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Research Article

Notes on Urban and Architectural Heritage Conservation of Historic Cores in the Middle East: A Critical Review, Evaluation and Recommendations

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Abstract

The historic cores in the Middle East (after this referred to as "ME") region, a fragmented and thoroughly changed region during the 19th and 20th centuries, have many identities and authenticity challenges. Unfortunately, the rapid development rate, economic and rapid urbanisation, fast population increase, conflicts, lack of appreciation and awareness, and increasing market values gradually replace urban heritage buildings with newer, higher-density identity-less structures. This paper attempts to present the features, obstacles, challenges, and opportunities facing the urban built heritage at the historical cores and the neighbourhood within their physical, cultural and social life in the ME. It analyses questions for maintaining identity and authenticity, the future of traditional physical, technical and functional architectural elements paradigms and their contemporary reinterpretation and rethinking conservation from sustainable technical culture to socio-cultural sustainability. The paper investigates several issues related to the conservation concepts of the urban and architectural heritage in the ME. Special attention is given to the decision-making framework in the conservation practice, the destruction of the traditional urban heritage, and the destruction resulting from the ME region's political changes (modernisation). The focus is to identify, discuss and analyse how to deal with the challenges of maintaining the identity and authenticity of their historic urban cores. Finally, guidelines and framework recommendations are made for possible measures that may be taken for social sustainability.

Keywords: Intangible, Social Sustainability, Neighbourhoods, Visual Performance, Identity and Authenticity, Modernity

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Introduction

The conservation and regeneration of traditional urban neighbourhoods/quarters is a global problem with various cultural, technological, economic, and organisational implications, varying on the country under consideration. Unlike the conservation of archaeological sites, urban heritage conservation concepts and processes deal with "living sites that have value for people, in which the presence of humans is essential for their existence" (Zancheti & Hidaka, 2011). Thus, urban heritage is the actual presentation between humans and the surrounding built environment. The Middle East (after this, referred to as ME) historic cores were fragmented and comprehensively changed regions during the 19th and 20th centuries. However, they have always been the focal point of many cities containing their principal historic and landmark monuments and sites. Unfortunately, they received little attention. Due to many factors, architecture and urban heritage underwent dramatic transformations during the second half of the twentieth century.

Some of these factors that resulted in its deterioration and damage are economic difficulties, low educational levels and lack of appreciation and awareness, and the desire for modernisation, westernisation or globalisation (Hobbs, 2017). In addition, the changes in conservation decisions and the failure of many governments with a rich heritage to provide the monetary and technical assistance essential for restoration, rapid urbanisation, and rapid population increase. Furthermore, many countries of the ME became a region afflicted by regional and global changes, major political conflicts and migrations grounded in competing for social identities, and an ever-increasing demand for housing. Rapid development, economic and urbanisation, and increasing market values gradually replace urban heritage buildings with newer, more dense identity-less structures. All these factors have negatively created urban chaos to the cultural significance of the historical cores, which have received very little attention in urban development policies (Steinberg,1996, 463)—impacting both the natural and the built environment. According to the Australia ICOMOS Burra charter (1999, article 1.2), cultural significance means "aesthetic, historical, scientific, social, or spiritual value for past, present or future generations". It is embodied in the place, its fabric, setting, use, associations, meanings, records, related places, and objects. More analytically, relying on imported building styles, especially in the Arab world, is explained by the lack of belief in traditional methods as poverty symbols and retardation (Rajjal, 1998; Abedi & Soltanzadeh, 2014).

Thus, the public image of the historic cores in the ME is marked by a dichotomy between prominent historical monuments and residential quarters from different groups. The type of hyper-modern architecture also tends to ignore its context. As a result, it produces human isolation and denies a desirable human scale within the city's public realm (Duncan & Tomic, 2013). This dichotomy is primarily due to the lack of resilience, creative, intelligent interpretation methods, and available limitations. As a result, the discontinuity concept is apparent and enlarged over time. Although some features of the traditional cores can still be traced, it is feared that there will not be pieces of evidence of such a significant identity (Mahmud, 2007). If this trend continues, Steinberg (1996, 472) alerted that there is "a real danger for the future that in the cities in developing countries, we will find that only fragments of their urban heritage remain". What is maintained will be isolated without impacting the majority of the population.

On the other hand, the rapid urban environment transformation in many Gulf city cores intends to highlight the danger of emerging "double identity" due to misinterpretation of urbanisation. For example, Hobbs (2017) recently rightly argued that "modern urbanism has largely neglected heritage in architectural design and social and private spaces, creating inauthentic places that foster a hunger for belongingness in the UAE's built environment". More than 70% of high-rise developments globally are in Asia, the ME and Africa (Kearns et al., 2012). Thus, emergent historical cities' double identity. In addition, their transportation facilities and the additional functions and population loads, such areas in the city cores became unacceptable and incompatible for accommodation. To summarise, the modernisation of the Arab world, according to Mahdy (2016, 49), "brought about profound changes in attitudes. One such significant change was the duality in society, culture and economy. Another change was the development of passive, if not hostile, attitudes towards cultural heritage by the masse".

Due to this duality of attitudes, many historic cores are losing their authentic traditional styles. At the same time, the impact of modernisation and conflicts have led to a split of continuity between the inherited morphology and more recent urban structure. Therefore, this has led many ME countries to adopt preservation policies to sustain their historical character, local identity, and authenticity. In particular, many international

academic and professional conferences have highlighted and dealt with these concerns in the last two decades dedicated to the relationship between the urban heritage environment, society, conflict, nature, local identity and authenticity. Furthermore, many urban and architectural heritage in the ME has gradually become an object of preservation policies due to increasing cultural awareness.

Meanwhile, various urban conservation projects have been planned and prepared to preserve these historical cores; unfortunately, the general attitude of the conservation strategies and policies is still concerned primarily with the physical appearance. One of the crucial challenges facing these cores is that "the people living in historic city centres-have not yet developed a sufficient sense of self-identity and community purpose to allow them to fight back" (Steinberg, 1996, 473). This vague sense can be explained while an apparent duality is intrinsic to the social, economic, and cultural frame of reference in the ME societies. Another crucial challenge is that the architects and planners of the ME heritage conservation and interpretation will reconstruct the destroyed and lost parts of many monuments due to the current political conflicts, such as in Iraq and Syria.

Objective

The historic cores in the ME have always been the vital point containing the city's principal historic and landmark monuments and sites. Unfortunately, they received little attention in urban development policies. The rapid development rate, economical and rapid urbanisation, fast population increase, conflicts, lack of appreciation and awareness, and increasing market values gradually replace the urban heritage buildings with newer, higher-density identity-less structures. Meanwhile, various urban conservation projects have been planned and prepared to preserve these historical cores. However, unfortunately, the general attitude of the conservation strategies and policies is still concerned primarily with physical appearance only.The paper investigates and discusses several issues related to these urban and architectural heritage conservation challenges and concerns in these historic cores in ME.However, it focuses on the main critical challenge, social sustainability of these historic core neighbourhoods'/quarters' local identity and authenticity.Finally, recommendations are proposed to maintain the historic local identity and potential measures, without threatening the built environment's future vitality and authenticity, especially regarding the critical role of the informal ignored sector of the urban and architectural heritage cores' social sustainability in the ME.

Method

The paper's methodological approach is to identify, discuss, analyse, and define the challenges of maintaining the identity and authenticity to achieve the social sustainability of these historic urban cores. The paper's methodological approach is structured into two main sections. The first is a brief of the main features of the historic core and the neighbourhood in the ME, an analysis of traditional core environmental impact design, identity and authenticity questions and challenges, and how they can be adopted or reinterpreted in a contemporary context and concepts.The second is exploring alternative approaches that could settle traditional principles with current needs for protecting and reviving the historic urban fabric and rethinking conservation from a sustainable culture to cultural sustainability.

Understanding the Architectural and Urban Features of the Historic Cores and the Neighborhood in the Middle East: A Brief

The ME urban scape, during the 400 years of Ottoman dominance and before, was arranged of residential quarters that supported the usage of "the millet system", which denotes a "religious community, a community of the same confession or the same rite" (Cobb, 2010). Narrow and dry streets, high walls, arched roofed chambers, highly elevated air traps, and water reservoirs are the main features of historic cores in the ME. Generally, we can summarise the leading architectural and urban characteristics features of the traditional city core and the neighbourhood in the ME as follows:

- A typical traditional house can be considered a microcosm of the space that reveals its direct relation with nature. Meanwhile, energy circulation reveals the basic principles of bioclimatic architecture, where the courtyards represent the "green areas" of the town/city. However, the courtyard house is not only used for its environmental but social advantages (Figure.1). In this regard, Akbar (1988) stated that "the weight of experience of the whole society lies behind the traditional buildings".This also has given the urban heritage

its distinguished identity in developing the urban tissue with designs articulating scientific knowledge and artistic skill, which gives the heritage this distinctive identity (Mahmud, 2007; Jokilehto, 2006).

- The neighbourhood is a construct of social spheres (practices and relationships) organised spatially by the adaptable development of individual buildings over time and in response to changes in individuals' needs and means. For example, the maze/ labyrinthine-city patterns- create much shade in the hot environment, reduce external heat gain or loss, and blocks extreme air movement, which carries sand and dust in the ME. A good paradigm is the evaluation study of air temperature and movement inside houses and along the streets of Cairo's medina. It was concluded that the moderation of temperature extremes in these historical quarters was "ahead of anything we are doing today"(Nasr, 1980). Meanwhile, the dead-end streets were used to protect inhabitants against strange influences; the residents of a dead-end street controlled the street, and thus nothing disturbing the street could be done without the blessing of all the residents who were responsible for maintaining it (Hobbs, 2017; Moossavi, 2014). On the other hand, Hobbs (2017) has emphasised that the social and spatial features at the neighbourhood scale in traditional Islamic settlements are among the most promising precedents for modern social sustainability. He concludes that neighbourhood scale is most relevant to "sustainable design today"(Hobbs, 2017).

- Despite the ethnic and socio-economic differences of the ME city's residents, the houses reflect local building traditions and similar characteristics. Analysis of the architectural, cultural landscape and urban heritage resources in many ME and Islamic countries highlights the flexibility and adaptability of the old building form and how it has become an integral part of the working city. For example, Eben Saleh (Eben Saleh, 2000; Abedi & Soltanzadeh, 2014) attempted to define the vernacular settlements of southwestern Saudi Arabia by "the architectural form and landscape as a harmonic entity". However, the present situation in many ME historic cores is primarily between the spectrum; authentic neighbourhoods with their traditional fabric and modern quarters and districts with their global sense of living (Ibrahim et al., 2014, 58).

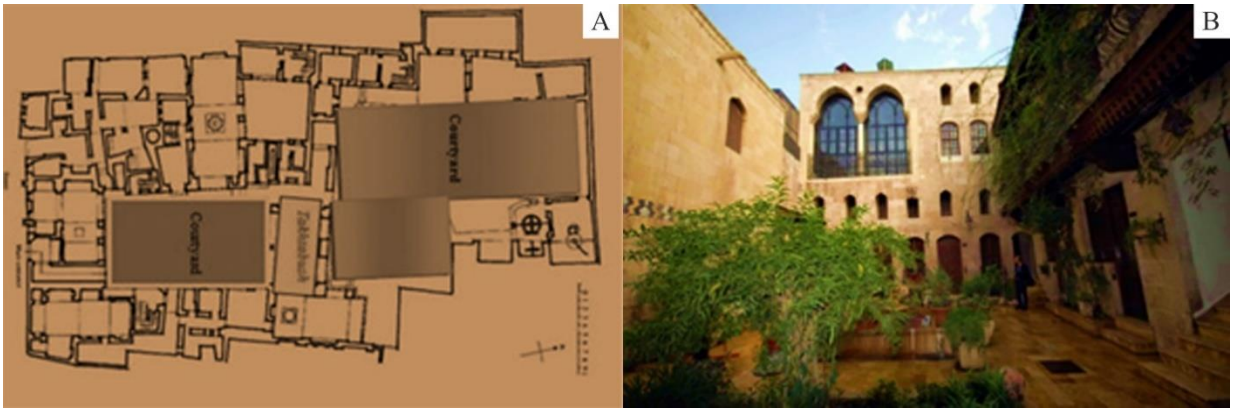

Figure 1 A, B Microcosm paradigm where the courtyard represents the town/city's social and environmental green areas of the town/city. source: After https://architecture.knoji.com/the-architecture-of-the-traditional-arab-house/,2022

Questions for Maintaining Identity and Authenticity: Analysis and Recommendations

The necessity for this section is heightened by the apparent conjunction of four potentially destructive forces; the loss of many historic cores' identity in regional development projects, the world economic slowdown, the current anthropogenic conflict the ME is facing, and the global climate changes. Concerns of identity and authenticity are principally centred in the historic cores where socio-cultural interaction and change shape the active transformation of their urban fabric and structure in the ME. This particular issue is critical in the post-war condition (Ibrahim et al., 2014, 58).

Question for maintaining identity and conservation

To clarify our understanding of identity, however, it is not just the quality of the architecture of the physical place; Identity also refers to a socio-cultural cohesion that relates to the "number of things for an urban area and the people that live and work there. It relates to tangible and intangible heritage: buildings, history, and memories" (Al-Naim, 2008). Furthermore, Shawesh (2000) has clarified that identity also refers

to the relationship between the self and the surrounding; thus, researchers and theorists have struggled to offer a separate consensus definition that is objective and overarching. Meanwhile, urban identity is best illustrated in "representation beyond time and includes a deep understanding of the characteristics of buildings along with social, cultural, and spiritual contexts" (Ibrahim et al., 2014, 59). It is characterised by conserving the valuable cultural traditions of people, communities and cities during the executions of urban development (Devine & Wright, 2009). To conclude, urban identity means respecting and dealing with the physical dimension characteristics and memories, events, activities, and functions. It also reflects the everyday interaction between people and how they act and use their physical context. In addition, "meanings, signs, and symbols which are considered the most complex features of identity since they are related to human behaviour, intentions and experiences" built environment and fabric (Ibrahim et al., 2014, 60).

However, the question is how urban heritage can be used wisely for resilient compatible modern uses and sustainable tourism without compromising its social and cultural role in enhancing the local cultural identity and authenticity. Ardalan (2013) recognised that there is an identity crisis driven by the loss of many forms of heritage: "a visual/ spatial loss of a vital sense of cultural identity, collective memory, traditional knowledge and values, indigenous narratives, historic textures/patterns, and a sense of place, in other words, the intangible elements of heritage". Therefore, a successful conservation design approach means achieving an identity, which correlates to the design of all elements in harmony with the "context, climate, traditions, needs, and requirements of modern and future times" (Mehrpoya et al.2015). Unfortunately, significant efforts in conservation concentrate on restoring isolated monuments and sites, whilst protection measures are enforced only for the listed or classified structures, with no or negligible concern for the different values of the surroundings as stated by many international charters and conventions recommendations (Haddad et al., 2021). This ignorant surroundings attitude is commonly ineffective in addressing the urban context's unphysical decay and the urban context's livability (Southworth, 2010).

Question for maintaining authenticity and conservation

In the ME, maintaining the authenticity of heritage cores is critical, as many of these cores carry and continue the regional tangible and intangible memories and styles of traditional architecture. The question is, why, since the primary purpose of the conservation and revitalisation of most historic cores was mainly for tourism goals, have many cores lost their authenticity and the original historic tangible and intangible atmosphere, including their characteristic inhabitants? Accordingly, many historic buildings were adaptively reused as museums or visitor centres besides being kept as historical or archaeological sites after conservation works.

However, most urban heritage cores face the challenge of unplanned modification and alteration, threatening their authenticity and heritage value (tangible and intangible). From a theoretical point of view, many case studies and projects ignore to illustrate the mechanisms that produced the threats and damages and, consequently, their causes, following an empiric-experimental method—for example, reviewing several case studies such as in Egypt, Jordan, Gulf, Turkey, and other Islamic counties.

1. Power, representation, consumerism, and authenticity are shared criticisms of historic conservation practices that have been found to threaten the historical integrity of the town and the historic core's authenticity and identity.

2. Preservation policies are primarily based on the state's intervention. However, at the same time, protective measures and the freezing of buildings against alteration repeatedly contradict the urban dynamics and incremental process that generated such core cities and historic buildings.

3. Once refined over time by the entire society, the aesthetic quality of the built environment is now controlled by individuals who produce a uniform monotonous environment (Hobbs, 2017).

4. Consequently, all features that give a historic core its distinctive character and provide a sense of belonging to its community are constantly missing for commercial development. This is even more obvious in the traditional districts, where the sense of belonging and preservation of community values, principles and practices is comparatively high (Abdelmonem, 2012).

5. Eventually, in a time of economic downturn and limited financial resources and conflict, it is a challenge to provide the necessary infrastructure to ensure regional connectivity while maintaining the natural and built environment and quality of life (Rajjal, 1998; Haddad & Fakhoury, 2016; Fakhoury & Haddad 2017).

The future of traditional physical, technical and functional architectural elements and contemporary reinterpretation Paradigms

Akbar (1988) points out that "if we are convinced that the traditional physical forms were the best solution for their users, then attention to the process that generated those forms will bring us one step nearer to a better environment." For example, the mashrabiya may be the most well-known element of Arabic architecture in the Middle Ages up to the mid-20th century. The concept of mashrabiyya can block and diffuse sunlight allowing fresh air to pass into living space while providing privacy. The double-skin façade ventilation at the "Mashrabiya House" in the Arab Palestinian village Beit Safafa, between Jerusalem and Bethlehem, is a paradigm of the mashrabiya application concept at the beginning of -the 21st century. According to the architect Senan Abdelqader, the house (1700 m2) was designed as a contemporary reinterpretation offering new and imaginative solutions for the village's transforming social and cultural landscape on the brink of urbanisation of traditional elements of Arab vernacular architecture (Figure 2). A double-skin facade as a building envelops acts as a wind tower, but in another way, a "Shaft-facade is one kind of double skin" (Amirkhani et al., 2010, 93). In addition, panels of the building's responsive façade, a series of aluminium frame folding screens faced with PTFE (the synthetic resin Teflon), are computer-controlled to be opened and closed with the sun's movement. The outcome is a reduction of solar gain by more than 50 per cent (Hobbs, 2017). In Abu Dhabi, at the twin Al-Bahr Towers (145m), a high-tech mechanical adaptation of mashrabiya screening provides a functional and aesthetically compelling effect.

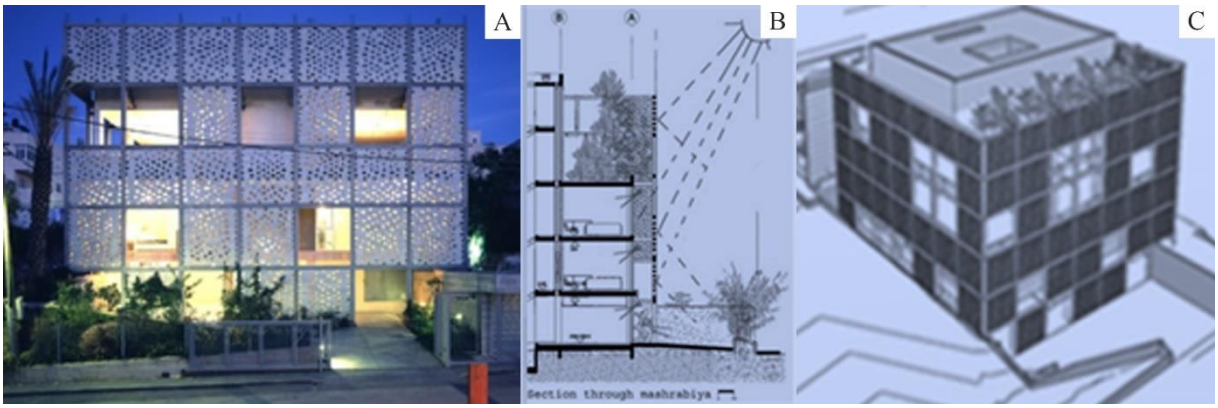

Figure 2 A, B, C The "Mashrabiya House" (1700 m2) in the Arab Palestinian village Beit Safafa, between Jerusalem and Bethlehem
source: After https://www.archdaily.com/175582/the-mashrabiya-house-senan-abdelqader, 2022

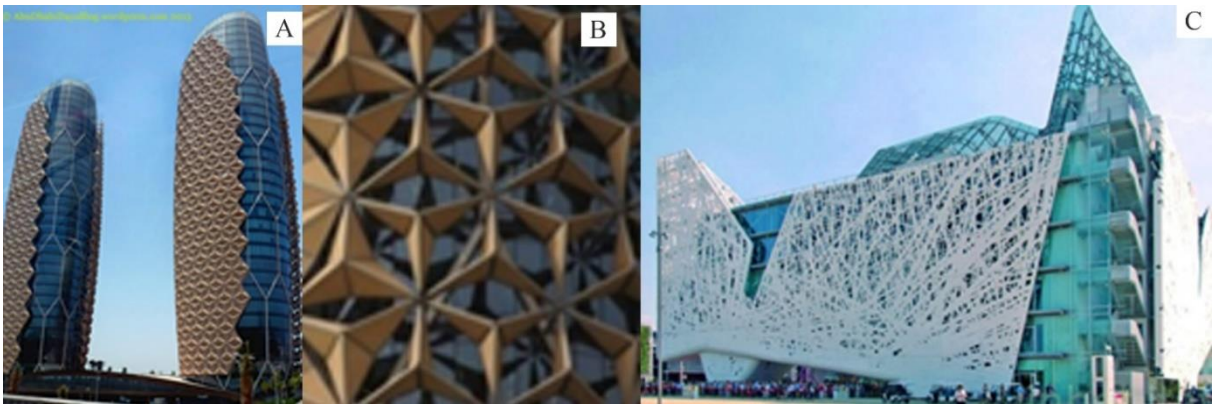

Figure 3 A, B The two 25-floor twin Al Bahr Towers.
source: After https://abudhabidaysblog.wordpress.com/2013/09/17/al-bahr-towers-2/, 2022
C Palazzo Italia, the most well-known use of this material, is in Italy's Palazzo Italia, debuted in Milan's Expo 2015.
Smart Building Materials and Techniques Perfect for Tucson
source: http://tiboaz.biz/2017/12/11/smart-building-materials-and-techniques-perfect-for-tucson/, 2022

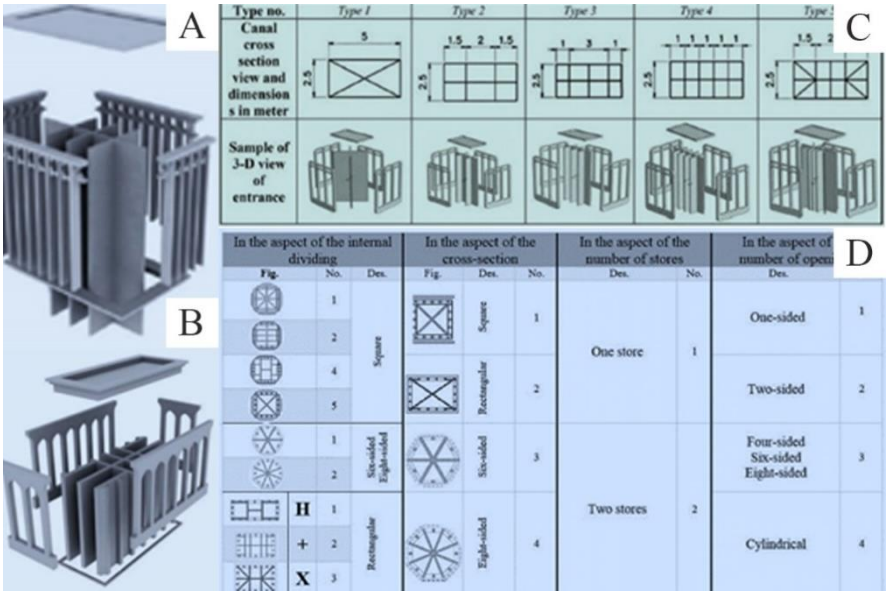

Figure 4 model of a Windcatcher
A with equal canal, B with different canals
source: After Roaf,1989
C Investigated Windcatcher types of partitions, D Different types of windcatchers in various aspects
source: After Sangdeh and Nasrollahi, 2020, Table 2

These two 25-floor twins Al Bahr Towers (Figure 3A, B), house the Abu Dhabi Investment Council Headquarters. Their main feature is the series of 'honeycomb' innovative panels shaped and solar-responsive modular shading screens covering the South, West, and East elevations. They are designed to improve the building's environmental performance by following the sun's movements around the building; they open when the light is bright and close in the evenings after sunset.

Another technological option is the “Smog Eating Building Material”, which can soak up smog from the air, turning it into inert salt which rinses off in the rain, thus helping clear the air of smog for air quality and combat climate change. It comprises 80 per cent recycled aggregates (Figure 3C). The Malqaf, or the wind catchers of traditional architecture, have been used for centuries across the Middle East's arid regions as passive cooling towers. It captures the cooler winds aloft, directing them into the living space and displacing warm air. This is another perfect paradigm of the original, innovative reinterpretation of the traditional and vernacular elements for an exceptionally effective air conditioning system. Several wind catchers have been used in contemporary buildings with different functions in this characteristic paradigm, especially in a hot climate.

Meanwhile, architectural solutions are practical and effective in facing climate challenges in designing a single building and urban planning (Sangdeh & Nasrollahi, 2020). Moreover, these ME wind catchers towers can save the electrical energy used to offer natural ventilation, passive air cooling, and thermal comfort during the year's warm months, “demonstrate the harmony between nature and human-created environment”, based on sustainability principles (Moazemi & Goudarzi, 2021, 47-49).

Many paradigms demonstrate the utilisation of the wind catcher, combining the principles of these towers with modern technology as valuable devices to enhance the condition and efficacy of the required fresh air. Western architects incorporated the principal concept of wind catchers to improve the quality and efficiency of the provided fresh air. Pioneering models for a wind catcher with the basic principles of the traditional architecture of the ME for natural ventilation can drive this heritage technology into a respected method for making modern edifices more sustainable. Frank Gehry showed the significance of natural ventilation and the value of wind catchers as an alternative system for modern indoor spaces. Frank Gehry's giant air-cooled cone-shaped galleries of the Guggenheim Abu Dhabi Museum are inspired locally by the wind catcher (Ouroussoff, 2007). Recent research showed that it could reduce air temperature to about 6.5°C

and increase relative humidity by about 27 per cent (Hughes & Ghani, 2009). Another modern adaptation paradigm of the historic windcatchers, designed by Foster, is the Saint-Etienne Métropole's.

These zero-carbon cooling technologies and methods could be used to better the quality of life while adding unique character to the historic cores in the ME for natural ventilation efficiency and its relationship with building geometry and indoor air quality limitations. Interestingly enough, Moazemi & Goudarzi (2021, 47-54) examined these windcatchers' features, use, and function as a different natural solution even in the context of COVID-19 restrictions. Furthermore, she emphasised the significant role of this natural ventilation of indoor public spaces in decreasing transmission of the Covid-19 virus in an enclosed environment. They can be categorised into several types according to different factors, including the number of openings, cross-section, number of stores, and position of blades (Sangdeh & Nasrollahi, 2020,13)Figure 4. These basic principles ultimately can be helpful in some cases to modern-day architecture if it is not fake and well-studied according to each project's particularity, setting, and aim.

Result/Finding

The research outcome briefly evaluates the present physical and socio-cultural interaction structure to determine the main challenges. Special attention is given to the decision-making framework in the conservation practice, the destruction of the traditional urban heritage and the destruction because of the ME region's political changes (modernisation). The research concludes that the identity, collective memory and authenticity of place in these traditional and historical cores need to reform the design strategies to further environmental and social sustainability in the urban context. They are missing many qualities related to liveability and permeability.

Generally speaking, we can assume that the conservation effort deals less with the intangible socio-cultural interaction events and activities within the old city cores than the tangible physical properties, including public spaces and the natural environment. Mehrpoya et al.(2015) argued that “the identity of the traditional house can significantly contribute to the physical and mental comfort of their residents”. Therefore, it must be integrated with intangible (socio-cultural interaction) measures covering the historic urban fabric. However, re-establishing the traditional architectural identity is essential if sustainable cultural tourism areas are developed (Haddad & Fakhoury, 2016). Many architectural compositions have engendered national and even ethnic identity, frequently related to tourism or used for political reasons such as nation-building. It is also essential to recognise the issue of visual performance's spatial and formal variables in historic cores to measure them (Rajjal, 1998) systematically. Visual performance means “the ability of the environment to support its users' psychological and physical requirements regarding its visual appearance, i. e., the spatial and formal aspects of the built environment” (Rajjal, 1998). Greene (1992) claimed that the visual image of the built environment reveals a distinguished identity supported by distinctive qualities embedded in historical and traditional aspects of the urban fabric. These qualities are primarily seen in the liveability and permeability of a space to integrate and adjust socio-cultural practices of interaction, security, engagement, and solidarity in a collaborative yet private manner.

Therefore, the real challenge question is how architectural and urban design can build an environment most suited to the modern lived environment of these places based on the concept of social sustainability. Sustainable development needs “compatible strategies between the physical development and the natural environment preservation considering the social and economic issues” (Ibrahim et al., 2014, 60). Integrating social, physical, economic, and environmental elements can improve and secure all generations' quality of life (Newman & Kenworthy, 1999). Consequently, the emphasis should be on proposing new and creative treatments not only for the architectural and urban heritage types and patterns but also for the historic fabric particularity (tangible and intangible) while dealing with and respecting the following realities and concerns:

- Rehabilitation strategies should avoid the idea of static preservation and not attempt to “fossilise” the past and convert it into a sort of open-air museum (Steinberg, 1996, 472).

- The public space/places as part of urban heritage should be preserved and gazette for people. However, unfortunately, the privatisation approach has resulted in declining roles with the sense of place and design of modern public spaces within the historical context.

- The critical nature of traditional artisanship in the conservation process should become more evident in many cases, while replicating these artisans by transmitting knowledge to the next generation is vital.

- The traditional ME and Islamic city's morphological and typological lessons can reveal many culturally and environmentally determined patterns with timeless cultural identity elements.

Finally, many environmental technical architectural elements built on cultural needs and climate conditions are to be developed to be integrated into contemporary edifices and provide a wide variety of services that people require as sustainable structures integrated with traditional solutions suited to the future. Therefore, it is necessary to involve and appreciate traditional architectural technologies to help achieve optimal thermal comfort inside, as many traditional technologies were bio-climatically designed. Hobbs's (2017) deep understanding of traditional technologies provides architects with more suitable instances which cannot be replaced with an incompatible imitation of blindly imported technologies introduced into current ME structures. Furthermore, the crucial loss of artisanship must also be faced, such as lime plaster ornamentation (stucco) and its associations with conserving the ME-built heritage.

Discussion: Rethinking Conservation from Technical Sustainable Culture to Socio-Cultural Sustainability

The issue is how to develop an appropriate new socially sustainable solution to enable the synergy of socio-climatic needs, the well-being qualities of the residents, and the particularity of culture and people while constructing new buildings in and around the traditional historic cores. The key to a common objective in achieving successful urban heritage conservation is understanding, analysing and risk assisting the proper approaches for tackling the different layers and complex issues of a historic living core. The concern, however, has four folds.

- Firstly, the principles for developing practical conservation guidelines are lacking in significantly enhancing the liveliness of run-down urban areas once a particular town/city hub. Of course, we must respect differences in size, scale, and design because the owner's residences' socio-economic and political status share standard configurations.

- Secondly, the current architectural movements seem more attractive to architects and planners than the real needs of societies. For example, most ME Arab countries, particularly the Gulf countries, have been through extraordinary and unexpected urban development. This urban development was done to harm the old cities and towns, threatening the urban heritage of many historical cores and, even more, the community's integrity, authenticity, and identity (Jokilehto, 2006).

- Thirdly, not respecting the nature, an extreme example of ant-nature creation is Dubai's artificial islands, representing “a picture of man out of harmony with nature” (Caton and Ardlan, 2010).

- Finally, unfortunately, many technocrats and bureaucrats working in cultural heritage lack the vision and the belief in the power of cultural heritage as a tool for reconstructing the collective memory and local and national identities. Thus, they cannot provide and convince the politicians to be aware.

However, some questions are raised, such as; How can we promote collective memory communication creatively concerning planning for an intelligent heritage core? Is it the only approach to transformation in the historic core domestic spaces to preserve our historic cores and buildings? In the case of privately owned properties, is it enough for owners to be offered incentives (like property tax exemptions and transfers of floor-space indexes) if they rehabilitate and conserve historic properties and put them to new economic uses (such as hotels, restaurants, shops, offices) as Steinberg (1996, 473) and many others proposed? Is there an urgent need for creating new heritage collective memory communication tools as a vital constituent of any development policy? How can the integration of contemporary, even sustainable, high-rise buildings design with the capabilities of a socially unified and healthy environment of traditional structures and neighbourhoods work? To attempt to answer, or more correctly, shed light on these questions and dilemmas, we should have in mind and deal with the following:

1. Regarding the first point, the principles for developing practical conservation guidelines enhancing liveliness, unfortunately, many studies evaluate traditional buildings from their exterior architectural characteristics and classify them into different value groups. Moreover, the residential quarters in traditional architecture often make distinguishing individual houses behind the relatively uniform facades difficult. In contrast, modern residential architecture is about (or has already managed) to upturn the traditional structures. Sadly, this grouping will be the heritage conservation decision. As essential in conservation plans, the documentation studies of urban heritage and traditional lifestyle will determine the principles of any needed urban heritage policy or even compatible touristic activities or trails recommended by the international charters

and conventions (Haddad et al., 2021; Haddad, 2022). In other words, there is no need for Mega tourism structures. However, a pragmatic eco-tourism paradigms framework map for the definition of the role of public participation in these projects illustrates their role from past protecting into the future persevering the core's historical values and identity (Fakhoury & Haddad, 2022). Consequently, encouraging community spirit through "mixed-used development and pedestrian-friendly streets" is considered an essential component of "sustainable urban form. By creating such areas, local facilities become more viable, spatially liveable and maintain continuous traffic that is needed for active protection and surveillance" (Ibrahim et al., 2014, 67).

However, heritage documentation projects must be considered from various points of view, presenting, representing, interpreting, and monitoring the performance of the urban setting, inhabitants, and historic structures (Haddad, 2022). For example, Rajjal (1998) has shown that visual performance significantly influences subsequent reactions to the setting and its inhabitants. He pointed out that in the historical cores, "the same area might perform differently at night than in daylight. Historically, the exterior parts of buildings were designed to be viewed in reflected light".Thus, he concludes that no buildings were built with their appearance at night as a prime consideration until modem times.

However, in conservation, artificial lighting and laser show now represent essential tools for offering an utterly reversible interpretation of historical and/or archaeological structures. In this sense, lighting design and laser shows should be considered crucial parts of any documentation, interpretation, and conservation project. Furthermore, we need to re-examine and re-assist the historical examples and traditions' effect on current architecture to preserve the urban architectural heritage and attempts. Thus, to establish several intangible urban features to create and produce a "story of place" to preserve the intangible urban heritage and historical precedence urban heritage of the ME societies. Besides, we must enhance the visual quality of built environments while considering their users' preferences.

Thus, adopting a holistic approach to accepting that "traditional urban forms enhance and enrich the spirit and identity of new developments" (Ibrahim et al., 2014, 67). Many historical buildings in an urban setting thus should be re-evaluated for their socio-economic and cultural viability regarding the current and recent occupancy rates, type of occupants, and relative repair and maintenance cost. The owners of such buildings can be the prime target of the project's creators that make economically appealing offers for such properties to change into modern or new adaptive use centres in an empiric creative and innovative, economical way integrated into new concepts of use. However, with intelligent and creative communication tools and channels that reconsider the concept of conservation of voids, urban design and archetypes of collective memory and visual performance within the local policies, economic support could help regenerate these historic structures.

2. Regarding the Second point, the current architectural movements seem more attractive to the architects and planners than the real needs of societies; the revival of traditional and technical socio-economic features in the historic cores can be questioned considering the current development of the art of building. However, the issue is how to envision future social sustainability. For that, any ME design heritage project should be seen and practised as a showcase of the diversity of the heritage. At the same time, the cultural significance and values can be used as the basis for future efforts to present many of these historic cores as World Heritage sites.

Galantay (1987) considers the indirect impacts of imported value systems on traditional lifestyles even more destructive than the outward signs of modernisation. Therefore, any urban design or landscape interventions should secure the monument's legibility and establish an interface between the past buildings and today's city. Interestingly enough that Hobbs (2017) has shown that in the UAE, sources reveal "a hunger for authenticity and "belongingness" in architecture and other components of the built environment". Accordingly, to achieve social sustainability that respects the identity and authenticity of historic urban cores, the focus should be directed towards the local association not only on the tangible aspects but also on the particularity of intangible values. Thus, including the traditional events and activities parallel to a comprehensive upgrading of deteriorating buildings to match the shifting needs of the current population (Satterth & Cecilia 2003).

Architects must create a database with "vocabularies, parameters and rules that trace dwellings' social and environmental dimensions" (Jokhadar & Jabi, 2017). Furthermore, architects seeking authentic vernacular architecture in the modern context should avoid the pseudo-traditionalism of "the cosmetic use of traditional

decorative elements, applied skin deep to the exterior of Western-style buildings" because it is dishonest trickery (Satterth & Cecilia 2003). Single performances of shiny buildings and the sudden dichotomy of street fronts between main arteries and back streets portray wrong impressions of fragmentation and isolation (Haddad &Fakhoury, 2016).

Therefore, we should also avoid, as possible, any urban-architectural fake reduced to skin-deep façade imitation of oriental Asian, Islamic, and imitation and duplication of Arabesque features made of contemporary materials. This might result in distorted hyper-arid conditions, hyper-eclecticism concepts of the hyper-Disney Architecture, background, sources, roots, and ambitions different from the socio-cultural Context of ME cities. Consequently, conservation rethinking concepts of the Western or far-eastern culture seem useless. Architects who deal with and use traditional elements should employ several resilience strategies to express an architectural identity in their work. They should also avoid the artistic/ aesthetic interventions in both historic and new buildings, while this begins to be harmful to both the original fabric and social memory. On the other hand, architects who do not attempt to use traditional elements in their work should declare that cultural identity is constantly changing and a product of authentic practices and design.

3. The third point is about the extreme example of ant-nature creation. Al-Jokhadar and Jabi (2017) show that while most traditional houses are great examples of a socially unified and healthy environment, "most of the current high-rise buildings in the Middle East and North Africa lack the identity of the place". Hobbs (2017) also shows how even the architectural social-cultural heritage of the United Arab Emirates and other Gulf countries can better develop. Furthermore, Larkham (1996) concluded that brid the formal and informal duality can guarantee the sustainability of cultural heritage conservation. More analytically, Al-Jokhadar and Jabi (2017) argued that the traditional horizontal quarters' overall social and environmental qualities even "could have the potential of being transferred into vertical arrangements through dividing it into layers as a representation of neighbourhood in a traditional fabric".

New applications and design parameters also, as previously analysed, are needed to show how some traditional elements and devices can be adapted and improved to provide an adequate and straightforward solution, like ventilation, for even the most challenging buildings of the future. For example, climate control techniques and practices like ventilation and air conditioning can enhance indoor air quality while producing thermally comfortable environments (Moazemi& Goudarzi, 2021, 47). Jomehzadeha et al. (2016) have defined the leading indoor air quality elements for the enclosed environment concerning the health and comfort of indoor users by offering sufficient ventilation, controlling the contaminants circulating in the air, and offering required thermal comfort.

Therefore, some innovative traditional design ideas can propose new technical solutions regarding climate and sustainable design. Hobbs (2017) already proposes that the cultural and environmental legacies of the medina are the "potential of high value in fostering sustainable and socially healthy communities in the modern Gulf". As a traditional architectural device used for centuries to create natural ventilation and cooling in buildings, the paradigm windcatcher can be investigated in many creative and smart functions. According to Moazemi & Goudarzi (2021, 51), their design based on historical architecture could be "developed and adapted to contemporary building and encouraging the use of these towers as a natural ventilation method for indoor spaces".

4. Regarding the fourth point, many technocrats and bureaucrats working in cultural heritage lack the vision and the belief in the power of cultural heritage; however, the question is; what is the appropriate heritage-based policy input that can effectively respond to regional externalities? Thus, it will be required to change the attitudes of economists, architects, planners, developers and administrators. It will be necessary to create a changed political environment where historical centres are rehabilitated in their actual value and government policies and practices are modified accordingly. Institutions "must be developed, and economic and administrative instruments for control and promotion must be worked out" (Steinberg, 1996, 473).

The residential aspect remains without architectural qualities. The urbanism and architecture tradition would mean re-creating a suitable environment for the local people's harmonious and rational life. However, unfortunately, the aim of involving the local community in supporting the proper rehabilitation, maintenance, and administration of the ME historic cores is frailer. First, without providing all the comfort required by modern life, we cannot request and ensure involving them in the conservation process when presenting and rehabilitating these historical/traditional urban cores. Equally, restoring the sense of custodianship to the

citizens is critical. Thus, there is an urgent need for urban heritage communities, informal unique Ngo's, and public and private collaboration in the projects' heritage conservation process (Fakhoury & Haddad, 2022). A new criticism approach should trigger questions regarding its validity and impact on the locals. Examining the residents' attitudes toward their conservation efforts is also necessary. The conservation and enhancement of core heritage resources can and will continue to significantly contribute to the historic core's economic revitalisation, cultural and eco-tourism opportunities, image, brand, and quality of life. Formal and informal stakeholders should elaborate on the cultural significance statement for cultural heritage sites. Besides, urban conservation must be practised as "the sustainable development of areas of cultural significance" (Manhy 2016, 51).

We need all together to accept and boldly discuss possibilities and form out-of-the-box questions about the meaning and the cultural significance of space and place context of a setting as new informative content, then criticising together the results of many final or suggested projects-imposed concepts and exchange of ideas moving beyond the tangible to the intangible heritage conceptions. Creative alternatives and possibilities for developing local community and visitors' needs, planners and decision-makers should also reconsider new communication tools and channels. These channels and tools must bridge the gap and respect the level of understanding of the local community and visitors to the technical people involved in heritage conservation using digital technology to help shape the heritage conservation future in the ME.

Suggestion: Suggested Guidelines Management Framework of the ME Historic Cores Fabric

To maintain the historic local identity without threatening the future vitality and authenticity of the built environment, and to the critical role of the informal ignored sector, recommendations are made for potential measures that be taken for the urban and architectural heritage cores' social sustainability in the ME. These recommendations are built on the suggested 4C's model components sequence approach, Context, Concept, Creativity and Communication. Both parts of urban heritage, the highly valued historical monuments and the residential quarters, present many conservations, restoration, visual performance, and contemporary use challenges. Heritage conventions, charters, and legislation should be seen beyond the standardised to change the image of the architectural and urban 'heritage as drawback' to 'heritage as a sustainable opportunity is needed. Of meaning is what Amirkhani et al. (2010, 94) stated that the traditional technology trap reminded us not to follow the stereotypical thinking of conventional wisdom. However, to rethink that"each design decision clearly for ourselves and reminds us that the sustainability stool has three legs, and if you lose one, the stool falls". Moreover, integrating historical elements and traditional characteristics in modern planning has proven efficient in preserving the unique character of sustainable cities, particularly in places with a rich history (Kriken et al., 2010). However, Hobbs (2017) also proposed that adapting vernacular architectural heritage should not be the primary goal for heritage-informed design for the modern built environment. Instead, we might examine "the social processes underlying the traditional lived environment and aim for social sustainability based on the lifeways and preferences of local peoples". The following are the suggested basis for guidelines of a management framework for the historic cores to deal with the current situation:

- Meanwhile, heritage landscapes face many challenges due to the rapid climate change in the ME countries; managing heritage sites should be interwoven into the debates on the impacts of climate change. We also need to re-evaluate the conservation efforts in these core areas to reveal the built heritage's appreciation and maintain them. In addition, to disclosing the uncertainty of the strategies and tools utilised in the conservation process, besides re-reading and reinterpretation the cultural patterns that might need appropriate methods and tools based on the current digital tools and research findings. Any proposed Strategic Business Plan (SBP) should be setting the following green targets; energy saving, implementation of water-saving devices, reduction in gas emissions, use of clean energies and renewable resources, elimination of fuel oil for heating and sanitary hot water, enhancement of waste-saving measures and the exclusive use of recycled material.

- Meanwhile, much heritage conservation environment is among the main targets of the funded projects; we need to take a step and go back. We need to re-examine and re-assist if there are tangible effects of the social, cultural, economic, ecological, and psychological senses that those funded projects enduring, universal values of the traditional way of the edifice are still alive, and make them again inspiration for new, more human approach in the creation of urban architectonic space if needed, by respecting the context of a

setting, so we can have the chance to shape a humanistic/ethical concept. First, however, we should apply new creative tools and channels to provide the heritage community with a new communication language to all partners through awareness of inherited cultural values, environmental conditions, the anthropological history of an area, and the psycho-system of a target group that it would seem to be possible to provide people with an authentic and distinguished built environment.

- There is an urgent demand for a firefighting strategy. Fire risk is one of the highest risk factors contributing to the historic cores in many cities, evidenced by recorded statistics from relevant events. The existing firefighting approaches show preliminary plans and sensitivity. However, firefighting directly has put the cores in great danger and can cause lose their irreplaceable heritage. Though, immediate efforts to establish a "Fire Risk Preparedness Plan" in the historic cores are vital to protecting and preserving the values and many ME historic cores.

- A historic interpretive methodological approach for the reinterpretation and the adaption of traditional architecture to contemporary buildings as a new design that takes advantage of nature is required now more than ever. Setting out proposals for research into sustainable changes that can be made, both environmental and architectural, should aim to re-align the historic cores' suburbs into a historic socio-cultural interaction value context. In addition, social studies using accurate digital computerised mapping systems could allow monitoring of the current situation (Haddad, 2022). Ultimately, any intervention in the traditional/ historic cores should achieve appropriate scale, create a serial vision, enhance orientation and continuity, and accomplish the required complexity without creating information overload or monotony.

- The historic fabric requires protection through appropriate conservation plans and regulations and specific rehabilitation programs covering intangible and tangible aspects to achieve social sustainability and architectural and technical solutions to improve traditional architectural elements paradigms such as wind catchers' performance. In addition, these traditional architectural elements and device paradigms can bring new prospects for utilising passive cooling and natural ventilation systems in today's and future architecture of the ME hot and dry climate.

- Governments as formal bodies must facilitate the widespread use of preservation policies in collaboration with informal non-profit organisations at the national and state level. They should emphasise that the historic fabric (tangible and intangible) is a major cultural asset that cannot be disregarded. Meanwhile, the historic architectural conservation policy as a tool for socio-cultural continuity should not only focus on the sacred built environment. Social awareness and participatory approach and their role in urban conservation policies are critical for any policy trying to conserve and preserve historical cores. We should look for new resilience, creative and practical tools to convince the local community of the beauty, loveliness, and economic opportunities of a traditional built environment for inhabitants and visitors.

- Regarding communication tools, we must re-examine the hugely influential role of mass multimedia, social media, Satellite TV channels and internet sites that spread Western culture at the expense of almost every other culture. Manhy (2016, 51) states, "No wonder then that the man in the street clung to his informal socio-cultural framework born of patriotic resistance after independence and long into the era of globalisation. His indifference towards his cultural heritage remained as he saw heritage as a part of a propaganda machine that served oppressive political regimes, both foreign and national". The critical communication gap between the local communities and the formal sector is the way an image is perceived by local communities of the so-called "Participatory projects" as "cosmetic operations managed by the formal sector". Manhy (2016, 1) explained this critical communication concern: "While it is formally accepted that a lack of awareness causes local communities' negative attitudes, the reality is much more complex. Except for a few religious significance monuments, cultural heritage resources were associated with the formal sector, its values and culture". However, this means that we must integrate the urban development of historic cores concepts in the ME as an ecological and cultural (tangible and intangible) point of view with the preoccupation with achieving a more social sustainability environment.

Finally, by focusing on the incremental process, the urban dynamics and the social mastermind that once stood behind such urban and architectural heritage, researchers and professionals could go beyond this paradox and even produce a new paradigm that bridges the gap between the past and the current practices based on what I call here the *4C's* model sequence approach, *Context, Concept, Creativity and Communication*. These four keywords can probably capture what many architects, designers and planners

have learned about creativity, critical thinking, and aesthetics to enrich and sustain their professions and communities. Creativity is the keystone of our human knowledge; aesthetics relate to ethics. However, first, we need to create and strengthen the platforms for dialogue that will allow us, as residents from different target groups, planners, and architects, to reconsider our participatory approaches concerning engagement with the cultural significance of our tangible and intangible heritage.

Harmonious social relations between inhabitants and community cohesion are essential for socially sustainable neighbourhoods (Ahmed, 2012; Fakhoury & Haddad, 2022). People eventually recognise and memorise these as unique to the place and community (Shamsuddin, 1997). Therefore, harmony between the four keyword components is needed to plan and design heritage conservation and interpretation practice. More analytically, building on the *4C's* sequence approach, the context of the historic cores should deal with and respect parts of the living historic city cores' collective memory communication tools that was the frozen touristic context of the dynamic, historic city.

Building on the *4C's* sequence approach, we also need to ensure a delicate balance between the result having creative historical integrity to provide the complete resurrected context's history. Unfortunately, whenever a historical context/ structure is undergoing any intervention, part of its originality is lost and sacrificed for preservation. Therefore, when conserving living tangible and intangible associated with the collective memory, identity and authenticity, the *4C's* model approach must respect and not ignore any component. Therefore, balancing the *4C's* model components' interrelationship is a must. Only tangible building conservation alone makes the eventual decline of the intangible activities within the city itself. Therefore, there is a need for a grave re-formation focusing on its connections to the intangible aspects, even the geographical and environmental cultural context, to promote the liveability of these historic buildings' cores with new communication tools. The aim is to address the suggested *4C's* model sequence approach as a "Functional living heritage" based on architectural and urban cultural heritage in our digital age/ the 21st century, from documentation to conservation and reconstruction and from objects to functions. This means revising and dealing with the Cultural Heritage Concept as a Functional Approach with a more human, dynamic, and holistic perspective. This also means revitalising the Built Heritage and applying it from frozen to alive heritage with sustainable use by integrating manifold perceptions from various academic fields.

Based on the requirements and needs of the digital age, combined with the *4C's* model sequence approach, the new functional socio-cultural and economic dimensions, and built heritage at risk from climate change and conflicts dimensions, the *4C's* themes could act as a tool for re-examination and re-adaptation of the conceptual framework of cultural heritage; from the tangible and the intangible aspects to achieve a "people-centred functional heritage".

With the rapid and aggressive changes occurring regionally in the ME, there is an urgent need to act promptly and effectively to manage, develop and utilise the heritage resources. Changes on environmental, technological/digital, and political levels authorising a re-examining of the *conceptual/ theoretical and practical* framework of Cultural Heritage. Many Cultural Heritage issues need to reform the conservation and reconstruction strategies and policies for a more flexible and resilient approach. It should be postulated, re-examined, and advocated parallel to their 3D digital/ virtual documentation, restoration, and reconstruction in the related international charters and conventions. Brave actions should be taken to achieve further sustainability, comfort, permeability and innovative public participation. Figure 5 summarises the suggested *4C's* model sequence approach "Context, Concept, Creativity and Communication" approach.

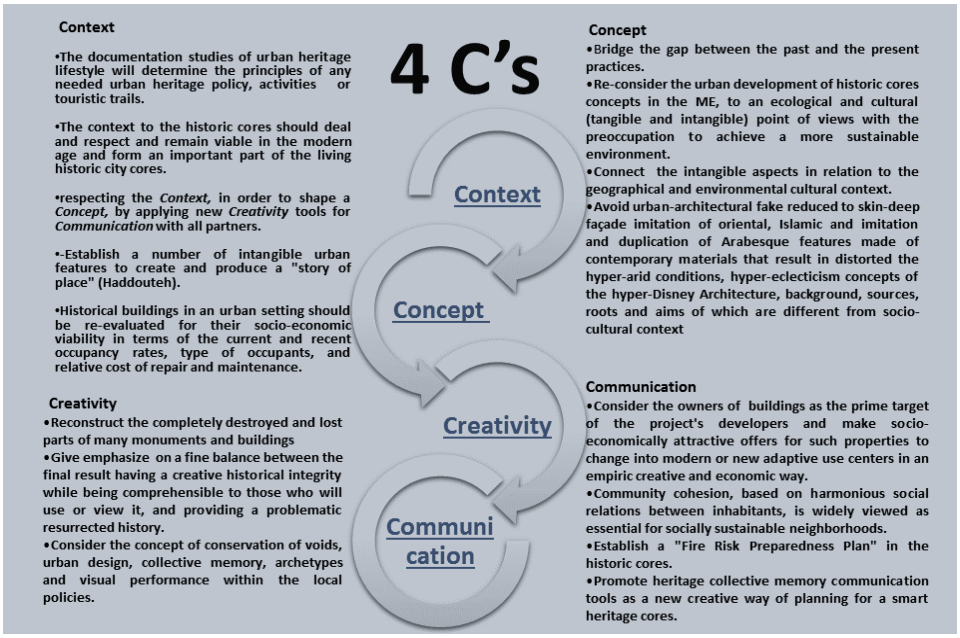

Figure 5 The suggested *4C's* model sequence approach "*Context, Concept, Creativity and Communication*" summary source: Haddad, 2022

Summary and Concluding Remarks

The paper's research outcome briefly evaluated the present physical and socio-cultural structure's main challenges and opportunities facing the urban built heritage at the historical cores and the neighbourhood within their physical, cultural and social life in the ME. Questions for maintaining identity and authenticity, the future of traditional physical, technical and functional architectural elements paradigms and their contemporary reinterpretation suggest rethinking conservation from sustainable technical culture to socio-cultural sustainability. Guidelines management framework for the historic cores fabric is suggested to remain socio-economically practical as integral parts of the ME cities and improve their image, brand, and social sustainability. Concepts of social sustainability have become the driving forces in historical core city planning and urban heritage conservation strategies in recent years. This can be achieved by respecting all the heritage community partners' collective memory and local identity. Tangible and intangible contexts shape a concept, applying new creative tools and channels for a new innovative heritage communication language.

The research concludes that the identity, collective memory and authenticity of place in these traditional and historical cores need to reform the design strategies to further social sustainability in their urban context. They are missing many qualities related to liveability and permeability, as also the critical role of the informal sector, which should not be ignored. Meanwhile, various urban conservation projects have been prepared to preserve these historical cores; unfortunately, the conservation strategies and policies' general attitude is still mainly concerned with the physical appearance. Accordingly, we must highlight modernity and tradition by reinterpreting the ME architectural and urban heritage sittings, elements, forms, and materials legacy according to the present-day digital age requirement.

This requires articulating the real solutions to the socio-economic, cultural, and recreational requirements and integrating them within a unified "Eco-neighbourhood heritage community concept". The concept is to be more human-centred. This concept model considers the environmental variables in designing housing, serves units, street passages and green areas and minimises energy consumption. This vision model is essential because it establishes contemporary social sustainability principles based on heritage collective memory and indigenous knowledge and builds a sustainable heritage environment.

Based on a balance of a tangible and intangible components model approach, an appropriate context of a living city of outstanding value can be administered. Strategies can be formulated to realise the nature of urban conservation conceptual practice, especially in the light of creative and intelligent living historic cores. Any heritage project should be seen and practised to showcase the groups' diverse heritage collective memory

and the value and significance that will be the basis for future communication efforts to present the historic core as an intelligent heritage core. The strategy to be developed from now onwards has to go beyond the urgent protection measures or design an emergency conservation action plan. Alternatively, even allow using the rich potential context of the tangible historic core heritage. It should use the potential of digital technology by awarding mainly the intangible values and respecting the suggested 4C's sequence approach as an integrated strategy with efficient administrative, financial and policy motivations for modern cultural eco-tourism management. This means re-assisting the strategic influence of many urban heritage projects in historic core integrity, identity and authenticity. To summarise, to achieve a better design for the built environment suitable for the maximum number of users, the following principles show the starting point for an urban social sustainability layout for the conservation and interpretation of the urban and architectural heritage:

- There is an urgent need for risk assessment plans containing risk identification, risk analysis, building risk scenarios, evaluating the magnitude of risks, and conditions of uncertainty and variability, prioritising risk mitigation options and "Fire Risk Preparedness Plan" in the historic cores for protecting and preserving the values and many ME historic cores.

- There is a crucial need to give new value to the neighbourhood as an "Eco-cultural neighbourhood". It should connect urban heritage, educational, religious, and social priorities that can lead to the establishment of similar feelings of pride of place context, collective memory and identity, and pride in creative culture to demonstrate the integration of the diversity of intangible context of all cultures.

- The historical neighbourhood image can offer a paradigm of the historic urban intangible structure and built fabric for conserving and interpreting the urban landscape projects in the ME historic cores. The traditional and historical ME cores should be seen as a tool to create "Neo-traditional communities" that can create new bright urban heritage trails while respecting the collective memory. Integrating the spatial and formal aspects in the visual performance of the built environment and symbolic meaning and communications is also necessary.

- A solid reconnection and integration between urban and architectural heritage and environmental systems are needed to maintain a delicate balance between them in any proposal to cover the following issues: legal framework, economic aspects as also income generation, conservation zones, urban and architectural design, restoration, information technology, and training and communications programs. In addition, this reconsideration opens doors to reviewing urban and architectural design.

- To develop guidelines framework for design policies, historic techniques and materials, and design decisions for contemporary and "Eco and bioclimatic architecture" concerning the potential of vernacular innovation paradigms in modern architecture. For example, develop the windcatcher's traditional cooling system to provide adequate natural ventilation and improve the indoor air quality of closed areas utilising renewable energy of wind in indoor multifunctional public spaces.

- A participatory approach, public awareness, and involvement must be integral in any conservation and interpretation process. For example, the public sector is to engage the private sector in forming Public-Private Partnerships (PPP) to promote a sense of "Eco- cultural neighbourhood", revitalise local retailers offering local goods, and share responsibility for shared spaces in a resilience concept and approach.

- Finally, to propose extensive promotion of new tools for the traditional materials and techniques to social structures of the built streets, houses, neighbourhoods/quarters, and districts. Combining traditional knowledge with advanced technology can create a new way of designing sustainable edifices integrated with traditional solutions suited to the future.

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