

Beyond the Façade: Architecture in the Arab World / Projects and Positions

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Abstract. Many cities in the Middle East and North Africa (MENA) region are experiencing rapid growth that presents significant challenges in terms of resource consumption, in spite of the fact that there are historical examples that can serve as models for understanding how to produce climate-responsive and culturally-sensitive architecture. Drawing upon under-researched archival material from the Aga Khan Award for Architecture, the project *Beyond the Facade* focuses on revealing design knowledge from six architectural projects from the late twentieth century across the UAE, Saudi Arabia, Syria, and Iraq. The project demonstrates how local knowledge can have transnational relevance to the development of environmentally and culturally sustainable strategies. Rather than treating archives as static historical records, this study transforms them into active sources for providing knowledge discovered through analysis. Employing generative analytical methods, the study utilizes three-dimensional drawings, stop-motion animation, and 3D-printed relief models to investigate and communicate how the façades in the projects are more than a separation between interior and exterior.

Introduction

Beyond the Facade is an ongoing critical examination of how facades can be constructed to embody cultural meaning, address environmental performance, and respond to aspects of human experience. To date six buildings in the Arab world awarded the Aga Khan Award for Architecture have been analyzed; the buildings selected are not only regionally significant but offer a counter-narrative to dominant global architectural approaches that deny the importance of context. Instead of treating these buildings as isolated case studies or stylistic icons, the project positions them as material evidence of a approaches to architecture shaped by climate, craft, and context. More importantly, this research uses archives not merely to retrieve historical data but to produce new modes of architectural engagement. Analytical methods and representational techniques (three-dimensional drawings, stop-motion animation, and 3D-printed relief models) reconstructs the structural and environmental logic of the facade. This approach, which focuses on ideas of “spatial thickness” rather than the surface detailing emphasized in tectonic analyses, offers a relevant method for understanding facade performance as a fusion of environmental, symbolic, and social dimensions.

In an era where climate-responsive, culturally-grounded design is increasingly urgent, these buildings are not relics but prototypes. They embody a design ethos that integrates tradition with innovation, offering frameworks for informing future practice across global contexts. This study therefore asks: **how can architectural archives be re-examined through visual analytical methods in order to uncover climate-responsive and culturally embedded design strategies**



within modern architecture of the Arab world? By reconstructing the spatial logic of selected projects through drawings, models, and animations, the research seeks to reveal how facade systems operate not merely as aesthetic surfaces but as environmental and social infrastructures.

Case Studies

Abu Nawas Development Project (Baghdad, Iraq (1980–1981) (Skaarup & Jespersen))

The Abu Nawas Development Project (Fig. 1) is an emblematic example of climate-conscious urbanism that offers globally relevant insights into sustainable residential design. Conceived as part of a larger 1970s renewal initiative, the project transformed a 3-kilometer stretch of the Tigris riverfront into a medium-density, community-oriented neighborhood. With 278 terraced units ranging from one-bedroom flats to four-bedroom townhouses, the design prioritizes privacy through features like front courtyards, back gardens, roof terraces, and shaded pedestrian lanes—reinterpreting the social and environmental logics of vernacular Baghdadi courtyard houses within a formalized planning framework [1].



Fig 1: Photographs of the Abu Nawas Development Project. Courtesy of Aga Khan Award for Architecture, 1987.

Relying on exploded three-dimensional drawings and an analysis of architectural attributes, the analytical method exposes the building envelopes as performative systems rather than decorative shells (Fig. 2). Recessed apertures, brick cladding, and the integration of systems to mitigate the impact of solar radiation are not superficial features, but function as both aesthetic features and environmental mediators. The brick façade is analyzed for its thermal properties, material use, and symbolic continuity, while the spatial layering of thresholds - garden, court, shaded entry - is reconstructed to show how environmental modulation is embedded in spatial and material sequences.

This reframing moves beyond cataloging archival data; it activates the project as a design prototype (Fig. 2). Abu Nawas demonstrates how urban density, social interaction, and climatic adaptability can coexist through a logic of wall assembly and shading - offering an alternative to energy-intensive suburban typologies or imported glass-clad housing blocks. The study positions it as a replicable model for urbanism in hot climates and as a critical artifact in understanding how regional modernism can inform contemporary sustainable design practices [1].

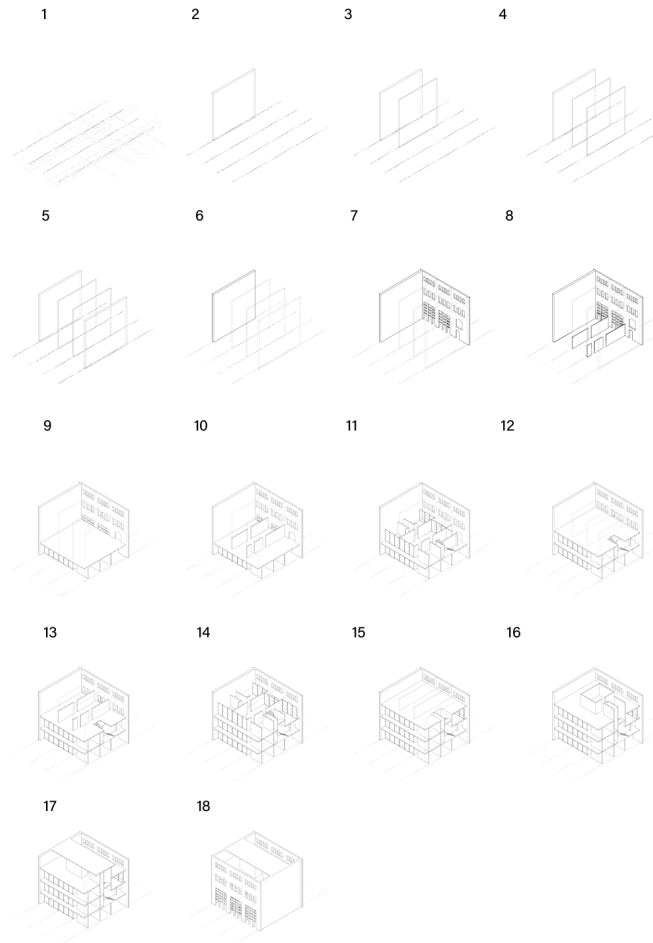


Fig 2: Abu Nawas Development Project - stop-motion animation sequence. © Omar Darwish

National Commercial Bank (Jeddah, Kingdom of Saudi Arabia (1983) (SOM))

The National Commercial Bank (NCB) Headquarters is reinterpreted not simply as an architectural icon, but as a model of environmentally performative high-rise design that proposes a response to context (Fig. 3). Moving away from the normative glass tower, the NCB deploys a stereotomic massing strategy—triangular in plan and cloaked in travertine—that prioritizes internal courtyards and shaded loggias over exterior glazing [7].



Fig 3: Photographs of National Commercial Bank. Courtesy of Architect (submitted to the Aga Khan Award for Architecture), 1989.

Three-dimensional drawings and stop-motion animations illustrate how the courtyards, paired with the central vertical atrium, act as passive environmental systems—drawing hot air upward and diffusing daylight across office floors (Fig. 4). Rather than a flat surface, the façade forms a volumetric boundary regulating thermal comfort and providing a degree of privacy. The NCB proposes an alternative to energy-intensive vertical typologies by embedding climatic responsiveness into the building's volume. This reframing allows the project to be seen not as a historical example, but as a forward-looking prototype for vertical architecture in arid urban contexts.

By shifting the narrative from visual monument to spatial system, the study argues that vertical urbanism can be achieved not through technological excess, but through the adaptive reuse of traditional strategies—such as courtyards, recessed walls, and inward orientation—rendered through contemporary forms [7].

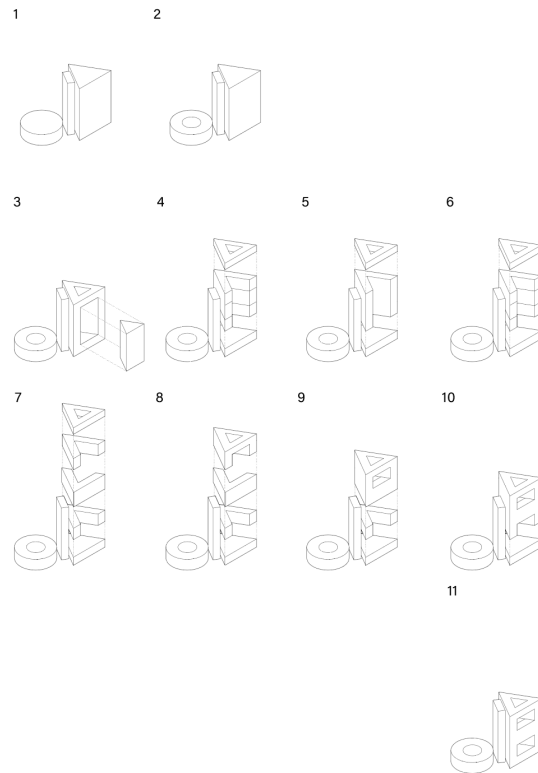


Fig 4: National Commercial Bank - stop-motion animation sequence. © Omar Darwish

Ministry of Foreign Affairs (Riyadh, Kingdom of Saudi Arabia (1984) (Henning Larsen))

The Ministry of Foreign Affairs exemplifies how architecture attempts to balance cultural symbolism with environmental performance. While its historic references to Najdi architecture and Islamic monumental forms are well-documented, this study recasts the building through a new lens to reveal a spatial language based on depth, mass, and filtered light (Fig. 5). Sectional analyses show how thick wall assemblies, vaulted corridors, and domed courtyards function not only as cultural markers but also as passive climate-control devices [6].



Fig 5: Photographs of the Ministry of Foreign Affairs. Courtesy of Architect (submitted to the Aga Khan Award for Architecture), 1989.

The façade is not treated as an aesthetic layer but as a spatial and environmental medium (Fig. 6). Wooden screens (mashrabiya), recessed windows, and deep wall sections are studied for their role in minimizing heat gain, guiding air movement, and framing social experience. These elements are not retrofitted nostalgia but are integrated into a modern civic building to support diplomatic activity.

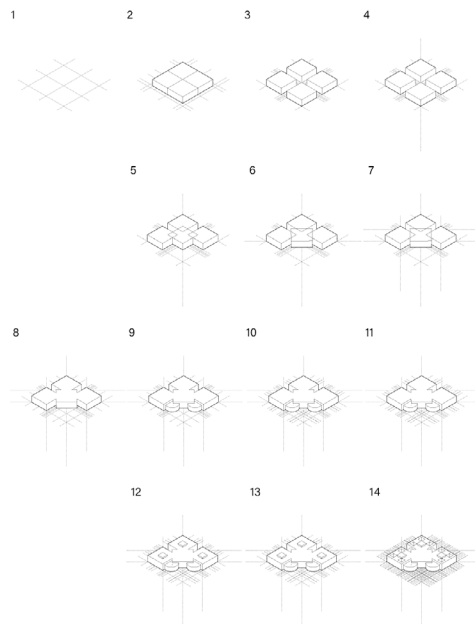


Fig 6: The Ministry of Foreign Affairs—stop-motion animation sequence. © Omar Darwish

The Ministry presents a compelling case for how governmental architecture can assert national identity without relying on mimicry or superficial symbolism. It models a performative monumentality—projecting cultural continuity while minimizing environmental impact. For architects and policymakers alike, it offers a replicable template for designing civic infrastructure rooted in place, climate, and public memory [6].

French Cultural Centre (Damascus, Syria (1986) (José Oubrerie and Kirkor Kalayciyan))

The French Cultural Centre is recontextualized as a spatial mediator between a dense historic fabric and the need for a contemporary structure that accommodates specific institutional needs (Fig. 7). Rather than focusing solely on its stylistic dialogue with local architecture, this study engages its inward-oriented massing and vertical courtyard as environmental and symbolic strategies. The central atrium is revealed—through sectional diagrams and animations—as a thermal and experiential core, regulating light, ventilation, and circulation [2, 4].



Fig 7: Photographs of French Cultural Center. Courtesy of Architect (submitted to the Aga Khan Award for Architecture), 1992.

The façade is read as a gradient of exposure and enclosure: solid stone on the south interfaces with the dense city block, while the more open northern elevation engages a civic plaza (Fig. 8). Grilles, screens, and atrium voids become tools for environmental control rather than merely stylistic gestures. This layered understanding positions the building not as an aesthetic compromise between French and Syrian traditions but as an architectural resolution of cultural and climatic tensions.

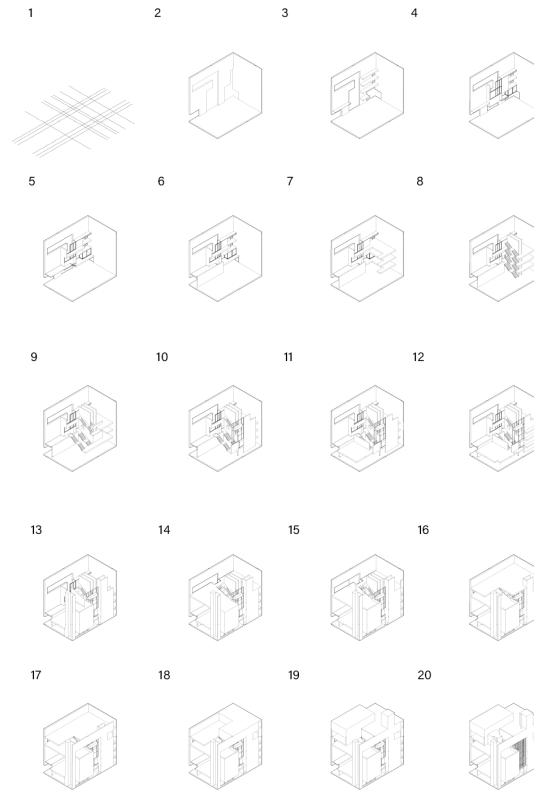


Fig 8: The French Cultural Centre—stop-motion animation sequence. Courtesy of the author.

The French Cultural Centre illustrates how institutions—especially those with dual or foreign affiliations—can build contextually without erasure or imposition. The project explores the potential of façade articulation to create depth as a means of climate mediation over visual flatness, a lesson increasingly urgent in contemporary sustainability discourse [2].

Abu Dhabi Cultural Foundation (Abu Dhabi, United Arab Emirates (1981) (The Architects Collaborative))

The Abu Dhabi Cultural Foundation can be considered an infrastructural typology of cultural urbanism (Fig. 9). Rather than merely a symbolic project of nation-building, the building's courtyard-centered layout and shading strategies are unpacked as a compositional and environmental system. Through physical modeling and drawing reconstructions, its arcades, mashrabiya patterns, and shaded walkways are analyzed for their spatial logic and climatic responsiveness [3].



Fig 9: Photographs of Abu Dhabi Cultural Foundation. Courtesy of Architect (submitted to the Aga Khan Award for Architecture), 1985.

The analysis shows how the façade is more than surface: it is a network of filters—structural, visual, and thermal—that operate collectively to create spatial porosity and climatic equilibrium (Fig. 10). This re-reading contributes to positioning modern heritage not as fixed icons, but as operational systems with transferable knowledge.

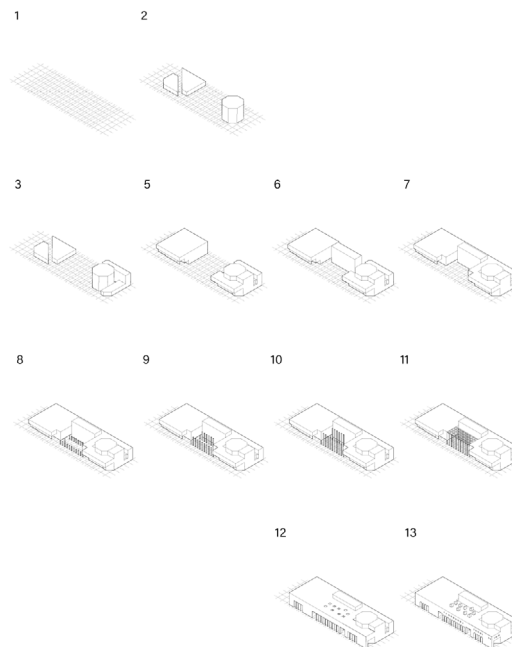


Fig 10: The Abu Dhabi Cultural Foundation—stop-motion animation sequence. © Omar Darwish

The Cultural Foundation thus becomes a didactic case in how postcolonial states can produce architecture that is both rooted in vernacular grammar and anticipatory of future needs—offering an instructive model for cultural institutions worldwide seeking to bridge past and present through built form [3].

Corbachi Building (Baghdad, Iraq (1952–53) (Rifat Chadirji))

The Corbachi Building is not simply as a hybrid of residential and commercial functions but as a strategic approach to issues such as urban density, multi-use typology, and thermal mediation (Fig. 11). Brick lattice screens, recessed corridors, and masonry envelopes operate as environmental buffers and spatial organizers [8].



Fig 11: Kamil and Rifat Chadirji Photographic Archive, Aga Khan Documentation Center at MIT, ca. 1953

Analyses reveal how the building internalizes traditional market *souk* typologies by employing double-loaded corridors. Residential duplexes above the market are a vertical reinterpretation of Baghdad's courtyard homes. Brick screens are not just a formal reference, but function as a calibrating device for privacy, ventilation, and light filtration.

This analytical reframing demonstrates that Chadirji's work goes beyond modernist adaptation (Fig. 12). It represents a regional logic of urban living that remains under-acknowledged in global discourse. In a world facing increasing urban density and environmental stress, the Corbachi Building offers an alternative to glass towers and gated compounds—a model for compact, climate-attuned, socially vibrant architecture that bridges tradition and innovation [8].

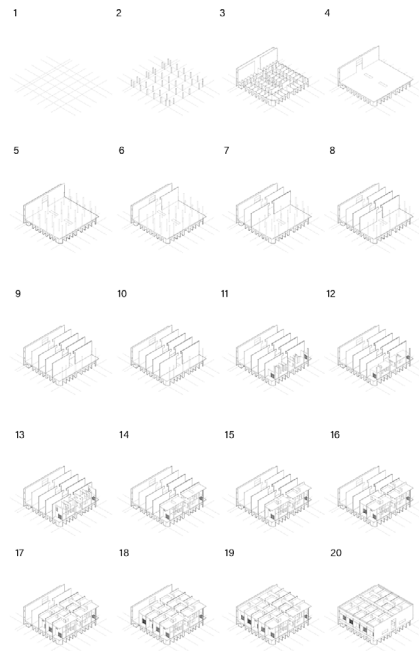


Fig 12: Corbachi Building—stop-motion animation sequence. © Omar Darwish

Research Methods and Visual Analysis Techniques

A distinctive aspect of the study is the use of innovative research and visual representation techniques to analyze and communicate facade behavior and design intent. This multi-method approach integrates exploded axonometric drawings, sectional axonometric studies, relief models, and stop-motion animations—each providing a unique perspective on construction, spatial experience, and environmental performance. By synthesizing insights from these tools, the study developed a rich, multi-sensory analysis of each building, exceeding what conventional photographs or textual descriptions could convey.

Exploded axonometric drawings were employed to deconstruct the complex assemblies of each facade. These three-dimensional representations reveal concealed spatial relationships and construction layers. These cutaway diagrams offered insights into the spatial hierarchy behind facade systems. A sectional axonometric of the French Cultural Centre's (Fig. 13) atrium exposed how sunlight enters through skylights and filters through multiple levels, affecting interior ambiance. In the National Commercial Bank, the vertical cut clarified the inward-facing skyscraper typology and its climate control logic, showing airflow rising through the central atrium (Fig. 14).

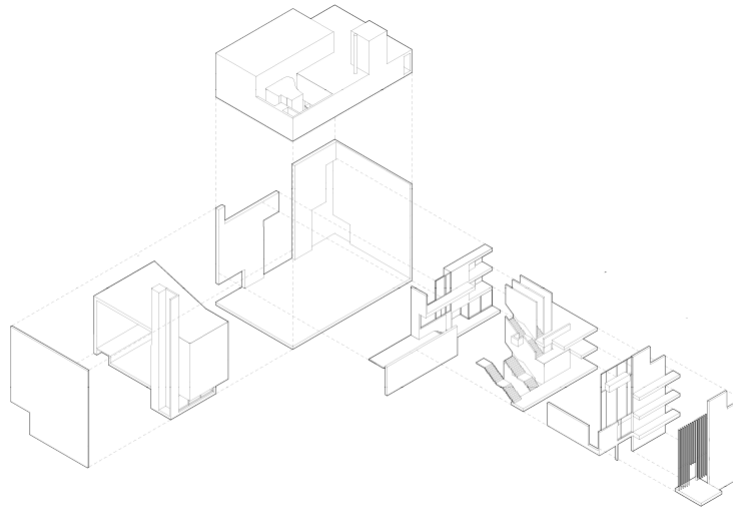


Fig 13: French Cultural Centre—exploded sectional axonometric. Courtesy of Omar Darwish.

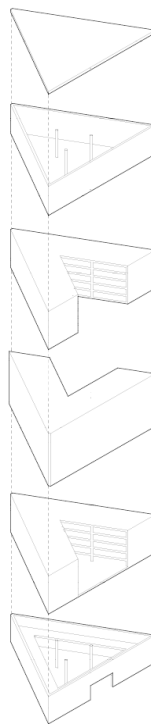


Fig 14: National Commercial Bank—exploded sectional axonometric. Courtesy of Omar Darwish.

Relief modeling added a tactile, empirical layer to the study. These physical models recreated facade fragments or sectional details, allowing close study of geometry and light/shadow. A model of the Abu Dhabi Cultural Foundation's courtyard elevation (Fig. 15) demonstrated how its arcade cast shadows and protected its interior glass facade, while a Corbachi Building model (Fig. 16) highlighted the visual rhythm between blank walls and perforated screens. Modeling reveals spatial and construction insights, reinforcing visual observations with experiential understanding.

The models also revealed subtleties like alignment precision in repetitive motifs or the scale of user interactions, such as depth of recessed windows and permeability of brick screens.

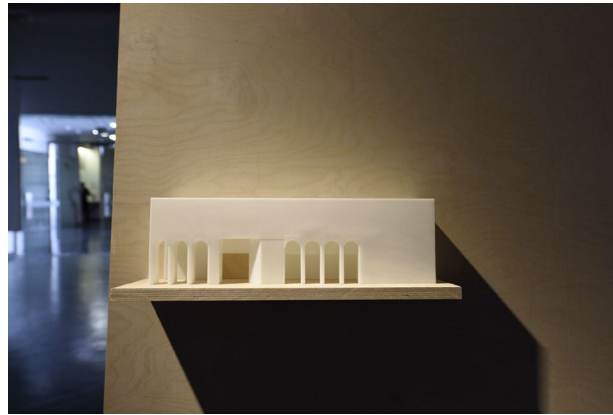


Fig 15: Abu Dhabi Cultural Foundation - Relief Model. Courtesy of Omar Darwish and Kevin Mitchell.



Fig 16: Chorbachi Building - Relief Model. Courtesy of Omar Darwish and Kevin Mitchell.

Stop-motion animations simulate construction sequences and illustrate the spatial and formal logic of projects. One animation sequentially assembled the Corbachi Building model (Fig 16), revealing its modular structure and layered planning. These dynamic visualizations enriched the static documentation, offering digestible and engaging storytelling that distilled complex ideas for broader audiences.

Together, these visual techniques revealed dimensions of architectural performance that were not immediately legible in the archival documents. Exploded axonometric drawings exposed hidden structural and spatial relationships within facade assemblies. Sectional reconstructions clarified environmental strategies such as ventilation, shading, and internal courtyards. Relief models enabled the study of depth, shadow, and material articulation at a tactile scale. Stop-motion animations illustrated construction logic and spatial sequencing, transforming static archival information into dynamic representations of environmental performance. By combining these methods, the research demonstrates how visual reconstruction can function as an analytical tool for extracting environmental and spatial knowledge from archival material.

Adapting Modernist Principles in the Arab World

The period during which these buildings were conceived (1950s–1980s) corresponds to a flourishing of alternative approaches across the Arab and Islamic world. This was a movement – or more accurately, a confluence of parallel efforts across different countries – where architects

sought to create modern architecture that was responsive to local climate, materials, and cultural values. It was partly a reaction against the placeless International Style of modernism and partly an assertion of newfound national identities in the post-colonial era.

This study's impact extends beyond its six case studies. It proposes a pedagogical model that reorients architectural education toward analytical making, multimodal research, and culturally grounded readings.

Beyond the Facade shows the potential of the studying built work in order to understand and transmit design principles and strategies that employ components such as thick facades, courtyards, screening devices, and typological hybridity. These are strategies with global resonance as we rethink how to build in the face of climate change and cultural homogenization.

Another facet of adapting modernist principles is the role of local architects who championed novel design approaches in their home countries and throughout the region. Rifat Chadirji, the designer of the Corbachi Building, is a prime example. He was part of a wave of Arab architects who sought to synthesize modernist ideas with vernacular forms in the mid-twentieth century. Chadirji's work and writings argued for an architecture that could be "international" in its techniques and functional layouts, yet intimately Mesopotamian in its spirit – something he often achieved by using local materials like brick, and by drawing on the abstract forms of Iraqi heritage (from Mesopotamian arches to Baghdad's 19th-century masonry). The Corbachi Building's inspiration from Le Corbusier's Unité d'Habitation is a testament to engaging with modernist concepts (mixed-use high-density living) while its execution in Baghdad's urban grain with an interior bazaar shows adaptation to local urban life [8].

The education and exchange of ideas in the region during these decades also fueled this movement. Many Arab architects were Western-educated (Chadirji in London, Oubrierie is French, Henning Larsen is Danish) but they often returned or practiced in the Arab World, bringing both modernist training and a rediscovered appreciation for their own heritage. The projects also benefited from cross-pollination via events like the Aga Khan Award seminars, regional conferences, and an emerging body of literature on Islamic architecture's relevance to modern times. Publications like *Architecture for Islamic Societies Today* (which the Aga Khan Trust for Culture put out) and others provided platforms to discuss conservation vs. development, identity vs. progress.

Specific regional narratives can be tied to each building as well. For instance, the Abu Nawas Development in Baghdad must be viewed against the backdrop of the oil boom era in Iraq (1970s) when there was a push for modernization, often with the help of international firms (hence the Danish collaboration) but a desire to keep an Iraqi character. The use of solar energy and modern building techniques in Abu Nawas juxtaposed with preserving Baghdad's heritage buildings on site perfectly encapsulates the country's brief optimism in blending technology with tradition before wars interrupted.

In summary, these six buildings exemplify how the tenets of the modern movement in architecture were adopted and adapted in various Arab contexts. They are products of architects who believed that modern architecture must grow from local soil. Their successes, highlighted by the Aga Khan Award, in turn influenced subsequent generations – showing that building in the Middle East could move beyond sterile importation of glass boxes toward a more meaningful architecture. The critical acclaim (and in some cases, enduring popularity) of these projects validated the idea that respecting tradition does not constrain creativity, but rather enriches it.

Broader Implications and Educational Value

Beyond the Facade offers a model for how to engage deeply with buildings through a variety of media. In architectural pedagogy, there is often a gap between design studio culture (which emphasizes creating new designs with visual communication) and history/theory courses (which emphasize writing and analysis). This project bridges that gap by using design communication

tools – drawings, models, animations – in the service of historical and theoretical analysis. For students and young architects, it exemplifies a proactive way of learning from precedents: rather than passively reading about these buildings, one actively reconstructs and re-presents them. This approach fosters a multi-dimensional understanding. For instance, the stop-motion animation of the Damascus Cultural Centre's sunlit courtyard or the exploded axonometric of the Jeddah Bank makes complex concepts (like passive cooling or spatial sequence) understood more intuitively than by reading a paragraph of text. Importantly, the content of the study fills a niche in architectural education as it addresses projects in locations that are outside of the "centers" of the Modern Movement. While iconic Western modernist buildings are exhaustively taught, the equally ingenious works outside of the "centers" context are often excluded.

In terms of contributions to architectural archives and preservation, the study acts as a supplementary archival record for the buildings it covers. For buildings like the Corbachi Building or Abu Nawas Housing – which are lesser-known internationally and located in regions that have faced conflict – having detailed descriptions, analytical drawings, and documented interpretation is itself a contribution. In cases where original drawings might have been lost or are not publicly accessible, the drawings and models become a part of the recorded history of the building. They might aid future researchers by providing visual material to serve as a basis for further interpretation. One could imagine, for example, a future conservation effort in Baghdad using the drawings of Corbachi's facade from this study as a reference if original plans can't be found. Reconstructions are not a substitute for original as-built drawings, but the material can be instructive. Even for well-known buildings like the National Commercial Bank, the study provides synthesized knowledge – combining design narrative, technical innovation, and cultural significance in one place – which can be useful for professionals and scholars.

The study also advocates for a position that views preservation as not only about historical buildings; rather, preservation should be extended to preserving knowledge and ways of thinking that have value in terms of contributing to solving contemporary challenges. For instance, the effectiveness of inward-oriented design in hot climates (demonstrated by NCB and the Ministry of Foreign Affairs) is a principle worth "preserving" and reusing in future projects, rather than discarding in favor of glass towers. The study's reflections effectively serve as lessons learned that can influence contemporary sustainable design debates. Similarly, the cultural sensitivity displayed in these projects is something to carry forward – as globalization continues, the examples set by these buildings on how to build with identity are increasingly relevant. In a way, the study contributes to preserving not just the memory of these buildings, but the ethos they represent: an ethos of thoughtful, contextually grounded design.

Moreover, the approach of combining sensory and analytical techniques promotes a multi-method analytical approach to architecture that has implications for preservation practice. Typically, heritage documentation involves measured drawings, photographs, and perhaps 3D scans. "Beyond the Facade" study suggests adding experiential analyses – like animations showing how a space is assembled – to the documentation toolkit. This is especially useful for preserving intangible qualities of heritage, like ambiance or usage patterns, which standard documents might miss. In educational settings, this approach trains students not just to see architecture as static forms but as dynamic environments interacting with people and nature over time.

Conclusion

Through the reconstruction of six projects using drawings, models, and animations, the *Beyond the Facade* reveals how facades and spatial systems encode environmental intelligence and symbolic intent, and how users interact with built form in ways shaped by climate and tradition. Generative analytical methods, three-dimensional drawings, stop-motion animation, and 3D-printed relief models are used to investigate and communicate how the façades in the projects are more than a separation between interior and exterior. The project demonstrates how local

knowledge can have transnational relevance to the development of environmentally and culturally sustainable strategies. *Beyond the Facade* contributes to broader global debates on sustainable architecture, modern heritage, and visual research methodologies. The project also demonstrates that architectural archives can be a dynamic resource that connects past practices with current and future efforts to ensure environmental and cultural sustainability.

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