psychological and cognitive studies should be conducted for the Arab child and the target age groups in the research, and there is a need for more studies related to physical factors in current schools such as (light, sound, air quality, thermal comfort). It is preferable to conduct more statistical survey on the psychological and behavioral level for the targeted age groups throughout the Kingdom.



## **The Impact of Aesthetic formation in the design of squares between development and identity**

**Mohamed Younes Fekry Amer**

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The design of major squares within a historical and functional Ab expresses the identity of the city from the cultural and artistic aspect. It also reflects the planning style and the social and economic conditions of that period, and with the successive and rapid changes that occurred in cities over the years, new spaces and squares appeared that keep pace with modern design thought. In terms of the plastic aspect, adding aesthetic fingerprints, and technological development while applying what is contemporary and new functional needs

**Study Problem:**

The designer faces many problems related to the appropriate and optimal design style for contemporary technologies while dealing with different spaces as a result of merging the old with the modern and trying to reach unconventional designs and treat them visually. This is through understanding the rules of visual composition and the aesthetic formations of the spaces and realizing all the visual facts, leaving the cognitive process to the recipient, which in turn leads to accepting or rejecting those solutions and treatments

**Objective:**

This research aims to clarify the relationship between the functional performance of coordinating open spaces and the visual performance of design treatments, the role of the interior architecture designer and his advanced ideas in emphasizing the subjective human dimension of the recipient in completing that functional visual system, and methods of employing the various elements that express and confirm the visual identity, by creating distinctive designs and employing new technology whenever possible, and the resulting sensory impressions and what is built upon it using the most appropriate for the success of the design in terms of modern equipment and techniques.

**Study Approach:**

The study is based on the descriptive analytical approach by analyzing the design and implementation of one of the squares in the city of Luxor (Corniche Road Square - known as Iberotel Square) designed by the researcher, in addition to the foundations of choosing the design criteria and its treatment, the extent of the impact of the experiment and its implementation on the ground, and what the design entails. The proposal for this area is based on the impact of Egyptian art and architecture on one of the most important civilizations of visual treatments, through a new, innovative formulation of the design, employing symbols and elements from Egyptian civilization based on it, and coming up with the final formulation of the design.



## **Sustainable Natural Printing Practices via Imprint Technology using Pre-Mordant and Post-Mordant Techniques on Cotton Fabric Printing with Flower and Leaf**

**Monika Choudhary**

Assistant Dean/Associate professor  
Sharda University Agra, INDIA

Clothing serves several essential functions, including protection, identification, and adornment. Among the methods used to enhance fabrics, printing techniques play a significant role, with traditional methods such as block printing and screen printing being widely utilized. Recently, eco-printing has emerged as a contemporary and sustainable technique that utilizes plant materials to create unique colors and patterns on textiles.

Mordants, particularly few Natural Mordants are critical in this process as they enhance and improve color quality with changes in the natural pigment of the flower & leaf and base colour of the fabric resulting in unexpected results. This study aims to investigate the effects of pre-mordanting and post-mordanting on the color quality, shape, depth, fastness properties, and overall aesthetics of cotton fabrics printed with natural dyes derived from flowers and leaves.

Flower and leaf impression printing, also known as floral impressionism or pounding, is an innovative technique that uses the natural shapes and colors of flowers to create unique prints on fabric.

This eco-friendly method involves pressing fresh flowers or leaf into cloth, either by hand or using a hammer for printing press, to transfer their intricate patterns and vibrant hues. As the textile industry faces scrutiny for its significant environmental impact, adopting sustainable practices like flower & leaf impression printing can revolutionize fabric printing and reduce pollution.

Few benefits of Natural Printing, which contribute to both environment and Design Aesthetics are-

1. Eco-Friendly Process
2. Sustainable Fabrics
3. Minimal Waste
4. Unique Aesthetic
5. Promoting Awareness



## 4D Biophilic in Interior Design

**Arwan Shah**

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Biophilic 4D interior design presents an innovative approach to architecture, allowing interior spaces to dynamically adapt over time, responding to seasonal changes and weather variations.

Expanding on biophilic design principles, which prioritize human connection with nature, this concept incorporates the dimension of time to create environments that evolve in harmony with natural cycles. Biophilic 4D spaces integrate adaptive elements such as lighting, materials, and sensory stimuli—including scent—that change fluidly throughout the day and year, fostering a stronger sense of connection between indoor and outdoor experiences. For example, lighting systems transition gradually from warm hues in the morning to cooler tones in the afternoon and evening, mirroring the natural progression of sunlight. Materials like walls and floors may subtly adjust in texture or color in response to temperature, humidity, or time of day, creating a tactile experience that reflects environmental conditions. Living features such as indoor plants, hydroresponsive surfaces, and natural elements further enhance this sensory-rich atmosphere, reinforcing the feeling of being surrounded by nature.

The psychological and physiological benefits of biophilic 4D design are significant. Research indicates that exposure to natural patterns and cycles can improve mood, reduce stress, and support productivity. These benefits make biophilic 4D design particularly valuable in workplaces, healthcare facilities, educational spaces, and residential settings, where mental well-being and productivity are key priorities. The adaptive, responsive nature of these environments allows occupants to feel more attuned to nature's rhythms, fostering tranquility and a deeper sense of relaxation. In essence, biophilic 4D design transforms static indoor spaces into adaptive systems that prioritize human health, happiness, and a sustained connection to the natural world. This evolving design pattern highlights the essential role of nature in everyday life, creating environments that support wellbeing and a more harmonious relationship with our surroundings.



## **Gamification in Interior Design Education: An Empirical Study of Student Engagement and Skill Development**

**Syeda Maheen Siddiqui**  
Ahlia University, Bahrain

Gamification, the use of game-like elements in non-gaming contexts, is emerging as a powerful tool in interior design education, where engaging students in creative, hands-on learning is essential. This paper examines how gamified approaches—such as design challenges, simulations, and competitive projects—enhance student motivation and retention of complex design principles.

Design challenges, which often involve real-world problems, encourage students to experiment with ideas, make decisions under constraints, and seek innovative solutions. Through simulations, students can explore immersive environments that mirror professional design scenarios, helping them gain practical skills while experiencing realistic consequences for their design choices. Competitive projects, another form of gamification, foster a sense of accomplishment and encourage peer learning by allowing students to showcase their skills, receive feedback, and refine their techniques in a collaborative yet competitive setting.

These approaches align with natural motivation theories, such as Self-Determination Theory, which highlights how independence, competence, and relatedness contribute to students' engagement and perseverance. Studies suggest that students participating in gamified learning experience heightened engagement and improved learning outcomes, as these methods make abstract concepts tangible, enhance memory retention through active participation, and boost creativity by encouraging risk-taking within safe boundaries. While gamification has shown promising results, it requires thoughtful implementation to avoid overemphasis on competition and ensure that all students benefit from a supportive learning environment.

This paper concludes that gamified approaches in interior design education, when applied with careful consideration, offer dynamic, experiential learning that equips students with skills essential for their professional development. These findings highlight the need for further research into how different gamification elements specifically impact student motivation, skill acquisition, and long-term learning outcomes in design education.



## **Towards Effective Studio-Based Learning: A Tool for Enhancing Peer Interaction in Design Studios**

**Manal Khalaf**

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While the pedagogic value of the dialogical exchange between the instructor and students is evident in the literature (Schön 1985), more recent studies suggest that peer interaction is also important and complementary to the students' learning experience (McClean and Hourigan, 2013; Biggs and Tang, 2011). This is even more critical in design education considering the experimental and creative nature of design and the long hours students spend in design studios. However, there is a general assumption in academia and in the literature that students within a design studio know intuitively how to interact with their peers effectively. Some students may have the social skills and openness to interact with their peers, posing questions, discussing design and giving comments, etc. which encourage critical thinking and studio-based learning, however, this is not the case for all. In fact, there are many factors that could impact peer interaction, such as students' personality, the extent to which they know each other, gender, cultural factors, the environmental setting within the design studio, timing and studio culture. Peer interaction became even rarer and more difficult after COVID-19 and the isolating impact of the virtual design studios. This research presents a structured tool that could be offered as a studio activity to guide students to interact effectively to enhance their critical thinking and studio-based learning. The intention is not to be dependent on that tool for peer interaction, but rather to learn peer interaction as a skill and show students the benefits and potentials of learning collectively together and from each other. The research presents the results of testing the above-mentioned tool in a pre-COVID, 300 level architectural design studio, and a post-COVID, 400 level architectural design studio. The results of both were positive and promising in terms of evoking students' critical thinking and studio-based learning.



## Modularity And Flexibility In Architecture: A Prototype For Residential Buildings-State Of-The-Art

**Kenza Belkhiri**

Politehnica University of Timisoara, Romania

Sustainable demands and the growing complexity of urban housing issues have made a move toward creative architectural approaches necessary. The concepts of modularity and flexibility have become essential, providing answers to problems related to affordability, adaptability, and environmental impact. Modularity aims to increase scalability, decrease waste, and expedite construction processes by utilizing prefabricated, interchangeable components. On the contrary, flexibility emphasizes creating environments that can change in configuration and function to meet the needs and preferences of users. This study thoroughly analyzes the most recent developments in modular and flexible design for residential architecture, covering topics such as sustainable material use, flexible spatial systems, and new construction technologies.

By examining prominent case studies and theoretical frameworks, the research highlights the advantages, difficulties, and knowledge gaps in existing practices. Utilizing these insights, the paper suggests a modular and adaptable residential building prototype that incorporates sustainability, scalability, and adaptability. Using prefabricated modules and reconfigurable layouts, the design strikes a balance between efficiency and customization, producing housing solutions that are economical, ecologically conscious, and adaptable to changing needs, supporting a range of lifestyles while maintaining relevance over time.

By connecting innovative theory with real-world design, this research seeks to reimagine residential architecture's capacity to meet the urgent demands of a rapidly changing world.



## Degrees Or Real-World Experience: Which Shapes The Future Of Interior Design

**Kishwar Imam**

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Interior design is a varied profession that merges creativity, functionality, and technical knowledge to create aesthetically pleasing and practical spaces. With the growing demand for innovative and sustainable designs, the question arises: is a formal degree in interior design essential to succeed in this field, or can alternative pathways such as online learning, certifications, and self-learning offer equivalent value. This paper explores the role of academic qualifications in interior design by analyzing industry standards, job market trends, and the skills required to excel. The study examines the degree to which formal education aids in the development of technical drafting skills, building code knowledge, material science understanding, and client collaboration communication through a detailed analysis of the literature and interviews with professionals in the field. It also explores the importance of originality, flexibility, and real-world experience—qualities that are frequently developed outside of conventional educational environments. The findings reveal a dual narrative: while a degree provides a structured foundation, theoretical understanding and professional credibility, the real-world experience and a compelling portfolio often outweigh formal credentials in the hiring process. Additionally, aspiring interior designers now have access to knowledge and skill-building possibilities outside of traditional academics because of the technological breakthroughs like design software and online learning platforms. This study clarifies the changing expectations of the interior design business by examining the viewpoints of both degree holders and self-taught designers. It discusses the growing emphasis on continuous learning, creative problem-solving, and adaptability as critical determinants of success. Ultimately, this paper aims to provide a balanced evaluation of whether a degree is important in interior design or if passion and practical real-world experience might be just as effective routes to career achievement.



## Challenges Facing the Redesign of the Emirates Association of the Visually Impaired (EAVI): Fostering Accessibility Through Sensory Design

**Aljaze Ali Alkarbi**  
University of Sharjah, UAE

The Emirates Association of the Visually Impaired (EAVI) has been a pillar of support for people with visual impairments across the UAE. This redesign project, located in Sharjah's Muwaileh area, covers an 887 m<sup>2</sup> space and aims to make the environment more accessible and inclusive. Through sensory design, the project transforms how visually impaired individuals interact with their surroundings, focusing on creating a functional yet emotionally engaging space.

The concept, "The Sound and Scent of the Desert", takes inspiration from the serene beauty of the Liwa Oasis. The design incorporates scents like frankincense and myrrh, materials that feel like shifting sands and palm trees, and soothing sounds of wind and water.

Together, these elements create a multi-sensory experience that reflects the UAE's desert heritage while fostering relaxation and accessibility. However, achieving the right balance is challenging. Too much sensory input can overwhelm users, so every element must be carefully planned to provide clarity, comfort, and ease of navigation. Another challenge is ensuring the space works for everyone. Visually impaired individuals have varying needs—some have partial sight, while others are fully blind. The design also needs to accommodate caregivers, staff, and visitors, creating a truly inclusive environment.

This requires adaptable solutions that cater to diverse requirements while maintaining a seamless flow throughout the space. Blending Emirati culture with modern accessibility standards is also crucial. The design must honor local traditions while meeting international guidelines. Working within a limited area and budget adds further complexity, requiring innovative use of resources and technologies to maximize functionality. Despite these challenges, the redesign offers an opportunity to set a new standard for inclusive design, creating a welcoming space that meets practical needs while celebrating the UAE's rich heritage.



## **Redesigning the Women's Association in Sharjah-UAE: Empowering Women Through Inclusive Spaces**

**Salama Ali Karam**  
University of Sharjah, UAE

My graduation project focuses on revitalizing and developing women's centers across the Gulf Cooperation Council (GCC) countries, inspired by the first women's building in the UAE, which was opened in Sharjah in 1972 by His Highness Sheikh Dr. Sultan bin Muhammad Al Qasimi, Member of the Supreme Council and Ruler of Sharjah. This building marked a key moment in supporting and empowering women in the region, and serves as a foundation for expanding the initiative to other women's centers across the Gulf.

The project's concept is inspired by the pearl shell, which symbolizes strength, protection, and beauty. Just as the pearl shell nurtures and protects its precious contents, the design of these centers aims to create spaces where women can feel safe, supported, and inspired. The concept also reflects the potential for women to shine and develop, much like the hidden pearl inside the shell. The design of the centers will feature flexible spaces that encourage creativity, learning, and social interaction. The project will include workshops and educational programs in various fields such as entrepreneurship, arts, and technology. It will also have green spaces to enhance well-being and sustainability, with an emphasis on using eco-friendly materials and energy-efficient solutions.

It is essential for Arab nations to establish dedicated spaces where women can develop their skills and unleash their creativity in an inclusive environment. These spaces should cater to all age groups, including seniors and people with disabilities, fostering a sense of belonging and empowerment. By providing such supportive and vibrant hubs, societies can enable women to thrive, innovate, and make meaningful contributions. Investing in these initiatives not only enhances women's personal and professional growth but also strengthens communities, reflecting the critical role of women in achieving balanced and sustainable development.

The goal of the project is to transform women's centers into spaces that cater to women of all ages and backgrounds, offering opportunities for personal growth and empowerment. These centers will also provide support services, including legal and psychological assistance. The project aims to become a model for women's empowerment in the region and contribute to building balanced, thriving communities.



## **Redesigning the Support Section at the Courthouse of Sharjah: Inspired by the Strength of the Mangrove Tree**

**Lamyia Saeed Al Suwaidi**  
University of Sharjah, UAE

As part of the Courthouse of Sharjah's mission to uphold justice and serve the community, the redesign project for the Support Section, spanning 2,315.29 square meters, reflects a commitment to innovation and sustainability. The design takes inspiration from the symbolic Mangrove Tree, which represents strength and resilience in maintaining environmental balance—mirroring the Courthouse's role in fostering societal harmony and ensuring rights.

This redesign is driven by the principle that everyone, regardless of age, gender, or ability, deserves full justice and equitable access to their rights. Whether the person is a man, woman, child, senior, or someone with special needs, the space is thoughtfully crafted to offer a seamless and inclusive experience.

The interior layout will include wide pathways, user-friendly signage, and accessible facilities to accommodate people with disabilities. Reception and service areas will ensure ease of access and comfort for all visitors and staff. By prioritizing inclusivity and sustainability, the Support Section will become a model for modern and efficient judicial spaces that respect human dignity.

This project aims to create a contemporary environment where efficiency, sustainability, and fairness converge, positioning the Courthouse of Sharjah as a leading example of justice and innovation in the community.



## **Environmental and Social Impacts of Renewable Energy Integration in Historic Havelis**

**Satakshi Choudhary**

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SSDAP, Sharda University

The amalgamation of renewable energy has great potential to mitigate environmental issues and promote sustainability objectives; its execution in traditional Havelis of Mandawa presents distinct obstacles and advantages. With an emphasis on solar and wind energy systems, this research examines the social and environmental effects of renewable energy integration in ancient Havelis of Mandawa. Using an exhaustive literature evaluation from the Shekhawati region of Rajasthan, this study investigates the complex effects of adopting renewable energy at culturally significant heritage sites. We examine the environmental effects by assessing the reduction of carbon footprints, energy efficiency improvements, and air and water pollution mitigation. The research also assesses the socio-cultural ramifications, encompassing effects on nearby communities, conservation of cultural assets, and tourist dynamics. It highlights excellent practices, difficulties, and lessons learned in incorporating renewable energy technology within the framework of ancient Havelis.

The results highlight how integrating renewable energy may support socioeconomic growth and cultural heritage preservation while improving old Haveli's sustainability. However, it also emphasizes the necessity of specialized methods that strike a balance between technology improvements, cultural protection goals, and community participation tactics. This research adds to sustainable development and adaptive reuse activities in the fields of renewable energy and historical conservation by clarifying the environmental and social aspects of renewable energy adoption in medieval Havelis of Mandawa.



# Enhancing the Gap of Intellectual Property Awareness in Bahrain's Architectural and Interior Design Education

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Architecture and interior design, as creative practices, tend to have some ambiguity around copyright and professional conduct. However, to combat that, many organizations around the world have published rules and regulations in an effort to control, organize and monitor the practice in a more systematic manner.

These laws and regulations usually fall into the category of copyright of intellectual property which can be identified as a collection of national laws, international settlements and agreements that gives rights to individuals and enterprises over their original creations including images, inventions, musical compositions ...etc. These rights are protected through four tools depending on the type of rights such as patents for inventions and innovations, intellectual property rights for literary and artistic works, trademarks for brands, and lastly, trade secrets (Alsulami, Karsou, Aljuaid, & Khayyat, 2022).

This paper aims to explore the concept of intellectual property in Bahrain, and the existing laws in comparison to regional and international laws and regulations by answering the research questions “How are copyright laws protecting designers’ intellectual property, and what responsibility falls on the designer in that context?” and “Are Bahraini educational institutions effectively educating architecture and interior design students on copyright and intellectual property rights in their fields?”.

It provides insights into the way these laws affect the architectural and interior design practices and assess the level of awareness regarding the matter through future generations of architects and interior designers through a comparative study and a survey conducted on students from the University of Bahrain.



## Sustainable awareness in the residential sector in Bahrain

**Fatema Ahmedi**

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The growing recognition of sustainability in Bahrain's residential sector is increasingly regarded as a crucial element in addressing urban challenges and promoting social, economic, and environmental sustainability. Multiple studies underscore the imperative for innovative designs and regulations that integrate sustainability principles into residential development. However, many of these features are significantly contingent upon the comprehension of sustainability principles and their genuine significance.

This paper intends to commence the implementation of sustainable residential awareness in the Kingdom of Bahrain. Several Bahraini individuals comprehend the concept of sustainability yet lack knowledge on how to implement sustainable practices, while others still find its related essence. This research evaluates the awareness of sustainability in Bahrain's residential sector through quantitative approaches. The research implements a survey study conducted among individuals responsible for sustainability in the residential sector to assess their level of awareness.

The research examines two regional sustainability awareness initiatives through qualitative case study analysis of the Kingdom of Saudi Arabia KSA and the United Arab Emirates UAE. Research reveals that only a limited number of neighbouring GCC nations have initiated awareness campaigns or programs to promote the significance of sustainability features. This study document examines these situations and utilizes them to enhance the Kingdom of Bahrain's strategies to achieve its 2030 sustainable vision.

Research findings from the survey results of 120 respondents highlighted the significant importance of altering the perspective of sustainability in the residential sector in Bahrain. Currently, it pertains solely to materiality and construction substances. Additional recommendations for actions beyond sustainable materials are advised through collaboration among the building construction sector, civil engineering, architectural and design education, and non-governmental organizations to disseminate awareness of the actual principles and ideals of sustainability.



## Hospital paediatric corridors' effects on human factors

**Fatema Ahmedi**

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Designing pediatric spaces often prioritizes the preferences of parents and guardians, leaving the direct needs and perceptions of children underrepresented. This study explores how the design of pediatric hospital corridors can reduce anxiety and contribute to a friendly healing environment. By integrating interior design elements such as colors, textures, and child friendly features, these spaces can become more comforting and engaging for young patients. Using a qualitative methodology, this research examines two case studies of pediatric corridors, incorporating visual and photo analysis, as well as interviews, to identify key design strategies that enhance human factors. The findings highlight the impact of thoughtful corridor design on children's emotional well-being and recovery processes, offering valuable insights for the development of healthcare spaces that cater to their unique needs.



## **Sustainable Interior Design Strategies: Advancing Healthier, Safer, and Smarter Spaces through Environmental Systems and Green Technologies**

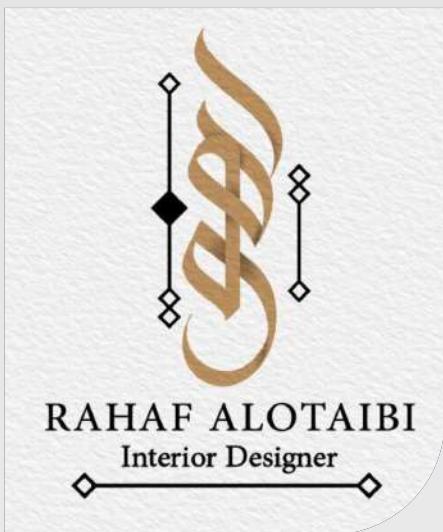
**Latika Singh**

M.DES Design Department

Dr. A. P. J. Abdul Kalam Technical University U.P.  
Institute of Design Noida

Sustainable interior design is at the forefront of addressing global environmental and social challenges by fostering healthier and safer indoor spaces. This study explores advanced strategies integrating environmental systems, green building technologies, and passive interior design solutions to enhance occupant well-being. Emphasizing indoor comfort through natural and artificial lighting, acoustics, and thermal comfort, the research evaluates the impact of sustainable materials and passive systems on interior spaces. Furthermore, the paper examines the transformative potential of artificial intelligence (AI) in optimizing interior design, including smart energy management and predictive maintenance.

Drawing on case studies and cutting-edge innovations, this paper proposes a framework for integrating sustainable practices and AI applications to create resilient and future-ready interior environments.



## **Studying designers' trends towards employing the metaverse world in the design and architecture sector of the Saudi labour market**

**Rahaf Ali Muhammad Al-Otaibi**

Master of Interior Design, College of Design and Arts, University of Jeddah, Kingdom of Saudi Arabia.

This study aims to identify the world of the metaverse and ways to employ it in the design and architecture sector and the Saudi market. The research used the descriptive analytical method by reviewing the importance of the metaverse and ways to employ it in the various architectural and engineering sectors by studying the trends of the Saudi market in the design sector. Going through the techniques used in the design sector. The research sheds light on the importance of virtual reality technology "Metaverse" in the design sector.

A tool was also designed to poll interior designers, architects, and engineers active in the Saudi market and some companies and institutions working in the same field. The research reached several results, the most important of which are:

- Metaverse technology is an emerging technology in the Saudi market and can be developed.
- The world of the metaverse has recently gained interest from Saudi designers, so it is clear to us that there is a willingness to adopt this technology in light of the Kingdom of Saudi Arabia's 2030 vision.

The research came out with recommendations, which are to conduct more research and studies on metaverse applications in other fields of design and architecture, in addition to developing training programs for designers to enhance their skills in using this technology, because adopting these innovations is not only a step towards the future, but rather a necessity to enhance competitiveness and innovation in the market Saudi work.



## Unveiling Spatial Narratives: The Architectural Phenomenology of Jean Nouvel

**M.A Mashael AIDoy**

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This study explores the architectural phenomenology of Jean Nouvel, examining how his designs transform space and place into immersive, sensory experiences. Renowned for projects such as the Arab World Institute in Paris and the Louvre Abu Dhabi, Nouvel's work demonstrates a profound sensitivity to light, materiality, and spatial dynamics, fostering meaningful interactions between architecture and its users. Through the phenomenological lens, this analysis investigates how Nouvel's designs transcend physical forms to evoke emotional and sensory engagement, creating environments that resonate deeply with human perception. The research critically engages with Nouvel's design philosophy, balancing his innovative use of materials and technology with the experiential qualities of his spaces.

While projects like Torre Agbar highlight his pursuit of visual spectacle, the critique explores whether such aesthetics compromise the phenomenological depth of the user experience. Conversely, works like the Louvre Abu Dhabi demonstrate how Nouvel's designs harmonise cultural context, material innovation, and sensory engagement, illustrating his capacity to craft spaces that foster connection and contemplation. By examining the dynamic relationship between architecture and human experience, this study underscores how Nouvel's approach profoundly enriches contemporary design practice. The analysis positions architecture not merely as a functional or aesthetic endeavour but as a powerful medium for engaging the phenomenological essence of human interaction with space, fostering deeper connections between individuals and their built environments.



## Beyond Comfort: Crafting A Unique Boutique Hotel Experience

**Ghadeer Al Alawi**  
University of Bahrain

The research focuses on comprehensive planning and design in boutique hotels, with a balance among functionality, aesthetics, and guest experience. That is to offer a unique hotel experience that marries the contemporary comforts of today with the timeless traditions of Bahrain while introducing global visitors to its beauty, promoting local culture, stimulating the economy, and offering a space for cultural exchange. It begins with an extensive literature review, covering three critical aspects: project-related research into the concept and uniqueness of boutique hotels; user-related insights into preferences and needs for personalized services and cultural connections; and design-related issues, including sustainable interior design, the integration of cultural heritage into wellness branding, aesthetic flexibility, comfort, and technology integration. These findings laid the groundwork for the research methodology.

It involved qualitative research through interviews, observations, and surveys to capture the users' preferences, site, and zoning analysis of Bahrain Bay and Bacon Private School. The study further analyzed the main elements that constitute boutique hotels, which include guest spaces, service areas, and social/cultural zones, through detailed area calculation in order to develop the best spatial layout for the selected scheme.

Programming strategies specific to site-specific climatic factors, architectural styles, and sustainability practices were put forth with the integration of advanced technologies that enhanced functionality. The calculation of area availability further supported the viability of the design. Cases of regional and international boutique hotels highlighted current design trends in their influence on guest experiences.

The research ends with the site selection and building that encompasses local culture, holistic branding, and innovative amenities. Findings to date highlight that a well-optimized spatial layout is essential for operational efficiencies and guest satisfaction. This paper provides a comprehensive outline for boutique hotel development, connecting academic theories through practical design approaches.



## **Environments That Shape Minds: How Interior Design Influences Cognitive and Emotional Development in Children**

**Akshitha Chikoti**  
Woxsen University, India

This research paper explores how interior design impacts the cognitive and emotional development of children aged between three to ten years old. The previous studies show that factors such as colour, light, acoustics, and space play a significant role in influencing their learning abilities, emotional health, and their overall well-being. Bright colours have been proven to stimulate creativity, while softer tones encourage the children to relax and concentrate. Proper lighting and acoustics can help in focusing better and can be soothing as well. In order to develop children's motor skills, the space has to be designed in a way where movement and exploration is possible. The main goal of this study is to identify the ways in which design elements contribute to cognitive and emotional growth in early childhood. This research uses methods like interviewing, observation of children in the environmental, and documentation.

The finding from previous research suggests that well-designed interiors promote positive developmental outcomes. Natural lighting and calm colours will enhance emotional regulation. It highlights the importance of designing interiors with the intention to foster holistic development of children, while offering insights to parents, designers, and educators to improve the overall wellbeing of the children.



## **Creation of Place and Placemaking: A Study of Peter Zumthor's Design Philosophy**

**Ghaida Mohamed**

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This study critically examines the architectural philosophy of Swiss architect Peter Zumthor, a Pritzker Prize laureate renowned for his contributions to place-making and architectural phenomenology. Zumthor's designs prioritize sensory engagement, exploring how materiality, light, tactility, and contextual sensitivity create immersive environments that resonate emotionally with their inhabitants. Iconic works, such as the Therme Vals and the Kolumba Museum, demonstrate his ability to integrate local materials and cultural narratives, forging profound emotional connections between architecture, memory, and identity. Through rootedness in local traditions and storytelling, Zumthor's architecture transcends mere functionality, inviting users to experience architecture as an extension of memory and identity.

This research critically analyzes the duality in Zumthor's philosophy: the tension between his emphasis on experiential depth and the pragmatic demands of modern design. By situating his work within broader architectural discourse, including influences from phenomenological theory and sustainable design practices, we examine how Zumthor's principles might inform more adaptable and scalable architectural approaches. The analysis also addresses environmental sustainability questions, highlighting how Zumthor's material choices and handcrafted techniques impact long-term feasibility.

Finally, this study contributes to the evolving role of architecture by proposing to reconcile sensory engagement and functional flexibility in contemporary practice. It explores how architects might draw on Zumthor's philosophy while incorporating adaptable frameworks that address the complexities of urban and social change. Thus, the research seeks to redefine the balance between memory, emotion, and utility, offering a pathway for creating phenomenologically rich and pragmatically viable spaces.



## Material, Memory, and Place: A Phenomenological Exploration of Anne Holtrop's Architecture

**M.A Zainab Jaafar Ahmed**

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This study examines the work of Dutch architect Anne Holtrop through the lens of architectural phenomenology, highlighting how his designs prioritize embodied experience, materiality, and the spirit of place. With studios in Bahrain and Amsterdam, Holtrop's architecture is rooted in a tactile, exploratory process where materials and site conditions guide creative evolution.

His approach transcends conventional forms and explicit narratives, focusing on how spaces feel, engaging the senses, evoking memory, and fostering emotional resonance. Holtrop's work aligns with phenomenological concepts such as Merleau-Ponty's idea of embodied perception and Heidegger's notion of "dwelling," emphasizing the interplay between human presence and material context. The Bahrain Pavilion exemplifies this philosophy, abstractly translating the textures and atmosphere of its environment into an immersive sensory experience. Similarly, the Museum Fort Vechten employs rammed earth and concrete to reflect its historical and geographical context, creating spaces that resonate with the *genius loci* as described by Christian Norberg-Schulz.

Despite these achievements, Holtrop's abstract and experimental style invites critique through the same phenomenological framework. While his designs encourage personal interpretation and sensory engagement, they occasionally risk alienating users by distancing themselves from explicit cultural or historical narratives. This tension raises broader questions about how architecture can remain innovative while fostering inclusivity and rootedness in cultural memory and identity. Furthermore, his use of innovative materials opens discussions on sustainability and the long-term viability of his architectural language.

By situating Holtrop's work within the theoretical framework of phenomenology, this presentation explores how his designs transform architecture into an experiential medium. It celebrates his ability to engage the senses and evoke emotional connections while critically examining the balance between abstraction, cultural narrative, and environmental sustainability. Ultimately, it invites reflection on how architecture can push creative boundaries while remaining deeply connected to the human experience of place.



## Architecture, Poetry, and Art: Interdisciplinary Emotion

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This paper explores how emotion connects architecture, poetry, and art. It focuses on how emotion is expressed by different disciplines through different mediums. Drawing from my background in architecture and creative writing, I analyze how architecture serves as a spatial expression of emotion. I look at how poetry captures interactions between people and places.

Basically, the study is about how architecture can be a physical form of emotion similar to poetry, finding out how spaces, interiors and exteriors, from small rooms to landmarks in open spaces, can embody various emotional experiences.

Also, artworks, such as multi-material collages that were created during a workshop titled Transform Emotions into Art, can help to see how emotional flows expressed through design elements and materials. This approach emphasizes the connection between space and emotional experience. Architecture, poetry, and art all possess the power to evoke a wide range of emotions, from silence to echo. This presentation argues that both architecture and poetry open doors to understand emotional and cultural narratives. I take an advantage of previous case study of a historic bathhouse I have done to study cultural and social dimensions of architecture. The bathhouse shows how architecture can shape social interaction and local identity. Also, I explore how iconic landmarks works as symbols of meanings. There is a poem that reveals how Riyadh Water Tower can symbolize transcendence and spiritual ascent.

By bridging theory and creativity, this work demonstrates how spaces can be both physical and emotional experiences, where poetry acts as a storyteller of emotional reflections within these spaces.



## Exploring Sustainable and Interdisciplinary Innovations: Behavioral and Cultural Trends in Interior Design

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The evolving field of interior design intertwines sustainability, cultural behavior, and interdisciplinary practices, creating a fertile ground for innovation. This research delves into how interior design practices influence and are influenced by environmental, cultural, and behavioral dimensions. Specifically, the study explores design education tools, environmental psychology, and the relationship between the body and space, contextualized within sustainable trends and emerging design practices such as exhibition, retail, and healthcare design. The paper employs an interdisciplinary approach, bridging interior design with art, fashion, product design, and literature, to present a holistic perspective on the field.

Leveraging a mixed-method research methodology, the study integrates qualitative analysis, case studies, and experimental design workshops to examine how contemporary interior design fosters creativity, functionality, and cultural resonance. Data gathered through industry and academic collaborations underline the growing significance of sustainable materials and adaptive design techniques. The findings aim to offer theoretical and practical insights for designers and educators, emphasizing the critical role of innovation in interior spaces.

The research underscores the necessity of aligning design practices with human behavior and cultural nuances, promoting sustainability as an imperative for future generations of designers. The proposed framework seeks to inspire creative dialogues at the intersection of design theory, pedagogy, and practice.



## Digital Sketching Skills As A Tool To Enhance Communication Between The Designer And The Client

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This research aims to study the role of digital sketching skills in improving communication between designers and clients in architectural offices. It also examines the impact of these tools in the early stages of architectural design. The research explores the factors influencing the use of digital sketching and how it can be employed to facilitate decision-making processes, along with identifying the best software to use in this context. A survey tool was utilized on a purposive sample of interior designers to gather data on their experiences and the challenges they face, aiming to provide solutions to enhance their digital drawing skills and improve communication with clients.

The study is divided into key areas:

1. The role of sketching in the conceptual design stages.
2. Challenges designers face when presenting their initial ideas.
3. Digital drawing tools.
4. Examining designers' approaches to using digital sketching in presenting design concepts.

The research adopted two main methodologies:

Descriptive-analytical methodology: To study the stages of the design process, analyze digital drawing software, and survey interior designers' preferences.

Inductive methodology: To review previous studies and extract the factors influencing design decisions.

In conclusion, the research provides recommendations for designers to effectively utilize digital technologies in their professional journey and achieve client satisfaction during the initial design stages.



## **The Role of Electronic Games in Developing Design Skills among Female Students of the College of Design and Arts**

**Lama Wan**

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This study aimed to investigate the impact of electronic games and their role in developing design skills among female students of the College of Design and Arts. The research explores the potential of using games as a tool to enhance learning and develop creative thinking and spatial awareness. The study adopted a descriptive-analytical approach and used a survey conducted with students from the College of Design and Arts. The questions were divided into three main sections: demographic information, assessing the participants' experience with electronic games, and exploring their experiences and preferences regarding the features of electronic games that they believe contribute to developing their design skills. The results showed that all 29 participants were female, with the majority specializing in interior design, reflecting the study's alignment with the researcher's field. The study included a preliminary analysis of the video games Minecraft and The Sims, as they are among the most popular and influential games in developing design skills. The findings confirmed the initial hypotheses, as 75.9% of participants indicated that their imagination skills were most enhanced through these games, highlighting the relationship between electronic games and design skill development. These findings emphasize the importance of using electronic games as an effective tool for developing design skills, suggesting the potential for integrating them into academic programs as an innovative teaching method. I recommend conducting an applied study on a game specialized in design to examine its detailed impact on skill development and focusing on how to incorporate such games into curricula. Additionally, it is essential to delve deeper into studying the negative impacts of games to develop strategies that minimize these impacts while preserving their benefits.



## Urban Metabolism Analysis: Water and Energy Flow Assessment in Bahrain's Circular Economy

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This research investigates how the concept of urban metabolism can increase waste diversion and material reuse within Bahraini urban centre while simultaneously contributing to a sustainable trajectory of Bahrain's Vision 2030. Cities are among the highest consumers of resources and waste producers globally (The New Urban Agenda - Habitat III, 2016). Thus a systematic literature review, material flow analysis (MFA), life cycle assessment (LCA) methodologies has been used in this research to evaluate the complex interactions between the urban metabolic processes and its environmental impacts. The study particularly focuses on technological and economic activities in Bahrain to encompass resource flows, energy production, and waste removal systems. While not much urban metabolism research has been done on the Arabian Peninsula, this region would be a perfect place to experiment with new waste diversion strategies. Studies show there's a lot of waste-to-resource technologies that can be applied. Urban metabolism shows waste can be converted to resources for cities. This research contributes to the general urban metabolism literature relative to an interdisciplinary perspective from the environmental studies, engineering, and urban planning fields, for it demonstrates that cities, through circular economy and diversion efforts, can greatly enhance resource efficiency. The empirical findings are also translated to applied action by international regulators and planners as it offers a systems solution for a cleaner, more integrated waste management diversion effort for localized implementation and international regulatory application. Furthermore, efforts of a circular economy and diversion demonstrate clear findings from which cities can operate at optimal diversion and recovery levels. Therefore, the findings and recommendations are a systems overview to which policymakers and planners can implement for the best diversion program focused on socio-ecologically sustainable development. Therefore, the research is relevant for those nations already in the midst of thrusts of rapid urbanization to better their sustainable development efforts.



## **Innovate, Inspire, Integrate: Harnessing Algae for a Revolutionary Agricultural Future**

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Algae, as aquatic photosynthetic organisms, serve as a strong connection between built environments and natural ecosystems. Bahrain's distinctive marine ecosystem, rich in algal resources, represents an invaluable opportunity that warrants recognition and utilization. The Algae Agri Hub is an innovative project combining sustainable design with advanced environmental technology systems to address global challenges, including climate change, food security, and resource depletion. The implementation of photobioreactor facades represents a considerable advancement in building technology, as these structures integrate algae into architectural exteriors to enhance energy efficiency and sustainability.

This project seeks to harness the potential of microalgae across various sectors through research and development, aiming to incorporate algae cultivation into architectural and agricultural frameworks. Such integration aims to alleviate environmental issues and revolutionize urban food production methodologies. This paper evaluates comparative studies of algae cultivation systems in multiple regions and assesses their viability within the context of Bahrain to support the agribusiness and industrial sectors.

In conclusion, this initiative aligns with the Kingdom of Bahrain's Vision 2030 by focusing on sustainable economic development, enhancing workforce skills, and supporting users through applied science education, environmental protection, entrepreneurship, and resource accessibility through the Algae Agri Hub. By supporting the development of this hub, the government can achieve its environmental objectives, diversify its economic base, and enhance its attractiveness to international investors. Further research can be implemented in the context of ecotourism to promote environmental conservation and education, support local communities, and generate economic benefits through sustainable tourism practices. This approach focuses on nature-based environments, which positively impact environmental conservation and local communities while providing visitors with significant and memorable experiences.

# **Honouring Cultural And Environmental Preservation Through Museum Design**



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The article will emphasize the study looks at how Integrating social, cultural, and environmental sustainability will be incorporated into the building design of museum research centers specifically natural/animal museum centers. The article proposes an animal museum center as an example that honors cultural identity while promoting and encouraging environmental preservation. In line with 2030 Bahrain Goals, where Bahrain aims to develop its tourism sector through the cultural and environmentally sustainable architecture sector. The article will show several study approaches to modern natural museum designs whether all three social cultural and environmental factors are included. Therefore, it will be studied through conducting a case study on current natural museums in Canada (Royal Ontario Museum) as it is a museum that contains both cultural and natural halls that aim for preservation. The article will also conduct a literature study about design layout and how often Bahrain's identity is presented in tourist buildings, as well as, conducting interviews with environmental activist professor Ismail Madani Professor Ismail Mohammed Al-Madani, General Directorate for the Protection of the Environment and Wildlife to explore the potential environmental challenges and considerations that need to be addressed during the design and construction phase and identifying effective strategies for incorporating sustainability and conservation practices in the museum's design and operations. As well as studying virtual interviews with experts in museum design such as the designers of The Museum of Modern Art-New York specifying important guidelines to follow to promote the aim and bringing exhibitions to life. Additionally, the article will cover the importance of storytelling in museum design to show the power of how layout design promotes the importance of integrating heritage and environmental preservation. This article will promote a change that will honor the cultural heritage and preserve the environment as an essential element of interior design



## Green Solutions for Indoor Air Pollution: The Role of Non-Native Plants in Formaldehyde Remediation

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Indoor air pollution (IAP), largely arising from new furnishings, finishing materials, adhesives, and paints, poses serious health risks due to the emission of volatile organic compounds (VOCs), particularly formaldehyde. This issue is exacerbated by the fact that people now spend more than 85% of their time indoors. While green solutions such as enhanced ventilation, use of low-emission materials, and air purifiers are effective, phytoremediation with indoor potted plants emerges as a particularly energy-free, cost-efficient, and environmentally friendly alternative. This study investigates the effectiveness of indoor plants as efficient air purification agents through literature review, lab experiments, and a survey. The phytoremediation potential of three non-native indoor plant species—*Epipremnum aureum*, *Chlorophytum comosum*, and *Spathiphyllum wallisii*—was examined under controlled laboratory conditions. These plants were exposed to formaldehyde concentrations reaching approximately 3 ppm in a sealed fumigation box (1 m<sup>3</sup>). The results revealed significant remediation capabilities, with *Epipremnum aureum* achieving a remarkable 76% removal efficiency, followed by *Spathiphyllum wallisii* at 70.5%, and *Chlorophytum comosum* at 69%. These findings demonstrate that these plant species can effectively lower indoor formaldehyde levels, contributing to healthier indoor environments. A questionnaire survey assessing public awareness and attitudes regarding the use of indoor plants for air purification was conducted.

Although participants were generally familiar with various types of indoor plants, their understanding of the plants' air purification capabilities was notably limited. This gap in knowledge highlights the urgent need for enhanced educational initiatives about the significant health benefits of indoor plants, particularly their role in improving indoor air quality. This study emphasizes the essential role of integrating indoor plants into interior designs not only for their visual appeal but also for their proven ability to purify indoor air. Future research should aim to explore the long-term impacts of various indoor plant species on a wider range of indoor air pollutants in real-world settings.



## Adaptive Reuse And Pop-Up Stores: Catalysts For Sustainable Transition In Algeria

**Aicha Kouidri**

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Adaptive reuse in interior design represents a strategic approach to promote social, cultural, and environmental sustainability in urban transformation projects. This method goes beyond mere functional rehabilitation of buildings by incorporating a long-term vision that addresses contemporary challenges. Unlike traditional renovations, it emphasizes leveraging existing structures as renewable resources to support urban transitions.

In this context, pop-up stores perfectly illustrate the potential of adaptive reuse. By temporarily occupying under-used spaces, these initiatives revitalize buildings while addressing specific economic and social needs. These spaces, often modular and flexible, allow entrepreneurs to test innovative concepts at a lower cost while invigorating the neighborhoods they occupy.

At a social level, pop-up stores foster inclusion and community interaction. They create temporary meeting places where local culture intersects with commercial innovation. Culturally, these projects highlight artisanal practices or local identities, thus contributing to heritage preservation.

In terms of environmental sustainability, reusing existing structures reduces the consumption of new resources and the carbon impact associated with construction. The use of recycled materials and flexible layouts demonstrates a responsible approach to interior design. This contribution proposes to analyze the key characteristics of a successful adaptive reuse project, highlighting the example of pop-up stores. The goal is to identify principles to integrate into future urban transformation projects, thereby strengthening the sustainability of transitioning Algerian cities.



## Generative Ai In Design: Innovations, Applications, And Emerging Trends

### **Mrs. Maryam Obaid**

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Artificial intelligence (AI) is among the most transformative and rapidly advancing technologies, revolutionizing various fields and significantly impacting human life. Most institutions, organizations and companies increasingly leverage AI to enhance creativity, quality, efficiency and speed in their work processes. This increases the interest of researchers in this topic, leading to the integration of AI into diverse areas of study. This transformation in research interests has also impacted on the evolution of architecture, engineering and construction (AEC) industry. As a vital component of this industry, interior designers must embrace modern technologies to boost productivity and efficiency. The integration of artificial intelligence (AI) into interior design offers innovative tools that enhance creativity, improve problem-solving, and streamline workflows.

Through experimental methods such as text-to-image, sketch-to-image, and 3D-to-render techniques, this research explores the transformative effects and applications of AI in interior design. It examines the features and capabilities of different AI platforms like Midjourney and Prome AI in redefining traditional design processes, fostering creativity, and improving efficiency.

Using a mixed-methodology approach, that includes theoretical analysis, case studies, and practical examples, the study highlights AI's potential to reduce costs, accelerate workflows, enhance creative outcomes and speed up the work. Furthermore, the research addresses the challenges of integrating AI into the interior design industry, such as maintaining design creativity and addressing data privacy concerns. Finally, it summarizes the use of AI in the field to prove that AI-driven tools can complement human creativity and transforming interior design into a more agile, efficient, and client-centric profession. It concludes, the effect of AI on the future of interior design industry and proposes some futuristic strategies for using AI in the field.



## Methodological Approaches for Residential Evidence-Base Design - Case Study Bahrain

**Dr. Susana Soares Saraiva**

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Research on the relationship between architecture and behaviour often lacks a sound methodological framework able to support evidence-base design solutions which are particularly relevant in mass housing programs such as those being implemented in most GCC countries.

The complexity of the topic lies in the fact that houses, like any object created by man, have a physical (functional) and symbolic (cultural) nature but also have a third dimension that other objects don't possess: the interior spaces within its volume. The patterns of spaces inside the building are its true purpose, not the physical object in itself [1].

For the most part of architecture history, the focus was on the physical variable: building form, aesthetics and construction, trying to derive social meaning from those individual characteristics [2]. However, the immense transformations unravelled by the industrial revolution and the evident failures of the 'Modernist Project' lead, in the 1960's and 1970's, to an increased interest in the relationships between the physical and symbolic nature of houses. This was revived in the late 1990s [3], but studies on such relationships are still relatively rare and lack a sound methodological framework for analysis [4].

In summary, the different theories tend to separate meaning from space or, in one way or another, humans (subject) from space (object). However, if you isolate humans from buildings, you deprive the object of its social content or social meaning from its spatial content. Hillier and Hanson call this the 'man-environment paradox' [5].

This work presents a multi-layered methodological approach that aims to fill the gap in existing knowledge and support an evidence-based approach to residential design. The methodological framework considers a wide variety of sources of information working together to understand the socio-cultural background of patterns of space [6], as well as the wide architectural/historical context and the specific individual processes of building and using houses [7], using as case study Bahrain's housing.



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