

Minimal adaptive conservation for saving urban memory in conflict areas: Gaza, Palestine

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Abstract: Conventional theories of architectural conservation mainly focus on the application of extensive programs and the deployment of large resources, on authenticity of materials and high expertise conservation. Usually, they fall helpless in dealing with abnormal situations in conflict areas. Few projects attempted to introduce new concepts for architectural conservation in conflict areas with innovative practical implementation. One of these projects was the conservation of Al-Alami house in Gaza, Palestine in 2010 (destroyed by Israel in 2023). Despite the innovative theoretical approach and practical applications used in this project, there is still a need for further development to arrive at a more theoretically sound and practically stronger approach that will still be appropriate for architectural conservation in conflict areas. This research introduces the Minimal Adaptive Conservation for Saving Urban Memory - MACSUM, as a new approach for architectural heritage conservation in conflict and post conflict areas. This approach calls for a shift from material-centred, expert-led restoration and puts the continuity of urban memory and identity in its focus. MACSUM is a theoretical framework that aims to safeguard heritage through minimal intervention, adaptive reuse, and local partnerships. It brings the community as the primary carrier of cultural dignity and urban memory. The research uses case study analysis to examine the application of MACSUM in the preservation of Al-Ashi historical house in Gaza, Palestine. MACSUM highlights the activation of local partnership, incremental conservation, and adaptive reuse as major foundations for conservation in conflict areas. This project demonstrated that the context and innovative conservation approach are of great importance and play the vital role in conservation in conflict areas. This article opens the door for future research to develop MACSUM and to examine its applications in other conflict areas like Syria, and Ukraine.

Keywords: architecture, culture, conservation, urban, memory, genocide, Gaza, Palestine

1. INTRODUCTION

Historical buildings in difficult situations of conflict areas deserve greater attention to keep urban memories of people as an important part of their culture and identity. For decades, Palestinians have suffered from the Israeli violations of all international conventions and treaties of all types. One unhuman aim of the Israeli atrocities in Palestine and especially in Gaza has been to destroy all signs of Palestinian urban memory. This brought many international institutions to stand beside the Palestinians and to support their efforts to preserve their urban memory and culture on their land (ICBS, 2006). However, the problem has another, equally important aspect: architectural conservation theories and methods are also powerless in the face of the difficult and dangerous situation of conflict areas. Most current theories and approaches address architectural conservation in politically, socially, and economically stable contexts. These approaches include strategic planning for architectural conservation, adaptive conservation, reuse, and, more recently, sustainable architectural conservation. (Doratli et al., 2004, De Filippi, 2005, Steinberg, 2009).

At the Palestinian side in Gaza, several studies dealt with architectural heritage conservation. Almughany et al. (2009) examined sustainability in the architectural conservation of Hammam Al-Samra without introducing a theoretical or practical model of conservation. Al-Qeeq (2011) studied how to enhance the sustainability of architectural conservation of the main historical monuments in Gaza city by applying the concept of adaptive reuse. Amro and Ammar (2024) presented the architectural conservation project of Al-Khader library. They referred to the Quintuple Helix Model in Heritage Building Rehabilitation but failed to explain how it was used to examine the conservation project of Al-Khader library. After presenting in detail the conservation process, they examined the post conservation use of the project with United Nations Sustainable Development Goals. Mohamed (2025/1) attempted to provide a comprehensive approach for architectural heritage conservation called GRASP. Although GRASP was used to examine the conservation of a historical building in Gaza, it came generally in line with the above-mentioned studies. It ignored the implications of the special circumstances of conflict areas for the theory and practice of architectural conservation.

The widespread prevalence of wars and conflicts around the world today increases the suffering of many people and destroys more historic buildings. This highlights the need for a more innovative approach to architectural conservation in conflict areas. The most important needs of people in conflict zones are security, safety, health, food, and education. In difficult conflict situations, these services deteriorate significantly. This is where the role of local, regional, and international humanitarian relief organisations emerges, helping to provide some or all of these services, even if only to a limited extent to heritage conservation. The International Committee of the Red Cross (ICRC) was one of the first to respond to this need in Gaza where it was involved in the conservation and maintenance of historical buildings, the most distinguished of which was Al-Alami house.

This new direction provided a suitable foundation for cooperation between ICRC office in Gaza and Iwan Centre for Architectural Conservation (Iwan Centre) at the Islamic University of Gaza (IUG) which is believed to be the first project of its kind (Mohamed, 2025/2). After the success of the experiment at Al-Alami house and the great results it fulfilled, Iwan Centre continued its efforts to repeat it in other historical houses in Gaza. Several house owners positively responded, among them were the owners of Al-Ashi house. An agreement of partnership with the owners was signed in 2011. The conservation project waited until 2016 when the German development Bank agreed to financially support the project under the supervision of the United Nations Development Program UNDP-Palestine. The work was completed and the house was opened in October 2021. Al-Ashi house faced the same fate as all historical remains in Gaza and was destroyed by Israeli warplanes in 2024.

2. URBAN MEMORY AND HISTORICAL BUILDINGS

Urban memory is a type of collective memory that is tied to the physical and symbolic aspects of the city. Building on Maurice Halbwachs' theory, urban memory develops through frameworks shaped by society, supported by physical settings like architecture and urban design (Halbwachs, 1992). Buildings, streets, and monuments provide the stability needed for memory to persist. Collective remembrance relies on lasting physical references that help societies connect their past with the present. Pierre Nora's idea of lieux de mémoire (site of memory) further explains this concept. Memory becomes grounded in physical locations when lived memory is threatened or weakened (Nora, 1989). In cities, historical buildings act as these memory sites, carrying meanings, rituals, and stories. They do more than represent history; they are active elements that keep collective identity alive. According to Jan Assmann's theory of cultural memory, urban memory sits at the crossroads of communicative memory (everyday experiences) and cultural memory (formally recognised forms of remembrance). Historical buildings serve as tools that help maintain cultural memory over time. They allow societies to pass on values, identities, and historical awareness beyond individual lifespans (Assmann, 2011). Therefore, urban memory is both spatial and temporal, rooted in the lasting presence of the built environment.

2.1. Destruction of historical buildings destroys urban memory

When historical buildings are destroyed, it creates a major break in urban memory. This destruction removes the physical structures that support collective remembrance. Without these anchors, memory becomes more abstract and fragmented, often replaced by selective or commercialised stories. Nora (1989) points out that when memory-bearing sites vanish, the transformation of lived memory into history accelerates, breaking emotional and experiential connections to the past. In such cases, new urban shapes may create superficial or distorted memories, leading to representations that lack true historical depth. This erosion undermines cultural continuity and diminishes the social meanings tied to urban spaces. The loss of urban memory also deeply affects collective identity. Halbwachs

(1992) argues, memory is social and spatial. When the built environment that supports shared remembrance disappears, community identity becomes unstable.

2.2. Colonialism, architecture, and memorycide

The destruction of historical buildings has been especially notable during colonial and imperial times. Here, architecture has served as a means of power and control. Colonial authorities often aimed to eliminate indigenous urban forms to wipe out local histories and impose new cultural and spatial structures (Garcia-Olp, 2018). This is a systematic attack on urban memory, designed to cut the connections between people and places. These actions relate to the idea of memorycide, which means intentionally erasing collective memory through the destruction of its material and symbolic foundations (Pagés Madrigal, 2021). By removing historical buildings that carry cultural memory, colonial powers aim to weaken resistance, justify their control, and reshape spaces to fit imperial ideologies. As Assmann (2011) argues, destroying the foundations of cultural memory makes it harder for societies to maintain their historical consciousness, making them more susceptible to imposed narratives. Therefore, the colonial destruction of built heritage should be seen not as a random result of urban change but as a deliberate strategy to reshape urban memory and redefine collective identity. (Coleman, 2024)

2.3. Preservation as memory practice

Preserving historical buildings is fundamentally about saving urban memory. Architectural conservation protects the material conditions that allow collective memory to persist, creating a link between the past, present, and future. In this way, preserving heritage is not just an aesthetic concern, it is an important cultural practice that fights against urban memorycide, and the loss of collective identity (Mohamed, 2025/2).

3. ARCHITECTURAL CONSERVATION IN CONFLICT AREAS: NEED FOR COMPREHENSIVE APPROACH

Mohamed (2025/2) argued that prolonged occupation brings many difficulties to the occupied and places several constraints to development efforts especially the preservation of urban memory. Coupled with the scarcity of resources and the absence of capable institutions, this makes it difficult to apply traditional orthodox approaches of architectural conservation. Some contemporary studies criticised the rigid outlines of the orthodox conservation approaches and introduced more flexible and community-oriented frameworks (Jokilehto, 1999, Pendlebury, 2009). The rigidity of orthodox approaches stems from several components in their theory. They place high value on material authenticity. They depend on expert-led consultancy, resource intensive, and their aim is to achieve complete conservation for existing historical characters (Tab. 1). The new proposed approach: Minimal Adaptive Conservation for Saving Urban Memory in conflict Areas - MACSUM is an attempt to restructure these theoretical doctrines of orthodox approaches to be more suitable for architectural conservation in conflict areas. It is focused on everyday and lived heritage, and its main value is urban memory. It depends on community-led stewardship and incremental conservation. It considers the scarcity of resources and applies dynamic conservation that does not stop at certain historical stations (Tab. 1).

MACSUM is a theoretical and practical approach to architectural and urban heritage conservation. It has been developed for such contexts of conflict areas which suffer severe economic, political, and environmental constraint. It prioritises the safeguarding of urban memory and collective identity through minimal, gradual, and adaptive interventions, rather than comprehensive restoration. MACSUM looks directly onto the actual needs of architectural and urban heritage conservation in conflict areas and avoids the problems and complexities of contemporary approaches.

Tab. 1. Differences between Minimal Adaptive Conservation for Saving Urban Memory in Disaster Areas – MACSUM and contemporary approaches. (Source: Author, 2026)

Aspect of comparison	Minimal Adaptive Conservation for Saving Urban Memory in Conflict Areas – MACSUM	Contemporary conservation approaches
Focus	Everyday and lived heritage	Monument-focused
Primary values	Memory and identity	Material authenticity
Decision-making	Community-led stewardship	Expert-led decision-making
Conservation goal	Incremental, reversible action	Complete restoration as ideal
Use of resources	Scarcity-adapted	Resource-intensive
Timeframe	Temporal continuity	Fixed historical moment

4. PRINCIPLES OF MACSUM

For MACSUM to be implemented successfully in conflict and post conflict areas, suitable principles should be followed. Based on its general theoretical framework the following principles have been introduced.

4.1. Minimal conservation

Incremental conservation focuses on small-scale, phased, and reversible interventions rather than comprehensive, large-scale projects. This approach enables historic environments to adapt gradually to social, economic, and functional change, minimising the risk of irreversible damage. By dispersing interventions over time, it aligns conservation with daily use and maintenance, ensuring continuity instead of disruption. Incremental actions also preserve urban memory, as change occurs through engagement with existing urban structure and practices (Pendlebury, 2009).

4.2. Adaptive reuse

Adaptive reuse allows historic buildings to remain viable by introducing new functions that respect and extend their cultural significance. Rather than freezing structures in time, this approach acknowledges that continued use is essential to survival. Sensitive adaptation maintains identity, material authenticity, and collective memory while responding to contemporary social and economic needs. By linking past meanings with present uses, adaptive reuse ensures heritage remains a living and socially relevant resource (Cantacuzino, 1989).

4.3. Constrained conservation

Constrained conservation reframes scarcity of financial, material, or technical resources as a productive condition rather than a deficiency. Limitations encourage careful prioritisation, reuse of existing materials, and low-impact interventions that respect historic fabric. This approach fosters creativity and reinforces values of stewardship and maintenance over replacement. Over time, working within constraints contributes to resilience by embedding conservation within local capacities rather than external imports (Araoz, 2011).

4.4. Saving-Our-Heritage partnerships

Effective conservation depends on integrating property owners and stakeholders into the decision-making process as partners rather than passive recipients of regulation. Owners directly influence maintenance, use, and long-term survival of historic buildings, making their involvement essential. Partnerships foster shared responsibility, encourage investment, and align conservation goals with everyday needs. Collaboration with municipalities and public or private bodies further provides conservation within broader urban governance and development frameworks (Stubbs, 2009).

4.5. Urban heritage networking

Networking with local and international institutions enables the exchange of expertise, funding mechanisms, and best practices in conservation. Local bodies provide contextual knowledge and continuity, while international organisations offer technical guidance and global standards. Such networks enhance legitimacy, visibility, and capacity-building, particularly in fragile or resource-limited contexts. They also situate local heritage within wider cultural and professional discourses, strengthening long-term conservation outcomes (ICOMOS, 2011).

4.6. Memory-live community

In conflict and post-conflict contexts, local communities often view heritage as a symbol of dignity, identity, and continuity, making them natural guardians of urban memory. Their lived experience provides intimate site knowledge, which formal institutions may lack (Fabbri et al., 2020). Volunteering in conservation projects empowers communities to safeguard heritage while strengthening social cohesion and resilience. Such involvement transforms conservation from a technical task into a communal cultural practice rooted in shared values (Labadi, 2013).

5. AL-ASHI HOUSE

The house is one of the oldest historical houses in Gaza, Palestine. It is located in Al-Daraj neighbourhood west of the Great Omari Mosque surrounded by tall concrete grey buildings (Fig. 1). It is believed to be built in the 17th century during the Ottoman rule. The building was owned by the Sesalem family before coming under the ownership of the Al-Ashi family. It remained continuously occupied with some periods of interruption affected by the changing security and economic settings. It was abandoned and left in neglect during the last decades before the start of its preservation in 2012. Iwan Centre paid attention to the house from its early days of practice for its distinguished historical and architectural value. After the successful preservation of al-Alami house, both the owners of the house and the funding organisations were encouraged to engage in a similar project.

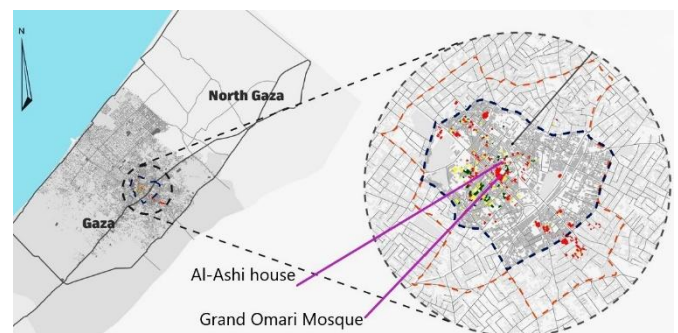


Fig. 1. Location of Al-Ashi house in Gaza, Palestine. (Source: Author, 2025)

Reasons for choosing Al-Ashi house:

1. Owner agreement to enter partnership with Iwan Centre,

2. The agreement of the German Development Bank (KfW) program to finance the project through the United Nations Development Program (UNDP) in the Gaza,
3. The historical and architectural value of the house. It is one of the oldest and architecturally richest historical houses in the city of Gaza.

5.1. Building description

The building consists of one floor with a long courtyard having one flange stair leading to the roof. An iwan opens to the courtyard from the eastern side. The iwan leads to a room at the east-south corner of the house (R2). The middle room (R3) opens to the courtyard and leads to the third room at the west-south corner of the house (R4). The wet service unit lies at the inner right side of the entrance (Fig. 2). Section A-A (Fig. 3) shows the courtyard and the details of the cross vaulted roof of the middle room. It also presents the elevation of the iwan and its grand arch with unique stone decorations at its inner wall (Fig. 4).

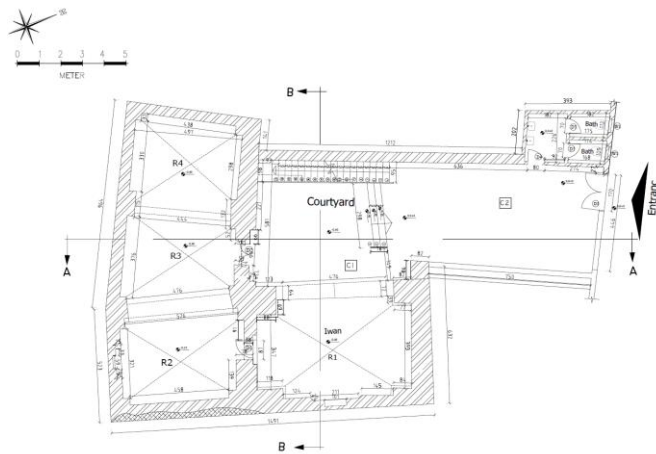


Fig. 2. Al-Ashi house, ground floor plan. (Source: Iwan Centre, 2012)

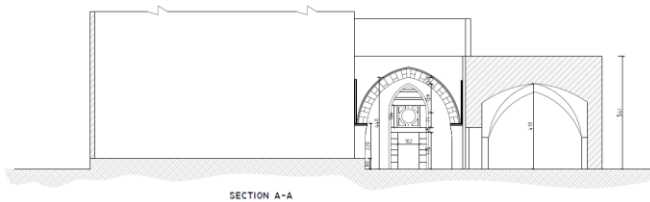


Fig. 3. Al-Ashi house, section A-A. (Source: Iwan Centre, 2012)



Fig. 4. Al-Ashi house, interior view of the Iwan Centre showing the decoration and the deteriorated plaster. (Source: Iwan Centre, 2011)

Section B-B cuts through the courtyard and the iwan (Fig. 5). It shows the courtyard stairs and the cross vaulted roof of the iwan. It also shows the decorative stonework around the doors of the middle room (Fig. 6).

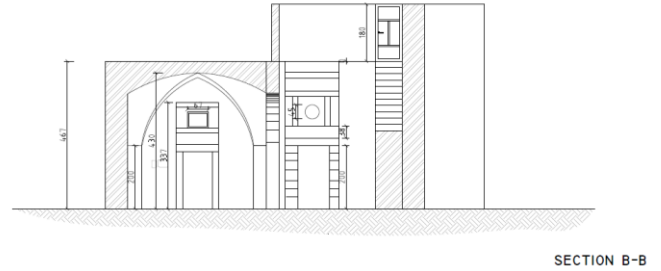


Fig. 5. Al-Ashi house, section B-B. (Source: Iwan Centre, 2012)

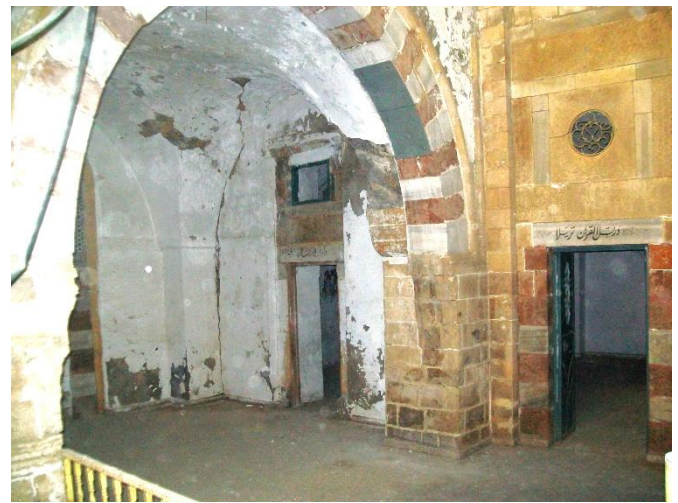


Fig. 6. Al-Ashi house, decorations around room doors. (Source: Iwan Centre, 2011)



Fig. 7. Al-Ashi house, deterioration of the building and the effect of cement plaster. (Source: Iwan Centre, 2011)

5.2. General condition of the building before preservation

The general structural condition of Al-Ashi house was stable but it suffered several serious problems. They included cracks (Fig. 7) and the falling of some stones. The cement plaster and the lime white paint severely affected the overall health of the building and its visual quality (Fig. 7). A room with concrete blocks was added to half of the courtyard and leaving narrow corridor to the house (Fig. 8). It was covered and the rest of the courtyard with metal sheets (all was removed later in the project).



Fig. 8. Al-Ashi house, concrete blocks addition and the corridor. (Source: Iwan Centre, 2011)

6. METHODOLOGY

The methodology of this research depends on examining the preservation of Al-Ashi house against the MACSUM principles. This is a two-fold exercise that from one side evaluates the preservation process of the house. And on the other side it examines the suitability of MACSUM to be followed in architectural conservation projects in conflict and post conflict areas. Examining the principles here will not follow the same order of their theoretical discussion. Rather, it will follow the temporal and procedural order of the actual preservation process.

6.1. Saving-Our-Heritage partnerships

Since its establishment, the Iwan Centre has worked continuously to safeguard what remains of Gaza's architectural heritage. Building effective partnerships has been a core strategy in achieving this mission, particularly under the severe conditions of war, siege, and limited resources. A key example is the partnership between the owners of the Al-Alami historic house and the International Committee of the Red Cross (ICRC), which helped to successfully preserve the house and transformed it into a liveable cultural centre (Mohamed, 2025/2). This achievement marked a turning point in both the history of architectural conservation in Gaza and the institutional development of the Iwan Centre.

Following this success, several owners of historic houses approached the centre to establish similar partnerships, authorising it to conserve their properties and utilise them for university and community services. Among those was the owner of Al-Ashi house, who signed a formal agreement with the Iwan Centre. At the same time, international organisations operating in Gaza were encouraged by the success of the Al-Alami house project and developed confidence in the centre's expertise and capacity. As a result, the German Development Bank (KfW) agreed to fund the preservation of two historic houses—Al-Ashi and Al-Gusain—through its EGPX project, aimed at creating job opportunities for unemployed workers in Gaza. This approach mirrored the job-creation model previously adopted by the ICRC in supporting Al-Alami house project (Mohamed, 2025/2).

KfW required the United Nations Development Program (UNDP) to supervise the project to ensure professional standards and procedural accuracy. UNDP welcomed the proposal and entered into a partnership with Iwan Centre to oversee the conservation of the two houses (Iwan Centre, 2012). This collaboration represents a significant shift in the role of international organisations in conflict and post-conflict contexts, demonstrating how humanitarian and employment assistance can be transformed into productive, community-enhancing projects. Preserving cultural identity through specialised initiatives such as architectural heritage conservation is a vital component of this approach.

Another notable development in the preservation of Al-Ashi house was the partnership with a local Palestinian organisation, Al-Quds TV Channel, which contributed financially to the project and later used the restored building for its television programs. Such partnerships with local institutions in conflict and post-conflict settings are critical drivers of historical continuity and cultural affirmation—elements that are often severely undermined by prolonged conflict.

6.2. Memory-live community

During the implementation of project, Iwan Centre adopted a participatory heritage conservation approach aimed at strengthening public engagement with architectural heritage as a shared cultural resource. Rather than limiting intervention to technical conservation practices, the project emphasised community involvement through a sustained program of outreach activities, including school visits, university lectures, academic seminars, exhibitions, and cultural festivals. These activities positioned architectural heritage within broader frameworks of collective memory, cultural identity, and historical continuity, thereby encouraging local stakeholders to perceive heritage as both socially embedded and collectively owned. In parallel, project staff supported through the KfW program acted as facilitators of heritage knowledge, contributing to the dissemination of conservation values and practices within everyday community contexts.

The involvement of university students further reinforced the participatory dimension of the project by integrating academic inquiry, creative interpretation, and community outreach. This multi-layered engagement structure reflects key principles of participatory heritage conservation, particularly the co-production of knowledge between professionals, students, and local community members. Evidence from the project indicates that this participatory framework corresponded with a gradual shift in public attitudes toward historic buildings in Gaza, from passive appreciation to active engagement. Indicators of this shift include increased national media attention to the project and the activities of Iwan Centre, as well as tangible forms of local support.

Building-materials merchants contributed financial and in-kind resources, while craftsmen from various trades actively offered their skills and technical expertise, thereby embedding conser-

vation practices within local economic and professional networks. Public events organised by Iwan Centre and partner organisations attracted substantial attendance, suggesting broad-based community interest and involvement. Most notably, several owners of historic residential properties initiated contact with Iwan Centre to request technical assessments and development of conservation and intervention proposals. This outcome demonstrates a transition from awareness-raising to stakeholder-driven action, aligning closely with participatory heritage conservation models that emphasise local agency, shared responsibility, and long-term sustainability of conservation efforts.

6.3. Urban heritage networking

Networking played a critical role in the conservation of the Al-Ashi house by enhancing the position of the building as an active node within the wider cultural, social, and urban structure of Gaza old town. The conservation of Al-Ashi house in a dense and historically layered city such as Gaza, established networks that connected it with surrounding urban fabric, community stakeholders, traditional crafts, academic institutions, and local government.

Benefiting from this networking, the conservation of Al-Ashi house reinforced the historical significance of Gaza's old town urban core, by linking it to nearby heritage monuments like the Grand Omary Mosque, Al-Alami house, Al Qaysariya market, and several other historical buildings. It also created a new stronger linkage with the surrounding urban social spaces and markets that collectively narrate the historical identity of Gaza. Through networking the project facilitated knowledge exchange between conservation experts, historians, and residents. This ensured the community appreciation of the restoration as a necessary way to adapt traditional construction methods to contemporary urban, economic, and political conditions. This network approach enhanced community perception of the historical house as a shared cultural asset that can host educational, cultural, and social activities.

At the same time, networking enhanced collective resilience by optimising limited resources, mobilising international support, and fostering partnerships with cultural institutions despite the political and economic constraints in Gaza. The Al-Ashi house conservation project leveraged urban regeneration and contributed to social cohesion and cultural continuity. As part of the urban heritage network, the project represented a living heritage conservation model interlinking memory, place, and existence. Networking ensured that Al-Ashi house project safeguarded architectural value and revitalised urban identity of Gaza in an inclusive and optimistic way. This network represents a model for architectural heritage conservation in conflict and post-conflict areas that deserve to be considered and acknowledged.

6.4. Constrained conservation

The reconstruction of Al-Ashi house took place in a very challenging context that significantly affected the project's development and execution. Following the Gazan war of 2008–2009, there was significant urban destruction, economic inactivity, and institutional vulnerability. The situation was further complicated by an ongoing blockade that limited the importation of building materials and conservation tools into Gaza. It also limited the movement of skilled technical experts from Jerusalem and the West Bank into Gaza. The primary limitation of the project in terms of project execution was identified as financial limitations. The project benefitted from KfW donations and the professional management and expertise of UNDP, which helped to effectively distribute the insufficient funds and develop a prioritisation strategy for implementation. The prioritisation strategy focused on stabilising the house structurally, protecting its elements, and conserving the architectural identity of the structure. The scarcity of materials also impacted on the deci-

sion-making process for interventions as traditional construction materials were not available and had delays. As a result, the project relied heavily on locally sourced materials and developed on-site adaptive solutions that required ongoing technical assessments to ensure a balance between authenticity, safety, and durability.

6.5. Minimal conservation

Within the previously outlined conditions that influenced the planning and implementation of the Al-Ashi house preservation project, the work commenced with a high level of enthusiasm and strong determination among all project partners. This motivation was not emotional but grounded in a conscious choice to adopt a minimal conservation approach. An approach that prioritises the protection of authenticity and historical integrity, over intrusive restoration. The project followed the principles applied in the minimal conservation of the Al-Alami historic house in Gaza, as documented by Mohamed (2025/2). However, the Al-Ashi house project advanced this approach with greater confidence, benefiting from more financial support from KfW and clearer administrative frameworks of the UNDP, which allowed for better planning, decision-making, and execution.

The adoption of minimal conservation was a response to the physical condition of the building and the broader socio-economic context. Instead of pursuing extensive reconstruction or aesthetic detailing, the project focused on stabilising historical structures, conserving original materials, and intervening only to prevent deterioration. This approach ensured that the historical layers of the house were preserved as authentic records of the history and cultural meaning of the building.

To translate this philosophy into practice, tasks were carefully distributed among workers and craftsmen participating in the EGPX program according to their specific skills and areas of expertise. This targeted allocation of responsibilities enhanced both efficiency and quality, while also fostering a sense of ownership and professional accountability. With this distinguished approach, the project demonstrated that minimal conservation is not a passive or limited choice, but a rigorous, knowledge-based approach suitable for application in similar conflict and post-conflict areas. The following paragraphs briefly explain the steps of this minimal conservation approach.

Before restoration, the building was fully prepared to ensure smooth implementation. All doors, windows, and internal electrical systems were carefully taken apart (Fig. 9). Incompatible additions were removed. Scaffolding was securely installed, and all necessary tools and equipment were available on site. Cement-based plaster was removed from all walls and cross vaulted ceilings to expose the original stone structure. The removal process occurred in two stages. First, the main plaster layer was removed using light hand tools. Next, any remaining residues were carefully taken off to protect the underlying stone (Fig. 10).

Once the cement plaster was completely removed, exposed stones were cleaned with wire brushes and distilled water to remove leftover cement deposits. This process ensured the masonry was properly prepared for repair and finishing treatments. The removal of cement plaster revealed some cracks in walls and ceilings which were reinforced and carefully filled. The walls, arches and cross vaulted ceilings were all carefully treated with suitable mortars by skilled craftsmen (Fig. 11). The walls of the courtyard were treated with the same techniques applied to the interior walls. The floor had a small area with traditional coloured miniature tiles that were preserved and the surrounding area was covered with ceramic tiles. The stones of the stairs' steps were also well cleaned and treated (Fig. 12).

Special care was directed to the treatment of the architectural details of the interior elements like corners of the arches and

vaults and niches and recesses. The decorations and calligraphy on some of the walls had special attention and caution. The coloured miniature tiles in room floors were also well preserved (Fig. 13).



Fig. 9. Al-Ashi house, the arch of the iwan before restoration. (Source: Iwan Centre, 2011)



Fig. 10. Al-Ashi house, stone walls after removing cement plaster. (Source: Iwan Centre, 2021)



Fig. 11. Al-Ashi house, final treatment of stone walls and ceilings. (Source: Iwan Centre, 2021)



Fig. 12. Al-Ashi house, the courtyard after treatment. (Source: Iwan Centre, 2021)

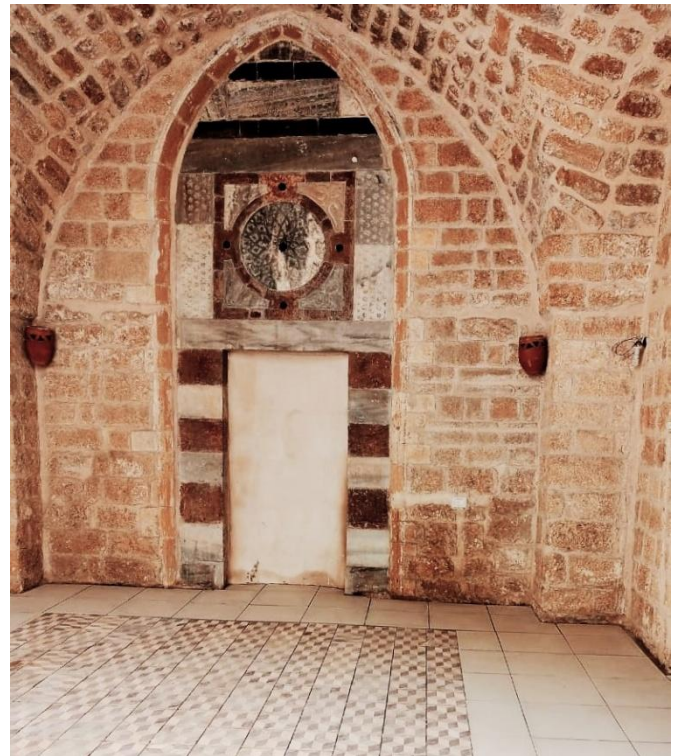


Fig. 13. Al-Ashi house, room interior. (Source: Iwan Centre, 2021)

6.6. Adaptive reuse

The public opening ceremony in October 2021 symbolised the success of this adaptive reuse approach. The presence of representatives from academic institutions, governmental bodies, municipal authorities, and civil society organisations reflected a broad-based recognition of the building's new role. This collective acceptance is a critical indicator of sustainable adaptive reuse, as it demonstrates that the building is no longer perceived solely as private property or a historical relic, but as a shared cultural asset with contemporary relevance. Adaptive reuse formed a core part of Al-Ashi house's conservation strategy and reflected strong alignment with the MACSUM framework. The project avoided treating the house as merely a monument or artefact, instead reintegrating it into the social, cultural, and urban life of Gaza's old town. This approach recognised that heritage in conflict areas survives only if it remains functionally relevant and socially embedded.

The choice to reuse Al-Ashi house as a community cultural centre was intentional and grounded in a thorough assessment of the building's spatial and historical qualities. The house's traditional layout—centred on a courtyard with interconnected rooms—supported cultural activities like exhibitions, lectures, and workshops. As a result, few architectural changes were necessary, reinforcing minimal intervention and authenticity preservation.

From a MACSUM perspective, adaptive reuse in Al-Ashi house functioned as a mechanism for ensuring the continuity of memory through use. The building's historical narrative was not frozen at a single temporal moment but extended through a new layer of meaning that reflects contemporary Palestinian cultural expression. By hosting cultural, educational, and media-related activities, the house became a living platform through which history, identity, and resistance to erasure are actively produced rather than merely recalled. This transformation aligns closely with MACSUM's emphasis on living heritage and the dynamic relationship between memory, space, and community.

Adaptive reuse contributed to the economic sustainability of the conservation effort. By assigning the building an active function, the project ensured ongoing maintenance, regular occupation, and continuous investment in the site. This is particularly significant in conflict and post-conflict settings, where abandoned or underused historic buildings are highly vulnerable to neglect, vandalism, or opportunistic alteration. The integration of Al-Ashi house into daily cultural and institutional life created a self-reinforcing cycle in which function supports preservation, and preservation enables function.

The adaptive reuse strategy respected the architectural integrity of the house by maintaining the legibility of its original residential character. New functions were accommodated within existing spaces without altering their proportions, materials, or structural logic. Modern services and technical requirements were introduced discreetly and reversibly, ensuring that the building remains adaptable to future uses without compromising its heritage value. This reversibility is particularly critical in unstable political and economic environments, where long-term certainty cannot be assumed, and flexibility becomes an essential conservation attribute.

In the context of Gaza, adaptive reuse also carried a strong socio-political dimension. Prolonged conflict, repeated destruction, and economic isolation have severely limited opportunities for cultural production and collective gathering. Reusing Al-Ashi house as a community cultural centre, therefore, responded to an urgent social need, transforming heritage conservation into a form of cultural resilience. The building became a space for dialogue, creativity, and public engagement, countering the fragmentation of social life imposed by siege and instability. In this sense, adaptive reuse transcended architectural concerns

and functioned as a tool for reinforcing social cohesion and cultural continuity.

The adaptive reuse of Al-Ashi house exemplifies a context-sensitive conservation strategy that aligns strongly with MACSUM principles. It demonstrates how adaptive reuse can serve as a bridge between the past and the present, safeguarding architectural authenticity while fostering social vitality. In doing so, the project offers a transferable model for architectural heritage conservation in conflict and post-conflict areas, where the survival of historic buildings depends not only on technical intervention but on their capacity to serve contemporary community needs and sustain collective memory over time.

6.7. The destruction of Al-Ashi house

Al-Ashi Historical house was destroyed in 2024 by Israeli airstrikes, resulting in its classification as a total loss from a conservation perspective (Fig. 14). This historic residence exemplified vernacular architecture, reflecting centuries of construction phases, materials, and spatial configurations within its urban environment. The bombardment severely damaged the house systems, including walls, floors, and roofs. Architectural elements were fragmented, precluding standard conservation interventions due to insufficient surviving material. Beyond material destruction, the house's eradication signifies a significant loss of intangible cultural heritage, disrupting social practices, intergenerational memory, and identity.



Fig. 14. Al-Ashi house, after bombardment. (Source: Iwan Centre, 2025)

7. CONCLUSION

This research has shown that it is not possible to use conventional frameworks developed for stable environments to assess architectural conservation efforts in conflict zones. In places like Gaza, which have experienced long-term occupation, repeated destruction and great shortages of resources, the preservation of heritage is completely connected to the issues of survival, identity, and memory. The MACSUM framework directly addresses these conditions by redefining conservation as a minimal-adaptive-community focused activity, with the primary goal of maintaining urban memory.

The conservation of Al-Ashi house demonstrated how MACSUM principles can be put into practice when faced with extreme limitations. By using incremental rehabilitation methods, limited use of resources, adaptive reuse, and strong collaborations between local and international organisations, and the community, the project was successful (at least for a short time) in returning the house to use as a living cultural space. The eventual loss of this house does not diminish its success; rather, the loss supports the MACSUM premise: that heritage conservation in conflict areas is inherently temporary, fragile, and politically vulnerable. Nevertheless, even temporally preserving a building

plays an important part in maintaining collective memory, cultural continuity, and social resilience. The purposeful targeting and destruction of historic buildings in Gaza should not be seen just as collateral damage, but as direct attacks on urban memory and social resiliency.

Within the broader context of ongoing human, urban, and cultural devastation in Gaza, the feasibility of immediate heritage intervention remains extremely limited. Constraints such as continued insecurity, restricted access, shortages of skilled labour and traditional materials, and the prioritisation of emergency humanitarian needs severely limit opportunities for post-damage assessment, stabilisation, or emergency conservation. As a result, the destruction of Al-Ashi historical house exemplifies the irreversible impact of armed conflicts on built heritage and highlights the urgent need for systematic documentation, risk preparedness, and international mechanisms for the protection of cultural property in conflict and post-conflict areas.

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