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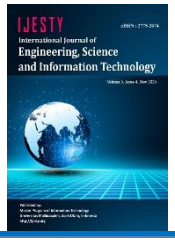

Futuristic Design Based on Sustainable Culture and Creative Economy: Material Technology Innovation in Commercial Buildings

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Abstract

The integration of futuristic design with sustainable culture and the creative economy offers a transformative paradigm in the development of commercial architecture. This study examines the Dekkson Knowledge Shop as a case study to explore how material technology innovation can address environmental challenges while reinforcing cultural identity and strengthening market competitiveness. Employing a qualitative descriptive method, the research utilizes field observations, in-depth interviews, and documentation analysis to investigate the application of high-performance materials and their interpretation within architectural narratives. The findings highlight that the use of eco-friendly composite panels, fiber-cement boards, and adaptive lighting systems not only enhances energy efficiency and durability but also embeds Balinese cultural values within a futuristic aesthetic framework. A key novelty of this research lies in positioning material technology as a narrative medium that connects modern innovation with cultural sustainability, rather than perceiving it solely as a structural element. This integration enriches user experience, strengthens brand identity, and supports the creative economy by transforming architectural design into a cultural and economic asset. Furthermore, the study proposes a replicable design model for future commercial projects that harmonizes sustainable material innovation with local narratives. The model provides both theoretical contributions to architectural discourse and practical strategies for sustainable design practices applicable in a global context. Through this approach, the research underscores the importance of balancing technological advancement with cultural preservation, thereby establishing commercial architecture as a medium for sustainable innovation, cultural continuity, and economic resilience.

Keywords: *Architecture, Creative Economy, Futuristic Design, Material Technology, Sustainability.*

1. Introduction

In the Indonesian context, local culture and the creative economy play an essential role in shaping spatial and architectural character. The creative economy encourages new ideas in utilizing local materials, adaptive construction techniques, and cultural narratives embedded within design. When cultural values are preserved through innovative approaches, continuity between the past, present, and future is established. In this sense, cultural sustainability is not merely about preserving physical forms but also about reinterpreting traditional architectural values expressed through materiality, space, and function in a contemporary context [1]. This integration has become increasingly relevant within the framework of sustainable development, which requires a balance between economic, social, and environmental dimensions [2].

Recent studies have emphasized the role of sustainable and futuristic design in addressing global challenges, yet limitations remain. Research on green building demonstrates that low-carbon materials can reduce energy use by up to 40% and CO_2 emissions by 30% [3], while circular design approaches are seen as crucial in promoting low-carbon urban transitions [4]. Meanwhile, the creative economy has been widely recognized as a catalyst for social innovation, inclusion, and economic resilience across the Asia-Pacific, and empirical research in Indonesia has shown that combining creative industries with architectural design can strengthen branding, identity, and business sustainability [5]. Nevertheless, these studies tend to treat sustainability, creativity, and futuristic design as separate domains rather than integrating them into a holistic architectural strategy. This is the main research gap that this study aims to address.

One strategic approach to achieving such integration lies in material technology innovation. Materials should be considered not only as structural components but also as narrative media that represent cultural identity while addressing sustainability challenges. The use of

technologically modified local materials has the potential to reduce carbon footprints, strengthen building durability, and open new possibilities for aesthetic exploration rooted in local wisdom. Thus, material innovation can serve as a bridge between futuristic design and sustainable cultural principles [6].

The case study of the Dekkson Knowledge Shop exemplifies this integrative approach in practice. This project not only demonstrates futuristic aesthetics through architectural form and building technology but also reflects Balinese cultural values and the spirit of the local creative economy through its material selection, spatial configuration, and user experience. Therefore, this article aims to examine how sustainable culture and the creative economy can be concretely integrated into commercial architecture through futuristic design strategies and material technology innovation. Specifically, the research seeks to answer three key questions: (1) How can material technology innovation function as a cultural narrative medium in futuristic commercial architecture? (2) How can the integration of the local creative economy reinforce cultural identity and sustainability in futuristic design? and (3) How can a replicable design model be formulated that merges sustainable material innovation and cultural narratives to provide practical strategies and theoretical contributions for global architectural discourse?

2. Literature Review

Contemporary scholarship converges on the need to integrate *futuristic design* with environmental performance, cultural continuity, and economic vitality in the built environment. On the sustainability front, recent syntheses underline how green-building strategies and low-carbon materials reduce operational loads and embodied emissions when evaluated across the life cycle, while also foregrounding the design stage as critical for carbon abatement in commercial typologies[3]. Urban-scale frameworks extend this lens via circular-city thinking resource looping, design-for-disassembly, and adaptive reuse, positioning circularity as a systems lever for low-carbon transitions in cities and their buildings [7]. Parallel streams of work emphasize cultural sustainability and identity. In Southeast Asian and Indonesian contexts, empirical studies show that vernacular logics, spatial syntax, orientation systems, and ritualized layouts can be reinterpreted within contemporary programs to sustain place attachment and social meaning. [8]. At a broader cultural scale, scholarship documents how Balinese identity is continually renegotiated within tourism and modernization, reinforcing the importance of culturally situated design narratives in commercial settings [9].

The creative economy contributes to the socio-economic engine for this integration. Studies link creative-industry ecosystems to urban resilience, innovation, and inclusive growth, offering governance and branding mechanisms that can be embedded in architectural programming and customer experience. Yet, despite growing cross-talk between design, culture, and creative industries, the literature often treats these as parallel tracks; explicit, operational models that join material specifications, cultural storytelling, and market differentiation in a single commercial-architecture framework remain scarce. This fragmentation delineates the theoretical and practical gap that the present study addresses.[10]. Material technology innovation is a promising bridge across these domains. Systematic reviews on bamboo and bio-based systems show viable pathways to lower embodied carbon while enabling expressive tectonics and culturally resonant aesthetics—qualities valuable for futuristic branding in retail and knowledge-exchange spaces [11]. At the city scale, culturally grounded planning in Denpasar illustrates how policy frames can scaffold project-level design decisions that intertwine local identity, sustainability metrics, and experiential value for users [12]. Together, these strands support a research agenda where materials operate not only as structural/performative components but as narrative media carrying cultural meaning while meeting environmental and market imperatives in commercial architecture.

3. Methods

This study employed a qualitative descriptive case study approach, which enables an in-depth exploration of futuristic architectural design integrated with sustainable cultural values and material technology innovation [13]. The case study method was chosen because it is suitable for examining the specific context of an architectural project holistically, emphasizing the interrelation between design form, material performance, and cultural narratives embodied in commercial architecture. Research data were collected through field observations, in-depth interviews, and document analysis. Observations focused on spatial configuration, façade articulation, and environmental strategies such as passive ventilation and rainwater infiltration systems. Semi-structured interviews were conducted with architects, designers, users, and developers to explore perspectives on material selection and the role of cultural values in design. Document analysis included architectural drawings, material specifications, and sustainability standards such as LEED and BREEAM. To ensure validity, methodological triangulation was employed by comparing findings across these three sources [14]. Although the study primarily employed a qualitative approach, basic quantitative data were also incorporated as a complementary element, particularly regarding the technical performance of materials (durability, recyclability, energy efficiency, and carbon reduction potential). This combined strategy aligns with the mixed-methods paradigm, which emphasizes the integration of qualitative and quantitative evidence to strengthen research outcomes [15]. Thus, the methodology highlights not only the symbolic and cultural meaning of design innovation but also provides measurable, objective indicators of material performance. The analysis was carried out in three stages: (1) technical assessment of materials based on recent literature on eco-friendly composites [16], (2) cultural-narrative analysis through the reinterpretation of Balinese architectural principles such as Rwa Bhineda and Tri Angga [8][12] and (3) examination of the building's contribution to the creative economy, particularly its role in branding and business networks. Research validity was strengthened through member-checking with key informants, while reliability was maintained by documenting a complete audit trail, including field notes, interview transcripts, and visual records.

4. Results and Discussion

The Dekkson showroom has a gross floor area of 250 m² and is located at Jl. Bypass Ngurah Rai No. 222X, Benoa, South Kuta District, Badung Regency, Bali 80361, Indonesia. The showroom and office were renovated by the prior building permit (IMB) designation for trade and services. Dekkson is a provider of architectural and interior hardware, including door and window accessories, bolts and locks, door hinges, and aluminum composite panel (ACP) products. The Bali showroom is conceived as a venue for sales, marketing, product discussion, and knowledge sharing. It adopts a hybrid concept that synthesizes a futuristic design language with the Balinese traditional

architectural idiom, thereby producing a distinctive style in terms of philosophy, form, materiality, ornamentation, and related spatial attributes. This hybrid approach positions the futuristic as a design horizon for the present and the future, while inflecting it with the locality of Balinese tradition so that both proceed in tandem amid contemporary diversity and modernity.

4.1. Integration of Futuristic Design and Sustainable Cultural Values

The architectural articulation of the Dekkson Knowledge Shop demonstrates a harmonious synthesis of futuristic aesthetics with local cultural elements. Futurism is expressed through dynamic geometries, clean lines, and the deployment of adaptive lighting technologies, whereas local cultural values are conveyed by reinterpreting traditional motifs into contemporary forms. This is not merely decorative; rather, it constitutes a narrative strategy that reinforces identity and fosters an emotional connection with users. The integration confirms that futuristic design can retain the essence of sustainable culture without diminishing its innovative appeal. As illustrated in Figure 1, the use of a futuristic façade embodies a present- and future-oriented architectural character while signifying unity within Bali's plural cultural context and local content. This aligns with recent research emphasizing that futuristic architectural strategies must combine low-carbon material technology with narrative-driven cultural identity to achieve global sustainability goals [3][8]. As illustrated in Figure 1, the use of a futuristic façade embodies both a present- and future-oriented architectural character while signifying unity within Bali's plural cultural context and local content. The reinterpretation of traditional motifs into modern façade articulation is consistent with findings that vernacular syntax and cultural logics can be integrated into contemporary programs to preserve place attachment and social meaning [8]. Moreover, Balinese identity is continuously renegotiated within the forces of tourism and modernization, reinforcing the importance of embedding cultural narratives in commercial architectural settings [9].

Fig 1. Façade design of the Dekkson Knowledge Shop

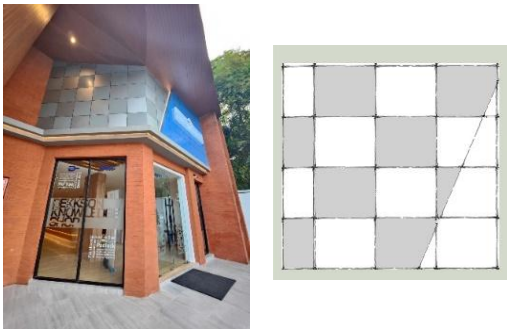

Fig 2. Application of the Rwa Bhineda Concept to the Building Façade

Figures 1 and 2 illustrate how the use of black-and-white tones on the building façade symbolizes the equilibrium of life between good and evil that coexist in tandem, consistent with the Balinese traditional architectural principle of *Rwa Bhineda*. This principle reflects cosmological balance that remains highly relevant in modern urban design in Bali [12]. By embedding such symbolism into a futuristic form, the Dekkson Knowledge Shop demonstrates that cultural resilience can be preserved without reverting to historicist imitation.

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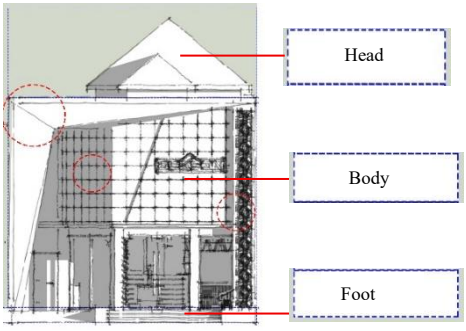

Fig 3. Application of the Tri Angga Concept to the Building Form

Fig 4. Application of the Peciren Style to the Building Façade

The formal composition adopts the Balinese Tri Angga principle, the tripartite hierarchy of head, body, and foot as the primary reference for achieving balanced building proportions, see figure 3. This approach reflects more exhaustive research showing that the synergy between creative industries and architectural design in Bali depends on the reinterpretation of traditional principles to sustain both cultural identity and business innovation [17] Such reinterpretation ensures that traditional values are not only preserved but also transformed into a medium of sustainable architectural expression. Figure 4 illustrates the application of the Peciren Bebadungan idiom, which must engage with its essence: rather than merely replicating historical forms, it requires a thorough grasp of the Bebadungan language through the brick tectonics that define it as simple, robust, and unembellished. Similar strategies are evident in contemporary studies of bamboo and bio-based materials, which reveal that natural, locally rooted materials can provide expressive tectonics while enabling low-carbon pathways suitable for futuristic branding [11]. In this case, material engineering based on the circular economy further supports the conservation of Balinese architectural identity through composite materials that reinterpret tradition while addressing sustainability challenges [6].

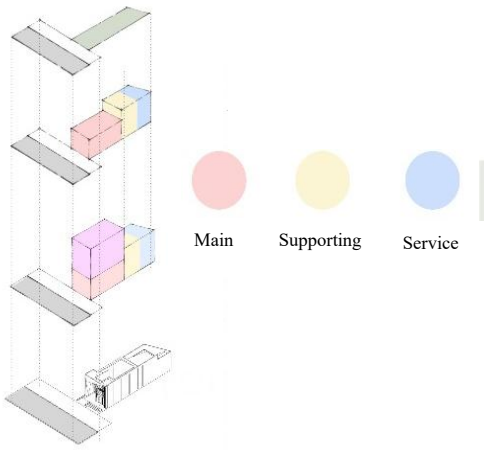

Fig 5. Application of the Tri Mandala Concept to Building Zoning

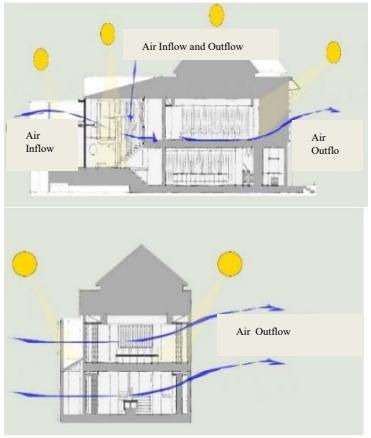

Fig 6. Application of the Sustainable Building Concept to Air Circulation

Figures 5 and 6 show that the Dekkson Showroom has a floor area of 250 m² and is located at Jl. Bypass Ngurah Rai No. 222X, Benoa, South Kuta District, Badung Regency, Bali 80361. The showroom and office were renovated by the previous building permit (IMB) for trade-and-services use and are designed with a building coverage ratio (KDB) of 60%, organized on two stories and subdivided into three zones—main building, supporting building, and service building as depicted in the axonometric sequence showing the site parcel, zoning layout, and the axonometric view of the Dekkson Bali showroom. The site integrates rainwater infiltration wells, a bio-system for wastewater treatment, and strategically placed vegetation to mitigate western solar radiation, achieving a green coverage ratio (KDH) of 20% of the total site area. The circulation concept optimizes natural ventilation, directing outdoor air into the interior to provide passive cooling. For instance, innovative design of integrated sustainable urban drainage systems incorporating rainwater tanks and infiltration systems for effective stormwater management in urban settings. [18]. Furthermore, modeled how densification combined with sustainable stormwater measures can mitigate runoff and enhance urban hydrology [19].

The deployment of contemporary materials on the façade of the Dekkson Knowledge Shop constitutes a key mechanism for fusing a futuristic aesthetic with sustainability principles rooted in local culture. The primary materials employed are aluminium composite panels (ACP) and Shera Wood fiber-cement boards. ACPs were selected for their light weight, resistance to extreme weather, smooth surface finish, and compatibility with efficient fabrication processes. In addition, the specified ACP is environmentally preferable, aligning with the project's sustainability commitments, and can be precision-manufactured to achieve consistent forms and detailing. ACPs are notably recyclable—often comprising up to 85% recycled aluminum and offer exceptional durability, thermal and acoustic insulation, and lightweight construction, supporting energy efficiency and reduced structural load. Their composite structure allows for extensive customization and contributes to sustainable building certifications like LEED or BREEAM. The integration of ACP on the façade addresses not only technical performance but also the preservation of Balinese architectural identity. This is realized through the orchestration of patterns, colors, and textures that reinterpret cultural elements in a contemporary manner. Consequently, modern materials continue to convey local cultural narratives in a design language that remains resonant with current developments.

Table 1. Material Technology Innovation in the Dekkson Knowledge Shop Commercial Building

Material Type	Technical Characteristics	Design Advantages	Sustainability Aspects	Relevance to the Dekkson Knowledge Shop
ACP (Aluminum Composite Panel)	Two aluminum skins bonded to a polyethylene core; lightweight, weather-resistant, easily formed	Delivers a futuristic look with flat, clean surfaces; geometric/form flexibility supports modern design	Recyclable and durable, reducing maintenance and replacement frequency	Applied to the façade to create a modern, distinctive visual identity and strengthen brand image
Shera Wood (Fiber-Cement)	Cement-based composite with cellulose fibers and additives; termite-resistant,	Enables natural wood-like aesthetics with higher durability and dimensional	Environmentally preferable due to natural fibers, long service life, and low	Provides a natural accent on the façade to balance local cultural

	moisture-resistant, readily paintable	stability	maintenance needs	expression with modern aesthetics

Meanwhile, fiber-cement–based Shera Wood is employed as an accent element to impart visual warmth while enhancing the façade's durability. The material is environmentally friendly, resistant to moisture and termite attack, and capable of emulating the natural appearance of wood without intensive maintenance. In combination, ACP and Shera Wood achieve a balance between a modern–industrial expression and a natural touch, resulting in a façade that is functional, aesthetically refined, and sustainable. Studies on fiber-cement formulations show that the inclusion of specific fillers significantly improves moisture resistance and overall durability of extruded wood fiber-cement products, reinforcing Shera's suitability for facade usage [16]. Additionally, modern fiber-cement siding materials are well-known for their high resistance to water, mold, fire, and insect infestation, as well as their low moisture movement and non-toxic nature qualities that align with durable and sustainable façade design. In combination, ACP and Shera Wood balance a modern-industrial expression with natural warmth, resulting in a façade that is both functionally robust and aesthetically refined. This pairing exemplifies how advanced materials can contribute to sustainable architectural language while grounding design in cultural sensibility.

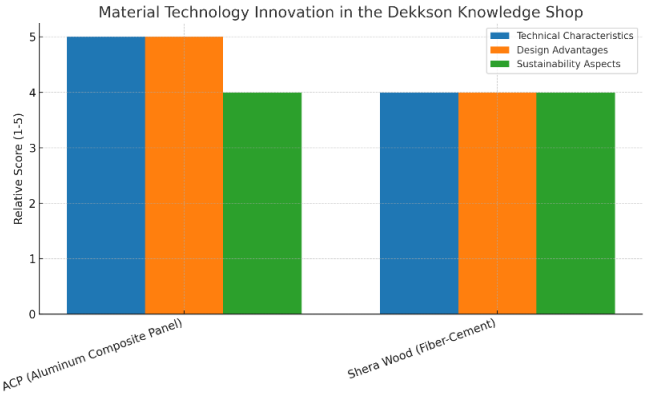

Fig 7. Comparative Analysis of ACP and Shera Wood in Terms of Technical Performance, Design Advantages, and Sustainability Aspects at the Dekkson Knowledge

Figure 7 demonstrates that both ACP and Shera Wood contribute significantly to the project, though with different emphases. ACP scores higher in technical performance and futuristic design flexibility, while Shera Wood balances durability with natural aesthetics. Both materials show equally strong sustainability aspects, aligning with the research objective of integrating eco-friendly technology with cultural identity.

Fig 8. Material Technology Innovation on the Building Façade

The selection of these two materials impacts not only the building's visual and technical quality but also carries strategic value for supporting the creative economy. By employing products aligned with Dekkson's portfolio, the façade design becomes both a showcase of material-technology innovation and a promotional medium that embodies a vision of sustainability and cultural integration in future commercial architecture. More broadly, commercial architecture can function as a strategic platform that reinforces branding, constructs identity, and stimulates economic networks. Specifically analyzed the synergy between the creative industry and architectural design in Bali, showing that integrating traditional Balinese elements with innovative design enhances business sustainability [17]. Their findings revealed that 75% of creative industry stakeholders in Bali leverage traditional design to strengthen product identity and consumer appeal, yielding economic, cultural, and environmental benefits as shown in Figure 8.

4.2. Synergy between Commercial Architecture and the Creative Economy

The synergy between commercial architecture and the creative economy plays a strategic role in producing buildings that function not merely as spaces for transactions or promotion, but as media for constructing identity, expanding business networks, and driving innovation-based economic growth. The Dekkson Knowledge Shop case demonstrates how a futuristic design approach grounded in cultural sustainability can catalyze the development of a creative-economy ecosystem. The implemented architectural design addresses functional efficiency and user comfort while integrating aesthetics that reflect Balinese local wisdom with innovative material technologies, thereby yielding spaces with distinctive character and strong consumer appeal.

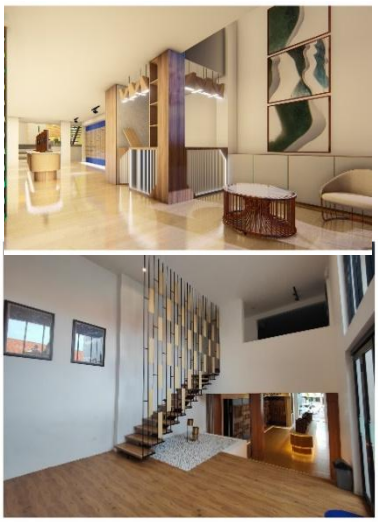

Fig. 9. Waiting Area Design that Enhances the Visitor Experience

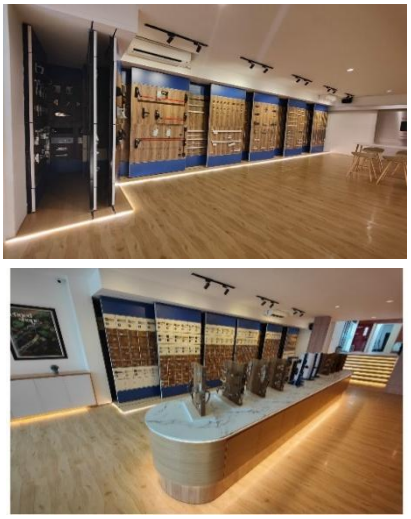

Fig. 10. Spatial Design with a Unique Character and Strong Appeal

In this context, commercial architecture functions as a platform that reinforces marketing strategies and brand positioning. Figures 9 and 10 show the Dekkson Knowledge Shop leverages material technologies such as aluminum composite panels (ACP) and environmentally friendly composite boards to produce a futuristic visual expression that remains harmonious with local cultural values. This integration adds value to the visitor experience, whereby the building becomes not only a place to purchase products but also a medium for education and creative interaction. The presence of salient design elements supports strong visual branding, stimulates word-of-mouth marketing, and maximizes exposure potential through digital media. Design research in creative industries highlights architecture's role in constructing environments that evoke emotion, culture, and activity. For example, in sustainable tourism, thoughtful architectural design fosters immersive cultural experiences and reinforces creative economies [20]. Moreover, structural analysis of cultural and creative industries in peripheral regions underscores how architecture and enterprise interweave to promote innovation, local identity, and economic resilience [21].

4.3. Implications of Futuristic Design and Material Technology Innovation across Social, Cultural, Economic, and Environmental Dimensions

The application of futuristic design combined with material technology innovation at the Dekkson Knowledge Shop yields significant multidimensional implications. Socially, interactive and flexible spatial concepts enhance user experience through the integration of digital technologies and adaptive layouts, enabling more intensive engagement among visitors, designers, and industry actors, and thereby fostering an inclusive knowledge ecosystem. Culturally, a design that adopts sustainability principles not only introduces a futuristic aesthetic but also preserves local identity through the reinterpretation of traditional motifs, forms, and architectural philosophies. This approach ensures that cultural values remain relevant amid technological advancement and global trends. At the Dekkson Knowledge Shop, interactive and flexible spatial concepts augmented by adaptive layouts, occupant-centric sensing, and digital media enhance visitor engagement and shared learning between users, designers, and industry partners. Evidence from smart-building and occupant-centric frameworks shows that data-driven, IoT-enabled spaces improve user experience and inclusivity; complementary IEQ studies link better ventilation/thermal/light/acoustic conditions with higher satisfaction and pro-health behavior changes, supporting the decision to privilege passive comfort and real-time feedback in retail-learning environments [22].

Table 2. Implications of Futuristic Design in the Dekkson Knowledge Shop Commercial Building

Aspect	Implications of Futuristic Design and Material Technology Innovation
Social	Enhances user interaction and comfort through inclusive public spaces.
Cultural	Integrates local values within a futuristic aesthetic to preserve identity.
Economic	Drives the creative economy and strengthens business competitiveness.
Environmental	Reduces the carbon footprint through the selection of sustainable materials.

Economic Dimension. In the economic domain, material technology innovations such as the use of environmentally friendly composites, recycled materials, and modular construction systems can optimize operational costs while adding value to the architectural product. The design serves as a promotional medium for the creative industries, positioning the commercial building not only as a site of transactions but also as a platform for education and branding that enhances market competitiveness and environmental Sustainability. From an ecological perspective, the use of sustainable materials and the adoption of energy-efficiency technologies contribute to reducing the carbon footprint, improving indoor air quality, and enabling more responsible resource utilization. Material technology innovation, e.g., low-carbon composites, recycled constituents, modular systems, can reduce operating and life-cycle costs while turning the building itself into a live showroom that strengthens branding and market differentiation. Empirical and policy-oriented studies on Indonesia's creative economy show that governance, digital transformation, and design-led identity co-produce competitiveness and ecosystem growth; positioning a commercial space as an educational, demonstrative platform is consistent with how creative-industry networks generate value [1]. Circular-design literature also links material efficiency with business resilience in the built environment [4]. Taken

together, these four dimensions demonstrate that a futuristic design grounded in cultural sustainability yields not only visual and functional innovation but also strategic impacts on society, cultural heritage, economic growth, and environmental stewardship. The Dekkson Knowledge Shop case confirms that the synergy of technology, creativity, and local wisdom can produce a design model that is both adaptive to changing times and supportive of sustainable development agendas. Peer-reviewed work on fibre-cement boards and ventilated façades indicates good durability, moisture performance, fire resistance, and suitability for monitored, low-maintenance cladding; studies on cement-based wood/plant-fiber composites also report resistance to decay and termite attack in laboratory/field conditions, caveated by the need for appropriate detailing and quality control [23]. These findings support the use of Shera Wood (fiber-cement) to deliver visual warmth with robust performance, especially when paired with ACP for a balanced modern-industrial yet natural expression.

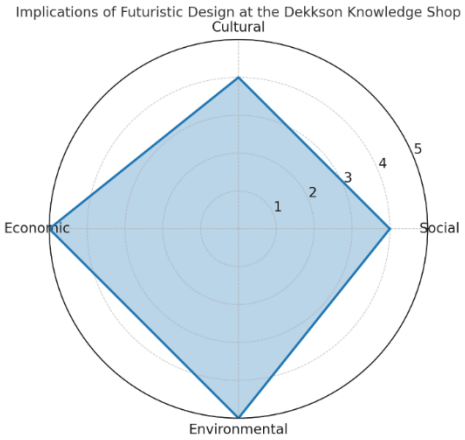

Fig 11. Multidimensional Implications of Futuristic Design and Material Technology Innovation in the Dekkson Knowledge Shop

Figure 11 illustrates the balanced multidimensional implications of the Dekkson Knowledge Shop. While social and cultural aspects ensure inclusivity and the preservation of identity, the economic and environmental contributions are powerful, highlighting the role of material technology innovation in driving both competitiveness and sustainability.

4.2. Replication Model for Future Projects

The design model implemented in the Dekkson Knowledge Shop case can serve as a strategic reference for diverse commercial projects seeking to integrate futuristic design with principles of cultural sustainability and the creative economy. The approach emphasizes synergy among material technology innovation, local wisdom, and dynamic market needs. Methodologically, the model is replicable through the application of adaptive design concepts that preserve cultural identity via the reinterpretation of traditional elements while adopting modern construction technologies such as eco-friendly composite materials, modular systems, and the integration of digital technologies in spatial management. From a sustainability standpoint, the model provides an implementation framework that prioritizes energy efficiency, construction-waste management, and the selection of materials with long life cycles. These strategies are applicable across various commercial contexts, urban and rural, while remaining sensitive to local social, cultural, and climatic conditions. Economically, replication has the potential to strengthen local creative-industry ecosystems through collaboration among architects, designers, artisans, and entrepreneurs. Buildings thus function not only as venues for transactions but also as hubs for education, innovation, and the promotion of local products. The Dekkson Knowledge Shop provides a transferable model for commercial projects that seek to merge futuristic design with cultural sustainability and the creative economy. Methodologically, replication begins with adaptive design embedding Design for Adaptability/Disassembly (DfA/DfD) and modularity so forms, finishes, and building services can be reconfigured over time without erasing local identity. This couples the reinterpretation of traditional elements (motifs, spatial hierarchies) with modern construction technologies such as eco-friendly composites, modular systems, and BIM/IoT-enabled spatial management. Reviews show DfA/DfD and reversible connections extend service life and reduce demolition waste [24]. While modular/DfMA frameworks systematize repeatable unit design for speed, quality, and scalability [25][26].

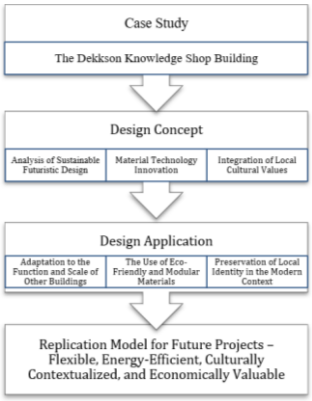

Fig 12. Replication Model Diagram for the Dekkson Knowledge Shop for Future Projects

Moreover, the model can function as a territorial branding instrument by leveraging distinctive visual narratives and architectural identity, thereby attracting tourists and investors. To ensure the sustainability of replication, performance-indicator-based evaluation mechanisms are required, such as energy efficiency, user satisfaction, economic contribution, and cultural preservation. Accordingly, each replicated project adopts not only the forms and technologies but also the underlying philosophy and management strategies. Implementing this replication model in the future has the potential to generate a network of conceptually connected commercial buildings, forming an ecosystem of culturally grounded futuristic architecture that remains adaptive to ongoing change, as shown in Figure 12. The Dekkson Knowledge Shop case shows that integrating innovative design with local wisdom is not only aesthetically relevant but also strategically valuable for reinforcing cultural identity, expanding the creative economy, and advancing environmental sustainability across scales. To keep replication accountable, projects should embed post-occupancy evaluation (POE) with a standard indicator set—energy use, IEQ, user satisfaction/learning value, economic contribution (footfall, dwell time, sales/partnerships), and cultural preservation metrics (e.g., recognition of local narratives). Recent POE syntheses in Building and Environment and Heliyon provide roadmaps and protocols for consistent measurement and feedback into design [27]. With further work proposing integrated POE-intervention cycles for cost-effective upgrades [28].

5. Conclusion

This synergy also creates opportunities for cross-sector collaboration within the creative industries. Flexibly designed spaces enable exhibitions, workshops, and training activities that engage local communities and national creative practitioners. This not only broadens the building's functions but also strengthens connections among architecture, society, and the creative economy. A design that is responsive to market dynamics and user needs fosters environments that adapt to shifting trends while maintaining social and environmental sustainability. Accordingly, the Dekkson Knowledge Shop serves as tangible evidence that commercial architecture can effectively drive the creative economy. This synergy shows that the success of a commercial building in the creative-industry era is measured not merely by transactional value, but by its capacity to cultivate experience, identity, and collaboration with long-term impact. The approach is relevant as a replicable model for sustainable commercial architecture at regional and global scales.

Integrating material technology innovation with local cultural identity constitutes an effective design strategy for creating commercial buildings that are functional, sustainable, and culturally compelling. The use of high-performance materials such as environmentally friendly composite panels, low-emissivity glazing, and sensor-based adaptive lighting systems improves energy efficiency while mitigating environmental impact. Cultural elements are articulated through motifs, textures, and spatial composition, grounded in local values, to generate a distinctive and immersive spatial experience. This approach not only delivers a tradition-rooted aesthetic but also strengthens socio-culturally relevant identity narratives. The synergy between material technology and cultural storytelling enhances commercial value, reinforces branding, and supports the creative-economy sector through experiential differentiation.

The success of futuristic design grounded in cultural sustainability depends on the selection and contextualization of advanced materials in line with local cultural frameworks. A holistic approach that aligns technical efficiency, environmental sustainability, and the narrative force of culture yields designs that are adaptive to contemporary change while respecting local wisdom. The design model demonstrated by the Dekkson Knowledge Shop holds replication potential for future projects, particularly commercial buildings that prioritize sustainability, innovation, and the creative economy. Replication can be pursued through the principles of deploying eco-friendly, high-technology materials; integrating visual–spatial cultural elements; and implementing adaptive technologies to deliver comfort and efficiency. This study contributes to the development of architectural and interior design strategies that address sustainability challenges while fortifying cultural identity, thereby advancing a commercial architectural landscape that is innovative, sustainable, and economically valuable to society.

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