Cities' Identity through Architecture and Arts

Editors

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CITIES' IDENTITY THROUGH ARCHITECTURE AND ARTS


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Preface

Intended to be a guide for academics, scholars, and interested leaders, this book was designed to critically assess issues related to architectural identity, the city as a scene, the city as an organism, the city as a subject, and the planning or rather approaching of one.

A pressing issue for many researchers in the field, the book discusses the negative repercussions resulting from globalization. Studies have indicated that globalization, despite all the positive effects, has resulted in a loss of identity within a city. As a city develops over time, its identity is evolving as well and may even be lost due to rapid and constant changes it is subjected to. Discussed as well are examples and tendencies in dealing with urban identities as well as the transformation of cities and urban cultures mentioned in terms of form, identity, and art.

This book is a combination of innovative research submitted to a conference on Cities' Identity Through Architecture and Arts (CITAA) whereas scholars from all over the world gather in one venue to discuss cultural, historical, and economic issues of the city. Thus, the book offers a collective and global solution that is applicable on a universal level.

The research presented in this book was conducted by authors, or rather participants of the conference from, three different continents of the world and organized by IEREK. It was a distinct opportunity for them to share their thoughts with leading scholars and professionals in the field of Architecture, Arts, and Planning.

The research and materials in this book are directed at those who are actively engaged in the decision-making processes and to a heterogeneous audience who has an interest to critically examine all the new literature available in the field.

A special word of thanks should be made to the editors of this book and to all the authors and co-authors of the chapters who collectively provided the academic community with unique and increasingly valuable literature.


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IEREK would like to express its appreciation to all the members of the staff, scientific committee, chairpersons, and editors for contributing to the tremendous growth of this institution and for making the Cities' Identity Through Architecture and Arts (CITAA) conference what it is today. IEREK would also like to thank conference chairpersons, Professor Safia El-Kabany, who is the core reason as to why this conference was transformed from a mere vision into an on ground success. This institution is greatly indebted to the conference guest editors: your efforts and continuous support is what led to our success.

IEREK takes distinct pride in being an institution that amasses a highly qualified and competent team who restlessly worked for months to make this conference what it is today. With regards to the success of this conference, any step forward towards the ultimate goal of creating a well-rounded society was made possible by the highly reputable scientific committee that worked competently to prepare for and revise research papers. It would also like to thank all the members of the Scientific Committee who made it their duty to help this institution spread knowledge to the masses.


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Architectural identity and globalization

Architecture


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A great Chinese 'rural' metropolis—the unity and contradictions in Beijing's urban identity

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ABSTRACT: A historic city, with its complex webs of relations and stories past, is often a bafflingly complicated system, and as such any attempt to summarise its identity becomes questionable. However, such efforts offer us an opportunity to better understand the role cities play in shaping our lives through their urban landscapes.

The author has been working on the practical solutions for Beijing's urban conservation and regeneration. This paper attempts to step back and look at the city in its historical and spatial totality in order to expand our vision of the possibilities for the conservation and rehabilitation of Beijing's unique architectural heritage. By looking at the city as a complex, contradictory organism, this study seeks to redefine our general approach to urban conservation and development.

> 'How noble this city must be! For we have spent four hundred years trying to finish it off, and we still have not succeeded.'
>
> – Doctor Juvenal Urbino, *Love in the Time of Cholera*

1 INTRODUCTION

The old city of Beijing has experienced greater changes in the past seven decades of rapid development than in all its earlier existence of the previous eight centuries. As modern China embraced new ideologies from the 1950s onward, the capital faced the radical demolition of historic landmarks such as old city walls, gates, and decorated archways. Many noble mansions and large courtyard houses were filled with new populations of working-class owners, without much effort to adapt their design. With the real estate boom and large-scale urban construction projects of the past 30 years, have come even further erasures of traditional houses in favour of wider roads, high-rise buildings and commercial developments. An awareness and practical knowledge of cultural heritage protection and urban conservation have grown rapidly in China, but never fast enough to catch up with the speed of the changes made in the name of 'modernisation'. Preservation of the historic city of Beijing has evolved via a similar path to that followed by the international community, moving from the protection of individual monuments to larger historic districts, and now to historic urban landscapes. Regrettably, however, the damage of previous actions has left irreversible marks on the city.

As the Beijing of today becomes more and more fragmented and its distinctive history less and less visible, is it still possible to reconnect with that urban past and its creative spirit? In this paper, I attempt to delve into the genes that make the capital unique to provide one possible answer.

2 RETHINKING OLD BEIJING'S IDENTITY

2.1 *Beijing was built in a day*

The old saying goes that 'Rome was not built in a day'. We take it almost as an inherent truth that great cities do not spring into being fully formed, but are developed incrementally over time. Beijing, however, presents a different story.

Beijing differs from other ancient capital cities around the world, such as Athens, Rome, or Istanbul, whose premodern forms primarily grew out of the natural evolution of urban space according to changes in population, economic wealth and political power. As the capital of a vast empire, historic Beijing was unique because it came into being as a 'planned entity' (Liang, 1986).

Born to be old: An 800-year-old city carrying a 3,000-year-old tradition

The actual construction that made Beijing the capital city it is today took around 20 years in the 13th Century, but its planning strictly adhered to principles laid out 3,000 years ago in the ancient Chinese Confucianism classic the *Zhou Li*, or the *Rites of Zhou*.

> 'Here, where Heaven and Earth are in perfect accord,
> where the four seasons come together,
> where the winds and the rains gather,
> where the forces of yin and yang are harmonised,
> One builds a royal capital.'

Though compiled later in the Spring and Autumn period, which began in the 7th century BC, the Chapter text 'Record of Construction' of the *Zhou Li* already set forth the conditions for the site selection of a capital city as early as the 11th century BC. The above poetic description was no random vision, but an expression of a rich geomantic system that explained ideals of place. Mountains and rivers, sunlight and wind—all elements of the natural environment were carefully observed and recorded in order to calculate the exact place where a city representing the heart of the empire would be able to prosper.

The book also specified the proper layout of a city, with guidelines illustrating in great detail what a good capital city should look like. It stated that such a capital should be laid out in a square so as to align with the four directions, north, south, east and west. Three city gates should be built on each side and interconnected via gridded streets. According to the *Zhou Li*, the inner organisation of a city should reflect the order of the universe itself, with every social function having its proper place. The court was to be placed in the centre, facing south, with the market behind, and an altar for paying respects to ancestors on the left and another for worshipping the gods on the right. It sets forth plans for the layout of main streets, with access designed hierarchically to lead from the most public to the most private spaces.

The actual design and construction of Beijing took place during the Yuan dynasty (1271–1368). It was built to be a strategic and ideal city, in the shape of a square, perfectly situated on the geomantic point representing the central place of power on earth. The guidelines set forth in the *Zhou Li*'s Records of Construction were materialised in almost every scale and dimension. Everything was planned, from the capital's placement within the empire's geographic environment—with attention paid to the major mountains and rivers to locate the city's most symbolically central point—to the width of residential lanes, so as to guarantee the proper social hierarchies, good circulation of traffic, and sufficient sunlight and ventilation.

In the Ming dynasty, Beijing was enlarged from its original square shape to a 凸 shape by including the Temple of Heaven to the south, and the urban waterway system was reorganised. The Qing dynasty inherited the city of the Ming, adding its own aesthetic preferences and decorative details. In terms of architecture and urban design, the same ancient Chinese principles prevailed.

Typically, other older Chinese capitals were destroyed when a new dynasty came to power. But Beijing, an 'unparalleled masterpiece of urban design' (Wheatley, 1971), stood solid and intact through 800 years. By crystallising Chinese philosophy and cosmology in its physical

manifestation, it is the ultimate example of ancient Chinese urban planning, and perhaps the largest single work of art in the world.

If we use the modern language of urban design to summarise, some of the main features of the historic city of Beijing would be as follows:

1. Site selection according to geomantic omens, a perfect location with all natural environmental elements well-considered, balancing the forces of Yin and Yang
2. The north-south central axis of 7.8 kilometres, the spine of the city, which dictates the capital's spatial order and symmetry, and gives it a clear orientation
3. The city walls of the Yuan and Ming dynasties, the big square in which every house will identify itself with the grid of the city and the earthly world
4. The consideration of natural landscape elements in its design, which serves practical functions such as providing water for urban usage, but also shows how Daoist aesthetics balanced and completed the Confucian order of Beijing's urban planning, softening severe, square rigidity with natural shapes and curving lines
5. The chessboard street patterns, with fishbone lanes dividing and connecting neighbourhoods used for commerce and social congregation, just as much as for transportation
6. An absolutely horizontal composition, with only one type of building (courtyard house) of one-storey high, forming a uniquely open and graceful skyline
7. Unity and variety in form, colour and decorative details, with a hierarchy achieved through a play of symbols, where their accurate organisation creates a kind of visual symphony in space.

All of the features listed above were part of a holistic urban planning vision that reflected the integral, complete philosophy of what ancient Chinese people thought made up the ideal human habitat. Theirs was a philosophy of order and harmony. As an entirely designed space, the old city of Beijing was the best illustration of this ancient philosophy.

It is common in urbanism today to put more emphasis on the idea of an urban fabric before thinking about individual architectural elements. But from the very beginning, those planning the old city of Beijing were already thinking about the capital in such a way, coming up with an open yet well-structured plan which succeeded in flexibly adapting and accommodating actual on-the-ground realities as time went on and dynasties alternated. Beijing has for centuries functioned as what Richard Sennett terms an 'open city' (Sennett, 2006).

2.2 *A city of nomads too*

Situated at a crossroads of the diverse nationalities and cultures of the north China plain, Beijing has been home to rulers from a wide variety of backgrounds, hailing from very different agricultural, herding and hunting cultures. The urban planning and design principles of the old city derive from a purely Han Chinese philosophy developed by the settled agricultural civilisation of China's central plain, but two very different nomadic peoples—the Mongols of the Yuan and the Manchu of the Qing—also made distinctive contributions in shaping its identity.

When the Mongolian emperor Kublai Khan decided to build the great capital Dadu in the Yuan dynasty according to Han Chinese principles, he had not long been separated from his previous nomadic life with horses on the grasslands. The nomadic Mongols, herders from China's north, were used to moving around in search of places 'where there is abundant water and grass'." It is little wonder that when Kublai Khan overthrew the Jin dynasty, he first chose to settle not in their old palace, but rather in an imperial garden in a suburb to the north-east, where its huge natural lake must have better recalled the nature he was accustomed to.

Ancient Chinese capitals would classically have had their palace and city centre placed on dry, flat land with water to the south, flanked by mountains. But the Mongolian emperor made an exception. He made the wide, open expanse of the natural lake the very centre of his city, and built the palace complex around it, enveloped by the rest of the city. This bold choice gave Beijing an extraordinary city centre—one in which classical urban planning was infused with the free spirit and imagination of nomadic traditions. Emotionally still attached to the green landscape of the steppes, Kublai Khan ordered grass and vegetation be brought

from the wild north into what today is the Beihai Imperial Park, to remind his descendants of their origins. This man-made hill in the middle of the imperial garden amazed Marco Polo, who declared it a 'green mountain', stating admiringly that here gathered 'the most beautiful trees and plants of the world'. Nomadic culture thus brought a touch of wilderness to the highly symbolic social and spatial order of Han Chinese city planning, making the old city of Beijing a green place with what is probably the earliest 'central park' in the world.

The Manchu emperors, too, attached great importance to their nomadic origins, while still appreciating the culture of the Han. Up until the reign of Emperor Qianlong (1711–1799), a plethora of imperial gardens, summer palaces and mountain resorts were built, turning Beijing into a true garden city.

2.3 *A metropolis of diverse cultures*

Beijing was the capital of one of the world's most powerful empires in the Yuan dynasty, and enjoyed long periods of extreme economic prosperity during the Ming and Qing dynasties. As such, it was a place where different cultures and ideas met and merged. Several religions such as Buddhism, Christianity, Islamism, Judaism, and shamanism all left numerous historic monuments and sites in Beijing, each with their own distinct artistic styles and architectural elements. The white Buddhist pagoda, built by the Yuan court architect Araniko (1244–1306) from Nepal, remains a distinctive landmark of the city, as does the Tibetan Buddhist white pagoda built during the later Qing dynasty on the hill of the Beihai Imperial Park, which remains to this day one of the most notable and beautiful elements of the historic city's skyline, perched high on the park's man-made hill.

2.4 *A city that stays rural*

The two most important components of the old city of Beijing are the *siheyuans* (traditional courtyard houses) and the *hutongs* (alleys between the lanes of courtyard houses). They are traditional architectural forms that originated 3,000 years ago, and are common throughout China, where they are still very much present in many villages and small towns today.

A siheyuan has the basic form of a courtyard surrounded by timber houses on four sides, typically with only one gate or door opening on the south-east corner. Elaborations can be made to this basic form, for instance via the addition of courtyards. Noble mansions and other such important buildings were often large courtyard complexes with their own gardens. With the door closed, people living in a siheyuan are enveloped in a peaceful space of their own, even in the middle of a buzzing market. This design allows one to be both integrated in and detached from city life.

In Mandarin Chinese, the words for home are 家园 or 家庭, with the first character literally denoting the house where one lives, and the second meaning garden or yard. This suggests that the ideal living space is one consisting of a built structure, plus nature—specifically, to have nature inside your home. The Beijing-style courtyard house realises this Chinese ideal of 'home'. This unusually pastoral image of the ideal home makes Beijing a very special metropolis—one that has retained dreams of an agricultural past in the heart of the city, and in each courtyard house.

The old city of Beijing is unique for being of only one storey high. It is a city of courtyard houses, with the Forbidden City as the biggest courtyard of all at its centre. Ancient Chinese urban planners chose this model to impose a sense of order and grandness in the capital, organising space to evoke a sense of hierarchy as residents move through it. Courtyard houses not only sheltered men, but also gods. Large courtyard houses could also serve as temples and public buildings, allowing them to be used by people of varied social statuses and income levels.

The old city of Beijing is thus a collection of modular, inward-looking spaces. Each courtyard house unit is independent and self-sufficient, and represents a rich tradition of philosophical thought. In a way, such homes are almost anti-urban, yet together they form a kind of alternative urban harmony, maintaining a touch of rural living without compromising the conveniences of urban life.

Hutongs perform a similar function. The name *hutong* is said to be derived from the Mongolian word for a well (Wu, 1999), likely because of the old tradition of planning blocks and houses around the city's numerous wells. Ever since the city began construction in the Yuan dynasty, there were clear and detailed regulations on the size and standards of streets, with hutongs as the smallest unit of the urban grid. If the pattern of growth in European cities centred around *squares* (*Piazzas*/*agora*), in China cities grew more out of a network-based pattern of planning. Without social gathering spaces such as the *agora* in the west, streets and alleys served as more ambiguous and flexible nodes for congregation. Streets and hutongs make up this network.

At a neighbourhood level, hutongs were not simply there for transportation. Though not spacious, they became a key public space for life, essentially fulfilling people's need for a 'public outdoor room' which is communal yet not as formal as a typical public space, put forward by architect Alexander Christopher (*Christopher*, *1977*, *69*), as a pleasant social space that modern cities are lack of. However, in Beijing, hutongs naturally blurred the boundaries between public and private in a pleasant way. They are places where the elderly can sit and play chess while children can roam in a relatively safe environment, at once an informal nursing home for seniors and an open 'kindergarten'.

Hutong residents often say that 'far-off relatives are not as good as close neighbours' – a phrase that used to apply to rural societies. Hutongs are just wide enough for small services such as open-air barbershops or fresh food markets, with farmers or vendors lined up along one side of the hutong to sell vegetables directly from their carts three times a day, as regularly as in a village.

This unique vernacular architecture—the courtyard house, and the multifunctional historic hutong space—added a relaxed, pleasant touch to the bustling metropolitan atmosphere of a city directly under strict imperial rule, keeping the capital in close touch with nature and folk culture.

These are just a few of the characteristics that shape old Beijing's urban identity. Contradictions abound in the old capital. Confucian Han Chinese cultural roots run deep throughout its entire urban history, yet Beijing has also always been a place where other cultures merge and thrive. Despite being the country's most developed urban centre for 800 years, Beijing has nevertheless retained characteristics more often found in rural areas. Harmonious yet not monotonous, Beijing, like many other historic cities, is a place whose streets and structures are rich with meaning.

3 CONCLUSION

3.1 *A different path for a different city?*

When it comes to urban development and renewal, or historic preservation and regeneration (or the lack thereof), modern Beijing has primarily followed the trends and examples set by Western cities. In a somewhat regrettable manner, it is more prone to following the trends of North America than of Europe. But given the particularities of Beijing expressed in the second part of this paper, one should question whether it is a good idea to apply conservation tactics that have worked for historic Western cities to China's capital.

There are certainly overlapping problems and challenges when it comes to conserving and developing Beijing versus other historic cities, and technical solutions used elsewhere may very well prove effective in China. Nonetheless, in this paper I have tried to stress some of the unique qualities of historic Beijing which might inspire a fundamentally different approach to looking at the same issues.

In a Chinese cultural context, it is worth rethinking from scratch all the seemingly unquestionable dichotomies of 'rural vs urban' or 'unity vs diversity', and even the concept of 'city' itself. What makes old Beijing special is not any single monument, or building, or even district, but rather the ways order and variations in its urban planning come together to create a coherent and harmonious whole. The city is thus a single, indivisible entity, best considered

holistically. To apply generally accepted modern urban planning concepts such as the use of zoning or 'protected areas' to such a place may itself be questionable.

Beijing's unique melding of rural with urban spaces may also be an inspiration for urbanisation in a new Internet era where we rely less and less on fixed physical spaces and conventional grand scale urban infrastructures. Do we have to continue with the same urbanisation processes that have come before in our future cities, now that 'rural' areas are less disadvantaged for residents who still seek modern services? Perhaps the old Beijing mind set, in which the rural coexists with the urban in harmony, could suggest an interesting alternative path forward. Could 'rural' be our new 'urban'?

3.2 *Reconnect through creation?*

An old Chinese saying states: 'Once you have grasped the essence, forget about the form'. It was typically used to describe a certain stage in the practice of calligraphy, a highly abstract aesthetic pursuit that looks beyond form to try and capture the essence of a subject.

As urban conservationists, we try to understand and analyse urban space and delve into how cities were built up and constructed—essentially, we investigate the static results of a rich, dynamic past.

When it is no longer possible to recover or reconstruct the physical form of architectural heritage, perhaps it would be possible to try and capture the fluid spirit of Beijing, a place loyal to its origin yet open and accommodating in its evolution. It is the special disposition of the city, rich in time and meaning, that provides for us today a solid yet mobile ground to walk ahead and continue to live creatively. It is this living spirit that we might find most valuable to the people in the present and of the time to come, because we could only imagine to live wholly, with the ability to connect with it. When reconstructing the physical form of architectural heritage is not possible, Beijing might suggest that we should rather try to grasp the flowing of the spirit, and live as one with it, and without the pressure of being overwhelmed. One way to achieve this end for me is through contemporary art; it might not succeed automatically in rebuilding such connection, but it will be an authentic attempt and effort in getting closer to it; and in these pieces of genuine creative processes of the present, we might find ourselves meeting halfway with the spirit of integrity, a past we have never lost, and a future of becoming from the very beginning.

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Architectural ornaments in the twenty-first century: An analytical study

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ABSTRACT: More than 100 years ago, the use of ornaments in architecture was described as a crime. In recent years, ornaments have become ecological devices that share to support the entire performance of the buildings amongst their built context. Between the two judgements of ornaments as being a crime or a function, and between the two states of rejection or reinvention, this paper aims to investigate the validity of the recent claim and trace the reasons for this shift, through an analytical study of a number of contemporary ornamental buildings in which the use of the ornament's characteristic is emerging. The paper's methodology consists of two sections: the first deals with a literature review of the discussions and different judgements of ornamentation in architecture from antiquity to contemporary, and the second deals with an analysis of 35 contemporary ornamented buildings in the last decade (of the years 2006 to 2016). The study concludes that the ornament is a translator and a bridge that connects the building to the environment and connects people with history and culture; thus, ornamentation is an instrument for the local identity of the building, the environment, and the entire urban context within the frame of sustainability.

Keywords: ornaments; ornamentation; patterns; contemporary architecture; twenty-first century

1 INTRODUCTION

The famous manifesto of Adolf Loos in which he titled the ornament as being a crime, concurrent with the beginning of the twentieth century, led to the disappearance of the ornaments for almost a century (Mitrache, 2012). Since the beginning of the twenty-first century, it could be said that ornamentation strongly announces its return to the architectural scene (Mitrache, 2012; Picon, 2014). Ornaments have attracted attention in the last decade, almost since 2005, that is clearly demonstrated in art exhibitions, journals, and books (Balik & Allmer, 2016). The architectural ornaments study is an uninterrupted source of architectural research, and the discussions about nature, use, social and cultural determinants of decoration are still ongoing (Mitrache, 2012). Over the history of architecture, the issue of ornaments' revival had been raised three times, and each time there was a different reason for the resurfacing. The first time was in the early twentieth century, where the transition was from handicraft to industrialisation and mass production; the second time was in the second half of the twentieth century with the transition to the post-structural processes of postmodernism, and the third time was at the transition from the mechanical to the digital age (Gleiter, 2009).

Before initiating the theoretical review, let us first cast our eyes on ornaments over the architectural history and hold a narrative of ornamentation throughout the history of architecture. Figure 1 and Table 1 together draw the timeline of the evolution of ornaments chronologically.

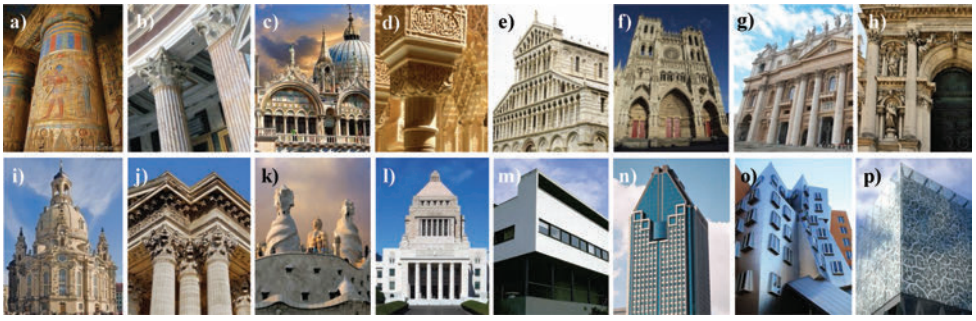


Figure 1. The evolution of architectural ornaments from antiquity to the contemporary.

Table 1. Ornaments—A walk through time.

No.	Architectural age	Time period(*)	The most featured ornamentation	Epitome (Figure 1)
a)	Ancient Egypt	3,050 BC to 900 BC	Murals, painted carvings, symbolic motifs, and botanical motifs, for decorative purposes as well as to record historic events inspired from nature	Temple of Medinet Habu, Luxor, Egypt
b)	Roman	850 BC to 476 AD	Geometric and plant-based ornaments	Pantheon, Rome, Italy
c)	Byzantine	527 to 565 AD	Geometric rich use of mosaics and polychrome marble veneers	St Mark's Basilica, Italy
d)	Islamic	622 to 1600 AD	Geometric, calligraphic, and vegetal decorations	Alhambra Palace, Spain
e)	Romanesque	800 to 1200 AD	Zigzag, spiral and animal head motifs, and painted murals	Pisa Cathedral, Italy
f)	Gothic	1100 to 1450 AD	Huge windows with ornamental stone openwork filled with stained glass	Amiens Cathedral of Notre Dame
g)	Renaissance	1400 to 1600 AD	Cylindrical columns, Corinthian capitals, entablatures, and semi-circular arches	St Peter's Basilica, Italy
h)	Baroque	1600 to 1830 AD	A lavishly ornate decoration, called Churrigueresque	Santa Maria della Salute, Italy
i)	Rococo	1650 to 1790 AD	Ornate sculptured cartouches, and natural organic objects that have been described as being an organised chaos and playfulness	Dresden Frauenkirche, Germany
j)	Neoclassicism	1730 to 1925 AD	Antiquity's decorations revival	Hungarian National Museum
k)	Art Nouveau	1890 to 1914 AD	Leaves, tendril motifs, flowers, intertwined organic forms, lavish birds, insects, and women statues (metaphorical-based)	Casa Milà
l)	Art Deco	1925 to 1937 AD	Motifs were inspired by the architecture of ancient Egypt	National Diet Building, Tokyo
m)	Modernism	1920 to 1960 AD	Completely devoid of applied ornamentation	Weissenhof Museum
n)	Postmodernism	1970 to 1980 AD	Ornaments have returned, replacing the unornamented modern styles	1000 de la Gauchetière, Montreal
o)	Deconstructivism	1980s onwards	The geometry of collage	Ray and Maria Stata Center 2004
p)	Contemporary		2000 onwards	John Lewis Department Store

Sources: (Wikipedia3, Craven, 2016; Wikipedia1, Majewski, 2012; Wikipedia2, Kharazmi & Sarhangi, 2016; Khairi, 2011; ArtEncyclopedia, Bothireddy, 2007; SaylorAcademy, 2011; Moussavi & Kubo, 2006).
(*) Time periods are approximate, since they vary slightly from one source to another.

2 METHODOLOGY

This paper aims to investigate the judgements of the ornaments, whether traditional or contemporary, in terms of rejection or renovation, and to explore reasons for their revival through an analytical study of a number of contemporary ornate buildings. The paper methodology consists of two parts. The first part deals with a literature review of discussions and various judgements of ornamentation in architecture from ancient and contemporary times. The second part deals with an analysis of 35 ornate contemporary buildings (particularly from the years 2006 to 2016) to determine the contemporary ornament's identity, its role in the twenty-first century, and the ornaments' contribution towards lending the cities identities.

3 A LITERATURE REVIEW

3.1 *Exposition of ornament*

Herein, various definitions of ornament will be reviewed. Several scholars agree that the traditional definition of the term 'ornament' refers to the decoration utilised to embellish objects of the buildings (Scranton, 1922; Paner, 2013; Mitrache, 2012). As the contemporary ornament has no particular definition yet, due to its multifaceted nature (Balik & Allmer, 2016; Bothireddy, 2007), the section below will try to raise a complete picture of the concept of the contemporary ornament.

Ornamentation comes from the innate human need for visual pleasure (Riisberg & Munch, 2015). It is a source of aesthetic pleasures rooted in our small and big world. It is observed in the quilt surrounding our bodies and the carpet under our feet (Massey, 2013). It imparts joy to life and adds charm and fun to the buildings (McNicholas, 2006). As ornamentation is the process of adding items to a work of art in order to enhance the aesthetic characteristics and the depth and the clarity of its symbolic implications, it is used by every culture as an integral part of artwork (Mitrache, 2012). However, it should be noted that the public artwork inherently is not just concerned with aesthetic values; it extends to involve social, cultural and political aspects (Sandle, 2000), as will be discussed later.

Ornaments link people to things and make their relationship more intimate with their surroundings, compared to the blank surfaces (McNicholas, 2006). Ornaments are the main sources of human visual cultures; hence, they are related to the individual identity, and accordingly, the community's identity (McNicholas, 2006). They indicate the social status by marking affiliations and distinctions. They distinguish the society classes, as well as the multi-religious and sectarian denominations (Massey, 2013).

Ornamentation indicates the historical and cultural values of the society in a certain period of time. It is a way of architectural communication through an organised narrative process in order to provide the identity of the building and the community as a whole (Bothireddy, 2007). In the same way, Riisberg and Munch define ornaments as being communication devices. They state that ornaments produce resonance (Riisberg & Munch, 2015).

Siwalatri et al. (2012) stated that ornaments hold a meaning that is conveyed to the observer either directly or in a metaphorical way. The purpose here could have been educational for the community. It educates on the history of humans and links them to the past (Siwalatri et al., 2012; McNicholas, 2006). In the same way, Bothireddy (2007) has defined ornamentation as being the action of remembering, and it is related to history as remembering begins when history ends (Bothireddy, 2007).

Ornamentation is a way to express the meaning within all its types: the symbolic, historical, aesthetic, and metaphorical. Most architects agree on one issue: that the ornamentation is necessary for architectural expression, and is provided to maintain at least one of its fundamental functional or symbolic roles (Siwalatri et al., 2012; Balik & Allmer, 2016; Mitrache, 2012), and according to Balik and Allmer (2016) the symbolic ornament expresses the building functionally and aesthetically together. The symbolic aspect of ornaments makes the building an icon and a landmark (Balik & Allmer, 2016), and according to Robert Levit

(2008), symbolic ornamentations require a certain level of cultural familiarity or erudition to ensure fair access to the code. According to Levit (2008), that is Moussavi's argument too. The consent and recognition of the public are significant to avoid alienating forms (Levit, 2008). To underline the argument of articulation, one should review Lilac and Diez's argument. They claim that the ornament is not a truth: it is never a real object; it is an articulation derived from nature. The distribution of real things for adorning purposes is the role of *décor*. That is the difference between ornamentation and decoration. It prefers simulation, deception, and illusion in an enjoyable and pleasing manner to be accepted by the eye and the mind (Lilic & Diez, 2009).

When we talk about ornament, there is no room for the omission of the political aspect. As politics relate to the management of wealth, and the ornament was an economic problem, there is a relationship between politics and ornamentation. The argument is to prohibit unnecessary expenses that consequently could adversely affect the state. However, Picon pointed out that the ornament can be an investment (Picon, 2014). Mitrache has indicated economic benefits from the use of ornaments, reasoning her claim on the flourishing of the construction market and mass production those are dependent on the production of full façade systems integrated with ornamental effects (Mitrache, 2012).

Through the above contemporary reviews of the different concepts of ornaments in architecture, it is found that the contemporary ornament is associated with several important matters: aesthetics, culture, religion, history, society, and politics.

3.2 *Incarnation of ornament*

3.2.1 *Materialisation*

The ornament is a detail that is used to attract the attention of the observer, whether it is a form, colour or texture (McGraw-Hill, 2003). In architecture, every detail represented in the shape, texture, or colour is employed to attract the observer, and since the ornaments are related to detailing, they are an integral part of architecture (Bothireddy, 2007).

3.2.2 *Motifs of ornamentation*

Various motifs used in the ornamentation are geometric, botanical, and animal motifs. Geometric motifs are made up of abstract shapes, which include all geometric shapes from the point to the polygon. Botanical motifs are made up of leaves, flowers, and fruit. Examples of these are lotus and papyrus, palm leaves and acanthus. Animal motifs consist of real or imaginary animals as well as human figures. These motifs could be put together in combinations such as the integration between geometric and animal motifs, or geometric and floral, such as arabesques (TGSE, n.d.).

3.2.3 *Types of ornamentation*

Ornaments in architecture are divided into integral and applied ornaments. The integral ornament is an integral part of the framework of the building, whether it is façades, ceilings, roofs, or the entire building. According to Riisberg and Munch (2015), the most appropriate ornament is that stemming from the building's structure and materials, and which is not masking the real building. The contemporary ornaments disclose the architecture of the building with various materials, innovative technologies, and structure (Riisberg & Munch, 2015). If a contemporary building lacks unifying space and surface, the ornaments become like wallpaper, and structural ornaments free ornaments from being an applied decoration (Balik & Allmer, 2016). The applied ornament is an architectural detail, on a small scale compared to the scale of the building to which they are attached; they often include carvings, sculptures, paintings, mosaics and inlay (Encyclopedia, n.d.).

3.3 *A literature of the traditional ornaments*

Before reviewing judgements about traditional ornamentation, it is worthwhile to show the opposite trends and arguments. The judgements of modernists against ornamentation are

well known to those interested in this field. The modernists believed that ornamentation falsifies the pureness of the form (Siwalatri et al., 2012). They conceived the ornament as being 'unsuitable' in terms of function, materiality, and construction (Riisberg & Munch, 2015). In his manifesto, *Ornament and Crime* (1908), Adolf Loos argued that ornaments consume manpower and health (Gleiniger & Vrachliotis, 2009). He bragged that he turned the meaning of ornament from the synonym of beauty to be that of inferior and superfluity (Massey, 2013).

Interestingly, although modernists decried ornaments, they had the means to express the visual pleasure somehow. Modernists advocated standardised solutions, naked structures, white walls, and geometric forms. They adopted the visual pleasure of the veining in wood and stone (see Figure 2(a)), sparkling chrome, the colour and reflectivity of glass, and the flatness and whiteness of paint (Massey, 2013). Moreover, according to Bothireddy, works of modernists were not in one way or another devoid of ornamentation. It has been represented at the urban level in the geometric pattern on Le Corbusier's *City for Three Million Plan*, where ornamentation was derived from manipulating the structure and construction processes. That was named 'ornament structuralized', a term coined by Thomas Beeby on the basis of the relationship between ornament and structure. Another structural-related ornament in modernism is in Mies van der Rohe's Lakeshore Drive Apartments. The façade's I columns were used to generate ornamental effect. This type of structural-related ornament is called 'structure ornamentalized'. In Frank Lloyd Wright's Unity Temple (see Figures 2(b), 2(c)), the structure of the ornamentation design was derived from the structural module of the design. That is so named 'ornament constructed'. Ennis-Brown's house (1924) is as good an example of this type of ornamentation (see Figure 2(d)). Bothireddy stated that Loos aimed not to eliminate ornaments, but instead the so-called 'ornate structure'. The type of ornaments related to this category is applied ornaments or surfaced ornaments, which can be seen, for instance, in Art Nouveau (Bothireddy, 2007).

Besides the foregoing, it should be noted that, akin to Wright, who abstracted plant forms to geometric shapes, Claude Bragdon created a Projective Ornament system (1915) to generate decorative motifs and geometric patterns to be a universal language to replace the historical patterns. These modernists reinvented the ornament rather than cancelling or eliminating it. From the late 1960s to the 1980s, postmodernists reshaped ornaments by abstraction and popular art. They developed iconographic motifs in which ornaments were evoked from antique to the 1920s modernism. Critics decried postmodernism for its nostalgia and commercial trend (Massey, 2013).

In classical architecture, ornaments were either separate small scale architectural forms derived from the main form of the building, or they represented stemming parts of the structure, such as Ionic, Doric, and Corinthian columns (Bothireddy, 2007). The purpose of ornaments from the Renaissance to the beginning of the twentieth century, according to Picon (2014), is not merely to please the vision. It is further to convey information about the nature and the purpose of the building, the level of the owner, the nature of occupants, and the rank of the firm it hosted, as an expression of the social values. In other words, it acts a

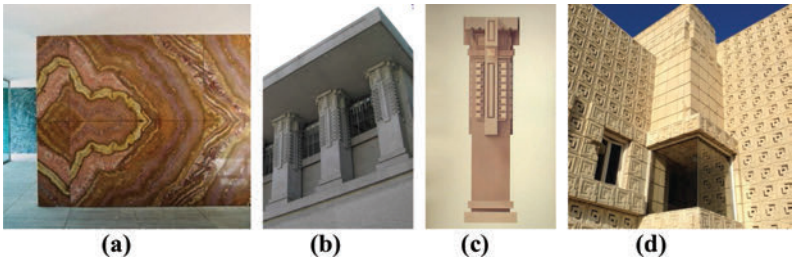


Figure 2. (a) The veining in the stone: the decorative instrument by the modernist, Mies van der Rohe, Barcelona Pavilion (1928); (b), (c) Frank Lloyd Wright's Unity Temple, USA (1908); (d) Wright's Ennis-Brown house (1924).

communicator (Picon, 2014). Along the same line, Siwalatri et al. stated that architecture in classical times managed to use ornaments more than at any other time, not only because the ornament is an aesthetic element, but rather for its symbolic role which holds an explanation, and for its role as a means of communication between the building and the users (Siwalatri et al., 2012).

Massey (2013) stated that ornaments in antique architecture conveyed the building's purpose, status, and character from the ornamentation's order, the proportion, the details of mouldings, and motif configurations that stem from mythology, history, and the military. Massey believes that, from the Renaissance to the nineteenth century, classicism unfolded clearly through ornaments. This classical order contributed to modularity, which consequently aided in subdividing surfaces and gaining the sense of proportions. Massey found that ornaments also reflected the economic status at this time; furthermore, the style of ornaments also reflected the imperialism (Massey, 2013). Industrialisation also affected the buildings' decorations in terms of production speed and scale, and the development of new materials such as stainless steel (Massey, 2013). Chrysler Building (1928) here testifies to this argument.

3.4 *A literature of the contemporary ornaments*

Recent publications have shown a clear shift in attitudes towards the ornaments in architecture, where they are now encouraged and supported. According to Fairhurst, it is now functional (Fairhurst, 2007). According to Opincariu (2011), ornaments in contemporary architecture go beyond decorating, to be further tools for expression and cultural reflectance. Ornaments demonstrate themselves as communication tools while acting as façades layers. She stated that the technology and digital revolution contribute to linking structure with the aesthetic values. She defines modern ornaments as the mirrors that reflect the new materiality and the technical logic (Opincariu, 2011).

Picon (2014) asserted that the subjectivity of the present-day ornament is not obvious. This ornament's subjectivity just has an abstract character that hardly takes us to a specific visage. On the other hand, it greatly articulates materiality as a witness to the development of the material and computer sciences. He pointed out that this technological development draws attention to new designs and manufacturing. From his viewpoint, materiality is supposed to be a tool, not an objective. Contrary to materiality, immateriality gives further contact with the physical world. So, materiality is closely constrained to specific physical and social conditions (Picon, 2014).

According to Balik and Allmer (2016), Jörg H. Gleiter argued that what causes ornaments to ignite again is the digital technology more than styles (Balik & Allmer, 2016). The return of ornaments in contemporary architecture is strongly attributed to the advanced technology (Mitrache, 2012; Pantazi, 2008; Balik & Allmer, 2016). According to Massey, while Le Corbusier rejected decorations in architecture as a hinder to societal progress, decoration has become today a witness to the technological progress (Massey, 2013).

The advanced technology-attributed programs, such as Computer-Aided Design (CAD), and Computer-Aided Manufacturing (CAM), have promoted architects to process complicated motifs through introducing patterns, complicated textures, and colours into their designs. Parametric design and its tools involve computer numerical control (CNC) milling, laser-cutting, robotic layering, 3D printing and water jets. Structural innovative approaches along with the production techniques resulted in the employment of ornaments through repetition, pattern, light, and numerical similarity to achieve structural and construction performance and environmental capabilities in tandem with aesthetic values (Massey, 2013; Balik & Allmer, 2016; Picon, 2014; Moussavi & Kubo, 2006).

In parametric architecture, patterns are considered the strongest architectural expression tools that produce a high-performance dynamic ornamentation (Schumacher, 2009). According to Robert Levit (2008), pattern is one of the chief incarnations of ornaments, including patterned-colours, materials, structures, and assemblies. He added information also to the pattern makers (Levit, 2008). Amongst this technological stream, digital ornamental façades combine between materiality and immateriality, and permanence and temporality. Within the

contemporary age of visual communication and the domination of images on architecture that attract public attention, the current culture is constituted. It could be said that the ornament in contemporary architecture contributes to image-making and trade marketing (Balik & Allmer, 2016).

Ironically, with the more state-of-the-art technology, there is a heavier return to classic ornaments. This can be found in the case of 3D-printed buildings technology, an example of which is the 3D-printed villa by WinSun, China (Kerns, 2016). The villa represents a strong return to the classics of architecture by the means of advanced technology.

4 THE ANALYTICAL STUDY

The second part of this paper deals with an analysis of 35 ornamented buildings. Since there is no specific definition of the ornate building, the buildings that have been selected are the product of the author's search over the year preceding the publication of this paper in the framework of the research topic.

Based on the foregoing literature review, and in order to draw the analysis structure, a map has been drawn to conceive the process of making the contemporary ornament (see Figure 3). Based on the literature, the physical aspect of ornamentation can be incarnated in one, or more of five visible aspects: structural, cladding, pattern, surface, and colour. These materiality features handle one of the three main motifs of ornament: geometric, floral, or faunal, or a combination of any two of them. The product, as an invisible aspect of materiality, could be served as a historical, functional, political, cultural, and/or aesthetic value.

In accordance with the foregoing review, the analysis structure will comprise of the building name, an illustration figure, the motifs of ornaments, the year of construction, architect/s, building type, morphology, materials, the origin of genesis and synthesis of ornaments, other aspects (access to daylight, ventilation, and other design statuses), and ultimately, the invisible aspect of materiality according to the designed map. Most of the information that was compiled about the buildings is based on the architectural pages on the Internet such as ArchDaily, Divisare, Archilovers, Arch20, Designboom, and ArchiTravel. The analysis is represented in the seven Tables that follow.

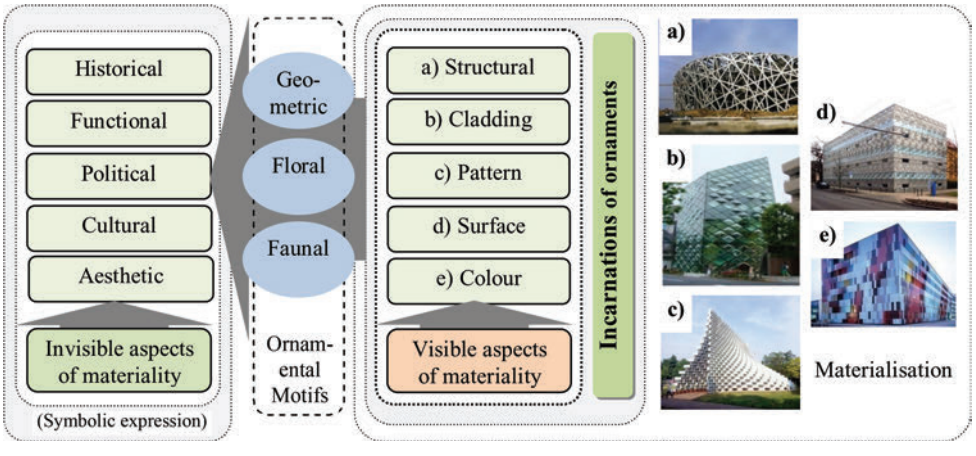


Figure 3. Ornamental incarnations in contemporary architecture.
Source: Author based on (Moussavi & Kubo, 2006; Riisberg & Munch, 2015). (a) Structure: Beijing National Stadium, Beijing, China, 2008 (Balik & Allmer, 2016); (b) Cladding: Prada Aoyama Store 2003; (c) Pattern: Serpentine pavilion 2016; (d) Surface: Eberswalde library 1999 (Moussavi & Kubo, 2006); (e) Colour: Pharmacological research laboratories, Germany, 2002 (Picon, 2014).

Table 2. A comparative analysis of ornamented buildings in contemporary architecture.

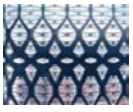
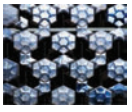
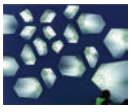
	(1)	(2)	(3)	(4)	(5)
Name	Dorobanti Tower Bucharest, Romania	ILUMA building, Singapore	Contemporary Art Centre, Cordoba, Spain	Polish Pavilion at Shanghai Expo 2010, China	ABC museum, Madrid, Spain
Illustration					
Motifs of ornament					
	Floral	Floral/ Geometric	Geometric	Floral/ Geometric	Geometric
Year	2013	2009	2013	2010	2010
Architect	Zaha Hadid	WOHA Architects	Nieto Sobejano, Realities: United	Polish studio WWAA	Aranguren & Gallegos
Building type	Residential	Entertainment and retail	Museum	Pavilion	Museum
Morphology	Meandering structural lattice, with chamfered diamond-like structure	The tessellated pattern crystal mesh media façade (interactive façade)	Media skin façade (the varying-size-lit-bowls represent pixels of a large display system)	Folk art paper cut-out motifs	Tessellated triangular glass and steel tiles façade
Material	Stainless steel filled with concrete	Crystal	GRC prefabricated panels	CNC-cut plywood	Glass and steel tiles
The origin of genesis and synthesis of ornaments	Establishing an iconic presence, structural requirements, CAD, urban parameters, and site constraints	Establishing an iconic vibrant nightlife, amplify visibility within the urban context. The intricate decoration are inspired by the historic shop houses	The pattern comes as an echo of the Hispano-Islamic culture in harmony with the global civilisation	The perforated façade are inspired by the traditional Polish folk art paper cut-outs, to convey the cultural idiom within the other expo facilities	To become an artistic reference at an international level and also a symbol of the cultural offer in Madrid
Other aspects	Optimisation of daylighting, view outside, and seismic resistant structure	It amplifies visibility, and saves energy	Glare treatment, and daylight optimisation. The interactive façade links the space with the public	The patterns' design has an educational function associated with the main theme of the expo	The triangular gaps provide natural light to interior spaces
Invisible aspect of materiality	Structural-based	Cultural/ symbolic-based	Cultural/ symbolic-based	Cultural/ functional-based	Cultural/ symbolic-based

Table 3. A comparative analysis of ornamented buildings in contemporary architecture.

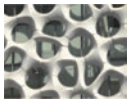
	(6)	(7)	(8)	(9)	(10)
Name	Torre de Especialidades, Mexico	Gantenbein Winery, Fläsch, Switzerland	Airspace Tokyo, Japan	0–14 Tower, Dubai, UAE	Argos, Cali, Colombia
Illustration					
Motifs of ornament					
	Geometric	Geometric	Floral	Geometric	Geometric
Year	2013	2006	2007	2011	2008
Architect	The Berlin-based architects	Bearth & Deplazes, Gromazio & Kohler	Faulders Studio	Reiser + Umemoto	Felipe Gonzalez-Pacheco
Building type	Hospital	Vineyard	Mixed use (residential/ commercial)	Offices/ commercial	Electrical generator at cement factory
Morphology	Quasicrystal façade air-purifying textiles	Pixels bricks façade	Foliage-like façade	Lace-like thick concrete exoskeleton shell	A woven concrete bamboo-like façade
Material	Prosolve370e coated with a superfine (TiO_2)	Bricks	Aluminium Composite Materials (ACM)	Concrete	Prefabricated concrete
The origin of genesis and synthesis of ornaments	Decorative architectural modules (inspired by fractals in nature) with photocatalytic pollution-fighting technology are used to clear Mexico City atmosphere	Robotic production method alongside a simulation-generating process is utilised to find a façade structure system that meets building function as a vineyard	The cellular design and double-layering screen simulate the lush vegetation in the site to provide a level of privacy	It is modulated depending on structural requirements, outside vision, and environmental considerations (sun exposure, and luminosity)	Simulates the textures made by the locals in fibres to fabricate artisanal objects. Conveying an image of the building function and product
Other aspects	Achieves a synergy between design form and molecular technology.	Controlling light & air penetration and buffering temperature.	The airspace screen acts as a buffer zone that provides privacy, and isolates noise.	The design creates a chimney effect, cooling the building, control sunlight & luminosity.	Making a reference for the local people and generates a play of light and shadow.
Invisible aspect of materiality	Environmental-based value	Functional/ structural-based value	Functional/ symbolic-based value	Structural/ environmental-based value	Symbolic-based values with technical solution

Table 4. A comparative analysis of ornamented buildings in contemporary architecture.

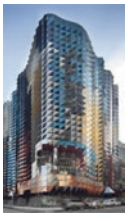
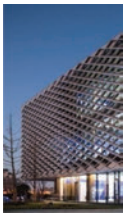
	(11)	(12)	(13)	(14)	(15)
Name	(LIMS) Melbourne, Australia	RMIT Swanston Academic Building, Melbourne	Lille Métropole Musée extension, France	Nantong Urban Planning Museum Nantong, China	John Lewis department store & cineplex, UK
Illustration					
Motifs of ornament					
	Geometric	Geometric	Floral	Geometric	Floral
Year	2013	2013	2010	2012	2008
Architect	Lyons	Lyons	Manuelle Gautrand	HENN architects	Foreign Office architects
Building type	Educational (university)	Educational (university)	Modern art museum	Museum	Retail
Morphology	Mosaic geometry-based tessellated façade	A chameleon and a mirror façade	Openwork screens (modern Mashrabiya)	Diamond-Shaped diagrid	Lace-like pattern façade (vegetal)
Material	Wood	Anodised aluminium panels	Ultra-High-Performance Concrete (UHPC)	Reticulated metal structure	Glass and ceramic
The origin of genesis and synthesis of ornaments	It is inspired by the hexagonal geometry of the molecular structure to express the research nature undertaken within the building.	It derives its identity from its surroundings as a chameleon and a mirror.	As an extension of the historical context. The irregular pattern used as a light filter and rain screen, while affording outside vision.	Fluid gradient fashion of the façade came from the need to optimise the requirements of lighting interiors.	To reflect the city's cultural and historical traditions (textiles and weaving), privacy considerations, and admitting daylight.
Other aspects	The organisation of low and high windows maximising natural light. The cellular concept creates meeting spaces and canopies.	The façade elements provide degrees of shading and optimise thermal performance. The façade creates a dialogue with the surrounding community.	The irregular pattern restricts light levels within the galleries and protects art works.	The diamond-shaped diagrid controls and regulates sunlight and allows for varying degrees of opening from 9%–60%.	Filtering sunlight, and achieving interiors privacy
Invisible aspect of materiality	Functional/ symbolic-based value	Culture-Based value	Heritage/ environmental-based value	Structural/ environmental	Functional/ environmental-based value

Table 5. A comparative analysis of ornamented buildings in contemporary architecture.

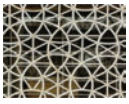
	(16)	(17)	(18)	(19)	(20)
Name	Ravensbourne College of Design & Communication, UK	Italian Trade Center 'I Principi d'Italia', China	Ibermutuamur Building, Murcia, Spain	St Teresa's Academy Windmoor Center, Kansas, USA	A simple factory building, Singapore
Illustration					
Motifs of ornament					
	Geometric/Floral	Geometric	Floral	Floral	Geometric
Year	2010	2010	2010	2012	2012
Architect	Foreign Office	MDU Architects	Roberto Gómez	Gould Evans	Pencil Office
Building type	Educational (college)	Trade, office, residential	Hospital	College for women	Factory
Morphology	Non-periodic tiling pattern	Lattice façade (double skin)	Lattice façade (double skin)	Lace façade	Optical façade
Material	Anodised aluminium tiles	Bronze glass façade, steel frame	Aluminium (Cortizo/ Duralmond)	Aluminium lace fabrication	EIFS screen and bronze window wall
The origin of genesis and synthesis of ornaments	It is inspired by the Gothic rose windows and flower patterns alongside the articulation of technology and novel materials	The traditional Chinese curving latticework and the Venetian medieval stone and wood frames form the lace skin to express the commercial and cultural tie between China and Italy	To show emblematic building (an icon of popular ideas) without more costs	It is inspired from the narrative of St Teresa, the patron saint of lace makers. The façade combines the school's history (the core values of the school) and the vision of modern education	To mitigate the tropical solar radiation, and achieve openness, outside vision, and transparency
Other aspects	Patterns were produced as an abstract construction. The façade configuration supports both structure and daylighting penetration	The façade is at once light-emitting and shading.	Achieving direct solar load reduction on the building that creates a small pocket of air waves through the building.	Worship spaces are flooded with soft light and connected to nature. Patterns merged both the sacred and secular elements.	It acts as a climatic engine. The veil protects the interiors from the harsh sun, allows views outside, amplifies daylight, and natural ventilation
Invisible aspect of materiality	Structural/ symbolic-based value	Symbolic-based value	Environmental/ symbolic-based	Religious symbolic-based value	Environmental-based value

Table 6. A comparative analysis of ornamented buildings in contemporary architecture.

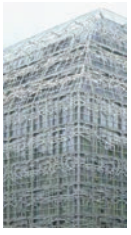
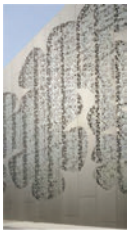
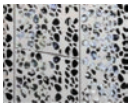
	(21)	(22)	(23)	(24)	(25)
Name	Central Mosque of Pristina competition entry, Kosovo	Louis Vuitton Matsuya Ginza, Japan	French Ministry of Culture & Communication, Paris, France	Podčetrtek Sports Hall, Podčetrtek, Slovenia	The House of Chutes-Lavie, Marseille, France
Illustration					
Motifs of ornament					
	Geometric/Floral	Geometric	Floral	Geometric/Floral	Geometric
Year	2013	2013	2006	2010	2012
Architect	Maden Group	Jun Aoki & Associates	Soler Francis, Druot Frederic	Enota	Damien Fluchaire & Julien Cogne
Building type	Masjed	Retail	Public	Sports hall	Sports hall
Morphology	Arabesque cladding façade	Louis Vuitton's damier	Organic-Weave mesh of steel lace façade	Flower pattern perforated cladding	Flower and map-like pattern perforated cladding
Material	NA	Steel	Stainless steel	Metal	Stainless steel cladding
The origin of genesis and synthesis of ornaments	Using arabesque to keep the tradition and to make a city landmark. There is a combination between geometry and flower patterns inspired by Islamic art	The highly abstract and stylised geometric pattern inspired by both the history of Ginza with its art deco design, and by Louis Vuitton's damier	The continuous mesh is used to regroup the different architectural styles (modern and classic) of the two existing buildings into a single unit	To highlight the main access that directs visitors to the main hall entrance, and to break the intensity of the serious heavy façade	The vegetable patterns inspired from pine trees in the middle of Marseille. It represents a mystical code as it interprets the pattern of the neighbourhood plan
Other aspects	Arabesque openings maximise the usage of natural light, insulation, ventilation and air conditioning.	The façade pattern with its bulges and dents, with LED lights, reveals various appearances through both day and night.	The network of steel lace brings natural light into the buildings and allows outside views.	Perforated cladding covering a large window prevents the disturbing, direct impact of sun on the playgrounds.	It protects the building from solar gains and allows privacy.
Invisible aspect of materiality	Religious/ symbolic-based value	Trade marketing/ historical based value	Functional-based value	Functional-based value	Social/ symbolic-based value

Table 7. A comparative analysis of ornamented buildings in contemporary architecture.

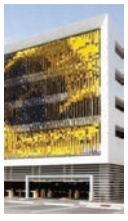
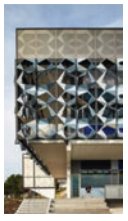
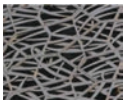
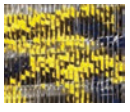
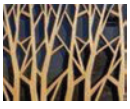
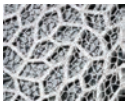
	(26)	(27)	(28)	(29)	(30)
Name	Princess Nora bint Abdulrahman University, KSA	Suzhou Science and Cultural Arts Centre, Suzhou, China	CIB Biomedical Research Center, Pamplona, Spain	Parking Structure Art Façade, USA	John Curtin College of the Arts, Fremantle, Australia
Illustration					
Motifs of ornament					
	Geometric/Floral	Geometric	Geometric	Various	Geometric
Year	2011	2006	2011	2014	2015
Architect	Perkins+Will, and Dar Al-Handasah	Paul Andreu & ECADI	Vaíllo & Irigaray	Rob Ley Studio	JCY Architects & Urban Designers
Building type	University for women	Science & cultural arts centre	Research centre	Services (parking structure)	Educational (school)
Morphology	Latticework façade	Hexagonal matrix façade	Origami façade	Art dynamic façade	Sculptural veil façade
Material of ornament	GFRC and aluminium	Aluminium	Perforated aluminium plates	Folded metal panels (steel)	Aluminium
The origin of genesis and synthesis of ornaments	It is inspired by Islamic geometrical pattern. It symbolises regional architecture and cultural tradition. It exploits innovative techniques as a single architectural language.	The overlayered hexagons form the matrix that is inspired from the classical Suzhou timber window. Science and arts (the main activities of the building) form a continuous dialogue within the façade pattern.	The origami façade simulates the biotype of leaves to reflect the building's intrinsic functionality (linking the façade biomimicry-based concept with the biomimicry research nature of the building).	The active camouflage façade seeks to create a dynamic interactive façade for the viewers in the urban context. The visual screen masks the scene that could be seen in ordinary parking structures.	The 3D Mobius elements, developed from the simple geometry of the golden right-angled triangle, contributes to enriching the simple structure components.
Other aspects	It acts as shading screens, enhances daylight distribution, and allows privacy and visibility.	The ornamental metal screen acts as sun shading.	The façade geometry generates folds to always keep the sun and allow vision.	It allows natural ventilation with regard to pattern design.	The sculptural screen provides passive climate control (sun shading and heat filtration).
Invisible aspect of materiality	Environmental/ cultural-based value	Environmental/ heritage-based value	Functional/ symbolic-based value	Functional/ aesthetic-based value	Environmental/ aesthetic-based value

Table 8. A comparative analysis of ornamented buildings in contemporary architecture.

	(31)	(32)	(33)	(34)	(35)
Name	Rose Museum, Beijing, China	The Newtown School, India	Cultural and Leisure Centre, Chaville, France	Ecuador Pavilion, Milan, Italy	Shanghai Natural History Museum
Illustration					
Motifs of ornament					
	Floral	Geometric (text)	Floral	Geometric	Geometric/ Faunal
Year	2016	2015	2015	2015	2015
Architect	NEXT Architects	Abin Design Studio	Laraqui Bringer Architecture	Zorrozua & Associates	Perkins+Will
Building type	Museum	School	Cultural Centre	Exhibition	Museum
Morphology	Rose-shaped perforated pattern façade	Bespoke stencil screen	Lace-like woodwork skin	A graphic façade	A striking cellular glass wall façade
Material of Ornament	Stainless steel	Fibre-Reinforced Plastic (FRP)	Wood (raw larch)	Anodised aluminium curtains	Glass and concrete
The origin of genesis and synthesis of ornaments	Rose shape and Chinese walled-off courtyard stem from Chinese culture. The intention was to create a new version of traditional Chinese culture based on the rose-like shapes and the semi-transparent walls surrounding the courtyards.	The theme of the façade, the alphabets, numbers and symbols, stems from the type of the building as a school. At the same time, it was intended to distinguish the building within its urban context	It was inspired by the neighbouring forests to stand out as a remarkable building. The building, used as a cultural centre, uses its ornamental latticework to teach the people to use natural materials to be in harmony with nature.	It was inspired by the multi-coloured traditional fabrics of Ecuador to convey the environment and the cultural heritage. The effect of the sun and the wind raises the sense of movement and subsequently attracts the visitors.	The atrium façade was inspired by the cellular structure of plants and animals. The whole building expresses the harmony of humans with nature as an abstraction of the basic elements of traditional Chinese art.
Other aspects	The enclosed spaces provide protection and privacy, and identify the boundary between outside and inside	The perforated façade filters the harsh sunlight, acting as a sun shading device	The façade connects the inside with the outside landscape while admitting the warmth sunlight	It highlights the biodiversity of the agri-food wealth of Ecuador and its role in sustainable agriculture.	The façade maximises daylight and minimises solar gain.
Invisible materiality	Cultural-based	Functional/ environmental	Functional/ environmental	Cultural-based	Cultural/ environmental

5 RESULTS AND DISCUSSION

Undoubtedly, the traditional ornaments have contributed to the beauty of the buildings, and have conceived and embodied the culture and history of the city. They are still a destination for tourists, and sources of inspiration for artists, art historians, scholars, and writers. Despite those considerable aesthetic, cultural, and historical roles, they are not classified as a function of architecture. Regardless of support or opposition, the ornament has announced its resurgence strongly in contemporary architecture. But can we state that contemporary ornaments beat and surpassed the old ones as being both aesthetic edifices and ecological toolkits? The answer of this question will be provided, based on the results of both the analytical study and the literature review. The results could be summarised as follows:

The development of ornaments in architecture throughout history confirms the human evolution over the centuries. As the human in ancient times relied on his craftsmanship, consequently, that was incarnated clearly through the rich ornamentation that emphasises his handicraft skills. As humans began to progress with the help of industry and technology, this was obviously reflected in architecture, including the ornamentation. It could be said that ornaments have never died. The changes that have occurred are the technological progress and the society's culture.

Many of the modernists strongly decried the ornament, or in particular, the decoration, or the real elements that are affixed to buildings without any purpose. However, they still found different ways to adorn their buildings. Maybe even in terms of that simplicity, with all its forms, leads to visual pleasure as well. Other modernists reinvented modern decorative models to replace the old ones. Many scholars refuted the common fact that classic ornaments are merely lavish decorative pieces that are affixed to façades. They have indicated to them as originating from the building's structure, and society's traditions, culture, and history.

The results of the analysis of this paper are consistent with the recent judgements and provisions that have been reviewed. The case studies clearly announce that modern ornaments originate as a reflection of:

5.1 *Function*

- Architectural functions (as a response to the structure system, providing privacy, or hiding defects).
- Environmental functions as ecological adaptive devices that result as a response to environmental issues. Since the climate has become an influential element in urban development, architecture has begun referring to the ecosystem, and ornaments have started to be combined with buildings' façades to allow the urban environment to take advantage of this synergy. Contemporary ornamentation is an intermediary for communication between the building and its urban context. Therefore, it has become an integral part of this ecosystem as ecologically passive and/or active devices that respond and interact with climate change to improve the performance of the building.
- Trade marketing functions (as brand attracting items), politics, and/or economic.

5.2 *Articulation or expression (symbolism)*

The contemporary ornament is linked to the cultural-social-historical surrounding contexts; it is a mirror that reflects the close correlation between the history of the nation on the one hand, and art, culture, tradition, society, and religion on the other. Mostly, the expression of this relationship occurs in an expressive or symbolic way.

5.3 *Aesthetic*

It stems from the formation of different typologies as pattern, symmetry, colour, and/or 2D or 3D incarnation (see Figure 4). Further, the results of this paper are consistent with the same judgements which attribute the ornamentation resurgence to the technological progress,

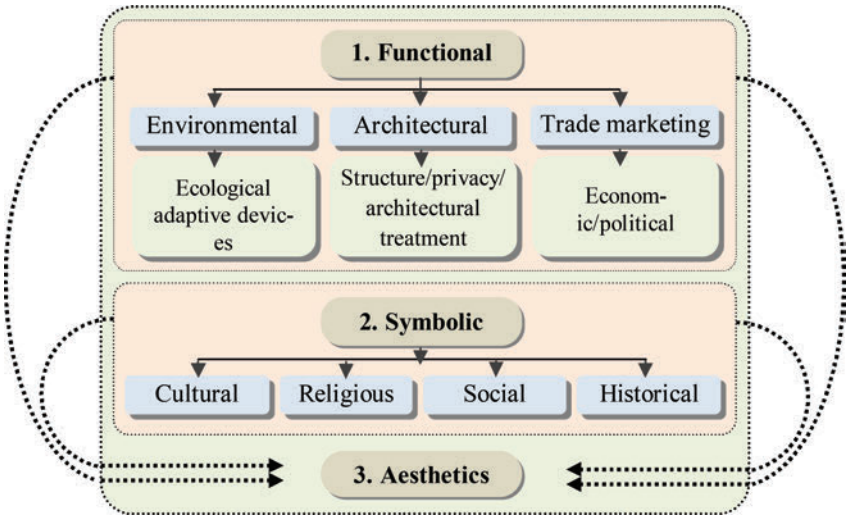


Figure 4. Ornament formation in contemporary architecture.

as technology provides mass production of ornamented façade systems, and the advanced materials that allow various designs, flexible formation, and eco-friendly performance compared to the potentials of old plaster.

Hence, it could be said that there are no radical differences in the causes for the advent of the ornament over the architectural eras. Forms of ornamentation may differ, while the reasons have remained the same. The ornamentation was, and has become, an expressive tool that testifies to the technology and science, the civilisation of people, their evolution, their cultures and beliefs, their social and economic circumstances, and their environmental awareness, all of which are the factors which draw the identities of people, cities and nations.

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Conservation strategies to revive the imageability of the Kumbakonam historic town

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ABSTRACT: Kumbakonam, a historical town, addresses new challenges and changes. The visibility and significance of the town and its heritage settings are decaying due to the process of physical transformation. Thus, this paper intends to highlight the imageability of the Kumbakonam heritage settings that still survive in the town and reflect its characteristic elements. The findings reveal that the town of Kumbakonam is being confronted with the pressure of development and changes to its skyline and its urban fabric/façade elements. Moreover, this confrontation is accompanied by meagre changes in how towns conserve and promote their heritage settings against the haphazard development. The findings suggest that the heritage settings of the town contribute to the imageability of places. In this regard, the conservation strategies should be introduced to revive the imageability of the town, as the image of the town is distinct only when its heritage settings are conserved.

Keywords: Kumbakonam; historical town; heritage decay; heritage conservation

1 INTRODUCTION

Conceived out of a profoundly established legacy, the noteworthy towns throughout the world have turned into immortal spaces. Historical towns are the legacy of our ancestors which narrate their picturesque culture and traditions that have been passed on over the centuries (Gast, 2007). The characteristic elements of the towns add to the legacy; also favors to the history of the place and the sense of belonging to the residents. Throughout the years, these towns with their bountiful history evolve their character and create a wonderful image. This manifested image of the towns is, for the most part, a sample of imperial architecture.

Since the 20th century, historical towns have been addressing new challenges and changes. The historic buildings, temple precincts, processional routes and the public squares all enriched with moonstones, remained engulfed in obscurity (Kiruthiga & Thirumaran, 2017). The respectable image of the town and its heritage settings are decaying due to a process of physical transformation (Feilden & Jokilehto, 1998). Kumbakonam, the historical town, is no exception to this process. The town, undoubtedly incorporates colourful gopurams directed towards the sky from its temple. Additionally, the town was once an honour of medieval South Indian power (Nanda, 1996). The imageability of the Kumbakonam town is engraved in its characteristic elements.

In recent decades, the Kumbakonam town has been facing new developments and changes in architecture, that hasve led to faulty and inconsiderate additions to the built heritage. This disintegration of the built heritage slowly, but surely, ruins the characteristic elements of the Kumbakonam town. This paper intends to highlight the imageability of the Kumbakonam heritage settings that still survive in the town of Kumbakonam, and to reflect on its characteristic elements. The main objectives of this paper are (1) to identify the characteristic elements that manifest and portray the image of the town, and (2) to study the problem and look for potential in the heritage settings of the Kumbakonam town. The primary data was gathered through direct observation to examine the characteristics of the constituent elements. Questionnaire surveys were carried out by a group of architecture students on the residents about

their experiences in the town. The findings reveal that the town of Kumbakonam is facing pressure of development and changes to the skyline, as well as its urban fabric and façade elements. This is accompanied by meagre changes in the conservation and promotion of its heritage settings against the haphazard development. The findings suggest that the heritage settings of the town contribute to the imageability of places. Efforts to conserve the built heritage of historic towns are weak and in need of proper strategy enforcement. In this regard, the conservation strategies should be introduced to revive the imageability of the town, as the image of the town is distinct only with an intact heritage setting.

2 LITERATURE REVIEW

2.1 *The context of imageability*

The imageability of a place is not limited to prominence. The unique characteristics of a place may catch an observer's attention for a limited amount of time, while its imageability is eternal. The integrated and intact physical settings of the town produce a vivid image through visual exposure. The physical attributes such as the skyline, the streetscape, the buildings with architectural elements, and the temple tanks and its precincts, create a fabulous picturesque portrayal of the heritage settings of the historic town. Thus, the visual experience of the urban elements within the heritage settings provide a sturdy image.

Kevin Lynch, a well-known icon in the field of urban design and city planning, was committed through his work to visual elements and cognitive concepts of the urban environment. Lynch (1960) additionally focuses his empirical study on imageability. He argues that the visual exposure of the urban elements heightened its image. He further categorises the physical elements of the townscape into five imaginable elements that include paths, edges, districts, landmarks and nodes. These elements play a vital role in evoking vivid images of the place. Moreover, Gordon Cullen (1961) states that the characteristic visual theme contributes to a cohesive sense of place, where he relates the imageability to a 'sense of place'. Silva (2006) also states that the character of the town is often perceived via visual exposure and fully experiencing the town.

2.2 *The components of imageability*

Once the historic town is classified as significant by its heritage settings, the study of its imageability becomes equally as significant. Evidently, the characteristic elements of the town become highly imageable due to the living heritage settings of the town. Each town has constituent physical attributes in its settlement pattern which changes over time. The physical attributes of the town, such as the traditional buildings, temples or religious buildings, have streetscapes and skyline demonstrating the architectural and morphological elements that are unique to the heritage settings of the town. The need for conservation is then understood. Moreover, Ewing and Clemente (2000) provided the voluminous empirical literature on the perceptual qualities of the urban environment, in which imageability perceived urban qualities with more significance. This study presents a review on the residents' perception with regards to imageability in the historic town through their reminiscent memories, hence explaining the existence of physical attributes and the residents' perceptions that strongly define the imageability of the town. These inferences of imageability are applicable as conservation strategies for new developments and architectural interventions in the historic town. This would maintain the town's consistency and harmony in the face of its historic fragmentation.

3 METHODOLOGY

The comprehensive review of the literature provides knowledge on how the physical attributes influence the imageability of the place. Based on the theoretical premises, imageability of the

Kumbakonam town has been analysed by and noted for its physical attributes. The study furnished much about the visual character and the physical attributes of the existing town.

A multilayer methodology was used for the study. At first, the study started with the division of the data into categories. The study concluded with a reintegration of the data to form a whole. The primary data was gathered through direct observation to examine the characteristics of the constituting elements. The data, such as the Kumbakonam town planning area map and land use map from secondary sources, has been collected from the Kumbakonam town planning department.

Furthermore, the questionnaire surveys were carried out by a group of architecture students on the residents of the Kumbakonam town to collect feedback on their perceptions and experiences. The questionnaire is composed of interviews as verbal descriptions to provide supporting information and substantiate the research data. The traditional core of the town is composed of the target residents of this study. Each resident was allowed 10–15 minutes to answer the questionnaire. Consequently, the survey data has been interpreted and analysed into graphs and chart diagrams with the help of MS-Excel. Finally, the study produced the comparative analysis of the qualitative data gathered from the primary and secondary data.

4 KUMBAKONAM: THE HISTORIC TOWN

4.1 *An overview*

Kumbakonam, the South Indian historic town is located at 10.97°N and 79.42°E in the Thanjavur district in the state of Tamilnadu, India. Kumbakonam is one of the river edge settlements in Tamilnadu, bounded by the two rivers known as *Cauvery* and *Arasalar* (see Figure 1). The rulers of Kumbakonam, especially Cholas, acknowledged the significance of these rivers and pioneered the production of paddies in this region. The region was also known as the 'rice bowl of India'. The town possesses strong and eventful history of the region (Hunter, 1908). The evolution of the town took place around the third century and received prominence during the seventh century (see Figure 2). Since then, the town has led to the prosperity of the Hindu mythology through its religious architecture (Ayyar, 1920).

Moreover, more than a hundred temples in the town date back to the early centuries, awarding it the title of the 'Temple town' (TNUIFSL, 2007). The town has become a popular religious centre over the past era. It is esteemed for its famous Mahamaham Festival, that takes place once every twelve years and guarantees the attendance of Hindu pilgrims from different parts of the world (Bansal, 2008). The urban fabric of the town has made Kumbakonam one of the best surviving ancient Tamil towns (Nanda, 1996).

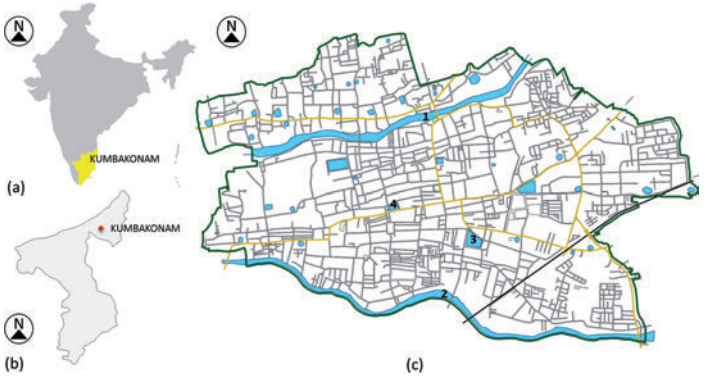

Figure 1. (a) Location of Kumbakonam town in Tamilnadu State; (b) Location of Kumbakonam in Thanjavur District; (c) Kumbakonam Town map showing 1. River Cauvery 2. River Arasalar 3. Mahamaham Water tank 4. Porthamarai Water tank.

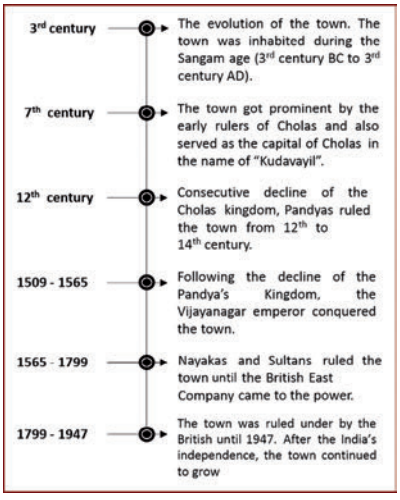

Figure 2. Kumbakonam timeline.

4.2 *Physical components of imageability*

The character of the South Indian historic town is influenced by its physical attributes, such as the traditional settlements, river edges and water tanks. Buildings with architectural values, and the skyline, dominate the temple shrines. According to the town of Kumbakonam's mythology, the emergence of the built environment was centred at the temple complex. The ritual topography of the town comprises of the temple complexes and the sacred tanks of Mahamaham Tank (famous for its Mahamaham Festival) and Porthamarai theertham.

As shown in Figure 3, the processional route connects the two sacred tanks and provides accessibility to the main temple complexes. The sacred royal tank has significant physical attributes of the town, along with the residential and commercial areas. This processional route represents the ritual importance, both in the everyday life and in the celebratory dimension, and creates deeper a connection to the image of the place. It can also be said that the processional route has been the historic centre as well as the traditional core of the town. Most of the historical special temples are located along the traditional core of the town with only a few in other locations. These prominent temples evoke the magnificent and ritual experiences to the viewers. Some of these temples have been in the town for centuries and exhibit a rich background that enhances their imageability. Historical associations are powerful example, and include the Adhi Kumbeshwaran Temple, the Sarangapani Temple, the Nageshwaran Temple, the Ramasamy Koil and the Kasi Viswanathar Swamy Temple.

The famous Mahamaham Festival of Kumbakonam held on the Mahamaham Tank is shown in Figure 4. The Mahamaham Tank is effectively recognisable to the stranger by its spatial, shape that is accompanied by functionality and deliverance of a vivid image. Its strength as a landmark is felt by its religious status and its cultural heritage. Once a historical background, a myth, or a meaning is associated with an element, its image and significance is then heightened and strengthened. Some of the historical buildings established a reputation as recognisable landmarks, such as the Porter Town Hall building, the Srinivasa Ramanujan Centre and the clock tower.

The residential buildings in the precincts of Mahamaham Tank and the Porthamarai theertham exhibit the architectural elements of previous decades, as shown in Figure 5. The architectural elements such as arched windows, pilasters, cornices, lean-to roof, pot-tiled roofing, ornamental parapets and entrance door or gateways, surely impact the imageability and the built heritage of the town (Kiruthiga & Thirumaran, 2017). Only a few buildings in the central commercial areas are dominated by the contemporary façcade elements in their

built fabric. However, the town's skyline is still dominated by the temple towers as the previous manifestations have turned them into principal elements for the whole town, as shown in Figure 6. The temple towers are also known as the long-distance landmarks, due to their symbolic visual significance.

The town's heritage exists in the physical attributes of the traditional settlements, such as its water tanks, buildings with architectural values, temples from the previous centuries, and its skyline that prevail in the midst of all the temple shrines. The modern interventions of new architectural styles and new materials are experienced by the residents. Still, a certain amount of the physical attributes maintains the strong image of the historic town in the heritage settings of Kumbakonam town. Now the physical attributes of Kumbakonam town have been

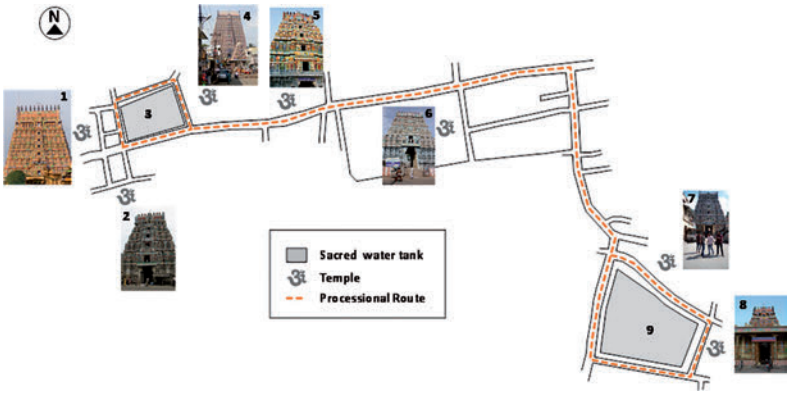

Figure 3. Map showing the location of the principal temples and sacred water tanks in the Kumbakonam town: (1) Adi Kumbeswarar Temple; (2) Ramasamy Temple; (3) Pottramarai water tank; (4) Sarangapani Temple; (5) Somesar Temple; (6) Nageshwara Temple; (7) Kasi Viswanathar Temple; (8) Abhimukhewara Temple; (9) Mahamaham water tank.

Figure 4. More than 40 lakh devotees took holy dip in the Mahamaham Tank during the Mahamaham Festival in February 2016. (Source: Deccan Chronicle).

Figure 5. Images of the building show the traditional architectural style on the processional route.

Figure 6. The temple tower along with the commercial buildings on the processional route.

changed, and from now, there is without having the proper conservation strategies for the development in the city, the character and the image of the town would lose.

4.3 *Perceptual viewpoint of the residents*

MEMORY AND IDENTITY: The significance of theories substantiates the stable connections between the time and memory to promote the identity of the town and its history (Ferdous & Nilufar, 2008). A place's identity has significance in towns with historical backgrounds and creates memories that evoke strong images of the town. The questionnaire survey points out the memorable spaces in Kumbakonam town.

As outlined in Figure 7, the Kumbakonam town attained a unique position which reflects the historical significance of the town. Furthermore, the role of heritage settings instilled the image and memory of the town. Additionally, the results show that the residents' perception of identity can be conceived by the physical elements. Likewise, the Mahamaham Tank, Temples of Kumbakonam, Cauvery River, Commercial streets such as TSR Big Street, Bazaar Street, and Nageshwara Koil Street endured as the most significant spaces of the Kumbakonam town by the residents' perception.

COHERENCE AND LEGIBILITY: The residents or observers need a visible space related to the physical elements of the town del Rio6 (Del Rio, 2016). The consistency of the place refers to an 'immediate understanding', whereas the legibility of the place refers to 'inferred understanding'. Consequently, the proper understanding of the physical elements by the residents provides high coherence and legibility for the place. The questionnaire survey reveals the understanding of spaces in the Kumbakonam town.

Shown in Figure 8 are the results' unveiling of the understanding level of the town residents. The Mahamaham Tank precincts and the temple complexes of the town are highly legible and coherent. In Kumbakonam, the streets and precincts associated with the temples and tanks become profoundly meaningful places and fosters the residents' mental map.' The legibility and coherence of the physical elements of the Kumbakonam town are affected by its traditional core settlements and the natural edges of its rivers, the Cauvery and Arasalar Rivers.

VISUAL APPEAL: The physical elements in the heritage settings intensify the visual qualities and the image of the town. The visual appeal of the town depends on the perception of the viewer, who could regard the physical form or pattern, quality of the space, or circumstance during which it has been seen. The questionnaire survey proved the visually appealing elements in Kumbakonam town.

Figure 9 shows how the Mahamaham Tank in Kumbakonam town sustains its vitality in the long run, thus attracting the residents, pilgrims and the viewers. The skyline of the town is filled with life, from the mixture of residences and commercial buildings. Out of all the existent structures, the temple towers are implicit in the skyline. The streets in the traditional residential settlements of Kumbakonam town are lined with buildings, whose traditional typology is punctuated by their windows and doors, columns and their style, generating a beautiful manifestation. The visual experience of space receding diagonally along the Cauvery and Arasalar river banks with agricultural land is reminiscent of the Kumbakonam town.

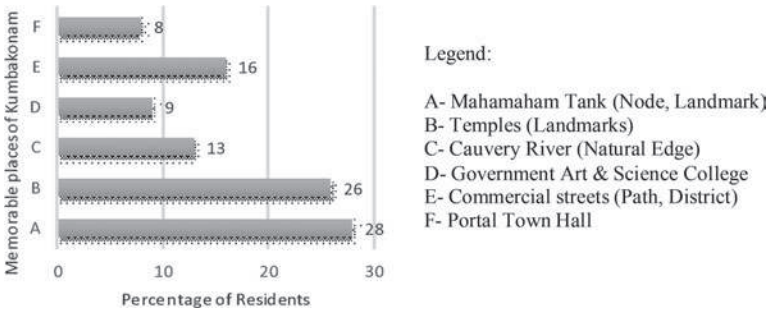

Figure 7. Graph showing the memorable places of Kumbakonam town from the perception of its residents.

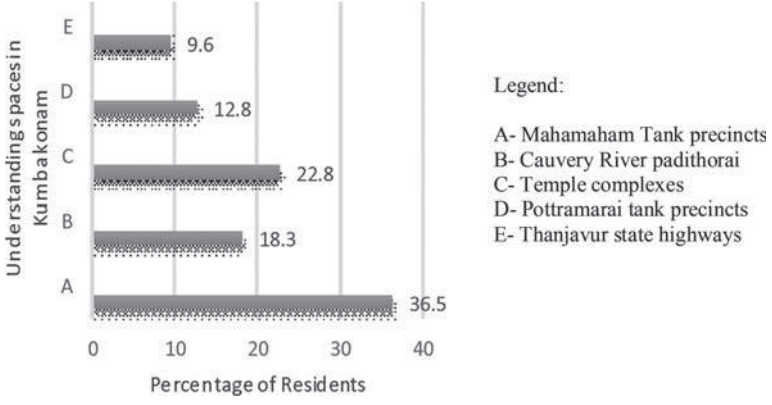

Figure 8. Graph showing the understanding of places in Kumbakonam town by its residents.

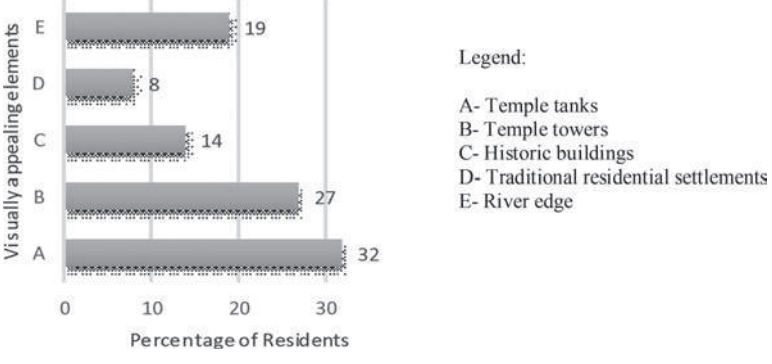

Figure 9. Graph showing the visually appealing elements of Kumbakonam town by its residents.

5 FINDINGS

The physical attributes of the town differ from region to region. The character of the South Indian historic town is influenced by its physical attributes such as the traditional settlements, river edges and water tanks, buildings with architectural values, dominating skyline, and the temple shrines. Though the traditional settlement has undergone a large number of changes in

land use from residential to commercial, some of the buildings in the precincts of Mahamaham Tank are still in residential use. The increase in commercial buildings leads to a rising in property value. Due to this higher property value, the town faces such problems as traffic congestion, lack of infrastructural facilities, and reduction of open spaces in the processional route.

On the other hand, the demand for commercial use has meant a flood of high-rise structures, resulting in a major change in the skyline of the town. The temple shrines were once the dominant element of the town's skyline but have now been replaced by commercial contemporary buildings. The buildings in the traditional settlement area hold the heritage values of the town (Silva, 2001). Due to the commercial pressure and urbanisation, the traditional buildings are changing their architectural elements into contemporary ones. This interference of a new style of architecture and materials is completely irrelevant to the context and rather damages the town's image. The endowment of the historic town's streetscape is then completely ruined in this process.

The Kumbakonam town differs from the other ancient historic towns of India due to its unique urban and ritual topography. The physical elements of the town contribute to all sorts of manifestations. From the gathered literature and site survey, the physical attributes of the Kumbakonam town comprised of imageability in its heritage settings. The results of the questionnaire survey highlighted the spaces by the residents' perception, consisting of historically significant spaces. Hence, the results of physical and perceptual components of the Kumbakonam town played the key role of evoking a sturdy image of the town's heritage settings. On the other hand, the uncontrolled development of the town is threatening the heritage setting which gradually causes a decline in the general image of the town. Therefore, the town is in need of immediate attention and conservation. The new development and growth should not destroy or ever interfere with the town's physical attributes.

6 SUGGESTED RECOMMENDATIONS

The development plan of the town should consider the historic centre a conservation zone that comprises of the processional route and the sacred royal water precincts. Most of the historically significant buildings and temples in this area reflect the character of the town. The following conservation guidelines are general for the existing and new buildings in the historical centre of the town:

1. Earlier decade buildings reflect the historic architectural features, such as pot-tile roofing, arched windows, cornices, pilasters, ornamental parapets, that should be retained and preserved. These building features are incorporated in the new buildings to contribute to the visual integrity of the existing historic buildings.
2. The existing historic buildings should not be demolished. Instead, they could be preserved with some alterations that should merge with their original style.
3. Maintaining the original materials used in historic buildings. The colours should be chosen to complement the traditional architectural style existing on the overall streetscape.
4. In the commercial areas, the signboards of the buildings should be appropriately sized in a manner respectful of the historic fabric of the street. It is also necessary to avoid huge banners alongside historical buildings as they cause visual disorientation.
5. The land use of the buildings in the Mahamaham Tank should be retained as a residential zone so that the cultural activities like *kolam**, *bajanai***, and social gatherings, could take place in the traditional sense. (**kolam* is a handmade drawing, using coloured powder or rice powder on the house front in the streets; ***bajanai* is a group of people singing a song with a religious or spiritual theme in their own language).
6. In the processional route, the height of the buildings is generally single storey or double storey. It is necessary to avoid extensions or an increase in floors of the buildings, so that they will not differ from the surrounding buildings by way of their actual height. The height restriction should be implemented so that the temple could be maintained as the dominant element in the skyline.

7. The sacred royal water tanks of Mahamaham Tank and Porthamarai theertham should be cleaned periodically and their spirituality retained.

7 CONCLUSION

More results have been gathered to illustrate that the changing physical elements of the Kumbakonam town have the potential to affect the heritage settings of the town. The heritage settings of the town can play a major role in enhancing the imageability as the town strengthens its physical elements. Kumbakonam fluvial myths, transferred down to the present day, elevate it to the status of the celestial threshold, one that is as primordial and the beginning of creation 1996 (Nanda, 1996). The historic town of Kumbakonam is an indisputable part of our ancestors' heritage and pride, but the action to revive these towns from declining lacks cohesive efforts. The Kumbakonam town has the potential of being revived to its past glory and to adapting to the current development growth through the integrated conservation strategy that will enhance its imageability. In short, this study reveals that the Kumbakonam town is in need of conservation to avoid the mentioned issues. Therefore, the implementation of the conservation strategy is recommended as an essential means to promote the town's image.

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Envisioning the unseen: Interdisciplinary approach between painting and architecture

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ABSTRACT: The comprehensive development of historical neighbourhoods in Cairo has been a major concern lately. This paper relates to the previous notion while researching and investigating the collaboration between painting, social practice and architecture. It is a case study of an interdisciplinary pedagogy approach between painting and architecture students, and how it can initiate a difference in the design process of the development of historical and informal areas, through collaboration, aiming to include artists for innovative solutions and futuristic visions.

It approaches a holistic vision through an interdisciplinary methodology that included interviews with stakeholders, sketching, photography and painting. The paper examines and analyses the workshop *Envisioning the Unseen*, initiated by the authors in 2015 during the first Egyptian Urban Forum (EUF), in order to question the transformative potential and the pedagogical partnership between painters and architects in the development of historical deteriorated urban areas, with a special focus on Al-Darb al-Ahmar area in Egypt.

Keywords: Egyptian Urban Forum; AL-Darb al-Ahmar; painting and architecture; social practice painting

1 INTRODUCTION

This paper contributes to the ongoing discussion regarding interdisciplinary approaches in the pedagogy of art and architecture, especially painting. The collaboration between artists and architects had been discussed extensively under the topic of Public Art. However, this paper experiments widely in different trajectories aiming to reach new forms of collaborations, support communities and aid their development; this is mainly regarding the use of social practice methodologies in painting and architecture, and the possibility of including artists in the innovative design process for architects. Due to the increased rapid change in our time, there is a strong need for a holistic understanding of the world, to look beyond discipline boundaries and conventional models of organisation, and to develop more flexible transdisciplinary study models for architecture and art students (Franz & Lehmann, 2004).

Interdisciplinary learning had been defined by Newell and Green as the inquiries that critically draw upon two or more disciplines and lead to an integration of disciplinary insights (Haynes, 2002). Furthermore, there had been four models of interdisciplinary learning identified by Lattuca, Voight and Fath: informed disciplinary, synthetic disciplinary, transdisciplinary, and conceptual interdisciplinary. A synthetic disciplinary approach is when instructors combine theories' concepts and even research methods from different disciplines, while the contributing discipline remains clearly identifiable (Lattuca et al., 2004). This model was approached in the initial planning of the case study workshop *Envisioning the Unseen*, although the implementations opened the doors to further integrations, raised questions and stimulated innovative insights. Among these questions: painters are known to depend on their personal information and interpretation as resource for their work; can a

social practice methodology be used to include the stakeholder's aspirations and dreams as a resource in painting a fictional reality (solution) of an existing problem? On the other hand, is it possible to include painters in the innovative stage of designing, to aid architects in their planning for the conservation or the sustainability plan of an urban area that needs development? Furthermore, can the visions that were introduced by the artist inspire the design of the development plans of the architects?

The word *Utopia* was used by Thomas More, as a title for his book that was written in 1516 (More, 2010). Since then, the contrast between the social and the urban ideal presented by utopia had been responsible for the definition of the concept behind the word; this ideal is not possible to concretise on proposal, but can be feasible some years later (Fernandes & Silvia, 2014). Art students in the *Envisioning the Unseen* workshop (July 2015) visited the sites, envisioned the future and created artworks that included the social dream of the inhabitants of the Al-Drab al-ahmar area, even if utopia is a far aspiration, but these visions can open the gates in time to feasible manifestations. The book *Imaginary Cities*, by Darran Anderson, demonstrates that Marco Polo was not a liar and that each city dreamt by an artist, a writer or an architect has an equivalent life. Concluding that imaginary cities do not just simply exist in fiction or the mind, but they manifest and we actually live in them (Anderson, 2015). Later, Anderson presented his findings in the *Imagining the Future* debate, *Venice Architecture Biennale* 2016, in the lecture series programme titled *Encounters on Optimism: Utopia in a Finite World*, which strength this paper's argument on the importance of creating wild fictive imaginary future cities (Donald, 2016).

2 METHODOLOGY

The pedagogy methodology executed was introduced to the art students in a series of lectures, covering architectural information about a deteriorated historical area of Al-Darb al-Ahmar and informal settlements in Egypt, how artists envision the future, utopia and examples of collaboration between artists and architects, social practice methodology in investigation, and design in cityscapes. Followed by a site visit, we applied an interdisciplinary approach by involving students from the architecture department to guide the art students during the field visit. The students viewed the site and asked the residents about their dreams and aspirations, using the social practice methods. Students took a black and white photograph of a location, and created an artwork that included a more factious reality per the vision and the received information during the workshop. The execution of the artwork took two weeks, and was followed by an exhibition at the first Egyptian Urban Forum (EUF). In a third stage, further investigation took place by including architecture students in a site visit and a survey to evaluate and discuss the artwork, which is a developed stage of the interdisciplinary approach.

3 CASE STUDY SELECTION

The choice for using the Al-Darb al-Ahmar district for the study was based on many qualifications: the district is part of the medieval Cairo and it has many rich historical Islamic monuments; the district passed through a regeneration project sponsored by the Aga Khan Trust for Culture, in which the Azhar Park was developed, and environmental rehabilitation to cultural restoration and socioeconomic development for the residents took place. Historical monuments, and parts of the public spaces and houses were developed, renovated or rehabilitated. On the other hand, the district has faced the deterioration of many buildings and the spread of informal buildings in the area, especially after Egypt's 2011 revolution.

3.1 *The workshop*

The *Envisioning the Unseen* workshop was designed to be delivered by the authors to 11 students from the third year of the painting department, Faculty of Fine Arts, Helwan

University, with the attendance of three students from the architecture department from the same faculty. It was funded by the UN-Habitat and the Faculty of Fine Arts, Helwan University, Egypt.

The workshop was executed over two stages that started with three sessions held on 3 June 2015. The first session was titled 'The first Egyptian urban forum—Rethinking informality'. The lecture was prepared for an audience of art students with a limited background in the topic. It started by introducing the share of responsibility between the public and private sector in providing housing in Egypt, the definition and classifications of informal areas in Egypt, and the percentage of formal and informal housing in Egypt. Then the lecture moved to the first EUF and introduced its aims to the students. After that, the students were introduced to the Al-Drab al-Ahmar district and the Aga Khan urban regeneration project. The lecture showed different examples and case studies, supported by images, maps and graphs. The lecture was followed by an open discussion from the students to answer their inquiries about the topic.

The second session 'Envisioning the unseen, the future, art and concept' presented the futuristic approaches in visualising the future, or fictive realities, in contemporary artwork, and major events that present the ongoing dialogue between art and architecture, especially exhibitions that presented city strategic planning ideologies in opposition to that encountered in everyday living. A team activity was introduced, aimed at showing the importance of including the stakeholder's ideas. Students were given photographs of the Fine Arts campus, and were asked to present futuristic plans for the specific locations of the shots. At the end, students presented their fictive plans for their campus. Social practice methodology of investigating the needs of the community was introduced, especially the part where the artist interacts with the community, asks questions and tries to understand and analyse the problems within a neighbourhood. The process of asking questions about problems, analysing community problems and identifying their reasons was introduced. Students were asked to develop their personal set of questions, to ask the inhabitants of the Al-Darb al-Ahmar area during their visit the following day. They were also directed towards asking them about their future aspirations and visions, and thus including the stakeholder's hopes in their artwork, rather than creating a cityscape from an aligned vision of an artist who is interested only in a historic cityscape.

Subsequently, a third session 'Art, design and architecture' explained to the students that design is a universal visual language that shares many principles between different forms of art. Moreover, it is found to play a great role in intersecting the interdisciplinary fields both visually and socially, which was important to the students in the execution of their projects. Furthermore, examples of artwork were presented, which are deeply involved in the urban scenery and their impact on the viewer who normally might be passing it on daily basis. The discussed selected artworks were paintings with different cityscapes, identifying through them design styles applied in planning the cityscape, besides other examples of mural paintings that suggested visual solutions for some disfigured scenes.

On the second day, the workshop went on a guided site visit of Azhar Park and Al-Darb al-Ahmar area to conduct their social research and to choose the location of their black and white photos, with the assistance of three students from the architecture department. The Azhar Park was the starting point. Then the group moved towards the Ayubi wall, crossing it to the Aga Khan successor 'Mazala Foundation', then moving to Darb Shaalan path, Alslam mosque and Al-Darb al-Ahmar St. towards Abou Hureiba mosque. Then coming back through El-Tabanaa St., visiting El-Merdany Mosque, Beit Madkour and the blue mosque, and going back to the Azhar Park. Through social interviews, the students discussed with the people inhabiting the places their needs and their visions of a better place, while trying to imagine how their artwork would affect the community and their inhabiting environment, visually and socially. Each student would finally choose a single photo of his/her own to make their artwork that projects both their view and that of the community, envisioning the unseen potentials each place holds, and how it could be transformed in the future. Following that, the second stage of the workshop (10-day period) included studio follow-ups, where students were guided through one-to-one sessions, where their working steps were supervised,

starting with visualising the concept required to be delivered, sketching and painting. Two students asked to present their work as a photo-collage rather than as painting, and it was approved. Later the artwork was exhibited on 14th June 2015, on the second day of the EUF at the Azhar Park venue. Upon exhibition, the audiences were so highly appreciative of the interdisciplinary workshop and the artwork, that the forum organisers requested the work be exhibited once again on the third day of the forum at the Marriott hotel in Cairo.

Art students submitted a text regarding their experience through the site visit and upon questioning the inhabitants of the community. The following are some examples of the students' reflections regarding the process. Dina Hany (Figures 3 and 4) commented that at first people were somehow afraid that the students were government inspectors or journalists, but in time, when they knew that they were only fine art students, they started to open up and tell them about their thoughts. Hany elaborated:

> *The majority of them complained about the garbage that was everywhere, and the 'tuk-tuks' that keeps passing by with their noises and bad driving. Also, they wished to have a playground for their children, which I find realistic and could be fulfilled but I focused in my painting more around their complaints. I highlighted their problems in a surreal exaggerated way by using vibrant colours and contrast between the old building and the garbage surrounding it, creating flying 'tuk-tuks' and polka dots garbage bags.*

As for Amgad Elsharkawi (Figure 5), he mentioned that he was in search for expanding the known, from a humanitarian view; he highlighted a problem and tried to present a fictive solution for it within the place. Another student had also concluded that the people were aware of the historical importance of their location but they had basic needs, and with her belief that colours can have a positive impact on people's lives, she represented the scene colourfully, aiding the inhabitants to peruse their life easily in a happy manner (Figure 4). Also, Fatma al-Zahraa mentioned:

> *I've noticed through the visit that even though the main colour of the buildings and streets in the neighbourhood was grey, when the people repainted the indoors of their shops and cafes, they painted them with a blue, turquoise colour, I thought it was as if they needed the sea, an optimistic scenery, so I repainted the scene in Al-Darb al-Ahmar area with blue, aiming to fulfil their subconscious dreams.*

Later, upon the success of the students' exhibition at the UN-Habitat Forum, and the high level of engagement by the audience, who were mainly distinguished architects and engineers in the Egyptian architectural scene, a third stage proposed itself for further research investigation.

3.2 *The third stage of the workshop: Al-Darb al-Ahmar site visit*

Twelves students from the third and fourth years in the architecture department, Faculty of Fine Arts, Helwan University were selected to visit Al-Darb al-Ahmar district. Eleven students had not visited the area before; only one student was a resident from the area and was nominated to join the group to help during the visit. Prior to the visit that took place on 9 October 2015, the students were introduced to the Agha Khan regeneration project in a lecture held in the Faculty of Fine Arts. A similar route was adopted during the EUF workshop in May 2015. At the end of the visit students filled in a survey. They were asked about the role and importance of art in the urban renewal and upgrading projects, their opinion about the paintings and art works of their colleagues from the painting department, and the possible cooperation between artists and architects. The main results of the survey can be concluded as follows.

3.2.1 *The role and importance of art in the urban renewal and upgrading projects*

The students highlighted the importance of art in the urban development of any area. They agreed that the cooperation with artists can create new ideas and bring about innovative solutions. Mentioning that artists use their imagination, their work reflects the people's needs, beliefs and daily lives. The following quotes highlight the students' opinion: 'Imagination

creates different options for development, this can be the role of artists' (Aisha Mahmoud, students survey).

> *Artists and architects have different visions; the artist see what the architect does not see, I thought that the role of the art in the urban upgrading is limited to mural painting, after seeing the paintings of my colleagues I discovered new ideas that we as architects can use to develop the area.*
>
> *Nada Elsherif, students survey*

3.2.2 *The most inspiring painting and implication*

The students were asked about the most inspiring paintings and their vision to apply it. Figures 2 and 5 shared the first rank with five choices each; Figure 1 got two choices. Students who chose Figure 5 agreed that the centre of the work was the human being; the work reflects how the environment affects the society and how the society is the core of any real development and urban transformation. Ideas like creating cultural centres, reviving the traditional vocations, and founding children cultural centres were suggested by the students. K. Sami clarified by saying, 'Figure 2 is the most inspiring as it opens the area to the Azhar Park and integrates the greens with the district'. Students suggested adding more greens to the public spaces, roof gardens, balconies and colouring the facades of the buildings. Students who chose Figure 1 suggested adding more restrictions for the construction of new buildings, and cleaning and organising the area. Other students stressed on the importance to renovate historical buildings and bring back their original vital image.

3.2.3 *Paintings inspiring architects to have creative ideas for upgrading*

The students were asked to name the paintings that can give them ideas to upgrade the buildings and the chosen urban area, clarifying their choices with explanation. Figure 5 received two choices, but those who chose it commented that although it inspires them with ideas, because it focuses on humans, it lacks solutions. Figure 2 got five choices; again, students suggested the use of soft-scape elements and establishing children play areas for urban development. Meanwhile, Figure 4 received five choices. Students agreed that the work carries different notions of sarcasm, highlighting the current deteriorated situation of a historical building in the area, in addition to the problems of noise and the garbage; the work brings imaginative solutions and integrative designs. Students who chose Figure 1 agreed on the importance of the colours and the artistic touch to bring beauty, vitality and identity to the area. Again, the unity of the colours, cleanness and landscape elements are the main reasons of the students' choice. Other paintings (photos not included) received four choices for ensuring the importance of the details to bring beauty, and for the use of the colours to distinguish the buildings. Two paintings did not receive any choice.

Figure 1. Above: Fatma Al-Zahra, oil painting and mixed media on original size, 35 × 50 cm canvas, June 2015.

Figure 2. Below: Passant Elshafei, oil painting on canvas 35 × 50 cm, June 2015.

Figure 3. Above, Dina Hany, Madkour's house, photo of the house.

Figure 4. Below: Dina Hany, acrylic painting and collage on canvas, June 2015.

3.2.4 *The cooperation between architects and artists in the urban development*
All the students highlighted the importance of including artists in the process of the urban development. They agreed that artists can add an artistic vision to the architecture and urban project, and they can also work with the residents to develop their talents and revive the intangible cultural heritage and the traditional vocations. Elaborating that artists can also work with

Figure 5. Amgad Elsharkawy, photo collage and color manipulation, 35 × 50 cm, June 2015.

the residents in the process of social and economic development, Mostafa Khaled mentioned: 'Maybe what we are missing is the absence of the artists in the development process'. Meanwhile, Hantash clarified: 'The diversity of the development team will bring creative ideas; the secret can be in using the imagination of the artist and the creativity of the architect'.

4 CONCLUSION

In the traditional norms of painting pedagogy, students in the painting department are trained to paint *plein-air* cityscapes in historical Cairo, but they rarely engage with the community; they just paint the landscape in front of them. In this case study a new dimension was added, where the stakeholders' dreams and daily living habits were taken into consideration. For example, the use of blue colour in the interior of the shops was detected by the painting students and reused to create a dream vision of the future of the place inspired visually by the inhabitants' social interaction. These visions were considered by the artists, sensed with their intuition, and translated by their brushes and colours. We argue that it makes the social dreams more visible to the architect. Roy Ascott mentions that the initial part of the design process of the artists depends on the trained intuition:

> *The artist is no analyst or statistician. We work by intuition, psychic apprehension. We're a lot nearer to the shaman than to the scientist. Paradoxically, at the very time when art is embracing high technology, the shamanic way is the only way forward for the artist (Ascott, 1997).*

In conclusion, there is an increased tendency towards creating a social interaction in the everyday build environment, including organising stakeholders' workshops prior to the designing of public buildings, and applying bottom-up strategies in the designing process (Salama, 2016; Salama et al., 2017). Therefore, we recommend the inclusion of artists trained in social practice investigation in these workshops, and to participate in the design process following a methodology similar to the one done in the paper. Thus, opening the doors to comprehensive integration and creative innovative site-specific visions for developments of deteriorated or informal parts of the city, it can also have a leading role in distinguishing the city's identity and adding an artistic value. It is also worth mentioning that the interdisciplinary collaboration between the students was highly appreciated; most of them wanted to collaborate with the other field in the future. Furthermore, it is recommended to include an advanced module that incorporates teams from the architectural and the art departments, for creating visions of the future and envisioning the unseen.

ACKNOWLEDGEMENT

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Heritage management: Investigating current practices in sustainable retrofitting of built heritage, methodologies, tools and approaches

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ABSTRACT: It is commonly acknowledged that the conservation of the heritage of buildings is crucial to any culture, especially since conservation is essential to understanding a country's background through preservation and control. However, most of the current practices regarding conservation and management of heritage buildings, with special reference to Egypt, are not guided by specific policies or strategic management plans. Consequently, the main objective of this paper is to analyse the current practices that are applied in sustainable retrofitting of heritage buildings, whether nationally or internationally, in order to extract lessons learned for the management of heritage building conservation. A qualitative analysis, through a literature review, was implemented in order to document the nature of reused heritage buildings. This was followed by a comprehensive comparative analysis between a numbers of case studies for heritage buildings, either nationally or internationally. The findings have been extracted from the literature review and case studies.

Keywords: Conservation; Heritage Buildings; Cultural Revitalisation; Heritage Buildings Management; Strategic Management Plans; Sustainable Retrofitting of Heritage Building

1 INTRODUCTION

Historical buildings, unlike those currently constructed, are built using a variety of normal materials that includes different types of wood and stone. These materials are appreciated because of the magnificence of the outdated designs (Martins & Carlos, 2013). Heritage management consists of development techniques and approaches that encompass an investigation of historic and prehistoric remnants for retrofitting (Nemaheni, August 2003). Furthermore, heritage management is a matter of rising importance, with the intention of identifying and preserving cultural heritage in the communal interest. Such interest was conveyed, according to an American source, back in the nineties when 50% of construction funds were spent on the conservation of buildings (Mitropoulos & Howell, 2002).

Value management is a methodical function of an approved plan that operates through recognising and classifying project functions. This is executed using a selective approach to make the best use of the overall performance (SAVE International, 2007). Retrofitting and renovating an existing building may, in many cases, turn out to be more cost-effective when compared to creating a new centre (Gultekin, 2009). In 1983, the United Countries' Brundtland Fee defined sustainable development as 'a development that complies with the needs of today without compromising the power of future generations to meet their own', which also results in a pleasurable experience explaining the need for its heritage. Generally, tradition

conservation will therefore be provided by any truly ecological development that fits the definition. Sometimes, sustainability objectives will inevitably clash with the needs of an individual and compromises will need to be considered (Akrson, 2015).

1.1 *Research problem*

Sustainable retrofitting in heritage building, as a subset of conservation, has been adopted in a number of countries as it represents an opportunity for heritage building reuse. In Egypt, for instance, some heritage buildings, currently in a deplorable state, were once reused for something other than their original purpose. In order to maintain the idea of sustainable retrofitting, heritage buildings ought to have developed a plan that fulfils the requirements of both the present and the future. In several studies, the title of conservation has suffered from exclusion and neglect, (Giancola, 2014). However, most of the current practices regarding conservation and management of heritage buildings, with special reference to Egypt, are not guided by specific policies or strategic management plans.

It is evident that the conditions in Egypt require international and national assemblies of policy makers and leading authorities, with regards to the existing performance and future guidelines intended for the continued existence of the antiquities of Egypt (Elnaggar, 2014). Furthermore, in a number of studies, the Ministry of Antiquities has undertaken a feasibility study to restore and document the historical buildings, to produce methods or techniques for conservation (Aref, 2012). This study was also done on the Baron Empain Palace in Heliopolis, Cairo, which highlighted a lack of guidelines and policies regarding sustainable retrofitting implementation as a type of conservation to the palace (Aref, 2012).

1.2 *Research objectives*

The main objective of this study is to analyse the current practices that are applied in sustainable retrofitting of heritage buildings (either nationally or internationally), in order to enhance education on the management of heritage buildings and conservation, and produce policies and guidelines for Egypt. The aims of this study also include promoting environmental and sustainable performance measures for existing heritage buildings without impacting their cultural heritage, increasing sustainability awareness, and encouraging the contribution towards conserving our heritage. The actions capable of accomplishing these discussed aims and objectives include:

- identifying and discussing the sustainable retrofitting nature of the national and international projects.
- studying diverse types and conditions of national and international case studies for retrofitting.
- identifying the sustainable retrofitting applications that are applicable to heritage buildings.
- investigating the practices of sustainable retrofitting for heritage buildings that are usable in Egypt.

1.3 *Research methodology*

This paper examines sustainable retrofitting implementations in heritage buildings. A qualitative analysis, through a literature review, was implemented in order to document recent practices of sustainable retrofitting and was used when needed to follow the right procedures. Together, the panels of experts, selected according to field relevance, were always prompt to cooperate with the strategies upon request. Different studies are analysed, and then re-adapted by retrofitting heritage buildings.

The method of this paper follows a technique that should be implemented to accomplish the purpose of this study and the objective supported by the subsequent points, as shown in Figure 1.

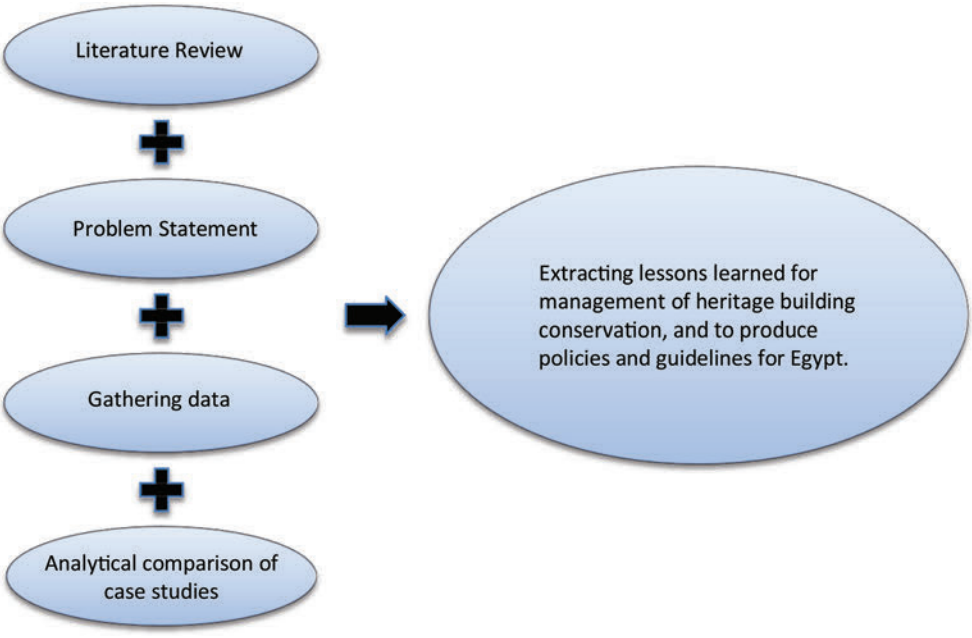

Figure 1. The outline of the methodology.

- Explain the basic terminologies supported by academic sources and integrate them.
- Declare the problem statement and analyse a manageable objective.
- Gather data to identify the various types, methods, climate zones and project sizes of the retrofitting projects in different case studies nationally and internationally.
- Analyse the case studies and examples of sustainable retrofitting projects.

1.4 *Value of research*

This paper is crucial as there exists a lack of management plans for sustainable retrofitting of heritage building and their implementation in Egypt. Thus, further studies need to be considered and implemented, similar to as in other countries. It should also include the possibility of its success and failure, as well as further plans suitable for implementation. Public awareness of project conservation of heritage buildings takes into account the future sustainable techniques used to renovate such types of building. Furthermore, this research is essential to the 2030 plan and vision explained, as it is concerned with the sustainable development, protection, and conservation of heritage buildings. Finally, if sustainable retrofitting is used in conservation of heritage building projects, it will assist in accomplishing an improvement policy plan.

2 LITERATURE REVIEW

This section of the dissertation covers the literature review, identifies the issues, while assessing the literature review sources. This section explains the meaning of Cultural heritage Management, Value of Heritage Management, Conservation, Sustainable Retrofitting and Heritage Buildings Conservation, and the multidisciplinary role of Sustainable Retrofitting.

2.1 *Nature of heritage*

Historical places may be composed of one or more buildings, regions, landscapes or archaeological sites that have previously been acknowledged and declared to be historical regions.

Table 1. Nature of heritage findings.

Author	Year	Focus on	Findings
Laila Khodeir Shaimaa Tarek Dalia Ali	2016	Age	These authors summarise briefly the identification and definitions of heritage buildings and extract a definition of heritage buildings as assets that contain ordinary value that are conserved for the population, and as being important properties that need to be protected and renovated for many years to come.
Feinlden, B.	2003	Value to the Culture	
HasifRafidee, B. in Hasbollah	2014	Value to the Culture	
Identify Historical Places Part 1 (Initiate)		Value to the Culture	
Kamal, S.K. Harun, S.N.	2002	Age	
Oxford English Dictionary	1989	Age	

Such identification and declaration assists in defining the identity of a society and presents unusual insights into its culture, traditions and background (SAVE Initiative, 2007). In other words, heritage buildings provide symbols to be carried and used by a nation. The buildings facilitate the creation of the nation's character and social values, and add to the tourism industry (Hasbolla, 2014). The Egyptian law no. 119, of 2008, considers the historical buildings to be important properties that agree with, and rather encourage, the need for renovation and maintenance (Khodeir et al., 2016).

Egypt is loaded with the multiplicity of existing heritages that, unfortunately, suffer from several issues. There are countless resources concerning the terminology of 'built heritage', that has been defined as 'a historic building that gives us a sense of wonder and makes us appreciate culture and our heritage' (Feilden, 2003). Moreover, there exist several identifications and definitions of 'heritage' from several sources, such as the Oxford English (1989), that state and characterise heritage as being an 'asset' that could be acquired. Table 1, the illustrated sources and terminologies are gathered to identify, as selective criteria, the age and value, the findings of the statistics, and the scarcity of data.

2.2 *The Philosophy of value of heritage buildings and its classification*

The current practices consider the value of built heritage to be an important factor in the conservation field. Values classify the importance of buildings and categorise some places and objects as historical (Avrami, 2000). The Welsh government classified the values of the existing built heritage into several types, as shown in Table 2. Cadw's main beliefs of conservation were represented by a system for surveying the importance of every noteworthy resource in view, and categorised such values into four parts (Cadw, 2011).

Four models of order were contemplated through the previous review. Every model has at least one particular aspect of arrangement. The grouping by Cadw was categorised by evidential and recorded qualities, in which the work in itself could act as proof of a particular piece of history or act as an extensive part of a verifiable period. Social qualities, for instance, were grouped under what was called mutual esteem (Khodeir et al., 2016). In Table 2 below the classification of values, illustrated from several sources, were used to extract the definitions and the relationship between value and heritage buildings.

2.3 *Cultural heritage management*

The sources represented in this section of the literature review have been used in defining the terminology of cultural heritage as being 'the result of interactions between people through a period of time and it contains all features of the surrounding environment as a reflection of rituals, values and traditions'. These results have been collected into a group of resources

Table 2. Basic terminologies for value of heritage management.

Model type classification	Defined basic terminologies
	Evidential Value • Value yielded from the capability of a place to harvest new confirmation about past human movement (Heritage, 2008). • Value obtained from historical benefits which provide verification for human movement and were proved with evidence in several cases (Cadw, 2011).
Cultural Value →	Historical Value • The benefits of historical association of notable movements of an event, person or a family that exemplify a particular feature of life in the past (Heritage, 2008). • Values extracted from the routes where individuals from the past, occasions, and parts of life can be associated into a present place (Cadw, 2011).
Cultural Value →	Aesthetic Value • Values invented by people with an intellectual stimulation from history (Heritage, 2008). • Values yielded from the courses in which individuals draw tangible and scholarly from a place (Cadw, 2011).
	Communal Value • Values that are concerned with the collective experience or memories people derive from historical benefits passed onto them (Heritage, 2008). • Values acquired from the implications of a place, for a general population that identifies with it, (Cadw, 2011).
Usage Value →	Social Value • Values that usually are the core for building conservation. It is one that is connected to an object or a place as it embraces a definite significance for people in the society, Torre, 2002).
	Economical Value • Values very powerful in recognition, revision and decision-making in the relation of things (De La Torre, 2002).
Age Value →	Comparative Value • Values that people connect to assets containing economic, symbolic, spiritual and comparable values (Cadw, 2011).
Risk Value →	Vulnerability Value • Identified by the risk level that the building draws (Cadw, 2011).

inherited from the past (Gnedovsky, 2013). On the other hand, the relation between values and cultural heritage is described in economic and social sectors. Some of the authors and sources focus on the type of cultural heritage as built heritage, existing heritage, and variable and archaeological heritage, while others focus on the general part of cultural heritage management (Gnedovsky, 2013).

Alongside various verifiable periods, people presented an assortment of cultural heritage that kept their recordings of heritage throughout time. Cultural heritage is characterised by the Council of Europe's Framework convention as a gathering of assets acquired from the past which individuals recognise, autonomously of proprietorship, as a reflection and articulation of their always advancing qualities, convictions, information and conventions. It incorporates all parts of the earth coming about because of the connection amongst individuals and places through time' (Khodeir et al., 2016). Fabricated legacy is an essential kind of cultural heritage as it can exceptionally address various parts of a general public and its advancement throughout history (Khodeir et al., 2016).

The research study sources found that during the collection of data for the basic terminologies of the value of heritage management, the same definitions were agreed upon, as shown above in Table 2. The tangible along with permanent values are classified as cultural

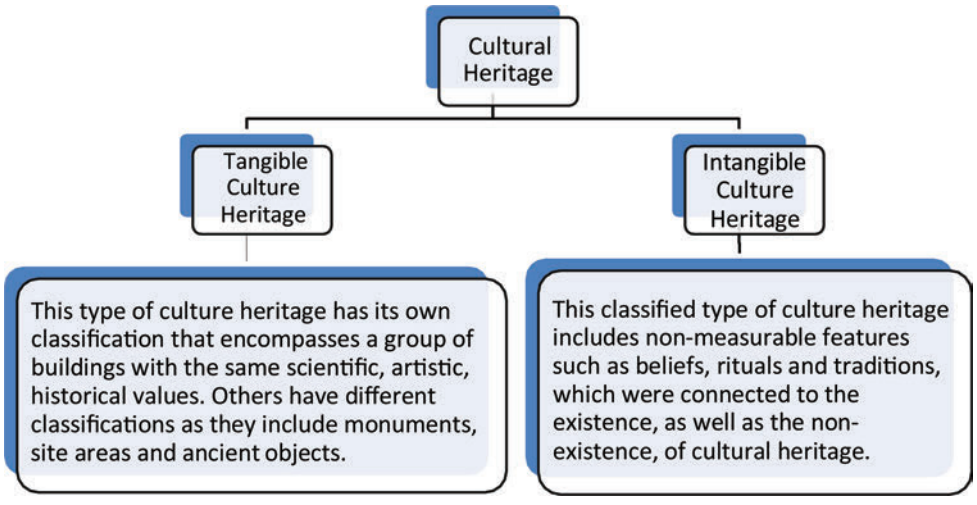

Figure 2. Culture heritage classification types (Hasbolla, 2014).

values which include only four forms, such as aesthetic value, historical value, evidential value and comparative value, from a classification of use that includes economic, symbolic, social and spiritual values. Communal values that are classified under the title of cultural values, in addition to vulnerabilities classified under risk values, are more contingent and reliant on situations (Cadw, 2011).

In Figure 2 below the classifications of tangible and intangible for cultural heritage, which illustrate basic terminologies and descriptive meanings from reliable sources, are presented to extract the classification nature of cultural heritage.

According to this classification, heritage building is considered and described as a tangible classification of cultural heritage. Tangible is defined as a physical feature that can be measured, while intangible is a non-physical feature that cannot be measured. The basic terminology of tangible cultural heritage, according to UNESCO, describes the physical objects that were extracted, conserved and broadcast throughout the community. Meanwhile, intangible cultural heritage is considered to be a foundation and resource of various cultures and acts as a motivation for sustainable development (UNESCO, 2003).

2.4 *Nature of conservation*

The conservation in this part of the literature review focuses on the conservation of heritage as the scope of the paper and as per its sequence. The heritage conservation theory is universally accepted, adapted, and practised. An important aspect of its process is to restore the aesthetic features of a heritage building. The most significant characteristic of its background is the ethical feature rather than the aesthetic feature (Heba, 2011). Consequently, the harmony and the beauty of a building are then deemed unacceptable, considering measurements, when restoring it to its original state (Harun, 2005).

The cautious management of alteration is conservation as it protects the historical buildings, qualities, and features to secure it in its original state for present and future generations (Heba, 2011). The conservation of a historical building will be achieved by understanding its importance to be able to accomplish the following aspects (Heritage, 2008):

- the classification to the terminology of heritage value as it is exposed to modification
- classifying the constraints to achieve heritage value
- focusing on the authenticity and future value of the building by a decision-making model.

The act of preservation generally encompasses two main aspects that include caring and protection from being decimated without cautious arrangements (Harun, 2005).

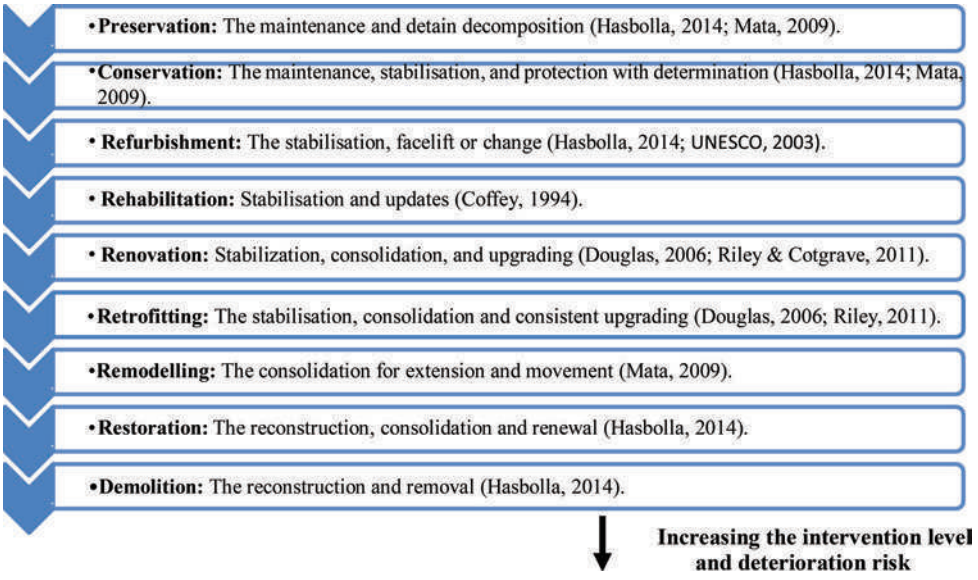

Figure 3. The basic terminologies of conservation approaches.

Table 3. Terminologies of retrofitting and its relation to heritage management.

Authors	Year	Basic terminologies of sustainable retrofitting
Almedia, Sara Lucia Gonclaves de	2014	The term 'Retrofit' means to afford, in a sustainable manner, something while constructing.
Riley, M; Contgrave, A.	2011	Retrofitting is fitting new and more current frameworks into an existing building.
Douglas, J	2006	'Retrofitting' is generally connected to building administrations, regardless of the building structure and texture being extensively longer than that of the introduced administrations, as indicated by Douglas.
Wilkinson, S.	2017	'Retrofit' is 'any work to a working far beyond upkeep to change its ability, capacity or execution'. It is 'any mediation to alter, reuse or update a working to suit new conditions or prerequisites.
Mansifield	2002	Retrofitting can be replaced by many terms such as upgrading, renovating, conversing and refurbishing.
Traykova, Maryna; Charkadova, Tanya	2014	The existing heritage building retrofitting represents a sustainable approach to demolish the new building construction.
Oget N.COCEN	2013	The heritage buildings conserved for a period of sustainable features without alteration in its contextual characteristics.

As indicated by a study, 'saving will prompt to draw out the life and the social property for its use until further notice and later on' (Hui, 2004).

2.5 *Identifying sustainable retrofitting and its relation to heritage building*

Although sustainable retrofitting as a concept was introduced back in 2002 through the publication of sources for 15 years, different authors have made different attempts to redefine it.

These many definitions are represented in Table 3 and are illustrated in the findings section of the literature review.

Based on a discussion of several definitions and terminologies of sustainable retrofitting, it could be concluded that the most comprehensive definition according to the scope of this research study is the one that merges between retrofitting and heritage buildings. It concludes the terminology finding by summarising all the sources represented above into one definition, stating that retrofitting is a procedure of making conceivable utilisation of a property through repair, changes, and increases, while safeguarding its authentic, social or engineering values.

3 COMPARATIVE ANALYSIS OF CASE STUDIES

In this section of the research, a qualitative analysis of some case studies is presented. These cases are selected according to a number of principles that encompass conservation, heritage building, value management, and integration between heritage building management and sustainable retrofitting for conservation. The factors and selection criteria that the case studies are based on include:

- varied climatic zones
- different sustainability aspects
- varied building use
- renovation of existing building or heritage building.

3.1 *Case studies*

This particular section of the case studies is meant to assess and discuss the cases of heritage buildings' residential and sustainable retrofitting with unique reference to Egyptian palaces

Table 4. Sustainable retrofitting and renovation of heritage building cases.

Classified Data	Case Study 1	Case Study 2	Case Study 3
Name	Deniz Palace	Hong Kong University	Alexandria National Museum
National/International	International	International	National
Age	1920	1930	1931
Location	Turkey	China	Alexandria, Egypt
Original Use	Residential Building	One floor residential and two for commercial	Residential Building
Recent Use	Administrative Building	University Building	National Museum
Relation with the classification of Cultural heritage: • Cultural Value • Use Value • Age Value • Risk Value	Use Value Age Value	Cultural Value Use Value	Cultural Value Use Value
Aim of Reuse	Additional loads to the building lead to Structural Element Retrofitting	Changing the use without interfering with value and building preservation	Enhancing the circulation and preservation of the main villa
Added Element and Retrofitted Part	• Reconstruction of foundations, columns, beams • Adding an elevator and fire escape staircase • Preserving the façade	• New mechanical systems added • Preservation of façade • Facilities for disabled • New glass windows, staircases & fire safety measures	• New mechanical systems added • Adding safety measures and techniques • New glass windows

Table 5. Existing building retrofitting.

Classified data	Case Study 1	Case Study 2	Case Study 3
Name	Passive House	Clarence House	Telus Building
National/International	National	International	International
Age	1940	1825	1940
Location	Cairo, Egypt	England	Vancouver
Original Use	Farmhouse	Residential	Office Building
Recent Use	Farmhouse	Residential	Office Building
Relation with the classification of Cultural heritage: • Cultural Value • Use Value • Age Value • Risk Value	Use Value Age Value Risk Value	Cultural Value Age Value	Use Value Age Value
Aim of Reuse	Active solar retrofitting in order to reduce dependency on non-renewable energy	To reduce carbon emission of CO_2 and to preserve heritage assets	Existing buildings should be reused and green strategies should be incorporated
Added Element and Retrofitted section/ finding	Providing an examination and vision for retrofits that may be implemented in the future on a large scale in Egypt	• Installing 32 solar panels on the roof • Raising the profile of new technology for sustainable retrofitting reuse in old residential assets	• Providing pre-heating in winter conditions • Using double facades to prevent demolition • Reusing existing systems

and houses. Analysts have handled the examined target through exploring the favourable circumstances and weaknesses of sustainable retrofitting in writing throughout the period of 2008 to 2016. The analysis of the cases results in a description of the integral relationship between sustainable retrofitting and heritage buildings.

The illustrations written below in Tables 4 and 5 are compared with the literature review on cultural heritage classification and components of retrofitting. The investigation additionally incorporates the correlation between reuse objectives and the components that were added to meet these objectives.

4 FINDINGS

The findings of this paper are extracted from the literature review after defining terminologies and focusing on the scope of topic that is sustainable retrofitting. It also produces a qualitative comparative analysis of the case studies previously presented.

4.1 *Findings of literature review*

The scope of work focuses on the sequence and flow constructed in the literature review, as shown in Figure 4. The statistics show that there is a scarcity in data with regards to sustainable retrofitting and its integration with heritage management, as is evident by its lowest percentage of the variable.

a. Heritage Building Management has had six resources indicated within the literature review that present the definition from an age and value point of view. The author summarises the differences and controversies surrounding this terminology. The extracted terminology is an asset that contains ordinary value conserved for the population; one that requires protection and renovation during upcoming years.

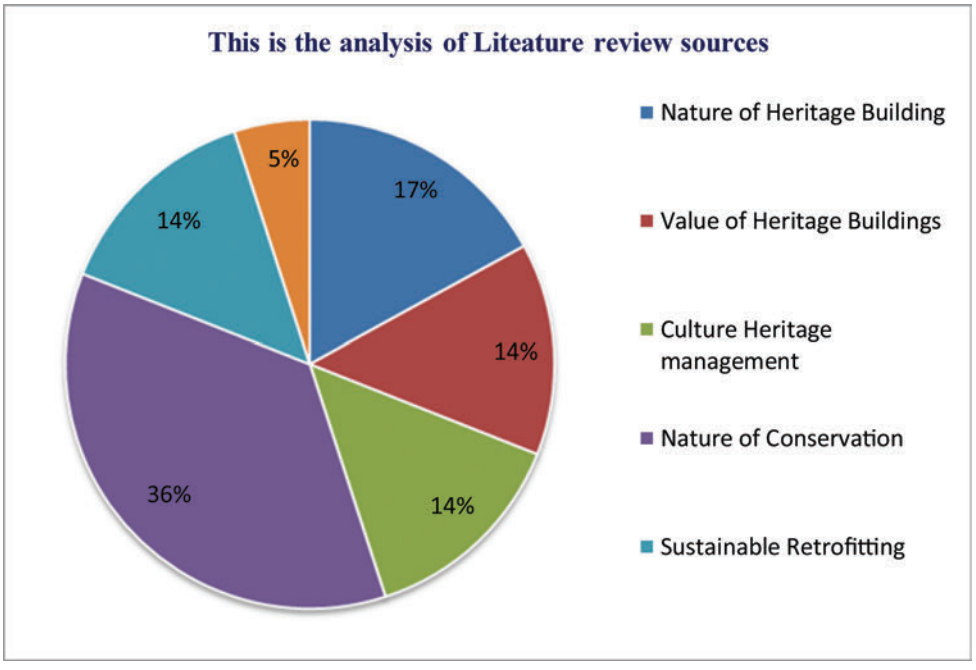

Figure 4. The literature review sequence of extracted data percentage.

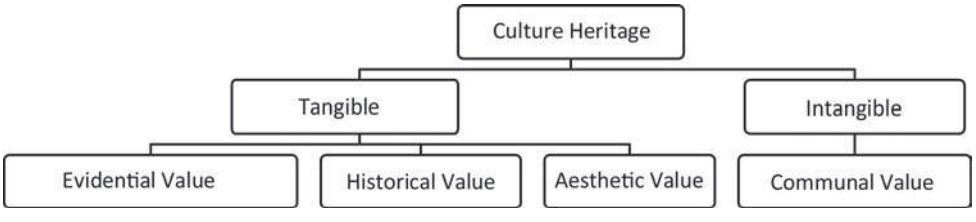

Figure 5. Classification of value and culture heritage.

b. The Value of Heritage Management includes four selected values which are the Evidential Value, Historical Value, Aesthetic Value and Communal Value. The illustration shown below is just a collection of the sources to identify the terminology findings that support the flow of this study.

- Evidential value is value acquired from the capability of a place to gather information on past human movement.
- Historical value is one acquired from the routes where individuals from the past can be associated with those of the present.
- Aesthetic values are those attained from courses through which individuals draw tangible and scholarly views from a place.
- Communal value is value yielded from a place for the general population that identifies it.

c. Cultural Heritage is the result of interactions between people through a period of time and contains all features of the surrounding environment as a reflection of rituals, values and traditions. These results were collected from a group of resources inherited from the past.

Tangible means a physical feature aspect that can be measured; however, Intangible is a non-physical feature that cannot be measured.

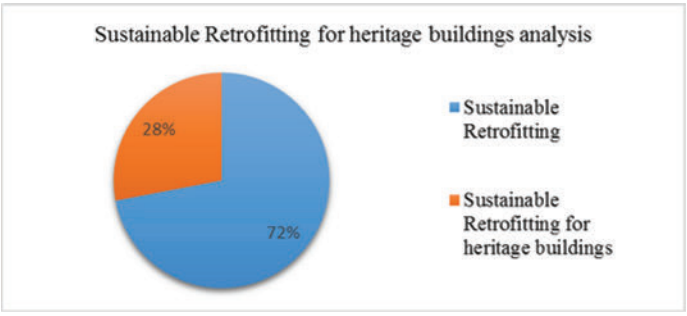

Figure 6. Sustainable Retrofitting Analysis.

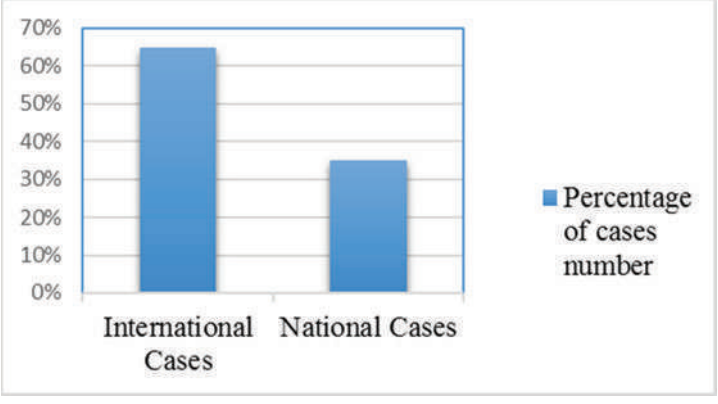

Figure 7. Analysis of the available case studies.

d. Conservation, according to the sources represented above, is defined concisely in the 'Nature of Conservation' section of the literature review. It is stated that conservation is an action taken to draw out the life and existence of important structures over time. In Figure 5 conservation approaches and a statistical analysis of the intervention level and deterioration risk are represented. (Douglas, 2006; Riley & Cotgrave, 2011; Mata, 2009).

The most comprehensive definition, according to the scope of this research, states that retrofitting is an upgrade of a building without major alterations. It has proven to be the most suitable for heritage buildings to be upgraded for future generations, and to protect and save the value of buildings that are in a deplorable state and have been closed without any use.

e. Sustainable Retrofitting was summed up by seven sources represented through an analysis of its terminology throughout the last 15 years. Seventy-two per cent of the sources focus on the sustainable retrofitting of a new building or a part of a building, while 28 per cent focus on sustainable retrofitting's integration with heritage building. The results in Figure 6 shows the analysis that indicate that there exists a scarcity in the integration of sustainable retrofitting and heritage buildings which represents the topic of this research.

4.2 *Findings of case studies*

The literature review extracted that the sustainable retrofitting of heritage building has the lowest percentage, which was the focus and scope of the selected case studies. The statistics show that there exists a scarcity in data with regards to the number of cases in Egypt, while the percentage for the international cases was proven to be higher.

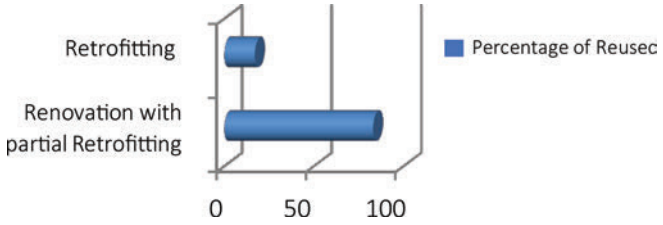

Figure 8. Percentage of retrofitting and renovation in the building.

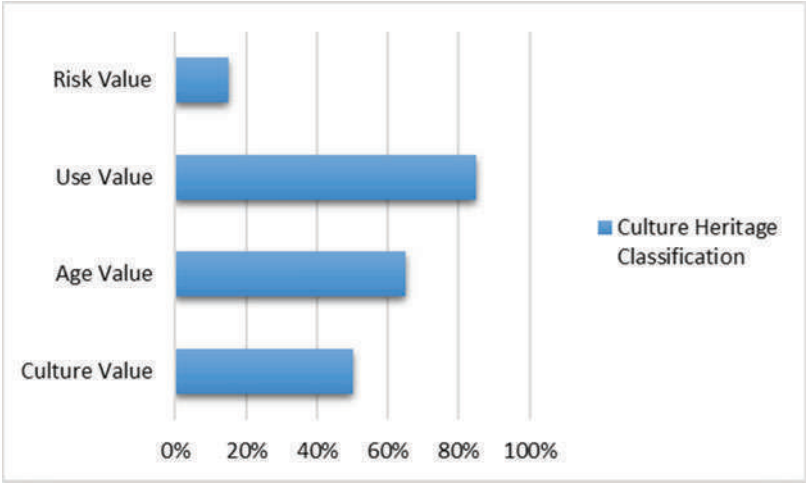

Figure 9. The cultural heritage value classification.

With regards to the case studies that have been used and compared, the majority of the results show that parts of the building have been retrofitted with renovation plans for the whole structure.

The statistics show that there is a scarcity in data of the risk value integrated with heritage building, and the majority of building focuses on the use value, and then the age. The case studies that were selected concluded that half of the cases were renovated to be reused for a different process, so the renovation plan is more important than the retrofitted part in the building to adapt the new uses of the building, whereas the other cases using retrofitting kept their original use. This lead to the fact that the use value of the building controls the plan of conservation in the building. Figure 9 show that it is the higher percentage.

5 CONCLUSION

This paper has sufficiently fulfilled and presented the basic terminologies related to heritage management and sustainable retrofitting in the form of tubular data and statistical analysis. Researchers agreed that heritage buildings are defined by age and value through the literature review results and the analysis extracted. Consequently, it has been declared that cultural heritage management is divided into tangible and intangible, thus guiding the process of case studies selection. One of the types of conservation presented and analysed in the literature review is sustainable retrofitting as the main scope of the comparative analysis of the case studies.

Furthermore, the outcome of the comparative analysis is extracted by two methods of renovation and retrofitting. The retrofitting aspect in the buildings analysed was only partially applied. On the other hand, the renovation was applicable to the whole building. Finally, based on an investigation of Egyptian cases, it was clear that sustainable retrofitting is already being used. However, the framework, guidelines and lessons learned from the implementation require further studies by following the codes of conservation plans in Egypt and facilitating an availability of resources for implementation models. The case studies have achieved a basic analysis, but still require further integration for Egypt's codes and policies, in order to reach a lessons learned phase.

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New urbanism and its reflection on residential interior design in Egypt

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ABSTRACT: Sustainable development has been increasingly embraced as a worldwide concept. Consequently, urban sustainability is gaining conscious attention in many cities. Along with urban sustainability, design principles in new urbanism were referred to by many architects and urban designers. But, little research was done which aligned with the interior spaces through the lens of new urbanism. This research aims to understand how developed countries established design criteria for neighbourhood settlements based on the new urbanism. Consequently, it provides insights for developing countries to adapt appropriate design criteria for new cities. Accordingly, the principles of new urbanism and how they were transformed into strategies were explored through the Leadership in Energy and Environmental Design for Neighborhood Development rating system. Even though new urbanism has basic principles that can be applied all over the world, there will still be some principles that need to be adjusted according to different cultural, ecological, and economic circumstances. Egypt has a rapidly growing population and this has led to an expanding sprawl in some areas. A case study was conducted to identify which new urbanism principles are successfully applied and which need to be adopted within a new Egyptian settlement. This study explains how urban design, landscape architecture, architecture, and interior design share common features and elements that shape cities' identities. Furthermore, it highlights areas where new urbanism principles and interior design are mutually influenced. Eventually, it is expected that this exploration of a developed nation's design criteria will provide valuable insight for an interior designer's contribution to the successful urban sustainability models and guide future research.

Keywords: New Urbanism; Egyptian Neighbourhoods; Residential Developments; Interior Design

1 INTRODUCTION

Globally, increasing population is leading to urban growth which is associated with multiple challenges. One such challenge is in providing adequate housing (Smith, 2014). Industrialisation, technological advancement, and car dependence have changed the way traditional cities were planned, designed, and built. The suburban communities in the United States led to increased infrastructure costs and environmental degradation. In addition, the building footprint increased, housing costs rose, and natural ecosystems services were disrupted. Roads and highways were extended due to the over-reliance on cars for commuting, leading to an exhaustion of natural resources, traffic congestion and air pollution. People became more isolated and lacked a healthy amount of social interaction (Grant & Tsenkova, 2012). A declining quality of life is associated with the poorly planned urban growth.

Several movements arose as a reaction to the urban spaces that were characterised by over-reliance on passenger cars as a means of transportation and the slums that were created during the era of industrialisation. One example is 'The Garden Cities of Tomorrow' which aimed to

integrate the economic and social advantages of a traditional town with the privacy and calmness of a country life. 'The City Beautiful Movement' is another reform concept that was driven by planners' efforts. It aimed at providing a better design for a more beautiful city, which highlights civic virtues. The focus of these movements was to provide urban dwellers with homogeneous mixed-use, prosperous, healthy, connected places (Smith, 2014). These concepts were advanced by new urbanism which incorporated the features of the neo-traditional planning strategy with the concept of transit-oriented design (Grant & Tsenkova, 2012; Smith, 2014).

The United States Green Building Council (USGBC) (2017) took a step towards sustainability through incorporating the leading principles of green building, new urbanism, and smart growth, and released the Leadership in Energy and Environmental Design for Neighborhood Development (LEED-ND) rating system, created as a collaborative effort by the organisations leading each model. LEED-ND encourages designers, planners, engineers, and developers to work collaboratively, creating new development that is expected to 'revitalise existing urban areas, reduce land consumption, reduce automobile dependence, promote pedestrian activity, improve air quality, decrease polluted storm water runoff, and build more liveable, sustainable, communities for people of all income levels' (USGBC, 2014). Moreover, there are several worldwide attempts to develop sustainable urban places. One example is the Building Research Establishment Environmental Assessment Method (BREEAM) of assessing, rating, and certifying buildings and communities in the United Kingdom. Another example, Comprehensive Assessment System for Built Environment Efficiency (CASBEE), is the green building management, rating, and certifying system in Japan (Smith, 2014).

In Egypt, new neighbourhoods were developed outside city centres, due to the increase in population, and the internal migration of peasants from rural to urban areas in search of better job opportunities. The planning of these new cities did not follow the traditional planning principles for the desert environment. They were not designed according to predefined customised guidelines that fit with the Egyptian context. Instead, strategies were borrowed from Western countries and adapted to the Egyptian governmental regulations (Shokry, n.d.). The non-efficient development standards that were adopted for the new cities ended up creating a chaotic mixture of aesthetic and cultural values (Shafik & Bayar, n.d.). This has led to a lack of identity and historical background as well as social exclusion. Consequently, this results in the development of communities that do not sustain the environment nor meet the needs of their residents (Hegazy & Moustafa, 2013; Ismail & Fattah, 2008; Shafik & Bayar, n.d.).

2 LITERATURE REVIEW

The United Nations Environment Programme (UNEP) declares that buildings consume about 40% of global energy, 25% of global water, 40% of global resources, and contribute to emitting up to 30% of global greenhouse gas emissions. (United Nations, 2009). Developing the built environment in a sustainable way can have a positive impact on ecosystems that are intensely managed and modified by humans. In this sense, ecosystem services are defined as being the benefits that people attain from ecosystems (Tzoulas et al., 2007). These can be in the form of provisioning, regulating, supporting, and cultural services. These services directly affect the constituents of human well-being, including security, basic material for good life, health, good social relations, and freedom of choice and action, and thus affect the quality of life (Mooney et al., 2005). Ecosystem services provide an organising concept to make environmental, economic, and social objectives explicit and measurable, as addressed by Windhager et al. (2010). Linking performance-based design goals to ecosystem services allows for an assessment of design decisions. Such an evaluation contributes to the achievement of a more sustainable culture, according to Windhager et al. (2010).

Green building, new urbanism and smart growth are three recent and well-recognised movements. They share common principles and strategies which aim to improve the impact from the built environment on the natural environment and human beings. However, each of them works on a different scale. Green building mainly focuses on the environmental impact of an individual building considering energy, water, lighting, and so on. Because green building

is mainly limited to the scale of a single building, it is hard for this model to influence the overall sustainability of a given location. New urbanism adopts a holistic planning and design strategy for creating better communities which offer a harmony between buildings and neighbourhoods. Smart growth supports the promotion of building and maintaining sustainable towns and cities within a regional scale in which urban, suburban, and rural communities are designed and follow transit-oriented forms (Smith, 2014). Each of these efforts has faced the obstacle of lacking practical design guidelines, which results in the limitation of their implementation (Smith, 2014).

Built upon the foundation of principles developed previously by green building, new urbanism, and smart growth, in partnership with the Congress for the New Urbanism and the Natural Resources Defense Council, the USGBC released a version of the LEED-ND Rating System (Grant & Tsenkova, 2012; Smith, 2014). It attempts to tie credit attainment with building performance, ecosystem services production, and human well-being (Windhager et al., 2010). Accordingly, the LEED-ND rating system gave encouragement to achieve specific credits within five categories; the main prerequisites and credits are categorised as Smart Location and Linkage (SLL), which is directly related to: Smart Growth, Neighborhood Pattern and Design (NPD), which is an output of new urbanism principles; and Green Infrastructure and Buildings (GIB), which is a descendant of green building concept. In addition, the rating system includes the Innovation and Design Process, and Regional Priority (Smith, 2014).

The LEED-ND rating system embodies physical features and psychological associations to create thriving and healthy developments. Two of the LEED-ND strategies are directly related to the field of interior design. The first is the NPD category which is worth up to 44 points, and the second is the GIB category which is worth up to 29 points. These two categories entail guidelines that are relevant to assessing the ecosystem health and resident well-being. LEED for NPD has been adopted as a guideline to measure the 'liveability' of cities (Boeing et al., 2014). In the USGBC's handbook it is emphasised that the character of the neighbourhood, which is shaped by the design of different building types together with the streets and open space, affects the quality of life (USGBC, 2014). However, it is observed that some of its criteria are based on aesthetics that express diverse values and preferences (Boeing et al., 2014). The concept of GIB introduced in LEED-ND upgrades urban green systems, which are a compromise of natural, semi-natural, and artificial networks of the

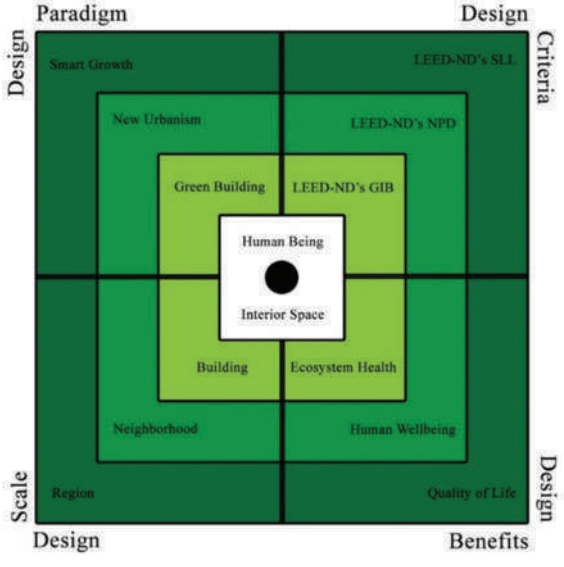

Figure 1. Diagram that shows the relation between built environment, natural environment and the human being in terms of design paradigm, scale, criteria, and benefits. Source: created by the authors.

ecological system. GIB is an approach that if planned, developed and maintained properly, the neighbourhood will offer opportunities for integration between urban development, ecosystem health, and human well-being (Tzoulas et al., 2007).

3 METHODOLOGY

First, an exploratory methodology was applied to introduce the basic principles of new urbanism, smart growth, and green building, and explain how they are related to the LEED-ND rating system. In addition, the two criteria NPD and GIB were utilised as supplemental information to understand how built environment contributes to the ecosystem health and human well-being. Second, a case study was conducted to examine the applicability of new urbanism principles within Egyptian neighbourhoods and how they are related to the design of interior spaces. Finally, a recommendation to adapt these principles into the Egyptian local urban conditions was proposed.

4 NEW URBANISM

New urbanism principles were initially implemented in projects designed by Andres Duany and Elizabeth Plater-Zyberk (Grant, 2012; Shafik & Bayar, n.d.; Smith, 2014). This movement emerged to react against urban sprawl and integrate design with planning at different scales. It encourages the development of the communities that promote mixed-use and high-density within a community, and also the promotion of connected, compact, walkable, transit-oriented, and diverse neighbourhoods. The sustainability concept occurred as a reaction to the overconsumption of environmental assets. It advocates meeting the human needs while protecting natural ecosystems, regulating the use of natural resources, and eliminating the waste outputs. Consequently, the Congress of New Urbanism was formed in 1993. Its aim

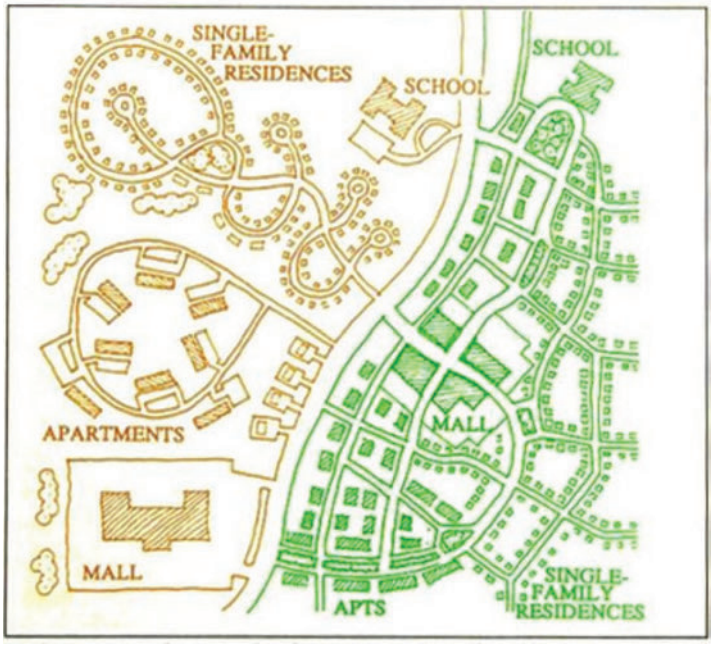

Figure 2. Sketch of suburban sprawl versus traditional neighbourhood design.
Source: http://msue.anr.msu.edu/news/good_urban_form_promotes_walkability_and_physical_health_part_2.

was to show how cities can expand in a way that makes growth attractive to the public and profitable to developers. As an effort towards this goal, new urbanism designers and planners developed a set of design principles, known as the Charter of New Urbanism (CNU), to guide their strategies (Grant, 2012).

The CNU guides public policy, development practice, and design (Shafik & Bayar, n.d.). The charter consists of 27 principles under three main categories. The first category is the 'Metropolis, City, and Town', that is concerned with the region scale. The second is the 'District and the Corridor', which focuses on the neighbourhood scale. The third is the 'Block, the Street and the Building', which is narrowed to the block scale (The Cooperation Council, 2012). This paper was guided by the new urbanism principles focusing on the block scale. Within the block, street, and building scale, the CNU established a preference to expand the thought of architectural design of buildings so that buildings are addressed as a part of the whole, and thus define street and public space profiles. This will result in a perimeter block development which emphasises the importance of the design of spaces between the building, considering the scale of the buildings and activities that will take place within this space. Successful residential environments tend to maintain a clear defined structure in which housing units, open spaces and other activities are within a clearly structured framework of interconnected routes (Tiesdell, 2010).

The CNU also states that individual architectural projects should be designed in integration with their surroundings (The Cooperation Council, 2012; Tiesdell, 2010). In addition, it argues that the design of streets and buildings should reinforce safe and secure environments without compromising the accessibility and openness. Moreover, the CNU emphasises the design of pedestrian-dominant but car-accessible environments in which the design of buildings and spaces meets the need of people through integrating traffic with other activities. Accordingly, a frequently promoted strategy of new urbanism is to provide service allies which allow the cars to park at the rear of the block, minimising their visual dominance within the streetscape. Consequently, having an active frontage and properly configured streets, squares, and pavements will provide a safe, comfortable, and interesting pedestrian-friendly environment in which residents can feel encouraged to walk, know each other, and protect their communities (The Cooperation Council, 2012; Tiesdell, 2010).

Within new urbanism principles, the architectural idiom is considered an important factor in emphasising the sense of place. The CNU encourages the developments responding to the local and regional identity in which architectural and landscape designs should arise from local climate, topography, history, and building practices. Moreover, civic buildings and public gathering places are important elements of the new urbanism as they provide a physical and social focus of the neighbourhood and thus develop the sense of community. The charter principles address the environmental aspects within the building and the occupant's connection to the surrounding environment in terms of location, weather, and time. Finally, the CNU expresses the importance of preserving historic assets as an integral part of the planning system (The Cooperation Council, 2012; Tiesdell, 2010).

5 DISCUSSION

5.1 *Combined design principles based on the new urbanism and green building*

Table 1 below summarises how design principles on a basis of the green building, new urbanism, and smart growth are linked to the architecture, landscape architecture, and interior design disciplines. It also shows the applicable strategies. The table was created in order to enlist the design elements at the block scale that were mentioned in the CNU. The design elements were classified according to the understanding of the NPD and the GIB criteria. The reason behind this classification is to link the exterior and interior design aspects of the buildings with their surrounding environment. Thus, the scope of the design could be identified from the table.

Table 1 presents how new urbanism principles are connected to the elements in landscape architecture, architecture, and interior design.

Table 1. The new urbanism principles that affect the block scale, and which scope of design it influences such as landscape architecture, architecture, or interior design.

3Es	New Urbanism Principles / Factors Affecting Block Scale	Scope of Design L.A.	Arch.	I.D.
Environment	**Improve Land Use Pattern**			
	Preserve Open Space	■	■	▭
	Infill Development	■	■	▭
	Rehabilitation Opportunities	■	■	■
	Link to the Surrounding			
	Location	■	■	■
	Weather	■	■	■
	Time	■	■	■
	Respect Local Character			
	Topography	■	■	■
	Resources	■	■	■
	Building Practices	■	■	■
Equity	**Create Sense of Place**			
	History	■	■	■
	Culture	■	■	■
	Style	■	■	■
	Transform Community Identity			
	Safe	■	■	■
	Walkable	■	▭	▭
	Pleasant	■	■	■
	Reinforce Environment			
	Accessability/Connectivity	■	▭	▭
	Compactness	■	■	■
	Openness	■	▭	▭
Economic	**Create Mixed Land Use**			
	Dense/Diverse Population	■	■	■
	Range of Housing Choices	■	■	■
	Variety of Building Types	■	■	■
	Define Shared Places			
	Street/Square/Pavement	■	▭	□
	Parking Lots	■	▭	□
	Public Spaces	■	■	■
	Accommodate Smart Transportation			
	Public Transit	■	▭	□
	Private Cars	■	▭	□
	Bikes	■	▭	□

■ Direct Relationship
▭ Indirect Relationship
□ No Relationship

5.2 *Environment aspects*

The first part of the table consists of environmental design aspects which are influenced by the GIB criteria in combination with new urbanism principles. One aspect is the need of land use pattern improvement. This can be achieved through preserving open space, infill development, and rehabilitation opportunities. The rehabilitation opportunities are one of the aspects that is directly related to the field of interior design. Another aspect is how the built environment is related to the surrounding environment with a conscious sense of location, weather, and time. The interior designer should have a clear understanding of these aspects to create efficient spaces. The last set of design elements of this part is dedicated to the urge for respect of the local character. This entails the local topography, resources, and building practices. Interior designers can contribute to the reduction of resources use and benefit from the local building practices.

5.3 *Equity aspects*

The second part of the table shows the equity design aspects. This section is derived from the NPD in the light of the Charter of the New Urbanism. Creating a sense of place is one of the aspects that the interior designer could greatly influence. Together with the projects team members, the interior designer can imply history, culture and style within the design. The second aspect is the community identity. This aspect is in an indirect relationship with the field of interior design. However, interior design can play a role in presenting the building façades. For instance, they can reflect the features of interior space design and the building façades should also contribute to the creation of attractive places for pedestrians. The interior layout of the building would also determine how it is connected to its surrounding environment and promote walkability. Similarly, interior design would indirectly affect accessibility, connectivity, compactness, and openness of a building within its surrounding environment.

5.4 *Economic aspects*

The last part of the table is dedicated to the economic aspect. This aspect is more related to the neighbourhood scale; however, some of them have direct relations to the interior design. Creating a mixed land use with a range of housing options, different building types, and the dense and diverse population, will have a direct impact on the way interior spaces are designed to accommodate these purposes. Accommodating smart transportation can be of indirect relation to the interior design as they may be asked to provide some storage spaces for bikes, for example, and waiting spaces to support people using public transit. The last two design elements (i.e. shared places and smart transportation) were added in respect of the economic aspect because achieving them should contribute to the decrease of grey infrastructure cost and ultimately lead to cost reduction. The first set of design aspects covers the issues of preserving natural resources, creating high performance buildings, and the use of green infrastructure which eventually contributes to the ecosystem health. The second set of design aspects are related to the development of liveable communities which contribute to human well-being. Eventually, a thriving economy is expected to arise as a result of achieving the last set of design aspects. Moreover, ecosystem health and human well-being lead to a high quality of life which is the main goal for many developments.

6 CASE STUDY

After reviewing the principles of new urbanism and green building, and how it is implemented within the United States with the guide of LEED for Neighborhood Development, a table was created to show the factors that might influence building and neighbourhood design at the block scale. This case study explored these factors within an Egyptian neighbourhood. This study focused on the city of Sodic West. Sodic West City is the largest residential development, located in El Sheikh Zayed, off the Cairo-Alexandria Desert Road. In 2001, over 3,000 single family homes, townhouses, and apartments were delivered. Nowadays, Sodic West City has expanded to include a large number of different residential units, besides schools, clinics, banks, clubhouses, restaurants, office buildings, and shopping malls. A case was analysed based on a site visit, literature search, and an observation of physical environmental characteristics.

7 MAJOR FEATURES IN BUILDING AND NEIGHBOURHOOD DESIGN

Sodic West City has been recently planned and developed on desert land. Hence there are no infill development or rehabilitation opportunities yet. Its buildings showed a good link to the surrounding environment.

From an interior design perspective, this was achieved through different types of building openings such as windows, terraces, roofs, and private gardens. Although pictures from

Figure 4. Mass plan of Sodic West City.
Source: https://plus.google.com/photos/+tamergroop/albums/5983808916225460993/5983810974054592978.

Figure 5. (Top left) Interior space of an apartment on the ground floor that shows how the space is linked to the surroundings through windows.
Source: http://www.mlseg.om/en/egypt/96015/penthouse-casa-beverly-hills-october-city-for.

Figure 6. (Top right) Roof of a building in which residents can gather.
Source: https://www.linkedin.com/pulse/beverly-hills-apt-sale-tarek-salem.

Figure 7. (Bottom left) Terrace within an apartment.
Source: https://villaforrentorsale.wordpress.com/tag/beverly-hills/.

Figure 8. (Bottom right) Private garden surrounding an apartment on the ground level.
Source: http://property-advisors.net/property/villa-sale-beverly-hills/.

different residential buildings show the connection of interior spaces to exterior surroundings, it was noticed that environmental aspects are not on top of the designer's criteria list. For instance, there was no specific guideline or building code that designers could follow while designing the building envelope. Some buildings had large windows and others had small ones, which did not reflect a consistent use of energy consumption considerations. It was also noticed that roofs were mainly covered with tiles and green roofs were not well considered yet. It was observed that residents sometimes covered a portion of the private gardens with tiles for the ease of use and maintenance. Planning and design of the city showed some respect to the local character. A good example for respecting the topography was that some streets were inclined so that they led to elevated parts of the land. Egyptian marble was installed as interior finishes in some buildings. In addition to the use of palm trees and some other types of plants that were adapted to the Egyptian climate, less water was needed for irrigation.

Sodic West City is a gated community with nine gates located around its perimeter. It has been developed in several stages, starting with the area referred to as the 'Beverly Hills' area which contains several multistorey residential buildings with an average area of 200 m^2 and stand-alone villas with an average area of 400 m^2. These types of buildings are surrounded with green open space and a network of streets that accommodate vehicle and pedestrian-friendly pavements. The façades of the buildings were designed referring to European styles.

They feature tilting roofs that are not suitable for the Egyptian warm and dry climate. Most of the façades are painted in white, which is not convenient for the Egyptian dusty weather, requiring more maintenance efforts for the buildings' exteriors. The design of the façades is reflected in the interior spaces. The windows sizes were chosen only in consideration for the design of the façade, and ignoring the interior function and design. For example,

Figure 9. (Top left) Beverly Hills phase one multistorey residential buildings.
Source: http://6october4realestate.blogspot.com/2016/06/beverly-hills-villa.html.

Figure 10. (Top right) Bel Air townhouses.
Source: http://www.gardencity-eg.com/Developments.htm.

Figure 11. (Bottom left) Casa multistorey residential buildings.
Source: http://www.ahram.org/en/egypt/40265/pent-house-for-sale-casa-compound-beverly.

Figure 12. (Bottom right) Alegria stand-alone villas.
Source: https://egypt.aqarmap.com/en/for-rent/villa/cairo/el-sheikh-zayed-city/650639.

Figure 13. (Top left) The British International School in Cairo, located in Sodic West City.
Source: http://wassefdesigngroup.com/british-international-school-in-cairo-bisc/.

Figure 14. (Top right) Westtown Hub.
Source: https://www.behance.net/gallery/26340775/Westown-Hub-Architectural-photography-Egypt.

Figure 15. (Bottom left) Beverly Hills main square and streets.
Source: http://sodic.com/our-developments/beverly-hills/.

Figure 16. (Bottom right) Public transportation provided by Sodic West City to its residents and employees.
Source: http://www.beverlyhillsegypt.com/.

it is very common to have very small window openings in kitchens and bathrooms, which can cause an increased dependency on artificial lighting in those spaces. In the later phases, such as Alegria, Casa, and Bel Air, some of these aspects were improved. The network of streets and pavements were expanded. In addition, some water features and urban furniture were added which promotes walkability. Modern design is the main theme of these areas, with earth colour schemes which are more compatible with their surroundings. Moreover, compact design was noticed in the new phases within both the multistorey residential buildings as well as for the townhouses and stand-alone villas.

The residential development was the primary purpose of Sodic West City. It thus has a diverse variety of housing choices, ranging in sizes and prices, starting with the compact apartments up to the spacious stand-alone villas. In addition to the residential buildings, there is a zone dedicated to mixed-use facilities. It consists of multistorey residential buildings where the ground floors are for commercial use.

Moreover, Sodic West City hosts two schools, one of which is the British International School in Cairo, and the other Beverly Hills School. One of the distinctive features of Sodic West City is that they created the Westtown Hub, The Strip, The Walk, and The Polygon. Westtown Hub is a place dedicated for restaurants and cafes where the landscape and buildings design are well-integrated, offering a variety of indoor and outdoor spaces. This place also is where social events take place. These features make it a live spot of the city, both day and night. The Strip is located at the edge of the city, and it has several banks, a couple of restaurants, and a supermarket. The Walk is a pedestrian-only street that has shops and cafes on both sides. Finally, The Polygon is a multistorey office building. These diverse activities

Table 2. The new urbanism principles that are applied in Sodic West City at the block scale, and whether they are applied sufficiently to enhance the interior space design.

3Es	New Urbanism Principles	Scope of Design	
	Factors Affecting Block Scale	I.D.	SWC
Environment	**Improve Land Use Pattern**		
	Preserve Open Space		/
	Infill Development		–
	Rehabilitation Opportunities		–
	Link to the Surrounding		
	Location		/
	Weather		/
	Time		√
	Respect Local Character		
	Topography		√
	Resources		/
	Building Practices		/
Equity	**Create Sense of Place**		
	History		/
	Culture		/
	Style		/
	Transform Community Identity		
	Safe		/
	Walkable		/
	Pleasant		/
	Reinforce Environment		
	Accessability/Connectivity		√
	Compactness		/
	Openness		√
Economic	**Create mixed land use**		
	Dense/Diverse Population		√
	Range of Housing Choices		/
	Variety of Building Types		√
	Define Shared Places		
	Street/Square/Pavement		x
	Parking Lots		x
	Public Spaces		√
	Accommodate Smart Transportation		
	Public Transit		x
	Private Cars		x
	Bikes		x

Direct Relationship
Indirect Relationship
No Relationship
√ Available
/ Needs Improvement
– Unavailable
x Not Applicable

bring a lot of people to the city besides its residents. Sodic West City has an interconnected structure of streets and squares that connects different areas. Most of the streets have pavements on both sides; however, sometimes there is a long distance between one place and another, so this discourages walking, especially during sunny days. Cars are allowed to park at both sides of the streets, except for in the Casa area which has underground parking. In addition to the private cars, Sodic West City has its own buses for the use of the residents and employees. Moreover, it provides bike storage in different areas.

Table 2 presents how new urbanism principles are connected to the elements in interior design and an assessment of their application within Sodic West City. It was developed based on the new urbanism principles and the Sodic West City case study. It highlights factors and capacity in which they affect interior design within residential buildings. It shows how far new urbanism criteria could meet within three levels: 'available', 'needs improvement', and 'unavailable'. Although Sodic West City was not planned on a basis of new urbanism concepts, it was found that most of it is covered but needs improvement.

On the environmental side, Sodic West City is a relatively new development which does not have an opportunity for rehabilitation or infill development for the time being. However, preserving open space in the future will be highly beneficial for the residents as this will give them a better outdoor view. Despite that, most buildings have sufficient link to the surroundings through windows, terraces, roofs, or private gardens. The size, location, shape, and materials of the openings and spaces are not optimised in terms of energy efficiency and the use of local materials. Introducing green roofs is highly suggested as it will have direct benefits in energy efficiency and provide the residents with a link to the nature and gathering places.

On the equity side, the European and modern design of the exterior of the buildings is reflected in the interior spaces. They do not reflect the Egyptian history, culture, and style; thus, it is not expected to create a high level of attachment and sense of place for its occupants. Sodic West City provides a safe, walkable, and pleasant environment for its inhabitants. Nevertheless, there is still room for the improvement, especially in allocating trees on the streets and its relationship to the buildings. This provides potential energy savings and better outdoor views for the residents. In addition, privacy needs to be addressed properly within the design. The city was successfully planned to be easily accessible and connected. However, reinforcement for the compactness and openness needs to be addressed. Designing more compact and opened buildings will have a direct impact on the shape, size, and orientation of the buildings, which in turn will affect the interior spaces.

On the economic side, Sodic West City is regarded as one the most thriving new cities in Egypt. This is due to the mixed land use that offers a wide range of building types and increases diversity within the city. Although there is a variety of housing choices within the city, affordable housing options are insufficient. Despite the benefits of mixed-use, defining shared spaces and private spaces is recommended to maintain the residents' perception of safety and maintain the economic values of the properties. Sodic West City offers a variety of transportation services. There are several buses designated for employee and resident use. These factors are not directly related to interior design, but they increase the market value of the owned properties.

8 CONCLUSION

After reviewing the new urbanism principles and testing them on an Egyptian example of residential neighbourhood, it was found that most of them will fit within the Egyptian context. It is encouraged that the government plays a role in managing growth through long-term planning strategies to ensure a sustainable future. This can be achieved by developing a collaborative effort. To establish a qualitative and quantitative connection between the design goals and the ecosystem services and human well-being, an Egyptian rating system needs to consider the current financial resources and social assets. Interdisciplinary work between Egyptian urban planners, landscape architects, architects, and interior designers is encouraged to incorporate the best of the principles of new urbanism to develop an Egyptian model with a flexible set of guidelines. These guidelines will be locally tailored for the Egyptian environment and culture, being committed to sustainability, positively influencing the character, and emphasising the identity of the city.

Since implementing sustainable urban development is associated with multiple challenges, learning from the experiences in developed countries could be beneficial for developing ones. It is noticed that creating a certification system is acknowledged by government officials, occupants, developers, and investors. It also promotes sustainable practices. Inspired by the USGBC, environmental designers, including architects, landscape architects, and interior

designers, should collaborate to develop performance-based guidelines that incorporate ecosystem services into design goals within the built environment. Some strategies that directly influence the interior design of residential spaces is the design of the building exteriors. Floors, walls, windows, and roofs of the building, which are the components of the interior environment, would be connected from the exterior of the building.

First, the floors are affected by the land use pattern strategies, surrounding environment, and local character. The compactness of the building will have a direct impact on the area of the interior spaces. On the other hand, the success of compact developments is largely dependent on the success of the design of interior spaces to accommodate the occupants' needs. Second, wall materials and how walls are designed to minimise the solar gain in summer and maximise it in winter have significant impacts on the energy efficiency. From a broader perspective, exterior wall design is important in creating a sense of place, enhancing the community identity, and reinforcing the environment. Third, the windows have a complementary role to the walls. Moreover, they play a vital role in providing the occupants with enough daylight and outdoor views. They can thus improve the occupants' satisfaction and performance. The placement of windows on the façades reflects the signs of occupancy which contribute to the essential elements of safety and being pedestrian-friendly. Finally, the roof materials and the means of insulation affect indoor temperatures of a building. Moreover, green roofs provide a shared space for residents to gather and foster social interactions.

To implement these considerations for interior spaces, this paper finally suggests a more collaborative multidisciplinary team should be established to pursue synergetic outcomes based on the clear goals and performance plans for residential and neighbourhood designs.

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Place identity/place making in the built environment—towards a methodological perspective

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ABSTRACT: Most research cases on place making discuss aesthetic perspective of the built-environment. Beyond the instinctive approaches of aesthetic qualities, this research contends the question of how the identity of places could be examined in respect to design purposes.

The research aims to introduce an integrative agenda to examine characteristics of spaces and buildings of the built-environment in accordance to place and residents' identity needs. Methodology is based on the analyses of theories explaining components relevant to the processes of place identity in order to develop a conceptual model in which characteristics of buildings and spaces together with identity aspects contribute to identity of places holistically perceived. The interpretation of results initiates an integrated agenda for housing policies, decision-making, and design implementation.

Keywords: Place; identity; integrative agenda

1 INTRODUCTION

Research in the topic of place-making witnessed remarkable works devoted to discuss aesthetic perspective of the built-environment. Arguments focus on the problem of imported western design and its fit and/or misfit in non-western cities. Instinctive visions together with descriptive interpretive criticism are usually followed to debate local versus global designs or vernacular versus international building styles. In most architecture and urban research outcome emphases are mostly placed on visual qualities of buildings and spaces; hence, socio-culture dimensions are rarely incorporated although their inclusion is essential to reach holistic view of a place (Salama, 2012, Devine, 1994 and Graumann, 1983). Beyond the inherent approaches of aesthetic qualities, this research contends the question of how the identity of places could be examined in respect to design purposes.

Based on environment-behaviour perspective, this research aims to introduce an integrative agenda to examine characteristics of spaces and buildings in accordance to the place identity needs, with the intention to develop a conceptual model in which place characteristics and identity aspects are holistically perceived.

The research follows a theoretical analytic methodology to explore the speculative nature of the concept of place identity and its reflection on empirical test. Three main constituents are traced:

A theoretical overview tackling the elaboration of the research basic terms: place, sense of place and place-identity. In accordance, places, in this study, are perceived from the 'transactional' approach as socio-physical entities that inter-correlate with all aspects of identity needs.

A theoretical stance to develop tangible understanding to the contribution of physical aspects of places in achieving identity needs in any living environment. Three main theories are debated: place identity theory, social identity theory and identity process theory.

A methodological standpoint to establish a core set of routes that guide investigations of place-identity in concern of design determination of the built-environment. It represents a key approach devoted to interpret how the identity of any place is constructed and transformed over time.

The previously mentioned theoretical analyses reveal two main overlapping directions in the construct of place-identity: the first is 'motivations' that guide actions related to identity needs and the second is 'mechanisms' by which those needs are achieved. All properties related to motivation and mechanisms of place-identity correlate with aspects of the built-environment.

Given the above, a conceptual model is developed to exemplify by a multi-dimensional matrix, the inter-connected relations among components and processes involved in the construct of place-identity and their bond with physical aspects of any living environment. In respect to the design field, the matrix introduces an integrative research agenda to study place identity; it advocates several methodological procedures and tools to examine characteristics of buildings and spaces and suggests their contribution to identity needs.

2 PLACE/SENSE OF PLACE/PLACE IDENTITY

This part elaborates the three basic terms concerning the aim of this study as follows:

2.1 *Place*

Several environment behaviour researchers have tried to create terms defining place in their empirical research, especially when employing qualitative research methods. Among those is (Barker 1968) who used the term 'Behaviour Setting' to describe bounded standing patterns of human activity, "that entail corresponding systems images of social groups and individual, as well as their behaviour and the social and physical environments in which their behaviour unfolds" (Popov & Chompalov 2012). Barker's theory has been elaborated by Wicker (1979) who took into account the internal reality of the individual and introduced into the analysis considerations about the experiential world of the individual; he explained 'Social Settings' as social design evolved over time. On the other hand, Canter (1977–79), has been inspired by both theories and developed his 'Psychology of Place', claiming that place is seen as a product of physical attributes, human conceptions and activities.

Based on Canter's theory, (Stokols, & Altman, 1987) have developed the theory of 'Transactional Settings' which explains the relationship between a place and a person as an interdependent process. In parallel, the term 'place' has been used since the 1970s in geography as a 'location', and then it elaborated as a 'place to dwell'. In 1976, Norberg-Schultz defined that spaces where life occurs, are places and that the 'genius loci' meaning 'spirit of place' has been recognised since ancient times. In this sense, 'Place' can delineate the distinctive features both tangible and intangible as well as the associations and feelings that we have when we see or hear about a particular place (Elnachar, 2011).

2.2 *Sense of place*

The feeling of perception held by people describes their sense of place; it is a symbol that makes a place exclusive; it is the way people experience, express, imagine and know that place. It could be interpreted as attachment to a place and alludes to the complex relationship between humans and their environment. This kind of relationship includes both the impact of the natural environment on humans as well as the development human activities have placed on the surrounding built-environment; this viewpoint explains how people are identified by places in which they inhabit. Purposely, places are intended to function in multiple ways that provide a sense of belonging, construct meaning, foster attachments and mediate change.

A place is not only about getting used to it but it is also about creating and developing a strong relationship with that place. "The sense of place is an experience created by the setting combined with what a person brings to it" (Cross, 2001); thus relations between people and places are transactional and place becomes part of who we are and shapes our identity.

2.3 *Place identity*

Strong debates in the fields of psychology and human geography have taken place in the 1990s to situate identity; is it geared more towards the 'social' or towards the 'place'? (Lalli, 1992; Bonnes & Sechiarolli, 1995). For example, social psychologist Irwin Altman and anthropologist Setha Low (1992) addressed the concept of 'place attachment' to define the ways in which people connect to various places, and the effects of such bonds on identity development, place-making, perception and practice. On the other hand, to some environmental psychologists, place is related to identity through the term 'place identity', a construct promoted by Proshansky who proposes that place identity is another aspect of identity comparable to social identity that describes the person's socialisation with the physical world (Proshansky et al., 1983; 1987). The term is defined as a mixture of cognitive, emotional and perceptual processes formed through individuals' transactions with natural and built-environment. In this reasoning, it suggests that such environments do not simply serve as settings for individuals' activities, actions or behaviour but are instead vigorously 'incorporated' as part of the self (Krupat, 1983; Proshansky, Fabian & Kaminoff, 1983).

The concept explains why people feel at home, as well as why displacement—forced or voluntary—can be so distressing for individuals and groups. In this sense, it is argued that all aspects of identity have place related implications (Twigger Ross 1996). In accordance, places' influences on identity could be perceived as a result of a holistic and reciprocal interaction between people and their built environment; people affect places, and in turn, the way places are affected influence how people see themselves (Hauge, 2007).

Purposely for the built-environment, designers' understanding of the integrative socio-physical unity of place identity is essential in order to design for identity needs. In this concern, examining how physical aspects of any living environments are interrelated with the construct of people's identity needs, calls for an interdisciplinary model to study place identity. Subsequently, integrative knowledge base for designing recognisable built-environments could be reached. Following is a comprehensive theoretical foundation steered to conceptualise a framework to study place identity in concern to the design field.

3 PLACE IDENTITY AND THE BUILT-ENVIRONMENT—A THEORETICAL STANCE

Place identity—as observed previously—is mostly debated by theorists to address whether or not identity was more 'social' or more 'place' (Lalli, 1992; Bonnes & Secchiarolli, 1995). Evidently, there has been a neglect of the physical aspects of the environment by self-theorists (Twigger-Ross, 1996), whilst for environmental psychologists, the construct promoted by Proshansky et al. (1983, 1987) called for a more radical evaluation of the concept of identity.

In this concern, three main theories debate how the identity of places is constructed: place identity theory, social identity theory and process identity theory.

3.1 *Place identity theory*

Place identity theory indicates how individuals' sense of self arises in part through their transactions with the physical environments. It suggests that such environments do not simply serve as settings for individuals' activities, actions or behaviour but instead are actively incorporated as part of the self. Inside this perspective, Krupat (1983) and Proshansky et al. (1983) rationalised that place identity constructed through emotional and perceptual processes is formed through individuals' transactions with natural and built-environments.

People memories, conceptions, interpretations, ideas and related feelings about specific settings, as well as types of settings assembled their place-identity (Hauge, 2007; Qazim, 2014).

Place identity is composed of processes of observations and interpretations regarding the living environments and changed throughout a person's lifetime (Proshansky & Fabian, 1987). Framed by the accomplishment of five central functions: (recognition, meaning, expressive-requirement, mediating change, anxiety and defence function), place identity develops a cognitive database against which every physical setting is experienced (Proshansky, Fabian and Kaminoff, 1983).

The place identity theory recognised characteristics of spaces and buildings, as referred to 'schemata' that Neisser (1976) and Piaget (1954) portrayed to indicate perceptions and ideas that concern the physical environments. Nevertheless, the theory has been criticised by environmental psychologists for not specifying much detail regarding the structure and the process involved in the construct of place identity (Twigger-Ross, Bonaiuto & Breakwell, 2003). Meanwhile, from experiential perspectives, the place identity theory was criticised for the scarcity of empirical work and for the lack of adequate instruments for measuring the concept in the study of urban identities (Lalli, 1992).

3.2 *Social identity theory*

Social identity theory is mostly limited by the dominance of 'self-concept' as the only principle of identity (Twigger-Ross, 1996 and Hauge, 2007). The individual's knowledge of belonging to certain social groups, as well as the delivered personal emotions and values, construct his/her social identity. It all depends on the quality of groups or entities people belong to or have—as a positive reference—such as nationality, culture, religion, family, neighbourhood and/or others (Hauge, 2007). Accordingly, group characteristics and behaviour might be produced by members of a social group who perceive themselves positively.

In this sense, self-esteem is central to the construct of social identity, while place is often associated with a certain group of people and their lifestyle and social status (Qazim, 2014). In accordance, physical aspects of places are related to social identity in their impact on self-esteem. Characteristics of the built-environment work as symbols, they maintain and enhance positive self-esteem for a specific group of people.

Although elements of the physical aspects are neglected when testing and developing the theory of social identity, nonetheless in urban studies the social identity concepts are used in different contexts to explain the symbolic meaning of spaces and buildings, attitudes towards environmental sustainability and identification of place (Uzzell et al., 2002).

3.3 *Identity process theory*

Breakwell's identity process model conceptualises identity as a biological organism moving through time and growing through processes of accommodation, assimilation and evaluation of the social world. The selection of information to be accommodated, assimilated and evaluated is governed by four principles: distinctiveness (uniqueness of a person), self-esteem (feeling of personal or social value), self-efficacy (person's perception of self-effectiveness) and continuity across time and situation (Breakwell, 1986; 1992 and 1993).

In this sense, identity is perceived by several theoreticians, as a social product that has both structure and processes brought by the collaboration of abilities for memory, consciousness and organised construal; whereas aspects of places are perceived as symbols that convey meanings representing both personal and shared memories (Twigger-Ross et al., 2003).

Therefore, regarding the built-environment studies, physical aspects of places are components of different sub-identity categories and have important influences as sources of identity elements. Yet, aspects of the physical environment have been mostly simplified within the studies of identity in social and psychological research in a way that could not facilitate the construction of a database for design purpose.

4 INVESTIGATING PLACE IDENTITY—METHODOLOGICAL STANCES

It is well observed that previous theories explaining the concept of place identity have implications that are strongly related to the design fields. Despite the revealed conceptual and methodological tensions, a core of set routes could be deduced to guide investigations of place identity concerning design decisions of the built-environment. In literature, a key approach brought by studies devoted to interpret how the identity of any place is constructed and changed over time (Twigger-Ross, 1996; Jorgensen & Stedman, 2001; Dixon, 2004).

Two main overlapping steered are revealed: motivations and mechanisms (Fig. 1).

They both correlate with aspects of the built-environment and expressed in several literature as processes and components of place identity as follows:

4.1 *Components of place identity*

In respect to design studies, four mechanisms reveal the intensity of accomplished identity needs in any living environment:

Familiarity refers to, a sense of bodily, sensuous, social and autobiographic 'frequencies' (Rowles, 1983); it is the result of people habituation to their physical surroundings.

Attachment refers to a sense of emotional belonging to particular physical aspects of the environment. It takes the form of a "psychological investment with a setting that has developed over time" (Vaske & Corbin, 2001 p.17) and, that is captured in the everyday phrases such as feeling 'at home' or having a 'sense of place'.

Self-expression refers to the process of personalisation and concerns about how aspects of the built-environment are employed to express or symbolise the self. This dimension of place-identity can operate at a collective as well as an individual level and at socio-spatial scales (Twigger-Ross & Uzzell, 1996 and Dixon, 2004).

Self-regulation refers to how people actively and imaginatively 'appropriate' their physical surroundings to create environments where the goals of self-coherence, self-worth and self-expression can be pursued (Korpela, 1989).

4.2 *Place-identity processes*

Four key motivations are revealed by Breakwell's identity process model and have the following physical aspects implications:

Distinctiveness is the need to maintain personal uniqueness. Aspects of place related self-referent are used by people to display dissimilarity from others. The built-environment,

Figure 1. Construct of place identity – Copyright the authors.

then, summarises a lifestyle and establishes a specific type of relationship with the living environment which is clearly distinct from any other type of relationship (Feldman, 1990 and Hummon, 1990).

Continuity is the need to preserve continuously self-concept over time. It has two types: place-referent continuity and place congruent continuity. The first refers to the maintenance of continuity via specific places that have emotional significance for a person whilst the latter refers to maintenance of continuity via characteristics of places which are common and transferable from one place to another (Devine, 1994 and Graumann, 1983).

Self-esteem is the need to uphold a positive conception of oneself. It has been regarded as a central human within social identity theory (Hogg & Abrams, 1988; Abrams, 1992). With respect to the built-environment, favourite physical aspects of any living environment can support self-esteem and enhance senses of pride by associations (Korpela, 1989; Lalli, 1992; Uzzell, 1995). This differs from simply evaluating a place positively as its qualities would boost a person's self-esteem; therefore, it may be possible to evaluate a place positively but this may not impact upon one's self-esteem, though the two may be related.

Self-efficacy is the individuals' belief in their self-competence to meet their demands. With regard to the built-environment, feelings of self-efficacy are maintained if features of places facilitate or, at least, do or hinder person's actions related to everyday lifestyle. In residential communities, it is expressed by the concept of manageable home environments (Winkel 1981). It indicates that residents are able to organise information from their socio-physical environment in such a way that can predict whether a setting supports their purposes to carry out their chosen activities (Breakwell, 1986).

5 THE PLACE IDENTITY MULTI-DIMENSIONAL STUDY MATRIX

Based on the above, the concept of place-identity is debated in terms of how 'Identity' is manifested and achieved through familiarity, attachment, self-expression and self-regulation. The four components are not only involved in the contrast of place identity, but they also work as indicatives for examining the dominance of place-identity in specific area or place. In course of everyday life, the four components reflect the bond between person and place while motivated by processes of distinctiveness, continuity, self-esteem and self-efficacy. As a result, in the achievement of place identity, relevant actions are enabled; components and processes involved in the construct of place identity could be exemplified by a grid matrix in which each component could be inter-related with every process that motivates place identity needs (Fig. 2).

In respect to the built-environment, both physical and social aspects of places are important sources of identity since they are symbols that convey meaning to us. Meanwhile, the development of identity in any environment, with both its mechanisms and motivations has to a greater or lesser extent, place related implications.

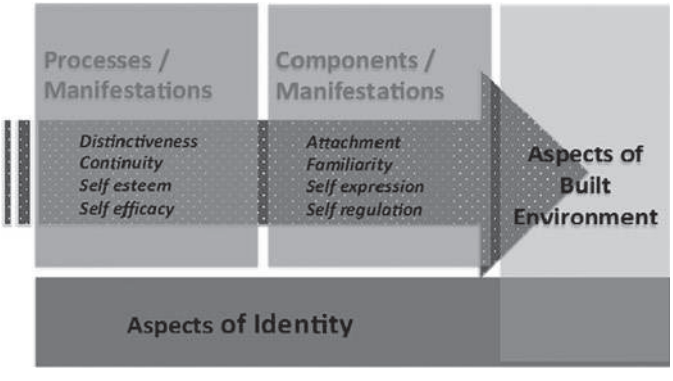

Figure 2. The place identity construct model – Copyright the authors.

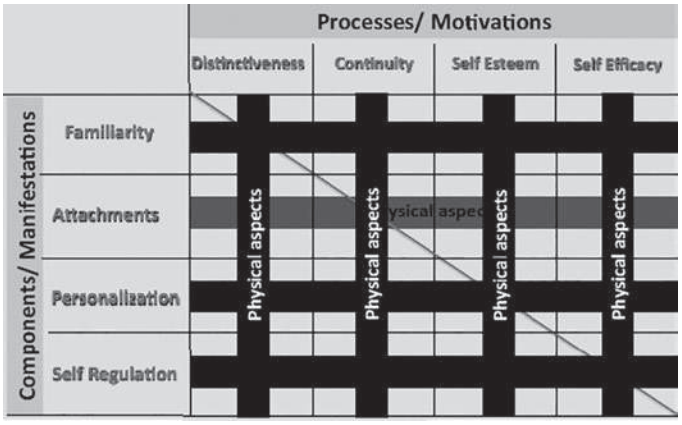

Figure 3. The place identity grid matrix – Copyright the authors.

Thus, physical characteristics, together with social aspects of places are intermediary milieus for the construct of identity. Such integrative bonds could be represented through horizontal and vertical layers crossing the components/motivations identity grid matrix (Fig. 3).

For design purposes, the matrix establishes an integrative framework for the study of place identity in several levels. For example, physical features of residential environments could be examined in their impact on the relation between people's attachment and familiarity with their built environment and motivations that foster their identity needs like their desire to preserve continuity of the self.

The matrix draws several methodological positions in the study of place-identity as follows:

– It inspires multidimensional perspectives for studying settings in the built-environment, since layers of place identity construct could be understood in their mutual relation to each other. The matrix raises questions of how each action related to identity needs is brought by specific motivation and how features of the built-environment are merged within this relation. In accordance, rich hypothetical exploration could be empirically tested in research on place and identity.
– The inquiries of place identity are framed by wide-ranging knowledge correlated to each other. In this sense, developing comprehensive understanding to place identity examines physical features of the environment together with social dimensions associated to psychological impulses and functional desires. Thus, interdisciplinary research procedures are encouraged in respect to data gathering tools and analyses techniques.
– Physical aspects of place are not a separate set of identity next to gender, social class or family, but all aspects of identity have to greater or lesser extent, place related implications (Twigger-Ross & Uzzell 1996). Thus, aspects of attachments/familiarity in any living environment and their relative physical characteristics of spaces and building combined with human motivations towards identity needs could be measured to create an integrative knowledge base for transdisciplinary research.

6 CONCLUSION

Along this research, the study of place is approached based upon transactional theories of the people-place relationship. Meanwhile, models that have been found in identity theories and tested in social and psychological disciplines, are employed to illuminate the relation between place and identity. Evidently, it was addressed that there is no social identity that is not also place-related and object-related. From this perspective, fields of design are

beneficially incorporated in research and theories established in social sciences to understand identity issues.

As argued by literature, although both the social identity theory and identity process theory explained the influences place has on identity, aspects of functions and manageability of places driven by motivations of identity needs, are left out in most research. In the meantime, studies on Proshansky's place identity theory are criticised by lack of structured tools provided to examine empirical results.

Consequently, in respect to design fields, behind the aesthetic perspectives dominating research on place identity, the developed place identity matrix in this research, allows more interdisciplinary detailed studies concerning physical characteristics of places relative to identity aspects as follows:

- Issues of functions of buildings and spaces could be raised by investigating people's desires to achieve self-esteem and self-efficacy, and how such motivations guide actions related to the manageability of any living environment.
- Within previous perspective, it could be argued that actions pertaining to the expressions of people's identification needs in their living environments are resourceful constituents in respect to creating urban and community identity. For instance, in the case of designing for low-income areas, understanding previously stated actions has informative significance and impact on both housing policies and designs' decisions.

To sum up, this research which aimed at developing a comprehensive innovative approach for investigating place identity within the perspective of how identity theories and their underlying concepts can be merged into an 'integrative examination agenda'. The approach incorporates novel ideas to the study of place identity, in respect to the built-environment, where issues deriving from social and psychological disciplines are integrated.

In significance, the proposed approach involves number of correlations that aim to reach reliable results among variables of identity aspects and the associated physical characteristics. In addition, the invention of integrative research questionnaires to examine assorted variables is recommended. The value of such an approach lies in the value of how planning and architectural aspects, social and cultural issues, all incorporated into one mechanism towards a comprehensive inquiry on the identity of communities and cities.

Finally, this paper introduces the study of the first phase of a research project initiated by the authors two years ago to place theoretical and epistemological foundations for the second phase: an empirical examination. In progress, an integrative questionnaire is designed, guided by the place identity grid matrix to explore aspects of place identity in low income residential areas in Cairo.

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Sustainable urban heritage conservation strategies—case study of historic Jeddah districts

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ABSTRACT: Due to the economic boom in the Saudi kingdom during the seventies, the urban area of the economic capital of the kingdom and its historic main port were subject to a lot of modifications and expansions. Later, during the eighties, the city expanded dramatically to the north and the old city was deserted. During the nineties, preservation and conservation strategies were implemented to maintain the city's culture and heritage. Since then, governmental and civil society organisations have been engaged in maintaining and conserving the historic once-gated old city, known these days as Al-Balad District. Moreover, successful efforts have been made by the Saudi authorities to register the vast majority of the remains of this historic area as human race heritage through the United Nations Educational, Scientific and Culture Organization (UNICCO).

Through this, practitioners and researchers spent a lot of effort in developing and adopting strategies and policies to revive and preserve this heritage urban area. This research, as part of these efforts, aims to evaluate the applied urban conservation strategies and policies for Al-Balad District, to test their success in preserving the heritage while maintaining socio-physical, socio-cultural, and environmental aspects of the local community. To do this, benchmark case studies for developing and conserving historic urban areas were analysed and compared to the applied strategies. The research concludes with recommended policies to achieve the most sustainable conservation strategies in this valuable area that will fulfil the recent needs of the local community.

Keywords: Old Jeddah; Conservation; Sustainability; Socio-Cultural

1 INTRODUCTION

During the last few decades, most cities all over the world have been facing the problem of deterioration of their historic districts caused by their rapid socio-economic development. Despite the economic benefits of this rapid development, it has affected the historic parts of the cities in a negative way. It has torn down the old urban fabric and character of the city, (Chohan, 2006) and directed the development towards new districts while neglecting the inner parts of the city, which has resulted in poor services and infrastructure in those parts. As a result, the residents have migrated to new districts, leaving their buildings abandoned, or they have tried to modernise their buildings with unplanned initiatives to cope with the

recent requirements. Such initiatives tend to harm the historic districts. In the end, the result is the loss of identity, history and the collective memory of the city. (UNEP, 2016).

It is the permanent contest between new development and heritage conservation which has been the subject of research and study for a long time, in order to find the best solutions to create a balance between the changing needs and conserving the past.

The previous scenario happened in the Saudi cities, especially in Jeddah city, the main port and the second capital of the kingdom, due to the economic boom during the seventies. A lot of modifications and expansions happened to the city in ignorance of the historic Al-Balad District centre, which resulted in the loss of many important historic buildings.

Since then, governmental and civil society organisations have been engaged in maintaining and conserving the old city or Al-Balad District. Moreover, an application to the United Nations Educational, Scientific and Culture Organization resulted in recognising the vast majority of the remains of the historic area as human race heritage.

Through this, practitioners and researchers spent a lot of effort developing and adopting strategies and policies to revive and preserve this heritage urban area. This research, as a part of these efforts, aims to evaluate the applied urban conservation strategies and policies for Al-Balad District, to test their success in preserving the heritage while maintaining socio-physical, socio-cultural, and environmental aspects of the local community. To do this, benchmark case studies for developing and conserving historic urban areas will be analysed and compared to the applied strategies. The research concludes with recommended policies to achieve the most sustainable conservation strategies for this valuable area that will fulfil the recent needs of the local community.

1.1 *Research problem*

The research is directed to answer the following questions:

- What is the relation between historic conservation and sustainable development?
- What are the strategies of sustainable historic conservation?
- Are the conservation strategies used in Al-Balad District sustainable?

1.2 *Research objectives*

The main aim of the research is to develop a sustainable strategy for historic conservation to guide the development in Al-Balad District in Jeddah city. This is achieved through a combination of sub-objectives as follows:

- Clarify the relation between historic conservation and sustainable development.
- Identify the strategies of sustainable historic conservation.
- Evaluate the impact of the applied strategies on the development of the historic area.
- Formulate a set of recommendations for developing Al-Balad District to achieve a sustainable development.

1.3 *Research methodology*

The methodology is based on three approaches: theoretical, analytical and applied approach. The theoretical study aims to identify the concept of sustainable historic conservation. This is followed by an analytical study for benchmark case studies of historic conservation to understand the different strategies used in sustainable historic conservation. Then the applied study of Al-Balad District in Jeddah, KSA, and the evaluation of the applied urban conservation strategies and policies for Al-Balad District, to test their success in preserving the heritage while maintaining socio-physical, socio-cultural, and environmental aspects of the local community. Finally, the paper concludes with the recommended policies to achieve the most sustainable conservation strategies for this valuable area that will fulfil the recent needs of the local community.

2 HISTORIC CONSERVATION AND SUSTAINABILITY CONCEPT

The general definition of conservation is the protection from loss and depletion for tangible and intangible elements, so historic conservation helps to extend places and values of the past into the present (Alison, 2007). The concept of historic conservation has existed since the 1960s (Elnokaly, 2013) and has become the core of cultural identity, and ownership of the past discourse over the last few decades (Alison, 2007).

The sustainability concept emerged in 1970 as a significant mode of thought in nearly every field, insisting that environmental quality, economic growth, and social and cultural values must be considered for viable long-term development strategies. Since then historic conservation became an important part of the sustainability agenda (Alison, 2007). Although their roots are different, conservation and sustainability share common ground (Elnokaly, 2013). Sustainability in this context means ensuring the continuing contribution of heritage to the present through the thoughtful management of change, responsive to the historic environment and to the social and cultural processes that created it. By creating the balance between change and continuity, between the old and the new, and when history is viewed as continuous change, it can be expanded into culturally responsive strategies that provide an alternative to imported solutions that do not relate to, or grow out of, the existing cultural context. Conservation can contribute to the sustainable environment (Alison, 2007).

2.1 *Historic conservation within the three-dimensional sustainability*

The most popular definition of sustainable development is the World Commission on Environment and Development (WCED) definition 1987, which defines sustainable development as '*the development that meets the needs of the present without compromising the ability of future generations to meet their own needs*' (Chohan, 2005). In this context, it was made clear that sustainable development can only be achieved through the integration between the three main dimensions: environmental, economic and social (United Nation Environment Program, 2016). Historic conservation can lead a way to sustainable development through achieving environmental upgrading, economic viability and social coherence, by the comprehensive policy for sustainable historic conservation (Chohan, 2005), as will be discussed.

2.1.1 *Historic conservation and environmental sustainability*

The main focus of the environmental dimension is the reduction of harmful emissions and in reducing the consumption of non-renewable resources (Yung, 2012). So, environmental sustainability depends on the three Rs: 'reducing-reusing-recycling'. In order to make historic conservation environmentally sustainable, one should consider the reuse of the historic resources. Reusing historic buildings is a significant way to practise the three Rs. On a much bigger scale, a new life breathed into old buildings helps to reduce urban sprawl, conserve energy and promote sustainable communities. According to the Life Cycle Assessment (LCA), which examines the energy and material usage during the entire life of the building, it indicates that retaining and rehabilitating buildings is more environmentally friendly than new construction; it diverts waste, and reduces the consumption of materials, energy, and land for new development.

Aspects of traditional designs which take into account natural ventilation, heat retention and cooling treatments in historic buildings (Allison, 2003) can be expanded into environmentally responsive strategies, which provide an alternative to imported solutions that do not relate to, or grow out of, the existing cultural context (Allison, 2011). The same concept can be applied at the scale of urban design. A historic neighbourhood is by default a sustainable neighbourhood. The layout of these neighbourhoods placed stores, schools, jobs, and recreation in close proximity to one another. Encouraging people to walk reduces the dependency on the car and reduces the carbon footprint (Gilderbloom, 2009).

Therefore, the traditional strategies of designing buildings and neighbourhoods can help in developing local design strategies.

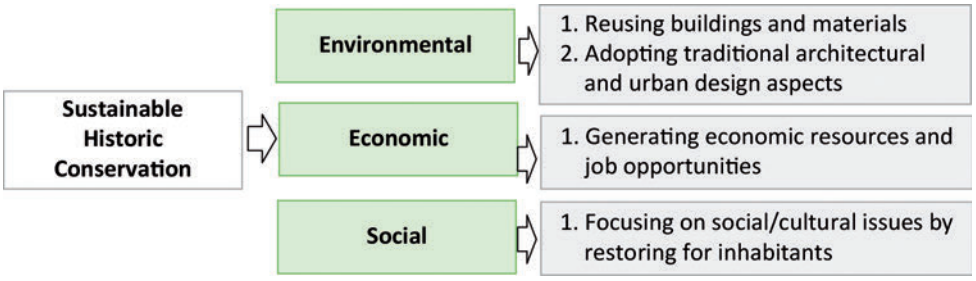

Figure 1. Sustainable historic conservation strategies.

2.1.2 *Historic conservation and economic sustainability*

Economic sustainability seeks to meet the service needs of the general public, particularly the poor, while enhancing the naturalness of the urban environment (Basiago, 1999). Historic conservation can be economically sustainable when it contributes in generating economic resources, and this can be achieved by providing job opportunities. The studies indicated that historic conservation results in more job creation than most other kinds of investments, whether in the restoration process or through the different activities which will exist in the area after development (Gilderbloom, 2009).

2.1.3 *Historic conservation and social sustainability*

Social sustainability can be defined as a life-enhancing condition within communities, and a process within communities that can achieve that condition (McKenzie, 2004). The town centres, where socio-economic pressure is high, become a driving force, whose victims are working class residents. In order to make sustainable historic conservation, a specific focus has to be given to social perspectives for the renewal of inner cities. Since 1996, within the United Nations Educational, Scientific and Cultural Organisation's (UNESCO) Management of Social Transformations (MOST) programme, many studies and initiatives have been made to improve socio-economic and cultural issues while improving the physical environment and buildings in historic districts. The main aim for conservation is how to restore and preserve historic districts as habitable areas where residents can enjoy the benefits of the revitalisation (UN-Habitat, 2016). Figure 1 summarises the strategies of sustainable historic conservation.

3 BENCHMARK CASE STUDIES

3.1 *Palestine rehabilitation of historic centres*

3.1.1 *Project background*

During the period from 1991 until 2001, there was an increase in the rate of destruction and the loss of architectural heritage in Palestinian cities. In 1991 Riwaq was established to save Palestine's heritage and restore historic buildings. Riwaq started its programme by restoring chosen single buildings. By 2000, the programme recognised the need to develop its strategies to include the three dimensions of sustainability. The new focus was to make historic conservation an income generator and a source for jobs. From 2001, all renovation projects had large job opportunities, local workers were being trained and then employed in the restoration works, and up to 60% of the construction costs went to the employment of local labourers. The programme aimed to save a threatened cultural heritage in many ways, especially in the case of Israeli occupation. A generation is coming of age that no longer remembers the geography of historical Palestine: they know only a fragmented landscape, where villages are cut off from their rural hinterland by political zones, checkpoints and barriers (Lamprako, 2013).

Figure 2. The location of Birzeit town (Lamprako, 2013).

3.1.2 *Birzeit rehabilitation of historic centres*

Birzeit, located ten kilometres north of Ramallah, is one of the largest towns in the Ramallah area and is significant for its history. The historic centre of Birzeit lies on a small hill on the town's eastern side. The area of the site is about four hectares (ten acres). The historic centre encompasses 108 historic buildings. Most of these buildings date back to the Ottoman era (RIWAQ, 2016).

After the 1967 war, the people of Birzeit abandoned the historic centre and moved to newly developed areas near the new regional road linking Ramallah and the northern village. In 1980 Birzeit University relocated its campus out of the historic centre. In turn, Birzeit lost its central role and had fell prey to rapid urbanisation. Several new housing projects, neighbourhoods, and cities were proposed in the region, causing a reshape of the area. Streets and public spaces were neglected (RIWAQ, 2016).

Riwaq started a five-year project to revive the decaying town of Birzeit (ARCHNET, 2016). Birzeit was chosen to be a pilot project for the revival of 50 other projects for the following reasons: proximity to Ramallah, the seat of the Palestinian authority; proximity to, and historical links with, Birzeit University; the presence of a supportive municipality and a number of active local NGOs (Non-Governmental Organizations), including Rozana School; a diverse, but socially and economically disadvantaged, population (Greek Orthodox, Roman Catholics, and Muslims); a largely intact historic fabric, which was compromised by neglect and degradation; and the presence of diverse resources around the town, including archaeological sites, natural springs and olive groves (Lamprako, 2013).

3.1.3 *The project vision and principles*

The project aimed to rehabilitate the historic fabric of the town to create a sense of value, and use this as a basis for revitalisation and development. The goal was to keep people living in the old town, and to create new interest and investment, making it a desirable place to live, work, do business, and pursue leisure and entertainment (Lamprako, 2013). The project vision was therefore to create a lively centre which is attractive to its residents, investors and visitors, within a mixed-land use context, and which is respectful of its identity and cultural heritage (Aga Khan Award for Architecture, 2013), Riwaq's conservation work involves: a) conservation/upgrading of the public realm; and b) restoration of selected buildings with public/community functions to act as catalysts for further interest and development (Lamprako, 2013).

The development principles included: improving the quality of life for the inhabitants and the users of the centre, the protection of the tangible cultural heritage as a space for

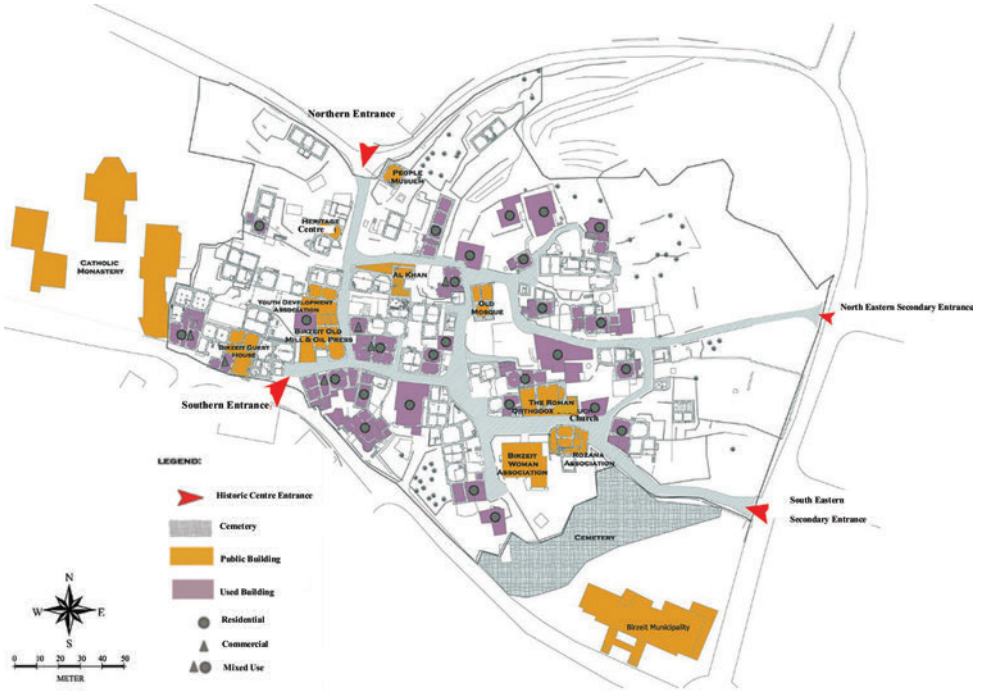

Figure 3. Map for the historic centre of Birzeit (State of Conservation Report, 2015).

socio-economic development, encouraging investment through the creation of key projects to make the place suitable for contemporary life, and promoting the historic centre as a cultural and touristic centre. The objectives of the project are obtained through a wide involvement of the community, which was encouraged from the start, including local NGOs, the private sector, owners, tenants and users (Saudi Commission for Tourism and National Heritage).

3.1.4 *The development projects*

The development projects targeted mainly the real needs of the population. Those projects included: upgrading infrastructure for the existing water system and the provision of a future sewer system; paving streets and the provision of street naming and signage project (those names were based on local memory and narratives); the creation of a heritage walkways and a map; planting trees; the rehabilitation of public spaces and the creation of new ones (streets, courtyards, gardens); the conservation of stone facades and walls lining the public space; and the restoration and reuse of selected buildings, such as for several restaurants, an Internet café, and a science museum devoted to children's science and environmental education as a way to communicate to children the links between past and future, and between built and natural environments. The Circus School has occupied a former university building; it offers training in modern circus techniques to young boys and girls from across Palestine; also, the Birzeit Guest House, which is used as a small hotel. The old town is slowly becoming a destination for residents, university students, and local and foreign tourists (Lamprako, 2013 & NG Architects 2016).

3.1.5 *Local architectural character, structure, materials, and technology*

The development projects respect the architectural and material characteristics of the historic centre. The material used is generally local limestone, lime mortar and lime plaster. Most buildings in the historic centre are one storey in height. The traditional house consists of one or more square modules, each covered by a dome (*qubba*). In addition to houses, the old town includes a number of religious structures, including the Greek Orthodox Church, the

Figure 4. Birzeit Guest House before and after development (Aga Khan Award for Architecture, 2013).

Figure 5. Birzeit streets before and after development (Lamprako, 2013).

Figure 6. Local labourers are trained, and worked on the project (Aga Khan Award for Architecture, 2013).

Latin Catholic Church and a mosque. The project focused on providing training workshops for local craftsmen; 90% of the labour was local labourers (Lamprako, 2013 & NG Architects 2016).

3.1.6 *Sustainability issues*

The projects demonstrate several sustainable dimensions: environmental, social, and economic. The dimensions table below summarises the different strategies and the achieved sustainability objectives.

3.2 *Conclusion of regional experience*

After analysing four urban conservation projects (which were awarded some prestigious awards like the Aga Khan and other national and international awards in four different countries),

Table 1. The conservation of historic areas. Response to historic area issues using three sustainability axes.

Sustainability dimensions	Sustainability strategies	Birzeit sustainability strategies
Environmental	1. Reusing buildings and materials. 2. Adopt traditional architectural and urban design aspects	Saudi Commission for Tourism and National Heritage. (2012). Submitted report to UNICCO property value, *Historic Jeddah, the gate to Makkah*. State of Conservation Report, November 2015. Available online: http://archnet.org/system/publications/contents/2570/original/FLS3269.pdf?1384764408. Last accessed June 2016.
Economic	1. Generating economic resources and job opportunities	• Provision of job opportunities through training the local labourers and promoting the traditional crafts • Provision of variety of activities which provide job opportunities • Encourage local trades
Social/Cultural	1. Focusing on social/cultural issues by restoring for inhabitants	• Saving and restoring historic centre to promote awareness of the old social and cultural bonds • Creation of series of open spaces that act as socio-cultural hubs • Using cultural and historic values in naming the streets • Promoting the traditional crafts helps in saving culture

Enokaly and Elseragy were able to conclude that conservation success factors are: '*Public participation and awareness at early stages of the project; an implicit approach of integrated urban conservation; employing many of the concepts underlying cultural sustainability; preserving the basic pattern and morphology of the urban fabric and the use of space; minimal interventions following a scrutinized analysis and assessment of the monuments or buildings involved; a bottom up approach and involving all stakeholders from the beginning of the projects; restoring buildings to their original form using traditional decorative features and motifs. Another key feature that led to success of most of these revitalisation projects is high impact propaganda that helped in mobilizing and selling the idea of rehabilitation to the residents*' (Elnokaly, 2013). From analysing the Birzeit rehabilitation project and the literature review analysed projects, sustainable urban conservation of historic towns and cities follows a comprehensive approach, that combines conserving historic buildings and their physical urban context along with the their socio-economic environment. This means utilising policies and programmes to mitigate the local community's needs, such as reducing poverty, increasing employment, and upgrading local communal services. Enabling the local community to positively participate in the planning and management of their area guarantees a sustainable conservation.

In all reviewed previous projects, community participation, training of local professionals and local institution-building, public awareness campaigns were the key factors in achieving sustainable conservation.

4 THE CASE STUDY—AL-BALAD AREA

4.1 *Relative importance of the case study*

Jeddah, with its three million population, is the second largest Saudi city. It belongs to what can be called the Red Sea civilisation. Historic Jeddah consists of urban property extending over an area of seventeen hectares, composing the heart of nowadays Jeddah city. Its architectural style is characterised by the tower houses, decorated by large wooden *Roshans* that were built in the late 19th century by the city's mercantile elite. Figure 7 shows some of these

Figure 7. The architecture style of the area where buildings are decorated by large wooden *Roshans*.

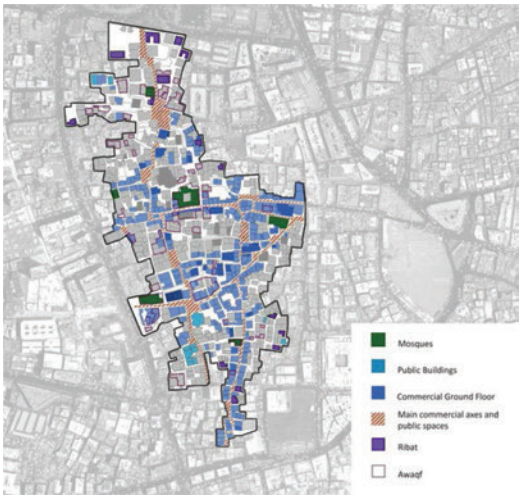

Figure 8. Public spaces and commercial activities within the area.

houses with their *Roshans*. The outstanding universal value of the area relates to its unique development of the Red Sea architectural style and to its preserved urban fabric. It can be considered as being the last surviving urban centre of this cultural region that still preserves its original urban fabric. An extraordinary pre-modern urban environment is shown in the map in Figure 8, where tower houses, lower coral stone houses, mosques, Rabats, souks and small public squares compose a vibrant space, inhabited by a multicultural population that still plays a major symbolic and economic role in the life of the modern metropolis.

4.2 *Development of the historical area*

As mentioned before, the historic area that was once a whole gated city, is now only a small district within the city itself. This was the result of several factors affecting the area through the past fifty years. After the old city walls were demolished in 1948, due to the creation of the modern port of Jeddah on reclaimed nearby land, the airport, the new road axis and the high-rise buildings were constructed. Dahab street in the heart of the old city was opened, and later in the 1970s, new types of modern buildings like shopping malls and office buildings were constructed. The old city of Jeddah has lost entire sectors of its original urban fabric, mostly replaced by the new high-rise structures in the Bahr Quarter, next to the original coastline. It should be noted that large areas of the Yemen, Mazloum and Sham quarters are still preserved to their overall original structure. Figure 9 illustrates the rapid growth of Jeddah city and its modern metropolis through the last fifty years.

The historic area quarters shown in Figure 10 preserve a very evident coherence at urban, architectural, economic and social levels. Therefore, it can be said that the existing historic area, though covering only part of the original walled-in city, contains the ensemble of the attributes that convey its outstanding universal value.

4.3 *Urban and architecture characteristics*

Historic Jeddah is a living urban environment primarily hosting residential and wholesale commercial activities, with some mosques. In the immediate surroundings of the area some traditional and cheap hotels and accommodations for pilgrims can be found. The traditional infrastructures created for the reception of pilgrims, the *ribats*, and the ground floors of

Figure 9. Set of maps show the rapid growth of the metropolitan area of modern Jeddah city through the last fifty years.

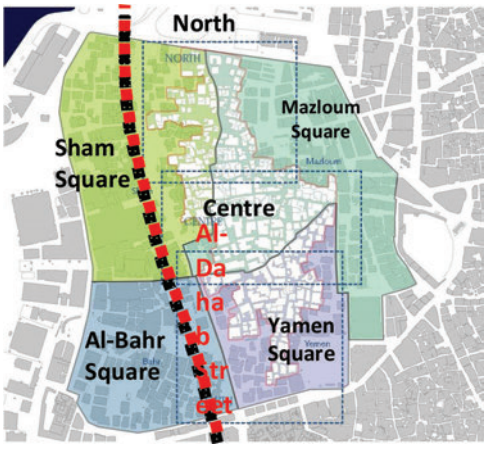

Figure 10. Historic Jeddah quarters.

private houses, that used to be rented out to pilgrims, are now mostly empty or replaced by other commercial activities. The historic mosques within the area perimeter have maintained their function and role for the community and most of their original features.

4.4 *Administrative structure*

Since the 1980s the four quarters have been reduced to two districts, but the traditional *Umdahs* continue to exist and to play an important role for the residents. Though contemporary Saudi society has also developed other management administrative structures, both at the local and central levels, this traditional management system is still active and has even been revitalised in the recent past.

4.5 *Cultural and economic life*

It is a traditional urban environment, where there are still concentrated the headquarters of century-old economic enterprises, retail shops, traditional souks, small cafés, popular restaurants, street food sellers and semi-legal fruit market stalls. A surprisingly rich human environment exists where Yemeni, Sudanese, Somali, Pakistani and Indian immigrant workers buy and sell their products to Saudi and non-Saudi clients in crowded 'traditional' souks, as shown in Figure 11. This an area where even the food shows multiple influences: Indian spiced rice and Red Sea colourful fishes, as in the past, constitute the menu of many traditional restaurants where old immigrants, newcomers and Saudi clients convene in the hot evenings.

Figure 11. Historic Jeddah crowded 'traditional' souks.

4.6 *Social character*

The major transformation that occurred in the last 50 years in Jeddah, is that poor newcomers have progressively replaced the rich local families who themselves do not reside anymore in their traditional family houses, but who look for modern comfort in the rich suburbs. Though this phenomenon is extremely common in many other cities, there are two specificities that distinguish historic Jeddah:

1. Most of the original merchant families that abandoned their houses have often kept their headquarters of their commercial companies in their old properties.
2. The poorer newcomers that have progressively replaced the merchant families are not coming from the local rural areas, as in other countries, but from neighbouring Islamic poor countries.

These two specificities created the city identity, a merchant and multicultural city, at the social and economic levels. The functional and social identity of the area is therefore fully authentic, even though the city, like any living urban environment, has continued to evolve and change, mirroring the evolution of the Saudi society (Saudi Commission for Tourism and National Heritage, 2012).

5 ANALYSIS OF PRESENT STATUS OF THE AREA

In its present state, the urban environment is no longer able to provide the comfort required by the Saudi families. The replacement of its original residents that moved to the rich modern suburbs has gradually transformed the heart of the city into a low-class ghetto, mostly rented out to poor foreign immigrants. Favouring in turn the accelerated deterioration and the collapse of many of its traditional coral masonry houses.

The area has deteriorated with the passage of time, by the transformation of their inhabitants, and with the fragility of their structure system. Pictures in Figure 12 show the condition of some of the buildings of the historic area. Some of the buildings have been changed by modern additions and some in-depth transformations that affected their form and substance, as shown in Figure 13.

6 CONSERVATION EFFORTS

The historic area of Jeddah city was subject to many studies, development and conservation projects. Being listed on the World Heritage List inspired even more efforts from the private

Figure 12. Deteriorated buildings and urban fabric in historic Jeddah.

Figure 13. Buildings facing modifications that affect their condition and style.

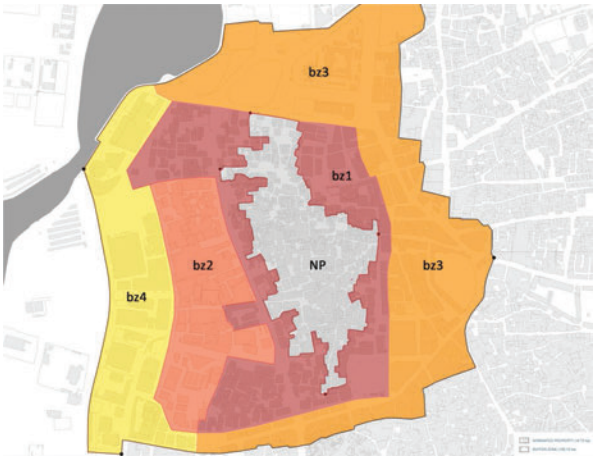

Figure 14. Subdivision of historic area according to urban regulations.

sector, municipality and Saudi Commission of Tourism and Antiquities (Saudi Commission for Tourism and National Heritage, 2012).

– The urban regulations approved by the municipality in 2012 set a new, much needed legislative framework, providing the legal tools permitting the control of the speculative moves that have caused the loss of many historic buildings in the past. The map in Figure 14

presents the preserved area, in addition to its surrounding buffer that was divided into four different categories. Each of these buffer areas has its own building regulations.

– Cultural and seasonal activities managed by the SCTA to raise the awareness of the importance of the cultural value of the area. Traditional shows are performed and local street

Figure 15. The annual festival of traditional activities in the historic area.

Figure 16. Restoration of Al Shafee' mosque.

Figure 17. Improving built environment conditions to help conservation efforts.

food is served to native and foreign visitors. Plazas and famous buildings are lit and opened to give a festival atmosphere. Figure 15 illustrates the annual festival atmosphere.
- The renewal efforts of the SCTA and the municipality of Jeddah for the conservation and restoration projects of main houses and mosques, under the joint control of the municipality and the SCTA, are actively countering the decay processes. The picture in Figure 16 shows Al Shafee' mosque during its restoration process.
- The urban fabric of the listed area is in relatively good condition and the deterioration impact is being tackled by the concerned authorities, as per the preservation strategy proposed in the management plan of the area. Lighting was replaced with decorative lighting, road pavement was replaced by traditional tiles and street furniture was replaced with designed ones.

7 ASSESSING CONSERVATION EFFORTS OF THE AREA IN THE SHADOW OF SUSTAINABILITY

- Working sites, directed by Jeddah professionals and municipality engineers with the support of foreign consultants, have used compatible traditional materials and techniques, and have been an opportunity to redevelop traditional constructive skills.
- Existing commercial activities did not enrich the social life of the area.
- Facilitating an economic base will help in achieving sustainable conservation and regeneration of the Jeddah historic area.
- Lack of adequate services and failing to accommodate modern communication and transportation is still preventing native families from returning permanently.
- Cultural activities increase the sense of belonging and ownership for Jeddah's inhabitants.
- Municipality efforts in regenerating the urban environment along with the conservation efforts is very useful to maintain a sustainable conservation.

8 CONCLUSION AND RECOMMENDATIONS

Regional successful interventions in conserving historic centres started from an overall vision, but they did not proceed as per the planned schemes. Intervention efforts should be based on incremental development as a response to tangible requirements, perceived from real site experience. The decision-making process should be based on the assessment of the local needs and requirements. An overall strategic vision concerned with heritage conservation and urban regeneration can result in achieving sustainable development.

Heritage buildings conservation and restoration should be integrated with their urban context sustainable regeneration, combining interactively many different disciplines. Conserving heritage is a good tool for sustainable tourism. Utilising cultural activities would enhance the spirt of belonging and ownership of the inhabitants. The conservation initiative gives to local inhabitants a strong sense of belonging and ownership of their social, cultural and historical values.

Involving the local authorities, local community and different interest groups is very important for the success of heritage conservation. The community involvement in any urban heritage conservation is a general expression which needs comprehensive strategies for preservation. Despite legal and institutional framework importance, local community and local authorities play the key role in achieving sustainable results in the urban development. Authorities should spend effort in involving the community and motivating other stakeholders, community professionals and volunteers to work for sustaining their heritage that could be a symbol of pride and give a sense of belonging and ownership to the coming generations.

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The correlation between art and architecture to promote social interaction in public space

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ABSTRACT: Public Space gradually becomes an absolutely necessary resource to a successful community in the new cities. It can provide lots of opportunities for people to meet and be exposed to their neighbours. This agrees with evidence of modern sociologists, who have proved that the strong social interaction between residents leads to a healthy community. However, these social connections and neighbour meetings often take place by coincidence or with active organising. In addition, the way of promoting the interaction among people in public spaces has been mainly ignored in many communities.

More recently, modern artists and architects reveal that arts and culture strategies can help to enhance the social form of the community by shaping the scene of its public space. Public art administrations, institutions, and cultural centres can play an important role in designing, managing, and planning these public spaces. Nowadays, artists are cooperating with landscape architects and city planners to design creative public spaces.

From this point of view, the study will display the meaning, the value, and the main characteristics of that new approach of designing to be part of the community's collective identity and promote the community social interaction. Moreover, the result confirms a supposed relationship between a creative community vision of designing their public space and their social interaction in these places.

Keywords: Social Interaction; Public Spaces; Visual Art; Contemporary Art; Landscape architecture; New Communities

1 INTRODUCTION

Community engagement is an interaction connection between residents and a place that can provide them a satisfaction, loyalty, and passion; a place where they can connect and socialise. They then feel a bond to their community which is stronger than merely being satisfied about where they live. Public space is the most attached form of place to the people who want to interact and share their interests together. Moreover, it plays an important role in identifying the community image and culture scene. In addition, public art such as memorials, sculptures, murals, and other aesthetic elements, can be involved with landscape architecture to personalise that public space and enhance the social connection between the community residents.

In that way, this paper will use the descriptive methodology which is generally used for humanities and social science research to highlight the crucial value of the correlation between art and architecture in the public space, to promote the social ties between residents which leads to a liveable and healthy community.

2 PUBLIC SPACES FOR CREATIVE COMMUNITIES

In the last decades, public space at first glance has been taken as meaning a common name for a public park. However, that meaning has been transformed these days to meet other new aspects and connotations. For instance, there is a prevalent vision around the world to see recreation centres, marketplaces, and gallerias as the modern kinds of public spaces. In addition, these spaces are considered to be crucial ingredients in every successful community. It can draw and infer an identity between the society and the whole city.

Public spaces can provide many chances for residents to gather and be exposed to various sorts of neighbours. These gatherings most probably take place by coincidence. However, they also can be organized by active associations or come through creative organising. Despite this, the art of enhancing and boosting the good vibes of interaction among people in the public spaces has been almost forgotten in many communities. Most of the urban planners, architects, and landscape architects have focused more on designing aesthetic places which provide various spaces to accommodate any kind of public activities, rather than creating places that promote social interaction between the community residents.

More recent studies in Chicago (Earls & Carlson 2001) have shown a very surprising result that the most significant factor of health from one community to the next was not wealth or easy access to healthcare, or any of the expected factors. It is simply the capacity of people who interact with each other on matters of common interests which makes a huge difference in health and well-being for individuals and neighbourhoods.

Another study was conducted by William H. Whyte, a famous American urbanist and sociologist writer, who emphasised that crowded, pedestrian-friendly, and active public spaces are more likely conducive to healthy civic communities than secured and controlled public spaces (Whyte, 1988). In addition, they are deemed to be safer and economically productive according to other sociologists who have asserted that strong social interactions are crucial ingredients of economic success.

'What attracts people most, it would appear, is other people' by this evidence, we now have a clear vision of, to build a creative community, you should create spaces where people can cooperate, connect, and share their goals.

3 INVOLVING PUBLIC ART IN PUBLIC SPACE

For Penny B. Bach, a seasoned executive of the Association for Public Art, public art is the easiest way for collecting people together and encouraging them to communicate well. 'It's free. There are no tickets. People don't have to dress up. You can view it alone or in groups (Figure 1). It's open to everyone' (Bach, 1992).

Furthermore, according also to Bach, many studies have indicated that the economic benefits of art has been increasing recently when public art is involved with public space. A survey of 43,000 residents in 43 new cities (John & James 2010) showed that viewing public art was the second most desirable activity in the public spaces, ranking above jogging, hiking, and biking.

In that way, it seems obvious that public space is the combined work of many design and artistic disciplines, predicting the prospering future of public art. Public art organisers, visual

Figure 1. People watch art work in different contexts as individuals or groups.

Figure 2. Various parades in public spaces.

artists, and cultural administrators can play a significant role in designing, organising, and programming the public space.

Recently, the awareness of how art can be an added value for any public space leads to involving visual artists with architects, landscape architects, and city planners in designing and creating these spaces with their unique facilities. Increasingly, there is a strong belief that as important as the space, pieces of art, or annual events, is the process by which they are created. For instance, you can organise a puppet parade involving only a group of dancers marching in the street, or it could be the result of a lengthy, community-wide process contributing many residents who create unique themes, paint the puppets, conduct the activities, and march together with their families in the neighbourhoods and public spaces (Figure 2).

3.1 *Promoting collective identity through public art*

While the design of public space influences its visitors, a public art event could form the collective identity of the community. By now, the meaning of public art as a piece of art work in an open space has been changed to include music, performance, and ceremonial show, besides the usual fine arts of sculpture, painting, and mosaic. In order to called the above, contemporary art which became a big hunt nowadays.

Innovating the kind of interaction between people that leads to collective identity is daring for any urban planner, organiser, or community administrator. Annual public art events or contemporary art exhibitions can play an important role. They boost the self-image of the community beyond the aspects that have been shown by them. Visitors and local residents now come from other communities to attend these events. They have become a secret formula as well as essential ingredient for any creative and liveable society.

As well as art associations, public galleries, or art institutions making the change to contribute in forming the community's collective identity, individual artists can also make a distinction. Artist Barnaby Evans, who works in many media including sculpture installations, photography, landscape design, and architectural projects, encouraged hundreds of volunteers and supporters to create a public art event in Providence, Rhode Island, USA. It was called Water Fire and its mission was to inspire Providence city and its residents by restoring the urban experience, boosting community interaction, and innovatively transforming the image of the whole city, by presenting the Water Fire public art event for all to enjoy (Frenchman, 2004).

The event engages music, performances, and sparkling bonfires. Filling the air with the fragrant scent of firewood, flickering firelight and enchanting music from all over the world involves all the senses and emotions of over ten million visitors, who have been captured by that kind of art which brings life to that public place and revives the connection between people every time it happens (Figure 3).

3.2 *Public art to restore the urban and social landscape*

Once you see an art work in a public landscape area, your movement through the space is slowed down. None of us can deny that one public art work can have a great effect on viewers. They gather up around it, take photos of themselves with it, or debate the underlying message behind it. Public art works attract people and lead to an interesting controversial

Figure 3. Water Fire public art event, Providence, USA.

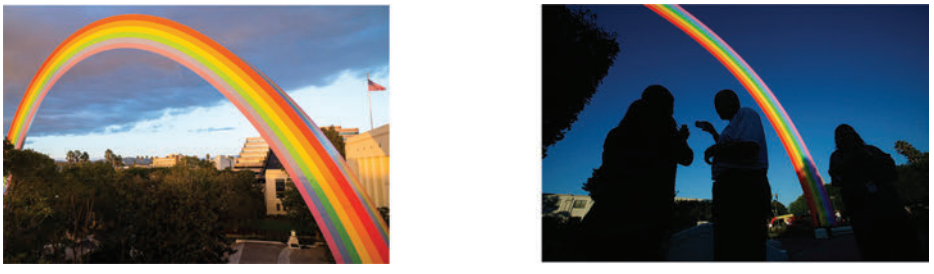

Figure 4. Rainbow, Culver city, California.

talk. Public art could be provocative and joyous. However, it could also be annoying. It does not matter what feelings and emotions it raises up; an art is a sudden stop in pedestrian life.

For this case, artist Tony Tassel has restored the urban and social landscape experience of Culver city, California through his creative public contemporary art work of a 94-foot rainbow (Figure 4). Many visitors now are welcomed, to be excited and socialised with each other around a wide neighbourhood area watching that unique kind of art. Actually, the rainbow is showable from miles around that people could believe that it is real!! Back then, during the rainbow's first inauguration ceremony, the visitors and the community residents were feeling dizzy and talking about how it has really changed the image of their city (Andrew, 2012).

Eventually, where the art work hits the ground, an exciting conversation starts between the people and the landscape.

4 THE CORELATION BETWEEN ART AND ARCHITECURE

Throughout time since the ancient ages to the modern history and then by now, the correlation between art and architecture is deemed to be as an inseparable symbiotic relationship. The aesthetic norms of art have been always engaged with the synthesis of architecture to produce a very successful product of the two in any specific field. However, public art is seen to be unappreciated much like landscape architecture is. But then, by now, great efforts have been made to indicate the role that landscape architects play in helping public art work.

In this instance, there are many good examples of the combination between artists and landscape architects to make a difference. Janet Echelman the famous sculptor and artist who graduated from Harvard University and was named an Architectural Digest Innovator in 2012 for changing the very essence of urban spaces (Echelman, 2016), always says that the landscape architect can play a leadership role in innovating a space for her art work. She is always the person who is charge. Echelman Studio explores the cutting edge of sculpture, public art, and urban revitalization.

The design team usually collaborates with creative architects, landscape architects, mechanical engineers and lighting designers. Furthermore, their design often focuses on creating a large scale public art work of contemporary sculpture. These sculptures embody collective identity and attract residents to form a personal and dynamic relationship with the art and

place. In the Vancouver Project, Canada, Janet Echelman said that Phillips Smallenberg, the seasoned landscape architect was the leader of her work. He designed a creative landscape architecture product for the Vancouver convention centre, which is covered with a Six-Acre green roof to make a lovely space for her art work. Echelman and Smallenberg collaborated and integrated the art ideas and the design concepts into the landscape. Especially in that project, Smallenberg redesigned the idea several times to adjust the water garden so that Echelman's art work became remediating.

Art critic Mary Louise Schumacher describes this project as in 'A social space that is simultaneously physical and virtual'. Many visitors came from all over Canada to see that huge and magnificent art work and engaged with each other in the surrounding space around (Figure 5). Since that time, the Vancouver convention centre has held annual public art events to please their visitors and raise the prosperity of the city.

Another exciting combination between public art and landscape architecture has begun with Echelman and Weiler to produce a contemporary project in Dilworth Plaza, Philadelphia (Figure 6). The both qualified artist and architect have added to the detailed work of the city hall's historic architecture with a creative virtual Rothko painting in the landscape area. The art work innovates with layers of coloured light moving in water mist, that physically and psychologically lead the people on a path through the underground lines below and traces them above the ground in real time (Harris, 2012).

Enthusiastically, Egypt is on the track. More and more new communities now believe in public art annual and seasonal events in their public spaces, to attract people to connect and socialise. It is clear findings, that events play an important role to promote the economic development and the human well-being for these communities. In addition to, they help to draw up the evidence of how public art could be a great element in place making and contribute well to landscape design and urban restoration.

In this instance, Sodic Residences, one of the greatest real estate companies in Egypt, has a missioned to that offering a variety of open spaces, overlooking green open areas and recreation plazas as the best way to sell a liveable community and a sustainable and maintain neighbourhood (Sodic website). According to their mission, the Sodic design team has created West Town Hub Project in one of their successful communities, Sodic West, Cairo-Alexandria desert road, to be a place where people can share and cooperate (Figure 7).

In the beginning, the project suffered a lot to make a foot print on the way to success, because it would depend only on the architecture landscape elements of recreation centres such as restaurants, cafes, market places, plazas, and outdoor areas. However, it has achieved a great boon after involving public art performances and events to these ingredient landscape areas.

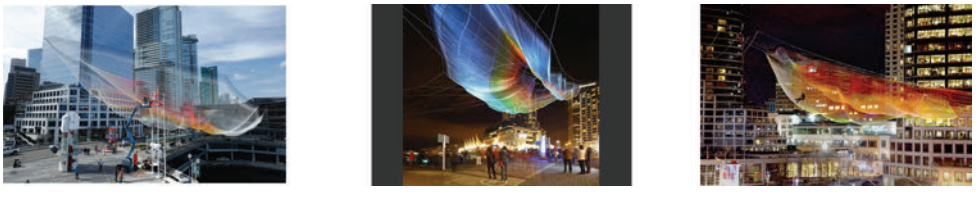

Figure 5. Jelly Fish, Vancouver Centre, Canada.

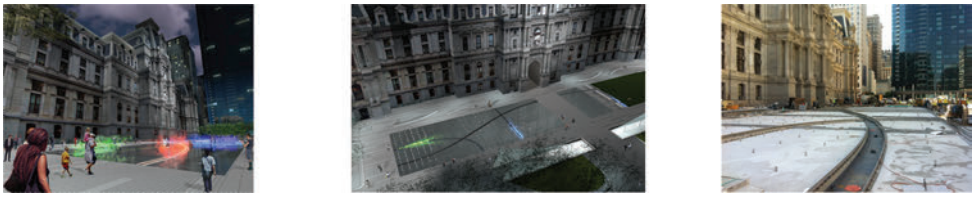

Figure 6. Contemporary public art in Dilworth, Philadelphia.

Figure 7. West Town Hub, Sodic West, Egypt.

In that way, West Town Hub became the famous place that always opens a room for the individuals and institutions of art, to produce their innovative ideas in contemporary art with a lovely environment for residents and visitors.

5 DISCUSSION AND RECOMMENDATION

The information drawn from the study indicated that people gravitate towards other people. Besides the proof that public spaces are the places which can best provide them a healthy and happy community to interact with each other, these spaces are the life-blood of a successful society and they have become an essential component of any community.

Urban designers, landscape architects, and city planners have been devoted more on creating social spaces that encourage residents to interact and find common interests. Moreover, enormous efforts have been made to develop these public spaces in order to improve the community civic participation and healthy living.

As another way to promote the social connections in public spaces, new cities, stakeholders, planners, and organisers recognise that public art, along with landscape architecture, is one of the crucial tools the community can use to build strong meaningful interaction between people and places.

Through the development of creative community design, seasoned artists are commissioned to innovate interesting products of public art works that are helping to enhance the scene of the place and shape the city.

In this respect, the study has discussed many examples of public places in various communities which depend on public art work to attract lots of visitors and help residents to connect and socialise in open spaces. Meanwhile, these art works contribute to raise up the civic participation and urban revitalisation in those communities.

Therefore, it is obvious to suggest the involvement of public art work with the landscape design of public spaces to promote the social interaction between people. This paper can provoke an interesting question about the correlation between art and architecture to enhance the collective identity of the creative community.

6 CONCLUSIONS

Through the investment and the development of successful community, public art can contribute to urban planning and landscape design to create a serene environment where people can make a social interaction. That increases the community attachment which engages people with their place.

Today, many new communities have recognised that involving public art in master plans increases the opportunities to build a creative society. Public art is ideally matched and attuned to its social and environmental context.

Public art investment and integration can assist in overcoming of economic, and physical challenges by increasing the social interaction in public space. The relationship between the economic health of a community and the quality of its connection has been increasingly strengthened.

This paper has concluded that public space has become one of the main ingredients in any successful community. It is the place where the community residents actually live and attach to their community. As well as this, public art has been considered nowadays as one of these ingredients needed to create a liveable community from which it draws its identity. Furthermore, public art administrators and cultural planners are being tapped to collaborate with urban planners and landscape architects in designing innovative public places which encourage the community residents to socialise and connect.

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The miniatures of Lahore Darbar

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ABSTRACT: This research analyses the court miniatures painted during the reign of Maharaja Ranjit Singh, otherwise known as The Lahore Darbar Miniatures. Furthermore, the essay highlights the main characters of the Darbar depicted in these paintings, which helps us to understand the medium in layers as well as the industry which was formed to aid this school of paintings. The city of Lahore plays a vital role in the identity of these paintings, as not only did the city work together to produce these paintings, but the paintings have become evidence of the city's history and its changing hands of power.

Throughout India and Persia, numerous styles and schools of painting were practised. When Maharaja Ranjit Singh came to power and claimed his throne in the capital of Punjab, Lahore, he decided to bring painters from all over India and Persia and settle them in Lahore to form ateliers. The amalgamation of artists, schools, material, techniques and ideals of beauty, power, authority and the holy come together to form what would be called the Lahore School of Miniatures or the Miniatures of the Lahore Darbar.

Working with two major museums of Lahore, the Lahore Museum and the Faqir Khana Museum, this research studies the material and the ideological aspects of these paintings and shows how the painting itself becomes evidence of a city's artistic triumph.

Using a few case studies representing a microcosm, the story of the painting and the city in the story are revealed.

Keywords: Court Miniatures, Maharaja Ranjit Singh, Lahore Darbar Miniatures, Darbar, Lahore School of Miniatures

1 INTRODUCTION

1.1 *The formation and development of the Lahore Darbar Miniatures*

Painting and sculpture prevailed in the city of Lahore for a long time. Specifically about painting, we know that during the reign of the Mughals in the 14th century when Akbar moved his court along with his artists and ateliers to Lahore, there was an established style followed by the painters in Lahore. The evidence of this lies in the famous project of Hamzanama which was an illustrative depiction of the tales of Amir Hamza from the 'Tilism Hosh Ruba'. This was a big project, and though headed by the Persian painters, local painters from Lahore were employed. The paintings produced by the artists from Lahore had a distinct style where individuality of faces of characters are apparent, unlike the traditional Persian style where the faces are almost identical. This style later became a part of the Mughal Style of Miniatures.

By the 19th century, this particular 'Lahori' style of miniatures reached its peak under the reign of Maharaja Ranjit Singh.

Punjab was divided into 12 misls or estates, owned by their respective leaders or sardars. Lahore, which was in a miserable condition and under the tyrannical rule of the Bhangi Sardars (Lehna Singh, Gujjar Singh and Shobha Singh), reached out to Ranjit Singh to be its saviour. Maharaja Ranjit Singh was a young sardar and was known for his gallantry, wit and leadership qualities. He marched into Lahore and with least resistance took the reins of

the city in his hands. On 12 April 1801 he was crowned the Maharaja of Punjab at the venue of Lahore Fort. He ruled until his death in 1849.

Initially called Darbar Khalsa, its name later changed to Lahore Darbar as the Maharaja stressed on the secularity of his court. The 48-year rule of Maharaja Ranjit Singh is considered the golden period of Punjab. Lahore and its environs were peaceful, safe and prosperous. Maharaja Ranjit Singh, in an attempt to update his methods of administration, employed and imported experts from all trades. He employed European army officers who had served in the French army to train his men. Likewise, he also sent for artists from various adjoining areas. In an interview with Faqir Syed Saif ud Din, he mentions that Maharaja Ranjit Singh issued a farman or official orders to Faqir Noor ud Din who was the governor of Lahore, to bring skilled experts and technicians from various areas and settle them in Lahore and Amritsar.

Artists were settled in specific localities in Lahore and Amritsar. In Amritsar, there was a 'Gali Musawwaran' (Artists' street), while in Lahore these artists set their ateliers or studios in 'Gumti Bazaar' ('Gumti', the name of the market, originated from the fancy cloth which was sold in bulk there) which was surrounded by the residences of the well-heeled patrons. Also, studios were set up at 'Tehsil Bazaar' (inside Mochi Gate) which received generous patronage by the Maharaja. There were over 120 functioning art schools/studios and more than 60 ustad (teachers of calligraphy) during this time, some of these art schools predating the Sikh rule.

Some prolific artists, like Perkhu, travelled with their patrons like Raja Sansur Chand of Jammu, who moved to Lahore for political reasons.

When these artists from the schools of Kangra, Guler, Chamba, Bhasoli, Jammu, Lucknow, Delhi, Agra, and Rajastan, with their distinct styles and a diverse visual vocabulary, came together and mixed with the already prevailing traditions in Lahore, they produced paintings which showed the blending of style and visual understanding. This became the signature style of the Lahore Darbar School of Miniatures.

2 ARTISTS, ATELIERS AND TECHNIQUES

Whenever establishing the definition of the Lahore Darbar Miniatures, we see a combined contribution of the artists, ateliers, techniques and a chain of historic events which leads us to the development of this school.

Artists who had been imported from different areas and schools around India and Persia came with their sensibility and ideals of beauty. When these artists eventually settled in Lahore, the interesting features began to show. Suddenly, not only do we see the regional styles of the artists showing in the paintings, but also certain characteristics that define the style that becomes the signature of all paintings made in Lahore.

This Lahori Ang, or Lahore Style, had to be integrated for the favour of the patron and became a formula for commercial gains. The integration of multiple schools made the Lahore School of Miniatures an interesting mélange of different styles and yet remained the paintings of Lahore Darbar.

With the different schools of miniatures coming together in one school, the flavour of work became individual, multi-regional yet remained Lahori. What follows now are the characteristics of the Lahore School of Miniatures and the factors that form its distinctive style.

2.1 *Colour*

A definite colour palette is used in the Lahore School of Miniatures. Bright and vibrant colours were selected for the paintings. Bright red, blue and yellow were used abundantly and reflected upon the opulence of the patron. Since gems were used in the making of pigments, they were colour-fast and did not lose most of their brilliance over years. It is not that these colours or pigments were not used before; they were not used in such abundance and not in such saturated amounts.

The characteristic colours of the Lahore Darbar Miniatures are bright blue, taken from ground lapis lazuli, bright red, yellow taken from a stone locally known as gattu, and with generous use of gold and silver leaf. White, which was usually used as a base and commonly known as safaida, was made from ground pearls. Even today, we can see the brilliance of these pigments.

2.2 *Portraiture*

Portraiture of Lahore Darbar paintings did not adhere to the idealised Chinese features which were fondly made by the Persian miniaturists. They also did not stylise the face, as did their other regional Indian counterparts, but made individual and accurate features. This was partly because most of these paintings were made for historiographical reasons and all those present in the paintings were well recorded and accounted for. As a matter of fact, names were also recorded on the frame of the paintings to retain the record of the characters present in the painting. This tradition can also be seen in the sculpture tradition of Lahore where accurate features were made.

In Figure 1 the faces of the Imaedin religiou scholars) show individual features along with distinctive attire. Notice the variations of skin tone, face, and hair types along with the character shown on their faces. Along with the faces, these paintings show the individual dress sense observed by the members within a group.

Along with the accuracy of features, the character study of a person is also evident through the paintings in subtle and sometimes vivid details. This is a unique feature of Lahore Darbar paintings, and contributed greatly in the narrative which was created in the paintings. Narrative was given more importance than the adherence to the realistic depiction of the scene, yet the realistic depiction in portraiture was demanded by the patrons. This left very little room

Figure 1. Individuality and portraiture: Syed Ghulam Noshasani 'Faces of the Imaedin' (Religious Scholars).
Detail: DarbarFaqir Syed Ghulam Moheyeddin Noshasani, Faqir Khana Museum, Lahore, Pakistan.

Figure 2. Character study of the courtiers involved in the murder of Maharaja Sher Singh.
Detail of Darbar Sher Singh, Artist: Kher Singh, Faqir Khana Museum, Lahore.

to manoeuvre around stylising the characters enough to tell the story. In other Indian schools of miniatures which are heavily stylised, the archetypal characters are given stylised features, establishing their role in the story.

Still, the painters of the Miniatures of Lahore Darbar possess the unique quality of showing character traits through postures and detailed facial features.

Notice the faces of the members of Sher Singh's court. Distinctive individual attire is noticeable as well as the facial features. Individual hand gestures can also be seen in this painting. The most interesting part of the details of this painting is that these characters were involved in plotting the murder of Maharaja Sher Singh. The entire painting told the story of the murder being plotted in the court of Sher Singh. The names of the persons present in the painting are written on the border of the painting. This was an important record-keeping technique which allowed the painting to preserve the historic moment.

Taking a closer look, you may notice the flared nostrils and focused gaze of the characters.

Notice the sneer on But Singh's face as his nostril is flared and the curve of his moustache arches sharply over his mouth. This shows the ferociousness of the character who is waiting to pounce on his prey. But Singh and his brother Lehna Singh were instrumental in the assassination of Sher Singh.

Characteristic physical deformity is also shown here in Figure 6, as Raja Dehan Singh's sixth finger is carefully rendered as it oddly springs out. The artist delicately comments on the unnecessary presence of the villain who sticks out like an ugly sixth finger; though his hands are closed together to show respect, his devilish plot cannot be ignored, just like his sixth finger. Raja Dehan Singh was the mastermind behind the assassination plot against Sher Singh.

Figure 3. Detail of But Singh's face from Darbar Sher Singh.
Artist: Kher Singh, Faqir Khana Museum, Lahore.

Figure 4. Detail of Raja Dehan Singh and his six-fingered hand from Darbar Sher Singh.
Artist: Kher Singh, Faqir Khana Museum, Lahore.

Figure 5. Detail of Faqir Ghulam Moheyeddin Noshasani.
Artist: Perkhu, Faqir Khana Museum, Lahore.

Figure 6. Detail of Bhai Ram Singh's clothes from Darbar Maharaja Sher Singh,
Faqir Khana Museum, Lahore.

Iconography from various cultures and religions is evident in the image-making as well as establishing character traits of the person. European cupids are presented as angels, and halos around revered persons are shown even in the Mughal School of Miniatures, but the presence of a Muslim saintly figure in the posture and mien of Baba Guru Nanak, the founder of Sikh religion, is something unique. Using the local/regional religion of Sikhism as a point of reference for the holy, shows the amalgam of the school of thought and ideals of divine reverence.

Figure 5 shows the Faqir Ghulam Moheyeddin Noshasani seated in a position and represented with a likeness of Guru Nanak. Faqir Ghulam Moheyeddin Noshasani was a Sufi scholar and a poet, and was revered by people of all faiths. His legs are showed uncovered up to the calf, which matches the representation of Guru Nanak. Compositionally, it appears he is sitting under a tree which is a common archetype for representing teachers and people of faith in the Indian subcontinent. This Sikh iconography is then mixed with the European Christian tradition of placing a halo behind the head of the revered person. This halo is also present in the Mughal miniatures from the time of Akbar. When the Europeans illustrated bibles in India, they brought their iconography which was picked up by the artists of the Mughal court. Following the same tradition are the painters of the Lahore Darbar. Another European iconographic tra-

Figure 7. Detail of embossed pearl rendering on Sher Singh's jewellery, Darbar Sher Singh. Artist: Kher Singh, Faqir Khana Museum, Lahore.

dition can be seen in the background in the form of an angel who is showering petals and gold. The angels had also appeared in Mughal miniatures before. The act of showering petals and gold was a common practice in India to show reverence, respect and the showering of blessings.

The secular court of Maharaja Ranjit Singh had created an example of tolerance and moderation, and so it is evident in these paintings how cross-cultural imagery comes together in one composition.

Another trend of portrait within a portrait is exercised in the painting of Maharaja Sher Singh.

2.3 *Three-dimensionality of the painting*

A strong sense of three-dimensionality is also found in the paintings, which is rare in this particular school of miniatures, where otherwise flat washes or heavily textured fabric was used to show the flatness of the figure. This created a three-dimensional study of the body which would be further rendered with the design of the cloth that followed the curves of the body beneath it.

The three-dimensionality is also evident in the treatment of canvas. Finger nails were used to slightly emboss or sink the details on the paper. This tradition of treating the paper is believed to have come from the calligraphy done through the same technique known as Khat e Nakhoun. Calligraphers were a revered part of the ateliers and through the introduction of this technique calligraphers of Khat e Nakhoun became a part of the image-making process.

Jewellery, like a string of pearls, would be painted using real ground pearls and applied thickly to appear embossed.

As seen in Figure 7, embossing with thick layers of pearl pigment to make pearl necklaces in the painting created a slight relief. When observed very closely, these thick layers of white paint appear like rounded pearls.

These kinds of techniques have not been practised in any other school of miniatures and Lahore Darbar School stands unique in producing such interesting works.

2.4 *Perspective*

The intention of the painting was to tell the entire story or the happening in one visual. This required certain sacrifices. Real perspective was one of them.

The perspective in these paintings is not actual, but as perceived by the artist. The interior and exterior view is sometimes required in the same painting. Though this perceived perspective was heavily gauged by the patron, the artist did not lose his lyricism and logic. The compositions still balance out harmoniously and do not lose focus of the most important characters.

In many paintings, the interior view of court is juxtaposed with the exterior view through the window. The perspective is almost the same, whereas multiple perspectives are shown inside the court. Likewise, in some paintings, piled-up perspective is paired with the one-point

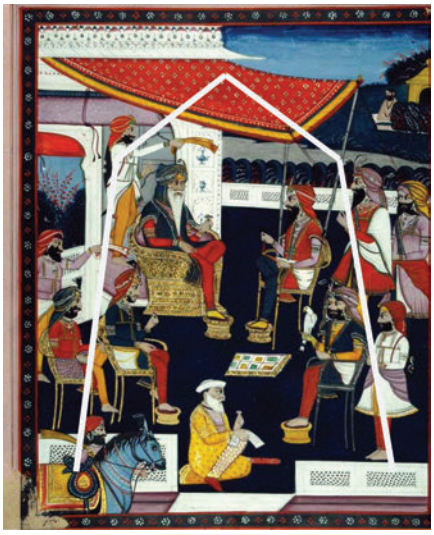

Figure 8. Perspective flow, Darbar Maharaja Ranjit Singh, Lahore Museum.

perspective to highlight the important areas. The dimensions of the characters vary according to their rank and importance.

3 INDIVIDUAL PICTURE BREAKDOWN

3.1 *Maharaja Ranjit Singh in Shikarpur, Lahore Museum collection*

This painting depicts the historic event which took place at Shikarpur, Sindh. Maharaja Ranjit Singh planned to extend his empire towards Sindh. On advancing towards Shikarpur he was stopped by the British, who sent their Wakeel (lawyer) or representative to stop him in his tracks and to request him to go back.

On hearing this, Maharaja brought out all the contracts and told him there was no law stopping him from this invasion, but he really lost his temper when the Wakeel, Basharat Khan, suggested that the Maharaja's greed was getting the better of him. Ranjit Singh pulled out his sword and told the Wakeel off by saying that he had a birthright to his land, that the British had no right to claim what was not their motherland, and that it was indeed the British whose greed was getting the better of them.

The following are the numbered details of the painting:

1. Maharaja Ranjit Singh in his winter apparel sits with his sword out
2. Basharat Khan—Wakeel (lawyer) of the British
   2.1. Smudged feet show the artist's mistake in depicting shoes, whereas no one was allowed to wear shoes inside the court.
3. Phula Singh Akali—Trusted and respected general of the Akalis
4. Akali Army—The diehard Sikh army, loyal to Ranjit Singh, who used to fight with religious zeal. They were led by Phula Singh Akali. (3)
5. Divan Ratan Chand—Minister of the court, who was added later by the artist
6. Quilted curtains depicting that it was wintertime
7. Clouds made in Rajasthani style of miniatures
8. Floor design is typical to that of Lahore

This miniature shows the time of the year by showing elements of weather. Heavy clothing is worn by the courtiers, while the windows are covered with quilted curtains (6).

Figure 9. Numbered details of the painting, Maharaja Ranjit Singh in Shikarpur, Lahore Museum, Lahore.

3.2 *Darbar Maharaja Sher Singh, Kakir Khana Museum collection*

This painting is phenomenal in its subject. The artist Kher Singh paints the court of Maharaja Sher Singh before his assassination. As the plot against the king develops, the attendees of the court are brewing up plans for the assassination. The right half of the painting consists of the villains, while in the left half are the victims. Kher Singh draws himself as one of the victims who foresees the situation. A careful study of the faces of these villains shows intense hatred as Kher Singh renders his focused gaze on Maharaja Sher Singh with flared nostrils.

Showing the view from the north through the Naulakha pavilion at the Lahore Fort, we can see the River Ravi, Kamran's Baradari, Jehangir and Asif Jah's mausoleum.

On the top left corner of the painting smoke rises from the direction of the city. Tiny angels are being sucked into this smoke showing that even the king's guardian angels cannot help him anymore.

The interesting combination of one-point perspective and piled-up perspective adds to the narrative when the interior of the Naulakha Pavilion opens the view into the placement of the Old Ravi River, mausoleums of Asif Jah and Jehangir (Mughal rulers), and at the same time comes back to the city of Lahore which smoulders at the thought of the assassination of the rightful king. This is a very strong propaganda painting which legitimises the rule of the Sher Singh, and then attaches it to the death of the former great rulers who ruled from the same fort Sher Singh and his attendees are sitting in.

1. Maharaja Sher Singh—Son and successor of Maharaja Ranjit Singh.
2. Bhai Ram Singh.
3. Raja Dhian Singh—Mastermind behind the assassination of Sher Singh. Famed to be six-fingered; a closer look at his hands shows his sixth finger branching out of his thumb.
4. Wahbian Singh.
5. Raja Heera Singh.
6. Attar Singh Kalianwaley.
7. Sardar But Singh Sandhianwala—Active participant in the assassination plot.
8. Sardar Lehna Singh Sandhianwala—Brother of But Singh and actively involved in the plot.
9. Kher Singh—One of the leading court painters of the time and artist's self-portrait.
   9.1. Kher Singh's Album on lap where he is pointing towards another miniature of Sher Singh riding his favourite horse Dhollu (this detailed miniature exists separately).

Figure 10. Numbered details of Darbar Maharaja Sher Singh, Faqir Khana Museum, Lahore.

10. The Naulakha Pavilion of the Lahore Fort. Opposite Sheesh Mahal.
11. River Ravi, which flowed right next to the Lahore Fort in those times but later changed its course.
12. Kamran's Baradari—Here shown as double-storied building. It now stands with one storey and in the middle of the River Ravi.
13. The Minarets of Jehangir's mausoleum, seen through the trees of Shahdara. Next to it is Asif Jah's Mausoleum (can be seen very faintly).
14. Rising of a smoke cloud from the side of the walled city of Lahore with small angels, showering flower petals, being sucked into the smoke cloud.

4 CONCLUSION

The Miniatures of the Lahore Darbar established the industry of book arts in Lahore like none before. These also become one of the true first-hand representations of the Sikh court of Punjab. A Maharaja's vision to unify his people and bring tolerance for all cultures and styles is evident in how he encourages the embracing of multiple philosophies and schools of Indian Miniatures, and how in doing so, records his feats, his companions, his enemies and the city he loved the most. Lahore shines brilliantly in these paintings along with her ruler.

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The potential of the eco-passive construction technique for the Western Desert in Egypt

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ABSTRACT: A proposal for the eco-passive construction technique has been discussed to maintain thermal comfort in hot, arid climates. The study focuses on the case of Kharga, Egypt – climate classification BWh—for its strategic location, as well as for the availability of data and accurate weather data files for the Western Desert Region in Egypt. The proposal discusses an integrated multi-layered wall using eco-friendly insulation (rice husk), thermal storage materials, and Bio Phase-Changing Materials (Bio PCM), with a total thickness of 24.6 cm (one-brick), using a computerised simulation for three prototypes of multi-layered walls applied to three rooms. According to their geometrical roof shape (flat, domed, vaulted), the simulation and discussion are consequently run across three stages, which leads to successfully achieving comfort according to the Adaptive Comfort Model in American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 55-2010 for the Kharga climate (19.6°C–30.7°C) with 100% comfort operative temperatures in summer and 91% in winter.

Keywords: Eco-Passive Construction; Thermal Comfort; Eco-Friendly Insulation; Thermal Storage Materials; Bio Phase-Changing Materials; Bio PCM; ASHRAE

1 INTRODUCTION

Many aspects of globalisation have a direct impact on the built environment in general and specifically on the control of the architectural environment. Aspects of the globalisation process

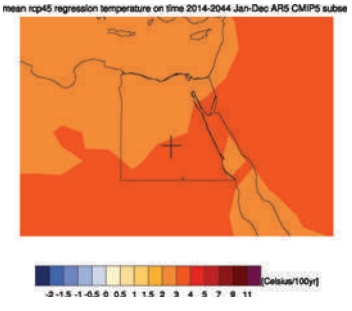


Figure 1. Prediction for the next 30 years of the rate of climate change in Egypt. The map illustrates that the Kharga oases zone, where the study takes place, is under a change rate of 4°C/100 years. The prediction was simulated by the KNMI Climate Explorer web-based tool. The cross refers to the location of Kharga (KNMI, 2014).

affect, and are affected by, factors like business and work organisations, economics, sociocultural resources and the natural environment (Babones, 2007). Environmental challenges such as global warming, climate change and air pollution, and overfishing of the ocean are linked to globalisation (Bridge, 2002). Climate change is impacting on our economy, health and communities in diverse ways. Over the past 50 years the average global temperature has increased at the fastest rate in recorded history (NRDC, 2011) (see Figure 1). In addition, it is impacting on the architectural identities of nations that document their history and shape their unique character. The Kharga Oasis in the Western Desert Region in Egypt is lacking the required number of people to settle due to the hot arid climate which characterises this territory. The climate is characterised by high and wide diurnal temperature fluctuation. At certain points around the year, the temperature difference can reach up to 20°C between day and night. This leads to insufficient thermal comfort in the territory, and it is interrupting the governmental plans to encourage people to settle in this territory, with fears that they may abandon it because of insufficient thermal comfort. Furthermore, this wide diurnal fluctuation affects human health with chronic kidney disease (Barsoum, 2013, Kalaitzidis et al., 2014).

2 RESEARCH HYPOTHESIS

The construction materials and the thickness of walls and roofs are important to consider in terms of their thermal resistivity. The architect Hassan Fathy presented a project proposal to New Bariz in the 1960s for settling people in the Kharga territory, representing the folkloric style that was accumulated from the Pharaonic, Christian and Islamic times. This would be carried out using a passive design approach. However, due to the economic and political issues at the time, this planned development was not completed (see Figure 2). During that time, Fathy's strategy to design passive buildings for hot, arid climates depended on the use of local materials such as mud bricks, and in Kharga to have wall thicknesses of up to 80 cm, to maintain thermal comfort with the appropriate fabric inertia. In addition, he used the geometrical roof structure of domes and vaults to diffuse solar rays in order to maintain his initial aim of reaching indoor comfort zones. The experiment of Hassan Fathy in Cairo (Fathy, 1986) revealed that a wall thickness of two mud bricks can act as a thermal energy storage system, a thermal lag for heat dissipation, and a thermal insulator for heat dissipation at night (see Figure 3). The experiment also revealed that this technique is more beneficial in controlling temperature fluctuation than that of prefabricated concrete slabs with a thickness of 10 cm. This was an example of ingenious urban development in the Western Desert Region in Egypt. However, at the moment, mud-brick structures alone may not be the most durable and applicable for the new century's urban development in Kharga. According to Harper (Harper, 2011), questions have been raised about mud brick's long term durability and susceptibility to water damage. In addition, it is commonly known that the overuse of mud brick as a core construction material in Kharga affects the sustainability of the agricultural cultivation in this location (*Attia* and *Raslan*, 2011).

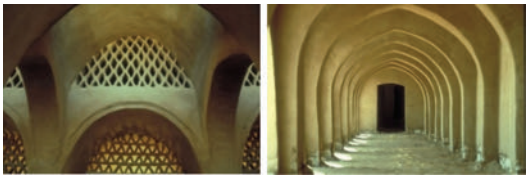


Figure 2. Architect Hassan Fathy used mud brick as a local construction material in the project New Baris Village, Kharga, Egypt. His design represents an ideal expression for the architectural identity for this particular location. (Archnet, 2014).

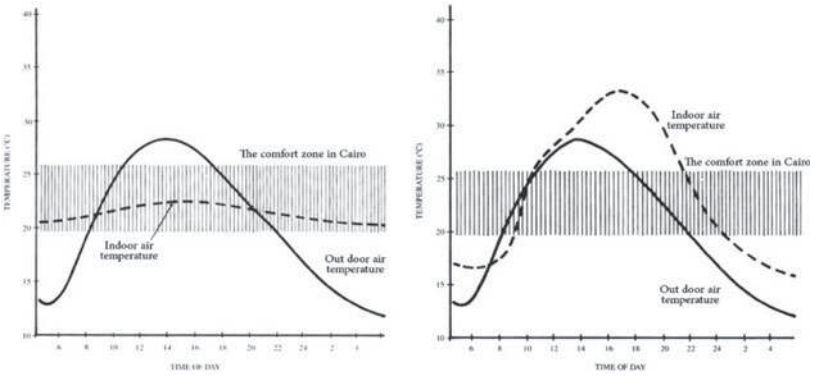


Figure 3. An illustration of a comparison between heat flux rate over 24 hours, both indoors and outdoors, by using a 50 cm mud brick (right), and a concrete wall (left). The graphs show the comfort zone in Cairo (Fathy, 1986).

3 RESEARCH BACKGROUND

Several researches on this concept have been reviewed. For example, Tyagi and Buddhi (2007), Pasupathy et al. (2008), and Whiffen and Riffat (2012, 2013) discussed the different forms of thermal energy storage integrated with building an envelope, whether it is for the targeted climate zone in this paper (hot, arid climate) or as a general approach for other climates. By giving examples without any limitations, Tyagi and Buddhi (2007) discussed passive solar and heating/cooling systems which can work through three main functions: solar energy collection (wall external surface), storage (Thermal Energy Storage (TES) of multi-layered materials), and distribution (internal surface material). Storage can be maintained through the multiple layers of a wall, as the construction materials such as brick, stone and concrete can be utilised as sensible forms of heat storage, or PCM (Phase Change Material) as latent heat storage. Passive storage systems for heating can be used through two strategies with wall construction. The first one is 'Direct Gain' and the second one is 'Indirect Gain'. The Direct Gain concept can be explained as receiving heat through a single-layer external wall surface (solid–solid phase change method), while Indirect Gain can be maintained by utilising the thermal mass storage wall between direct solar radiation and the living space, whether with sensible heat storage using bulk materials or latent heat storage through a layer of PCMs (solid-liquid phase change method). The literature review related to this topic assisted in conducting the research methodology below to fulfil the required research aim.

4 RESEARCH AIM AND METHODOLOGY

This research investigates the feasibility of replacing the very old and thick construction wall that uses earth materials for the vernacular architecture context in Kharga with an equivalent thin lightweight multi-layered wall, to be used as an internal and external wall for multi-storey buildings in the Western Desert Region in Egypt (see Figure 4). The research identified organic non-paraffinic PCMs (called bio-based PCMs), which are nano-engineered (Yu et al., 2014, Jeong et al., 2013, Jeong et al., 2014) and derived from natural resources such as palm oils. They are expected to be stable for thousands of phase-changing cycles. Bio-based PCMs can absorb, store and release large amounts of latent heat, like general paraffinic PCMs. They can be manufactured to have various melting points varying between −22.7°C to 78.33°C, so they can be used in different applications and in different climate zones (Phase Change Energy Solutions, 2014). However, they still has low thermal conductivity compared to the conventional organic PCMs. The research used the climatic computer

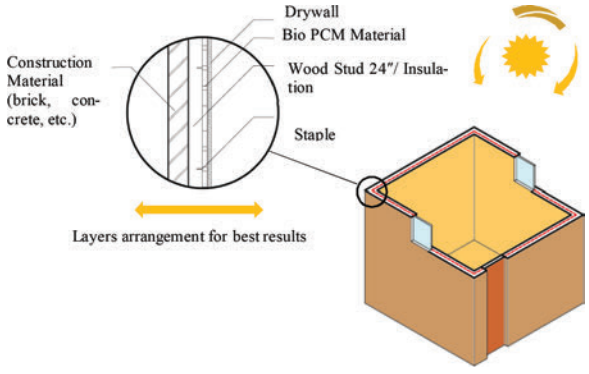


Figure 4. This illustration for the concept being studied shows the proposed wall construction layers. Details are redeveloped by the researcher based on (Phase Change Energy Solutions, 2013f).

simulation method to introduce an application of simulation that data sheet information of the defined Nano PCM layer product which is integrated with mud-brick walls to investigate operative indoor temperatures for a thinner integrated multilayer wall, and to compare with those temperatures produced by using the conventional 50 cm walls. The performance was studied in all seasonal conditions using the latest typical meteorological year data (Energy, 2003) for exterior boundary conditions in Kharga, Egypt. Comparisons were made between different cases of layer arrangements and parameters to investigate certain arrangements of layers. To continue with these various variable parameters, some parameters were aimed to be fixed, such as the rooms' boundary conditions (represented in the floor area), opening areas, and air volume and flow rate. The comparison is hypothesised to be limited and represents a precise thermal simulation for the multi-layered proposals.

5 COMPUTER MODEL

Three prototypes of multi-layered walls are proposed to be applied to three different rooms (see Table 1). Several computerised simulations were carried out and led to the final three proposals in Table 1 for discussion. With reference to the room's geometrical shape of their roof (flat, domed, vaulted), see Table 2, the proposal discusses the integrated mud-brick multi-layered walls and roof using eco-friendly insulation (rice husk), and the thermal storage materials (Bio PCMs); the exception is for the flat roof room, which is reinforced using concrete. The investigation took place using fixed and variable parameters and was then modelled and simulated through computerised simulation. The aim of designing these three experimental multi-layered surfaces is to investigate their impact on comfort temperatures, besides the impact of using different roof shapes with respect to the orientation of the sun. The fixed and variable parameters approach narrows the investigation to let the study target only the effect of the integrated proposed multi-layered construction materials and the shape of the roof.

5.1 *Parameters (Fixed and Variable)*

The study considered that all rooms have the same internal area of 7.840 m^2 and that they have the same internal volume of 26.6 m^3 as well. According to the advised dimensions by ECP 306-2005 (2006), the opening dimension has been designed to consider that the sum of all opening areas for each room is 3.48 m^2 (including doors and roof vents). The opening orientation was also considered as a fixed parameter. Based on climatic analysis for the location of Kharga, the windows and doors are positioned in all rooms to face the prevailing winds from the north-west direction in Kharga. Two windows are placed in the position to maintain cross-ventilation. All domes maintained stack effect ventilation using a crown on the

Table 1. Surfaces prototypes, illustrated by a detail in the roof of the domed room. Bricks are used in Egypt with dimensions of 25 × 12 × 6.5 cm (Quality, 2005). Mud bricks used to be used with standard dimensions of 24 × 12 × 9 cm in Egypt (Correas-Amador, 2012). According to (Sheweka, 2011), mud brick has a lot of economical, eco-friendly and thermal benefits as a core construction material in the location of study.

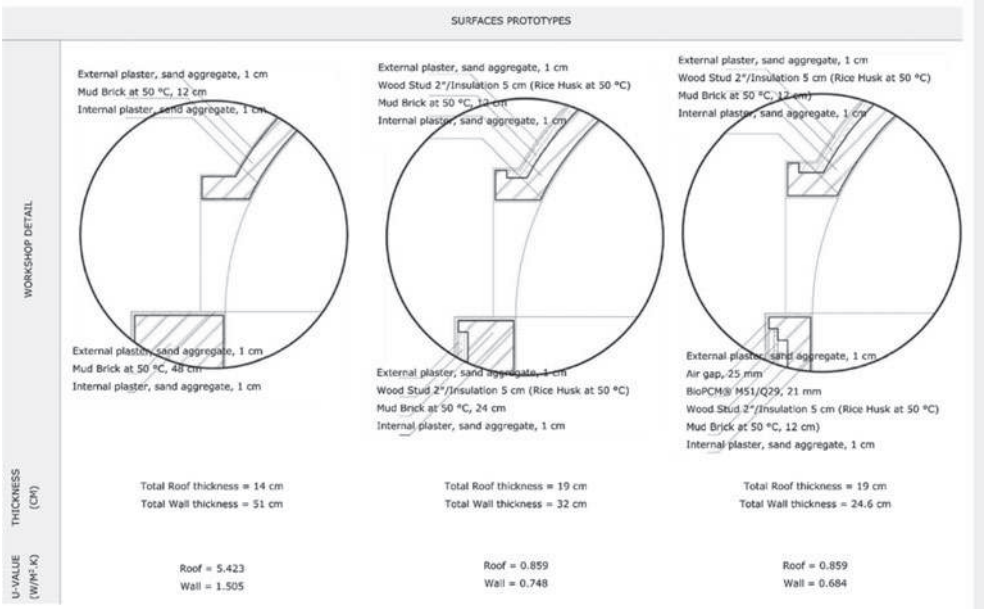
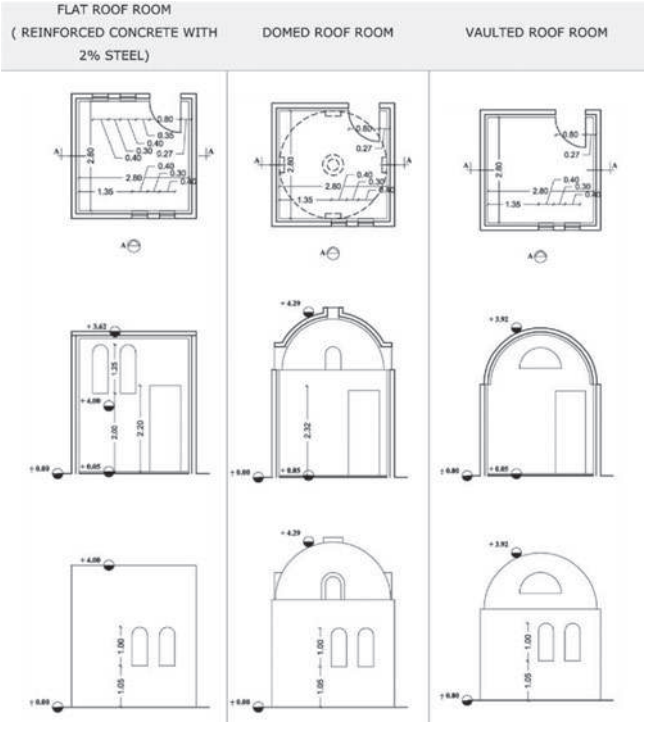


Table 2. Three rooms with three different roof geometrical shapes.



top of the dome and four vents positioned at the dome's axes. In the case of the vault, natural ventilation is maintained via two vents at the two flat surfaces of the vault. The vaulted roof is orientated to face the prevailing wind to maintain stack effect as well. The windows have a vertical rectangular shape to maintain the longest possible shading. All rooms have a floor made up of sandstone tiles (3 cm) fixed with mortar (2 cm). The occupation density differs from one place to another across Egypt, where it is related to the typological characteristics. The average number of family members in the rural areas in Upper Egypt is 4.37 capita and the residential space per capita is 13.7 m^2. The typological studies for the location of the study states that occupation differs across the day. The average occupation density in the location of study is calculated to be 0.072 people/m^2. The study considers an activity of eating/drinking, with metabolic factor 0.90, winter clothing has insulation effect of 1 clo, and the summer clothing 0.50 clo. A medium crack template for air tightness was considered with a constant rate of 0.700 ac/h. On the other hand, the study considered the following variable parameters:

– defining surface multi-layers
– shape of the roof
– surface layers orientation
– opening scheduling (night purging).

The study in this research has been discussed through a set of climatic simulation studies to utilise certain PCM material with its available data sheets, using Design Builder software v4.2.0.054 with the Energy Plus simulation engine of the accredited and the most up-to-date weather data file for Kharga. The software is approved by the building regulations bodies of various countries.

6 RESULTS AND DISCUSSION

The study investigated using numerous computerised simulations to produce the final three proposals, which are presented in Table 1 for results and discussion. The discussion will address the results through three stages. Each stage addresses each variable parameter that contributes to the particular stage.

6.1 *Stage 1*

This stage discusses the variable parameter defining multi-layered surface which is defines the layers of each proposed multi-layered case. At this stage, the discussion addresses the parameter's effect on a room's thermal comfort. Reviewing Bio PCM products, they are produced in different shapes, such as a mat of pouches or sticks. The mat is ideal for this study, as it is possible to be affixed onto curved surfaces or embedded into walls. The utilisation of the appropriate Bio PCM depends on the peak melting temperatures and its thermal energy storage capacity. Bio PCM is placed facing the maximum radiant, conductive and convective energy exchange. To determine how much Bio PCM is needed, first the cooling load is determined using loads software or a delta T over area calculation. Secondly, the total Bio PCM material that matches the thermal energy storage capacity cooling size for the space is specified. More PCMs than the design-cooling load is not typically required but can be used for increasing the thermal energy storage and peak demand time lag. Thirdly, the external surface exposure to solar gains is evaluated. Fourthly, the Bio PCM capacity is divided among surfaces, plus consideration is given to using materials of the highest capacity to face the highest exposure to heat gains (Phase Change Energy Solutions, 2013). According to the design heating load equation (Szokolay, 2014):

$$Q = A \times U \times \Delta T \tag{1}$$

where

– Q design-cooling load of building (W)
– U U-value surface to surface (W/m^2 K)

– A area of surface (m^2)
– ΔT design temperature degrees difference

Cooling load is an hourly rate that refers to the capacity of equipment required to account for such load. It may seem logical to define that space heat gain is equivalent to space cooling load, but in practice 'Heat gain ≠ cooling load' (Bhatia, 2012). Thus, considering the maximum wall area of a flat room,

$$Q = 6.25 \times 12.752 \times 21 = 1673.7(W) = 5710.9014512 \frac{Btu}{h}$$

Then, the calculated average Btu/h value is 41.60 Btu/h per feet or M41.60 (according to the manufacturer's specifications) for the sum of the surface area. According to the communication with the manufacturer (Crossett, 2014a), the mentioned calculation above is valid as long as the cooling load is considered with the minimum value, which can be considered as being M51 among the available prototypes by the manufacturer (Phase Change Energy Solutions, 2013a). In a further communication with the manufacturer (Crossett, 2014b), this prototype has been confirmed for simulation for this study. More Bio PCM than the design-cooling load is not typically required but can be used to provide additional benefits by providing additional Btu/hr thermal energy storage and peak demand time lag. The average life cycle of the used bio-based PCM is 85 years. The study did not consider thermal bridging. A simulation was run to test hourly inside surface temperature in the middle day of both the summer design week (01 AUG) and the winter design week (25 JAN). Therefore, the study can stand on the feasibility of the three prototypes, compared with the outside Dry-Bulb Temperature (DBT). Results in Figure 5 confirm the fact that the temperature fluctuation in Kharga is 17–20°C. While the three proposed prototypes record swing in temperature that varies between only 2–4°C.

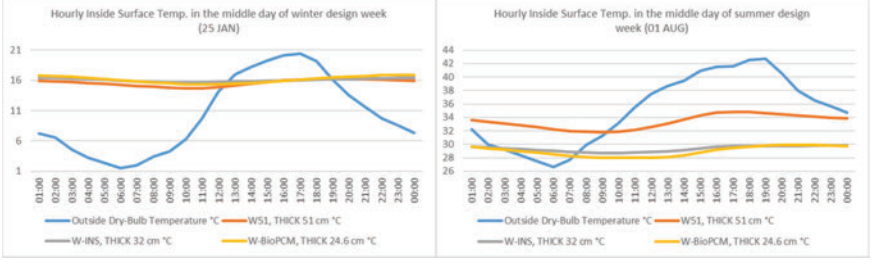


Figure 5. Results of hourly inside surface temperatures for the three proposed multi-layers prototypes. The data is for the middle day of the design week in summer and winter in Kharga.

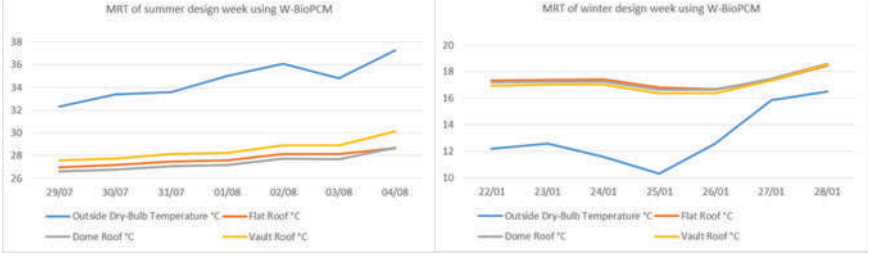


Figure 6. Result of comparing MRT for flat, domed and vaulted rooms in summer and winter design weeks, using prototype W-BioPCM.

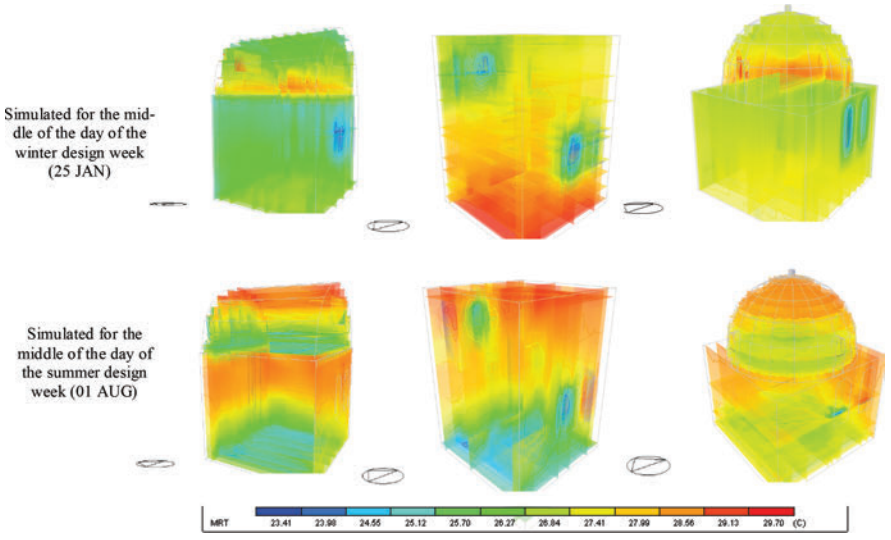


Figure 7. CFD simulation for contour temperature distribution for the three rooms.

6.2 *Stage 2*

Stage 2 discusses the variable parameter shape of the roof (flat, domed, vaulted) with the prototype W-BioPCM 24.6 cm thick, using the simulation method of solution algorithm finite difference. Figure 6 shows results for the summer design week. The average Mean Radiant Temperature (MRT) for the three rooms is lower than the DBT by 5–10°C, while the difference among the three rooms is AV 1°C. The domed roof room recorded the lowest MRT among the three rooms, while the vaulted roof in this particular room design and the windows orientation recorded the highest MRT. In the winter design week, the variation between DBT and MRT is 2–6°C; the difference in MRT for the three rooms is notably small.

Figure 7 illustrates a Computational Fluid Dynamic (CFD) simulation for the three rooms according to the temperature distribution of each room. During the summer, the MRT for the three rooms are more likely to be increased with heat transfer by convection of exposed surfaces. In winter, the MRT is more likely to be stimulated by the stored earth heat capacity.

6.3 *Stage 3*

Stage 3 discusses the thermal comfort of a domed room through its operative temperature according to wall orientation. Numerous simulations optimise several alternatives, and final alternatives are discussed through two proposed levels, Level 1 and Level 2. Each level will be discussed separately in order to interpret the produced results.

Level 1 (Figure 8) discusses comfort through daily mean operative temperatures according to walls W-BioPCM orientation and the use of insulation in the non-exposed direction(s) in summer and winter. The variables key for Level 1 results (Figure 8) is explained as follows:

- All Directions: refers to using W-BioPCM in all four directions.
- West & South + Ins. Non-exposed: refers to using W-BioPCM at both west and south only, and using insulation for non-exposed surfaces.
- West + Ins. All directions: refers to using W-BioPCM at west orientation only and using insulation in all other directions.

The simulation results in Figure 8 show that in summer, all the alternatives presented lower temperatures than DBT (AV 4°C), and they were all in the comfort zone range of Kharga, Egypt; ASHRAE climate zone BWh, according to Adaptive Comfort Model (ACM) in ASHRAE Standard 55–2010 for Kharga Climate (19.6°C–30.7°C). With regards to the win-

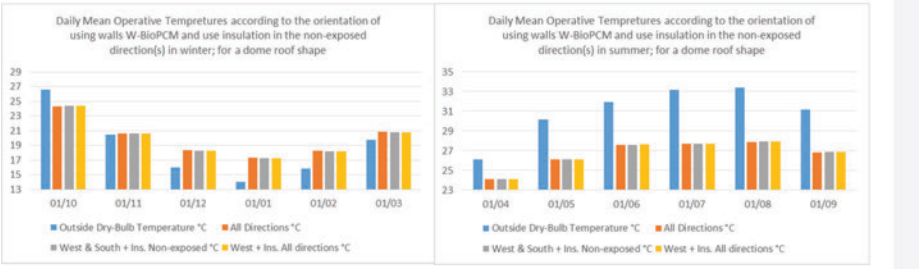


Figure 8. Level 1 daily mean operative temperatures according to the orientation of using walls W-BioPCM and use insulation in the non-exposed direction(s).

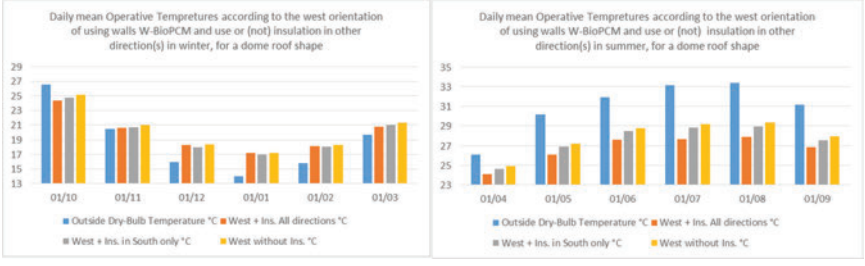


Figure 9. Level 2 daily mean operative temperatures according to the west orientation of using walls W-BioPCM and the use (or not) of insulation in the other direction(s), for a domed roof shape.

ter results, the alternatives resulted in operative temperatures above DBT with AV 4°C. Both summer and winter results at this level show that using W-BioPCM in the west and rice husk insulation in all other directions represents the reasonable choice in terms of cost for this level.

Level 2 discussion is as a result of Level 1, which led to the alternative of using W-BioPCM only in the west and using insulation for the other three directions. Level 2 discusses operative temperatures according to the use of wall W-BioPCM in the west orientation (most exposed), and whether or not using insulation in other direction(s) in summer and winter. The variables key in Level 2 results (Figure 9) is explained as follows:

– West + Ins. All directions: refers to using W-BioPCM in the west and using insulation in all other directions.
– West + Ins. In the South only: refers to using W-BioPCM in the west and using insulation in the south only.
– West without Ins.: refers to using just W-BioPCM in the west direction.

Results in Figure 9 show that in summer simulations, proposed alternatives can decrease the DBT down by 4–7°C. Using W-BioPCM in the west orientation and insulation in all other directions records the maximum difference in temperature degrees between DBT and operative temperatures, but using W-BioPCM in the west orientation without any insulation applied to other directions records the minimum result. On the other hand, the winter results showed the opposite. Proposed variables record higher operative temperature degrees than the recorded DBT with AV 4°C.

Using W-BioPCM in the west orientation and insulation in all the other directions recorded a higher difference between DBT and operative temperatures than when using W-BioPCM in the west orientation without any applied insulation to other directions. Using W-BioPCM in the west and insulation in the south recorded reasonable results with respect to the comfort range.

It can be concluded from the simulations discussed above for Level 1 and Level 2 that the case of using W-BioPCM in the west and rice husk insulation boards in all the other directions, and the case of using W-BioPCM in the west, and rice husk insulation boards

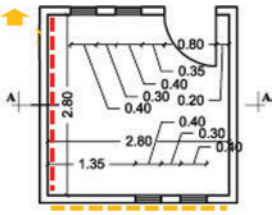


Figure 10. The proposed solution using W-BioPCM at west and rice husk insulation at south.

in the south, both reach the comfort zone in Khraga according to ACM. Comfort has been achieved by 100% in the summer as well as in winter within the ACM defined acceptability limit, amounting to 91%. Despite using W-BioPCM in the west and insulation in the south direction, it achieves less difference in operative temperatures than when using W-BioPCM in the west orientation and insulation in all other directions. As illustrated in Figure 10, using less insulation is preferable when it comes to cost as long as temperature differences are still within the comfort range.

7 CONCLUSION

It can be concluded from the aforementioned results and discussion for the three stages of simulation that the prototype W-BioPCM 24.6 cm thick has the economic advantage to introduce an equivalent thermal control performance to the conventional bulk materials walls (mud-brick walls with 51 cm thickness). Discussing the prototype W-BioPCM 24.6 cm thickness combined with the shape of the roof (flat, domed, vaulted), the domed roof room recorded the lowest MRT among the three rooms. This has been verified from the conducted CFD simulations. Discussing the aimed thermal comfort range of the domed room through its operative temperature according to wall orientation, the results have been discussed through two levels. It can be concluded from the discussed simulations for Level 1 and Level 2 that using both W-BioPCM in the west and rice husk insulation boards in all the other directions and using W-BioPCM in the west, and rice husk insulation boards in the south reaches the comfort zone in Khraga according to ACM. Comfort of 100% has been achieved in summer, as well as in winter within the ACM defined acceptability limit amounting to 91%. The study shows the potential benefit of using a proposal of multi-layered lightweight construction technique which has thermal capabilities similar or could be equivalent to the thermal characteristics of those buildings constructed with heavyweight construction materials such as bearing-walls buildings. This opens the scope towards thermally comfort multi-storey building with bigger capacity rather than the conventional bearing-walls technique which is limited in height with limited capacity. The research opens the scope for considering urban planning development in Kharga with flexible multi-storey skeleton concrete structures, rather than by using the conventional 50 cm bearing-walls construction that is limited in height.

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Towards public identity and climate awareness architecture

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ABSTRACT: Of all of the arts and technology produced by man, architecture is the most conspicuous of them all. The search for an identity is a difficult endeavour and for a multicultural nation the effort is even greater. To search for one's identity is also something of a peculiar endeavour, since it implies that one has either lost their identity or does not have a clue as to who one is. The Aga Khan Organisation gives awards to architectural projects every three years and there is a large selection criteria; but the most important ones concern the identity issue data. So, his highness the Aga Khan is interested in the heritage and identity of Islamic architecture. This study focuses on the views of architects contributing to the production of cultural identity in public architecture and analyses examples of their projects. For the purpose of this study, samples of architecture\projects that won the Aga Khan Award for Architecture (AKAA) were selected from a group of international architects expressing Islamic cultural identity in their projects. The methods used for data collection included an analytical framework using standardised thematical axes and the analysis of examples of contemporary international public architecture that represent the expression of cultural identity. The aim of this work and research is to clarify the duality of Identity/Climate awareness in public architecture and to define the influence of different variables and indicators on the architectural design of the public projects, such as architectural identity variables and climate data variables.

Keywords: Public Identity Architecture; Climate Awareness; Aga Khan Award for Architecture

1 INTRODUCTION

1.1 *General introduction*

The search for a public architecture identity seems to be a must for countries that are either newly independent or those with a leadership that stresses that certain groups or races are 'better' than others (Baper & Hassan, 2010). In the last few decades, we have often heard about identity in architecture, and this is now a daily concern for architects, designers and deciders. The context of the Aga Khan Award takes identity as a major factor that needs to be respected by the participating projects. 'We can consider that there are no less than three (3) different identities in any nation's architectural works; a natural identity, a forced identity and a manufactured one' (Tajuddin & Rasdi, 2005).

This study discusses the concept of identity and the role of modernity in the shift towards globalisation, which became a crucial study in identifying the factors that influence the concepts of change and continuity in architectural identity. In this short essay, we will attempt to classify the various approaches towards answering the problem of a national architectural identity (Zarzar & Guney, 2008). The literature study covers definitions of the keywords, which are: identity and architecture, Aga Khan Award for Architecture, climate awareness. The definitions include descriptions and issues related to the key words, 'case studies:

Aga Khan awarded projects' and checking whether there could be a climate awareness issue in addition to that of identity representation.

1.2 *Public architecture and identity*

The Aga Khan committee tries as hard as possible during the selection process to select projects that fulfil the standard of 'Search for Meaning', which is 'considered the particular context in which each project has evolved, as well as the unique social, economic, environmental and technical factors to which it responds'. The quality is assured by the 'appropriate and creative utilization of available resources in meeting functional and cultural needs, as well as the higher potential in each project to set a standard for the future'. Gracía Lorca: "*time, not man, makes architecture*", one of the best justifications for the specialised skill of the architect is that he or she makes possible the continuation into the future of valuable qualities of the environment, form, texture and materials, and also of details and decorations that would otherwise disappear. By signalling buildings and towns for special care, the architect distinguishes them from their fellows, emphasising their potential to serve the ends Lorca proposes for them. But this skill also has dangers. Since the action of time on buildings is judged to be an important factor, it does not do to rebuild them, to create pristine forms and details, to replace the patina of age with spanking new materials and textures or to put newly carved decoration in the place of old (Lewcock, 1989).

Societies are organised to ensure their own continuity and thereby to serve the function of preserving something from the past. Society's awareness of the past is, in fact, society's awareness of its own continuity. The concern here is to reinterpret the past in a way that is useful and suitable for the present: that is, in a way that will re-establish a sense of continuity and eliminate the rupture and sense of alienation being voiced as a result of the introduction of a contemporary environment. This concern implies that the past has a certain value for the present (Al-Hathloul, 1998).

1.3 *Public architecture and the climate awareness issue*

The designer architect is interested in those aspects of climate that affect human comfort and the use of buildings. They include averages, changes and extremes of temperature, the temperature differences between day and night, humidity, sky conditions, incoming and outgoing radiation, rainfall and its distribution, air movements and special features such as trade winds, thunder storms, dust storms and hurricanes (Pradeepa, 2013).

Shelter is the main instrument for fulfilling the requirements of comfort. It modifies the natural environment in order to approach optimum conditions of liveability. The architect's problem is to create an environment that will not place undue stress upon the body's heat-compensation mechanism. It is the task of the architect to make the utmost use of the natural means available in order to produce a more healthful and liveable building, while also achieving a savings cost by keeping to a minimum the use of mechanical aids for climate control (Boake, 2008).

'We must begin by taking note of the countries and climates' in which homes are to be built if our designs for them are to be correct. One type of house seems appropriate for Egypt, another for Spain...one still different for Rome...It is obvious that design for homes ought to conform to diversities of climate' (Vitruvius, 1st century B.C., pp. 170). What we as architects are aiming for is to take the climate-motivated, environmentally sustainable, valid ideas and practices, from both indigenous and vernacular buildings, and to incorporate them into current architecture that clearly responds to the issues of climate (and comfort) in the design of the building.

'When the full power of a human imagination is backed by the weight of a living tradition, the resulting work is far greater than any that an artist can achieve when he has no tradition to work in or when he wilfully abandons its tradition' (Fathy, 1988). This is because the best vernacular construction has always been primarily answerable to natural forces. As Fathy himself once said in a lecture at Dar al Islam: 'If the architect does not respect the God-made environment, he commits a sin against God. The God-made environment is the landscape; the atmosphere, the flora, the fauna, and the human beings who live in this environment. In this God-made environment there is nothing that is inharmonious. If we become one

with nature, beauty is defined as it is. Beauty, then, is obtained when form considers the forces that are working on it. It is only when man has ignored the environment and has been cut off from nature that problems arise. We must not distort any of the forces in nature' (Steele, 1992).

2 THE ANALYTICAL STUDY

2.1 *Methodology*

In this study, we will try to show that, while we are searching to apply an identity in design, inevitably, we are affected by the environment and climate data, and by giving climatic design solutions. To verify this hypothesis, the approach method carried out was a qualitative analysis based on a case study. The adopted approach relies on selecting and analysing a set of public buildings that represent the expression of cultural identity. The architectural analysis was based on design characteristics (criteria) expressing identity and climate adaptation. The criteria used throughout the study of the existing literature were presented in the form of two matrices using, respectively, an 'identity design' criteria and a 'climatic design' criteria as standardised thematic categories. The matrix is a synthetic visual representation of the data at an intermediate stage of the analysis, which will then be used during the interpretations. It presents the information in a compact and orderly form, allowing the researcher to visualise a set of variables together and draw conclusions accordingly. Thereby, each of the seven projects selected was analysed according to the matrix criteria. The outcome matrices indicate the different criteria fulfilled by each project. By comparing the two matrices, we aim to clarify the duality of Identity/Climate awareness and define the extent to which these two factors influence each other.

2.2 *Case study of 'AKAA' project winners*

With reference to the analytical framework, the selected examples had to be public buildings and to express cultural identity. The Aga Khan Organisation rewards architectural projects every three years. The selection criteria are many; but the most important one concerns the identity issue data. For the purpose of this study, a sample of seven architects\projects that won the Aga Khan Award for Architecture (AKAA) was selected from a group of international architects who expressed Islamic cultural identity in their projects. Our study focuses on the views of the architects contributing to the production of cultural identity in public architecture, and analyses examples of their projects. The seven AKAA projects were selected according to two main criteria: 'public architecture and identity awareness'. The selected projects (based on the author's architectural analysis by referring to the AKAA official sites and books) are: Madinat al-Zahra museum, Spain; Arab World Institute, France; Nubian museum, Egypt; Great mosque, Saudi Arabia; National museum, Qatar; Alexandria library, Egypt; and the Islamic cemetery, Austria.

- Madinat al-Zahra museum, Spain:

It is concluded that the museum has managed to create an image of the authenticity of ancient times (Madinat al-Zahra) with regards to their architecture, culture, history and quality of life. Visitors/tourists to the region who discover this archaeological site will visit the museum to see the first modern simulation traces of the Islamic era. The former environmental strategies of the Islamic architecture of Madinat al-Zahra (patio, underground, compact size, opacity and massiveness of the walls) are used in the museum. The museum remains a landmark of this architecture for other generations, as shown in Figure 1.

- Arab World Institute, France:

In this project, the Islamic traditional concept of Mochrabeiyah has used technologically 'the diaphragm of each window opens and closes due to the sunlight', also, the central courtyard has been directed to a valuable cultural building in the city 'Notre dame de Paris'. The institute creates a communicating space 'extension' between the institute and the Sorbonne university 'a grand plaza', as shown in Figure 2.

- Nubian museum, Egypt:

The edifice is surrounded by a natural botanical garden, which contains a large variety of Egyptian flora. All of the museum's construction materials are local and natural, and it was

Figure 1. Madinat al-Zahra museum. The source: http://www.akdn.org/architecture/project/madinat-al-zahra-museum.

Figure 2. Arab World Institute. The source: http://www.akdn.org/architecture/project/institut-du-monde-arabe.

Figure 3. Nubian museum. The source: http://www.akdn.org/architecture/project/nubian-museum.

Figure 4. Great mosque. The source: http://www.akdn.org/ru/architecture/project/great-mosque.

all built of stone and adobe. The museum's orientation is towards the Nile, the same as local identity houses. Nubians have questioned whether or not the edifice represents the local identity, and they have confirmed that it does (Figure 3).

- Great mosque, Saudi Arabia:

The great mosque of Riyadh, along with the urban development of nearby public squares, is one of the master plans for revitalising the Qasr al Hokm district, which is the old centre of Riyadh. Rasem Badran has recreated and transformed the spatial character of the local Najdi architectural idiom without directly copying it. The complex is a group of buildings behind walls, punctuated by such traditional elements as gates and towers. Within, columns, courtyards and narrow passageways recall the traditional uses of space. Mosque components, including 'courtyards, arcades, and the flat-roofed prayer hall' are ordered and articulated in the traditional way, as shown in Figure 4.

- National museum, Qatar:

Qatar's old Amiri Palace was reconstructed to form the nucleus of the museum. The Palace complex consists of three courtyard houses, two reception halls and various service quarters. Built in 1918, a two-story arcaded structure at the centre of the compound dominates the site (Figure 5).

- Alexandria library, Egypt:

The Alexandria library is a revival of the legendary ancient library that was built in classical Greek times. The rebuilding of the library has returned Alexandria to its former status as a centre for learning and exchange and has provided the city with a landmark building.

Figure 5. National museum. The source: http://www.akdn.org/architecture/project/national-museum.

Figure 6. Alexandria library. The source: http://www.akdn.org/tg/architecture/project/bibliotheca-alexandrina.

Figure 7. Islamic cemetery. The source: http://www.akdn.org/fr/architecture/project/islamic-cemetery.

The column and structure design is based on and inspired by the Egyptian flower, which applies an identity to the structure and external façade. This is also seen by the half sun disc shape. In contrast, the architect ensured that the buildings modernity was clearly shown on the selective façade 'entrance' (Figure 6).

- Islamic cemetery, Austria:

This finds inspiration in the primordial garden, and is delineated by roseate concrete walls in an alpine setting. It consists of five staggered, rectangular grave-site enclosures, and a structure housing assembly and prayer rooms. The prayer room on the far side of the courtyard reprises the lattice-work theme with Kufic calligraphy in metal mesh on the qibla wall. Mochrabeiyah-ornaments have been used to assure and profess the Islamic identity as a symbol in a minimalistic way (Figure 7).

2.3 *Defining thematic design categories: The matrix criteria*

Through the study of previous theoretical concepts, we focused on elements embodied in the design and took into account both the environment and the question of identity, and on this basis we selected examples of both traditional buildings and contemporary projects (AKAA selected project winners). We aimed to highlight their role in giving a clear idea of the identity of Islamic architectural areas, as well as in achieving climatic efficiency, which was reflected in the design parameters and their components, in order to achieve an integrated architectural environment and preserve their identity and privacy.

2.3.1 *Analytical pattern—projects of (AKAA)*

The review of the projects and the selection of the award recipients is the responsibility of an independent master jury, which is specially appointed for each award cycle. Each jury is multidisciplinary, bringing together specialists in such fields as history, philosophy, art, engineering and architectural preservation, in addition to practising architects, landscape architects and urban planners.

The reviewers are required to comment on a detailed set of criteria in their written reports, and they must also respond to specific concerns and questions prepared by the master jury for each project. To ensure maximum objectivity, reviewers report on projects located outside of their native countries.

2.3.2 *The 'identity design' thematic category*

The analysis contained several axes covering different enquiries, including the views and intent of architects when producing this architecture, in order to understand how they perceive what they are doing, what they use for their references, and how they are influenced by the client, the context, the climate and the history of the country.

- Results
- Identity design 'Aga Khan's criteria', see Table 1.

Table 1. Identity axe results collection.

Criteria/Projects	Madinat al-Zahra Museum, Spain	Arab World Institute, France	Nubian Museum, Egypt	Great Mosque, Saudi Arabia	National Museum, Qatar	Alexandria Library, Egypt	Islamic Cemetery, Austria
1/ Projects that respond to people's physical, social and economic needs	◙	◙	◙	◙	◙	◙	◙
2/ Projects that stimulate and express people's cultural expectations	◙	◙	◙	◙	◙	◙	◙
3/ Building schemes using local resources and appropriate technology in innovative ways		◙	◙	◙			
4/ Set new standards of excellence in architecture, planning practices, historic preservation and landscape architecture	◙	◙	◙	◙	◙	◙	◙
5/ Building projects that affect today's environment		◙	◙	◙			
6/ Architecture that reflects the pluralism that has characterised Muslim societies and communities	◙			◙	◙		◙

• Interpretations:

1/ We find that the Aga Khan seeks to give more awards to projects for identity, idiom and culture than for anything else (1,2,4);

2/ It appears that the environment and use of local resources are not one of the main reasons why a master jury gives awards to projects (3,5);

3/ It is also considered that the projects reflect the pluralism of Islam (6);

4/ From this way of thinking, we were forced to ask a question regarding the relationship between climate and identity to verify whether or not they are connected, which we did by reanalysing the chosen projects and checking the texts and plans of them (see Table 2).

Collected by referring to the texts containing the views of architects and specialists (Aga Khan Award for Architecture—cycle's books and official site).

2.3.3 *The 'climatic design' thematic category*

- Climatic design 'Aga Khan's criteria', see Table 2.

Collected by referring to the texts containing the views of architects and specialists (Aga Khan Award for Architecture—cycle's books and project's books).

Finally, by comparing the two matrices, it appears that when cultural identity is expressed in a building, it leads to a climate responsive project. So, by validating the idiom and identity criteria's elements in the design, we are, at the same time, assuring the climate adaptability of the architectural product.

Table 2. Climatic axe results collection.

Criteria/Projects	Madinat al-Zahra Museum, Spain	Arab World Institute, France	Nubian Museum, Egypt	Great Mosque, Saudi Arabia	National Museum, Qatar	Alexandria Library, Egypt	Islamic Cemetery, Austria
Architectural level							
1/ Exterior morphology	◙	◙	◙	◙	◙	◙	◙
2/ Spatial organisation	◙	◙		◙	◙		◙
3.A/ Façades and their treatment	◙	◙	◙	◙	◙	◙	◙
3.B/ Building materials			◙		◙		
3.C/ Responsive building elements	◙	◙	◙		◙		◙
Urban level							
4/ Buildings position and implementation	◙	◙	◙	◙	◙	◙	◙
5/ Orientations and guidance	◙	◙	◙	◙	◙	◙	◙
6/ Urban structure (grid, density, …)				◙	◙	◙	
7/ Shape and create urban spaces (courtyards, gardens, …)	◙	◙	◙	◙	◙		◙

- Interpretations:

1/ As a general overview, we notice that the projects are validating the climate awareness assumption, by applying most of them;

2/ With reference to the architectural level, we find that the exterior morphology and façades treatments are applied in all of the projects (1, 3.A). Climatic elements are also important (2, 3.C);

3/ With reference to the urban level, we find that the implementation and orientation are always taken into account (4, 5). The projects also reveal a variety of urban and green spaces, which play a decisive role in climate performance (7).

3 CONCLUSIONS

Projects awarded by the 'AKAA', which show a high quality in expressing idiom, culture and excellence in innovative architecture, are also sustainable and climate-efficient buildings. So, what is cultural identity in public architecture?

It is a process, and not a 'found' object. It may be likened to the trail left by civilisation as it moves through history. The trail is the culture, or identity, of that civilisation. As it is a process, identity cannot be fabricated. We develop our identity by tackling what we perceive to be our real problems (climate, for example).

In this paper, we focused on identity and climate as design criteria and we attempted to define the extent to which these two factors influence each other. We found that the way that we are designing and expressing our identity is itself the way that we are solving climate issues; it is a harmonious duality.

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Great Mosque – http://www.akdn.org/architecture/project/great-mosque.
National Museum – http://www.akdn.org/architecture/project/national-museum.
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Islamic Cemetery – http://www.akdn.org/architecture/project/islamic-cemetery.
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Vernacular culture and its contribution to the identity of Auresian houses in Algeria

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ABSTRACT: The Berber house in the Aures region of Algeria is known for being an example of austere architecture, defined by the construction materials available on site. What makes it different from other traditional settlements in North Africa is the fact that it is influenced by the vernacular culture of the Shawia[1] community. This is mainly the result of a process of adaptation to the common lifestyle of the region, which is the main reason why Shawia house typologies and urban configurations look so similar in their general aspect. However, diversity can be observed from one village to another, resulting in a rich urban fabric. The aim of this research is to investigate and diagnose, through a comparative analysis, the cultural influences on the architecture of two examples of Shawia houses situated in two different villages, the first from the Oued-Abdi valley in the western part of the Aures, and the second from the eastern part of the Oued-Labiod valley.

Keywords: Berber house; austere architecture; vernacular culture; urban configurations; Shawia houses

1 INTRODUCTION

The Auresian house is one of the few remaining footprints of the North African indigenous civilisations. It is a reflection of the Shawia lifestyle through their architecture, an adaptation of an austere and autonomous society in which culture and attachment to land is a main feature. In this paper, a comparative analysis is conducted after an investigation within two different villages of the Aures region, aiming to build an hypothesis on the cultural reasons for the differences that were noticed.

2 GEOGRAPHICAL CONTEXT

The name 'Aures' is given to the wide mountainous area that lies in the east of Algeria. Starting from the trough from which the Kantara River flows, it follows the roman track from Lambiridi to Biskra. Its north east borders start from Batna, to Khenchela through the highway. And goes down from the east to the south through Oued El Arab Valley, arriving to the Ziban. Aures is surrounded by the quadrilateral: Batna, Biskra, Khanget Sidi Nadji, and Khenchela (R. De Latrigue, 1904) (Figure 1).

The Aures region covers about 9,000 Km Sq. and is situated in the north east of Algeria at a latitude of 35° North, and a longitude of between 6° and 7° East. In the south west, Djebel Metlili separates Aures from Ziban. From the north east, the links to the high plains of Constantine shape a border, as also does the Seggana synclinal oriented to the east and the synclinal break of the Ain Touta that separates Aures from the Belezma Mountains (R. De Latrigue, 1904).

1. Native inhabitants of Aures mountains

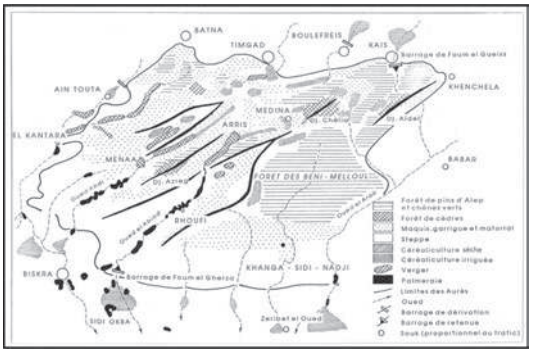


Figure 1. Economical map showing limits of Aures (Côte, 1983).

The climate in Aures differs from one place to another due to the rich geographical landforms. It is categorised by three different ranges of microclimates, depending on height (Benbouaziz, 2011):

- Above 1,400 m high there is a cold winter, with 60 snow days per year and precipitations of about 1000 ml/Year. The climate is sub-humid.
- Under 1400 m the climatic conditions change: 24°c in summer, 5°c in winter and 15 snow days per year. The climate is semi-dry.
- In the southern piedmont, the climate is hot and dry.

3 SOCIAL STRUCTURE

Fanny Colonna defines Aures as a group of tribes united by history and conflicts, based on identical social and cultural practices, and on the exchange of properties, goods, men and saintliness. Despite disparities due to certain differences in their lifestyles, they are also united on identical principals of social organisation (Colonna, 1995). The Shawia settlement is an independent entity, both economically and socially; the villages are the property of the tribe 'El Arch'. The tribe is composed of numerous fractions called in local language "Harfikth", and each fraction is divided to a number of families. The fraction is the most common scale of division; it is generally named after the agnatic ancestor's name. (Benbouaziz, 2011) Shawia have always lived in a closed traditional economical entity, based on self-sufficiency, on products that are as varied as possible and on a basis of controlled consumption. Together, all members of a family play a major role in economic life; both men and women participate in agricultural activities.

4 SHAWIA SETTLEMENTS

Settlements of North African tribes are found in different configurations, they often lay on a complex fragment of space. They are distributed on the hillsides, and most of the time on the least accessible summits dominating a valley. Even in the lower relief of the Saharan oases, settlements are found in hardly reachable positions. This is a characteristic of the setting of the Berber settlement (Bellal & Brown, 2001).

The Shawia settlement in the Aures demonstrates a moderate degree of savoir faire. It consists of a limited number of clusters grouped here and there. Most of the time the stones are used as a back wall. The cluster has fortified granaries and underground storage rooms where grain, crops and water are stored. In most of the Shawia settlements, the granary is the focal point of the community (Bellal & Brown, 2001).

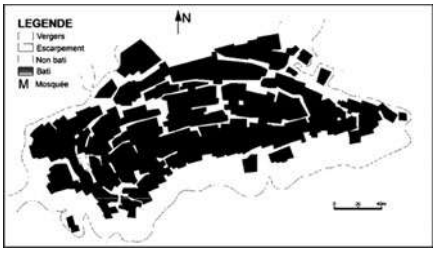


Figure 2. Urban plan schema of Menâa—regrouped settlement (Benbouaziz, 2011).

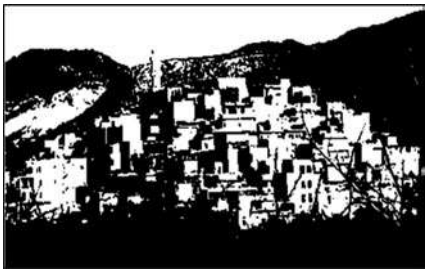


Figure 3. Perspective general view of Menaa village (inumiden.com, 2016).

Figure 4. Postcard showing a view of Tifelfel in 1930–dispersed Auresian settlement (declamp.net, 2016).

Figure 5. Houses of Himsounin around the courtyard (Flickr, 2012).

The idea of the Berber house makes sense, but it is still not easy to define. It has been mostly described as poor architecture: modest and ephemeral. Its main components are mud, stones and palm trunks. But it is far from being commonplace; many sophisticated techniques are found in the different types of buildings, and also many original and significant shapes. These buildings are most commonly used for residential purposes, but granaries and castles can also be found (Sekkour, 2011).

It is claimed in many studies that the typologies of Auresian houses change in relation to the climate, local environment, available materials and the building's function. These parameters are the same in most of the Shawia vernacular architecture settlements. (Benbouaziz, 2011) Accordingly, these settlements are classified in three types (Adjali, 2002):

- A dispersed settlement covering part of the vast area of the Constantine high plains and north piedmont of Aures.
- A regrouped settlement, more structured and more compact, often situated in mountain crests or in the depth of a valley; they are called 'Dechra' of the Aures region (Figures 2 and 3).
- A settlement of houses that gives premises a Saharian typology without undergoing its constraints; the southern piedmont house of Aures. It is defined by a group of properties around a courtyard, belonging to one fraction (Figure 5).

5 CONSTRUCTION RELATED CULTURE

Besides the influences of a physical nature, such as context, climate and construction materials, which had an impact on the architecture of the Shawia houses (Sekkour, 2011), there

were other elements related to the culture of the local society that made house typologies distinguishable and different from one village to another, or more obviously from one region to another. Numerous daily life practices, or lifestyles, may affect the configuration of the houses. For example, in some regions in Aures, a form of builder-architects existed in each village, which the natives called 'Azurkaw' or plural 'Izurkawen'. They had a certain authority over construction related decisions affecting the shape and the configuration of houses, according to their experience and vernacular knowledge. Twiza (Tawiza or Thawiza) is also among the most influential traditions on the architectural layout and typology of Berber houses, as it is a common tradition in North African communities; it is a type of solidarity action that provides materials and physical assistance to persons in need. Community members organise Twiza to mobilise labour and assistance, in order to build new houses. It is often orchestrated by one of the builders of the village.

In the villages used for the case studies, many houses have been modified due to changes in social needs, some because of joint families becoming nuclear ones, and others due to the lack of adaptation to the requirements of modern life. However, there are still houses that are in the same condition as when they were first built, which are the ones that are the subject of this study.

6 COMPARATIVE ANALYSIS

6.1 *Case studies*

The case studies constitute representative samples in the Oued-Labiod valley, in the village of Tifelfel **(House 1)**, and the Oued-Abdi valley, in the Dechra of Menâa **(House 2)**. The two villages are situated parallel to each other between the two valleys; a mountainous region separates the sites of the two villages, giving them identical climatic characteristics. Tifelfel is home to a nomadic society that used to live an unstable mobile lifestyle. The year is divided into two long seasons; a cold season, during which the inhabitants settle in the lower valley beside the river to work on the land, harvest the crops and also as a refuge from the cold in the upland, and a warm season, which they spend in the heights of the Buyeman mountain at the other side of the river, at a higher level than the valley, where the settlement is dispersed (Figure 4), seeking for a better airflow. Meanwhile in Menâa, the village is more elaborate on an urban level (Figures 2 and 3); it has gained a structured appearance over time, giving it the prominent configuration of an Auresian village and resulting in a stable, settled society.

The information in the table below (Table 1) has been gathered after an investigation and measurement conducted by the author. It gives a description of the studied houses from an architectural point of view.

6.2 *Analysis*

6.2.1 *House 1*

The first house represents a traditional house built between 1860 and 1870. It has not undergone any modification. It reflects the Auresian vernacular type of constructive culture in the Oued-Labiod valley. It was built with stonewalls—with a thickness of between 50 cm and 54 cm—and a supportive structure of cedar trunks carrying lightweight flat ceilings composed of juniper beams.

The house contains five main rooms with an accessible intermediate terrace. It also has two fireplaces in two separate rooms, indicating the presence of two families living in this house. The space within these rooms is used for multiple purposes, such as traditional textile fabric manufacturing, cooking and families gathering for meals. It is noticed that the two rooms open on to an intermediate terrace, allowing light and air to penetrate and having the auxiliary use of drying both food and washed rags and clothes. The guest room has two doors; one that leads directly to the outside and another going into the interior of the house. The barn is situated in the depth of the house, which means that the animals had to pass through

the living room to reach their shelter. It is a spatial incarnation of the aptitude of nomadic societies to live together with their cattle (see floor plans row in Table 1).

Storage spaces are relatively limited; except for the small built-in wall closets in the entry, the terrace and the family rooms, there are no other storage spaces in the house, which is probably due to the presence of the granary in the village, where the inhabitants store most of their stocks (Figure 6).

The façade is 6 m large and oriented to the west. It has small openings in the shape of triangles, with no other form of opening except for the doors (See Figure 6 and Table 1).

Table 1. Case studies morphological presentation (Author).

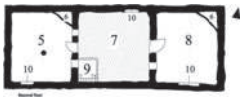
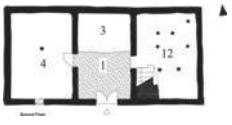
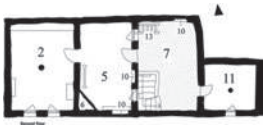
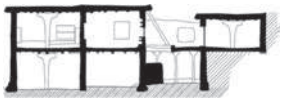
	House 1 – Tifelfel	House 2 – Menâa
Date	1860 to 1870	1880s
Urban context	Dispersed; most of the houses are built beside a grove. With the presence of a focal point in the village: the granary.	Structured urban configuration; gradual range of streets. A vernacular urban fabric. See Figures 2 and 3.
Surface	Ground 87 m^2; First floor 87 m^2; Cumulative surface 176 m^2	Ground 89 m^2; First floor 109 m^2; Cumulative surface 198 m^2
Ground floor plan		
Second floor plan		
	1 Entry 'Tasqift' 2 Guest room 3 Living room 4 Barn 'Tafrakt' 5 'Family room' 'Taddart n-Laamarth' 6 Fireplace 'isli' 7 Terrace 8 Second family room 9 Void 10 Storage closet 11 Bachelor room 12 Storage room 13 Ladder	
Façades		
Sections		

Figure 6. Exterior perspective on a Tifelfel house—case study 1 – (Author).

6.2.2 *House 2*

The second case study is a family house situated in the village of Menâa in the Oued-Abdi valley. It has recently been transformed into a museum for tourists. Apart from decoration, there has been no modification. The owner claims that the house was built around 1880, simultaneously with the eastern adjoining house, which explains the overlapping (see the façade in Table 1). Stone is used for the ground floor and the boundary walls on the second floor. The interior walls on the second floor are earthen built and they are about 40 cm thick.

This second case study shows a different layout on the plan level; the entry door opens directly on to the visually exposed exterior space, which is used as a living room or a guest room. The entry also separates the barn from the storage room. In this case, the barn is open with a small window for aeration on the exterior. At the other side, a storage room of 24 m^2 is used to stock reserves, tools and different life items. It has an opening onto the stairs, which leads to an intermediate terrace between the family room and a second smaller room with no fireplace. This space has smaller dimensions than the other rooms—including height—and the owner states that it is a bachelor room. The guest room is only accessible through the family room, and has two windows facing on to the street. The storage spaces inside the rooms are numerous (Figure 7). Shelves are installed within window wall breaks (Figure 8).

6.3 *Comparative study*

By taking a general view of this comparison, a lot of fundamental similarities are noticed between the two case studies of the Shawia houses, however, there are also a number of differences. For example, the entrances are made to visually protect the interior of the houses from the exterior passengers, through an articulation making the access indirect "The chicane". Even though that the example in case study 2 opens more to the exterior, since the external door also leads to a small living room. In the Oued-Labiod case study, there is an additional door that opens on to the guest room from the street. Families occupy private spaces in the village of Menâa in the Oued-Abdi valley; the streets are divided gradually from the largest to the tightest until they reach dead ends. This might be the reason behind the less intimate living space at the entry.

In the Oued-Labiod case study, the village is composed of dispersed settlements. Also, there is the presence of additional spaces due to different family compositions and different comfort range requirements. As can be seen in the Oued-Labiod valley case study, two fireplaces indicate the presence of two separate families, living together in a floor surface of 87 m^2, which indicates the degree of austerity and the low level of consideration given to

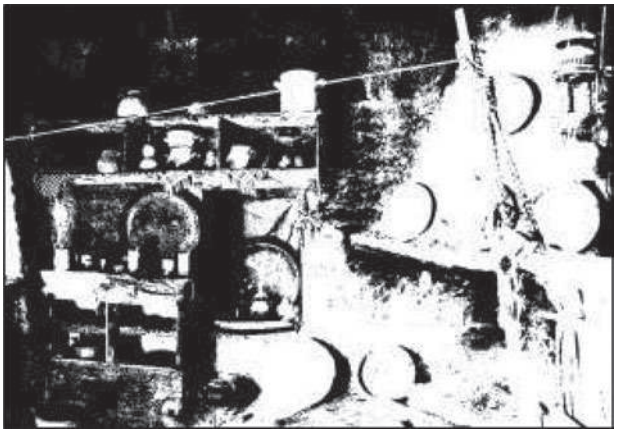


Figure 7. Interior view main family room—Menaa House (Author).

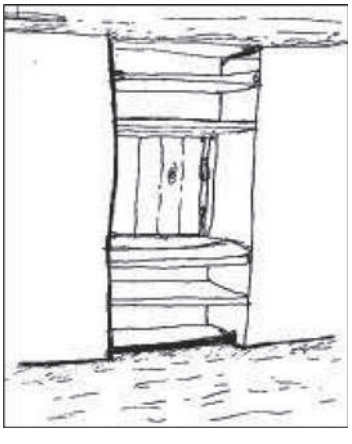


Figure 8. Storage space within window—Menaa House (Author).

comfort. On the other side of the hill, in the Oued-Abdi valley, the degree of comfort can be seen by the single-family house built on a surface of 109 m^2 and comprising of three rooms and a terrace (see Table 1). The materials used are identical, except for a difference noticed in the second floor walls in case study 2; they are earthen built, which facilitates the excavation of storage spaces in the walls, unlike with the stonewall, where the process is more complicated. The orientation of the facades is different in the case studies; case study 1 shows a tight façade of only 6 m long, oriented to the west, with no openings except for the two doors and triangular aeration holes.

Meanwhile in case study 2, the façade is oriented to the south, with openings on to the street from most of the spaces. The physical austerity aspect of both case studies is noticed from both the exterior and the interior, from the irregular stone used in the walls and the lack of any form of decoration. This comparison helps to build a hypothesis regarding the effect of cultural influences and traditional patterns on Shawia houses in the studied two regions. The plural identity of Shawia houses appears in the differences between the valleys.

7 CONCLUSION

The Berber settlement configurations in North Africa are the result of many outstanding traditions and lifestyles. It is generally an adaptation to specificities of the context. From the present research, it is clear that Shawia houses differ from one region to another. These differences are the result of numerous social and environmental practices.

In the Oued-Labiod valley, the nomadic lifestyle of the tribes makes the quest for comfort less important than issues of mobility. This results in austere dwellings, with few comfort features. This is shown in the case study by the lack of storage spaces and the relatively reduced floor surface. In addition to this, the family composition helps in the collective daily life of this society, which is why this house is a home for two families.

The village of Menâa in the Oued-Abdi valley shows more elaborate urban structures, following a logic process through its dense fabric, allowing its inhabitants to settle in a single portion of the mountain and develop a stable lifestyle, which has led to the adaptation of the houses in this static rhythm. As can be seen from images of this adaptation, more storage spaces are present in this case (Figures 7 and 8). The standards of comfort are higher in this case study, which is probably due to the community exposure.

Through the exploration of these examples from two faces of the Aures region, it is obvious that vernacular culture is one of the essential components of the Auresian Shawia identity, and that it acts not only as a major influence on the local architecture, but also on the urban scale.

Throughout the previous examples and many others, we can see that adaptation and sustainability is what this native community mastered the most. The vernacular architecture is the solid foundation of Auresian villages. The house acts like a singular piece, not only as a shelter for families, but also as a manufacturing and working place, playing a main role in the economic circle of the local community and allowing it to put up with climatic and geographical constraints and drawing out of it a singular vernacular frame, which is a result of a historical process, making the present identity of the Aures mountain villages.

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The historical symbolizing of Istanbul city through its iconic buildings

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ABSTRACT: Istanbul city has been historically symbolised through its iconic buildings during three different historical periods. The city that would later become a Byzantine city was formerly known as a Roman city in AD 196 and also as Constantinople, the new capital of the East Roman Empire. Finally, after 1453, during the Ottoman era, it was renamed as Istanbul which it still is today under the Turkish Republic.

According to J. Ebersolt, Constantinople's previous cityscape had been determined by its structures that were interspersed along the antique seven-hills, rising above the city walls where the blue waters of the Golden Horn ended. (Ebersolt, 1918) Thus, as an ancient features of Istanbul throughout its history, the antique hills evolved and were emphasised by newly constructed forums or buildings.

These buildings gave the city of Istanbul its identity and they were generally placed according to their importance along the antique axis of the ancient city hills. Although no longer wishing to regulate a city panorama sprinkled over the antique hills in a similar way to the Roman planning during the Ottoman period, the city still reflects the iconic structure emphasising the axis of those antique hills. (Petruccioli, 1991).

After the Byzantine period, Istanbul city was transformed from a Roman-Byzantine city in to an Ottoman city with the newly built Ottoman mosques replacing the antique Roman forums and with their columns emphasising the antique hills axis.

1 ISTANBUL CITY'S THREE HISTORICAL PERIODS SYMBOLISED THROUGH ICONIC BUILDINGS

1.1 *Istanbul city's three historical periods and constructing of its iconic buildings*

Istanbul city has been symbolized by its unique buildings during three different historical periods.The first and oldest one was the aqueduct of Valens which strongly symbolised the

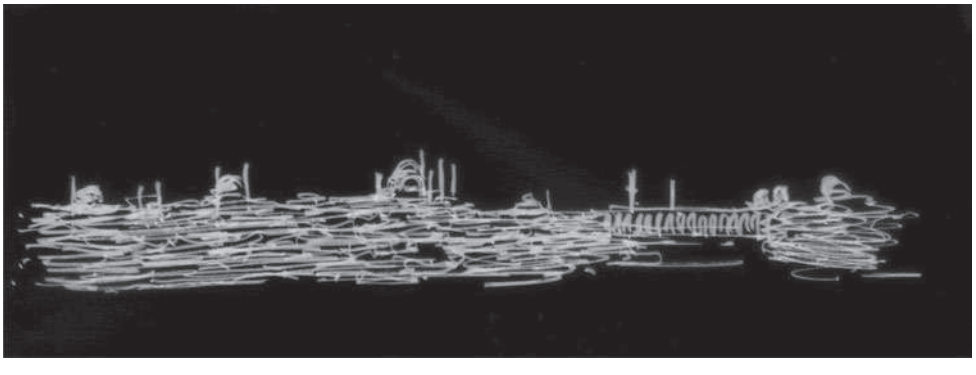

Figure 1. Istanbul city, from the character of a Roman-Byzantine city to an Ottoman city with mosques replacing the Roman forums and their columns. Suleymaniye Mosque is situated in the centre of the city and right, Roman Valens Aqueduct connecting through the axis of the hills. (Coskun).

antique Roman era of Constantinople by giving it the characteristics of a Roman city. The iconic structure of the aqueduct of Valens was first located in the silhouette of the city of Istanbul during the Roman period. The iconic aqueduct of Valens has been situated on Istanbul's antique city axis on the hills from the Roman period until the present day.

The second landmark was Saint Sophia which symbolised the antique Byzantine era of the city of Constantinople, after the Roman era by giving the city a unique Byzantine character that would later be called Byzantium.

2 ISTANBUL'S HISTORICAL ICONIC BUILDINGS

2.1 *Roman period and Valens Aqueduct*

According to periodical order aqueduct Valens had been seen in the silhouette of Constantinople as a first iconic structure during the antique Roman period.

Completed by the Roman Emperor Valens in the late 4th century AD, it was maintained and used by the Byzantines and later by the Ottomans. It still remains as one of the most important landmarks of the city. The exact date of its construction is still uncertain, but it is said to have been completed in 368 AD during the reign of the Roman Emperor Valens, whose name it bears.

Valens aqueduct extended along the antique axis of the seven hills, emphasising the third and fourth hills of the city. This spectacular multi arched bridge was laid along the valley between the third and fourth hills of Constantinople, occupied respectively at that time by the Capitolium and the Church of the Holy Apostles (Muller, 1977). Near the east end of the aqueduct there was a distribution plant, and another has been laid near Hagia Sophia's water feeds the zone of the imperial palace (Mamboury, 1953).

This iconic Roman arch between the antique hills connects Byzantine era cathedrals and the later Ottoman mosques. This connection specified due to later transformation from the Roman-Byzantine city to Ottoman city character through the newly constructed mosques replaced the old Roman forums columns with their slender minarets emphasising the antique city's axis on the hills.

2.2 *Byzance city's iconic Cathedral of Saint Sophia*

Cathedral of St. Sophia is located on the first hill of antique Istanbul known as early era Constantinople which is the most important of the antique axis of hills, and is a unique structure symbolising the Byzantine character of the city.

Figure 2. St. Sophia, iconic building of the Byzantine city's most important first hill. Bizans Yuruyus Yolu, (2008).

Figure 3. St. Sophia, Byzantine cathedral in the Ottoman period. View from Sultanahmet Square. Anonymous.

Constantinople was turned into an unique Byzantine city, which later would be called Byzantium. Mainly emphasised by its topographic character Constantinople, constructed by ancient Roman genius loci on its antique axis of hills with the columns at the center of the Roman forums on the eternal hills.

St. Sophia, as a preliminary starting point, was placed on the first hill of the Constantinople ancient hills sequences. So, being the most important building in the Byzantine era St. Sophia, was seen in the silhouette of the outer city from the Marmara Sea and in the silhouette of the inner city from the Golden Horn, with the perception of being three dimensional. It was was also the city's most important place, symbolising the city's aesthetic, strategic and religious values.

St. Sophia, importance as the an iconic Byzantine cathedral meant that it was also the city's most important structure during the Ottoman era, similar to its status during the Byzantine period.

2.3 *Ottoman city character and Suleymaniye Mosque*

The Ottomans lived in the Istanbul city did not ignore the antique axis of the hills deriving from the ancient Roman period. On the contrary, they chose to emphasise the ancient hills axes by constructing their own buildings, especially the Ottoman mosques.

Suleymaniye Mosque, placed on the third hill of the Istanbul city was the most important mosque giving the city a new definitive character after the Sultanahmet Mosque on the first hill. During the Ottoman period, Istanbul was adorned with by the axis of the ancient Roman period. Suleymaniye mosque, mostly perceived as panoramic, emphasising the silhouette of the city, and by its newly built buildings in the ancient hills that stressed the new identity of the city.

Actually, Suleymaniye Mosque was built on the third hill of the old, antique Istanbul city's axis of hills where one of the old Roman forums called Forum Theodosius took place. Thus newly built Ottoman mosques replaced of the antique Roman forums, as they were the only empty spaces in the city during the Ottoman period.

Antique Istanbul city's panoramic view with newly built Ottoman mosques were changed slowly and replaced of old Roman columns. So, the antique axis of Istanbul gained a more Ottoman character with Ottoman mosques. Fatih Mosque was the first mosque built in the city place of the demolished old Byzantine Church of the Holy Apostles, and then Sultanahmet was built on the first hill of the city next to St. Sophia and Sehzade Mosque was placed on the antique axis of the hills.

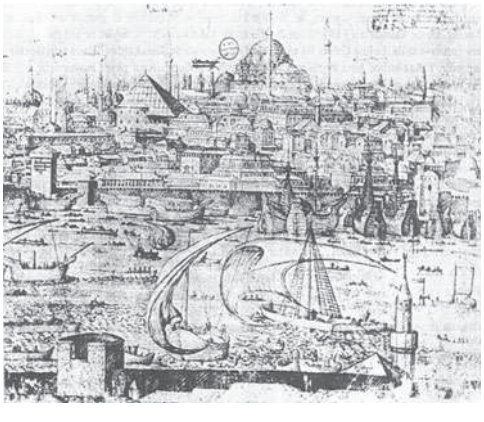

Figure 4. Istanbul, Suleymaniye Mosque Ottoman period. 1474, Gravure of Melchior Lorics.

Figure 5. Istanbul, Suleymaniye Mosque, beginning of the 20th century. IFA Archives.

However, located and integrated at the top of the centre hill of the Istanbul city's third hill, the old Roman Forum Theodosius was replaced by Suleymaniye Mosque. This mosque is still specified as the most important place within the city centre.

3 CONTINUITY OF ISTANBUL CITY'S IDENTITY WITH ITS ICONIC BUILDINGS

3.1 *Roman, Byzantine and Ottoman planning methods as continuity of a city's identity*

According to Borie and Pinon, small Ottoman domes and minarets replaced the antique obelisks remaining from the Byzantine era where their old places still could be perceived clearly in the silhouette of the city today (Borie, Pinon, 1988).

It is possible to say that since, the ancient Roman period the silhouette of the ancient Istanbul city has been determined by the demolished cathedrals that are marked as focal points. They have always been determinants and guides to the new constructions in the city. Whereas in the relatively new western quarters near Galata the imperial foundries had been such an entity (Gönen,1999).

The rules of structuring the Istanbul city hills, which were not visible like the antique seven-hills city of ancient Rome, had been pioneered by the relative continuity of the city. According to Borie, the Ottoman architects also pointed to the traditional system, saying that the architects of the time had adopted the construction rules arrangements of the buildings towards the Golden Horn, the hilltop skirts or the silhouette of the city (Borie, 1993).

These construction rules were a continuation of the Roman genius loci in the Istanbul city they were only seen in the city's historical peninsula section which had a Roman substructure. But, in such quarters as Üsküdar which was also constructed in the Ottoman period, the mosques were positioned in the lower part of city which was close to the seaside and far from monumentality unlike the old Ottoman rules.

The continuity of the Istanbul city after the Roman and the Byzantine eras, with their iconic, monumental and aristocratic constructions, had been constituted as the main reason for the continuity of these hilly structures. According to Guidoni, the fact that the construction of the Istanbul city was carried out with more monumental elements, had been seen similarly in the many Islamic cities but, their reflections of the monumentality was more symbolic than visual. (Guidoni, 1991).

Figure 6. Istanbul City, beginning of the 20th century view from the Golden Horn. On the left St. Sophia emphasising the Byzantine character and on the right Sultanahmet Mosque shows the Ottoman character of the city. IFA Archives.

4 CONCLUSION

The most radical changes on the historical peninsula with regards to the identity of Istanbul city were seen in during the Ottoman period. The Byzantine character of the city of Istanbul was gradually transformed into the character of an Ottoman city, with the dominant appearance of the newly built Ottoman mosques replacing the destroyed Byzantine cathedrals and also the Roman antique forums and its their columns.

Thus, Istanbul's Byzantine-Ottoman character was almost completed with the transformations during the late Ottoman period the newly built Ottoman mosques in the city's antique hills. But, in the late Ottoman period, although it had gained its predominant character from the Ottoman mosques as a continuation of antique Roman forums and Byzantine cathedrals which placed in the ancient axis of the hills where could still visible in the Istanbul city's silhouette.

Even today, as a meaning of the same idea of urban continuity with the urban identity. Istanbul city axis still depriveted from fundamental old Roman period city planning rules determining the constructing new structures in the city as long as Roman genius-loci.

As a result of the structures being built according to the eternal construction of the antique hills determined by the silhouette of the Roman city, whether it be a Byzantine cathedral or an Ottoman mosque the buildings in the Istanbul city have continued with their iconic urban fabric from antiquity until the present day.

According to S. Kostof, in Istanbul, likewise the seven hills complex topography of the Rome we also called Ottoman period Constantinople's topography with seven hills because they wanted to realise a seven-hilled city vision like Rome precisely placed with domed mosques (Kostof, 1991).

Perhaps the Ottoman structures in the Istanbul city which emphasised the antique seven-hills urban structure with its their monumental forms outlined this ancient cityscape to a grater extend than did the structures of the Roman period. It is fact that in Istanbul city, the Ottoman hills structures were more accomplished than the Roman city structures due to the continuity of the rules transposed from the antique Roman period, as S. Kostof stated (Kostof, 1991).

As emphasised by Kostof, from the antique Roman genius-loci of the topography of Istanbul city and the construction of the hills with the eternal rules lead to preserving the city's antique identity and its character also remain unchanged and have been sustained even to the present day (Kostof, 1991).

This unchanged ancient structure has been reflected by a unique character of Istanbul city that was enriched and crowned by the Ottoman mosques during the Ottoman period, along with the Byzantine cathedrals and some antique Roman city elements, such as the Roman forums and their columns that underline the antique hills and Roman aqueducts.

By the beginning of the 20th century, Istanbul city had not changed its Byzantine-Ottoman city character. However, during this period some buildings and even some Ottoman mosques would be destroyed due to the city's new planning regulations, which were more in the context of a modernisation project rather than reconstruction. New 20th century arrangements for transportation and modernisation had been purposefully conducted to render the city similar to modern European capitals. Large streets were implemented and even some important buildings were destroyed.

From the 1950's, onwards, the Istanbul city's historical peninsula was affected by the intense and massive internal migration to the city. New and modern streets had been opened in the Istanbul city, and on the edges of these streets were constructed new multi-storey buildings that would transform the area into a modern city. It was only in the historical peninsula of Istanbul city's that green areas and gardens were still seen, and the city's panoramic view has been replaced by multi-storey apartment-style residences, which has affected the city's iconic Byzantine-Ottoman character and silhouette.

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Interior design


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Anticipating possible future visions in interior architecture

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ABSTRACT: An in-depth analysis of today's design practices and discourses can help in forming a vision about the possible future of a city's identity. This paper focuses on the hypothesis that new visions for future trends in interior architecture could be anticipated through the choices of the current concepts expressed in the graduation projects of the Interior Design students at October University for Modern Sciences and Arts (MSA). The interpretation of the results shows a major tendency towards global design trends, with some local cultural influences, according to each student's contextual affiliation.

Keywords: interior architecture—future vision—pattern metamorphosis

1 INTRODUCTION

The city is a reflection of constant changes, both tangible and intangible. The process of its dynamics is due to the fusion of a multiplicity of factors: historical, cultural and the degree of exposure to the global trends at large in all facets of life. An in-depth analysis of today's design practices and discourses can help in forming a vision about the possible future of a city's identity.

This paper examines the question of what the possible design directions and trends could be in the upcoming years. It focuses on the hypothesis that new visions for future trends of interior architecture could be anticipated through the choices of the current concepts expressed in the projects of Interior Design students.

Interior Design students at MSA University are required to submit a bachelor thesis on a chosen topic for their graduation project and to apply research findings in the design phase. In the year 2015/2016, the students were encouraged to thoroughly explore, analyse and study a pattern of their choice in response to the theme, 'Pattern Metamorphosis: Historical, Natural, Social or Invented' which was given to them by the teaching staff. Suggesting that the students research their chosen topic within a broad theme has encouraged them to form a well-structured exploratory research, thus helping them to obtain insights for their final design projects and to consolidate coherent philosophical design concepts. The students' design outcomes adopted different approaches, ranging from bio-mimicry to historical and geometrical visual analysis, which inspired their process of form generation, use of materials and the creation of their projects' visual identity.

The aim of this paper is to verify whether the visions of the students, through their work give an indication of the future identity of the city's interior architecture and whether the outcome is more geared to local or global trends.

The methodology of anticipation follows a systematic enquiry using participant observant techniques during the research and design phases followed by a comprehensive analysis of each design project. The students' cultural identity and the contextual factors are also thoroughly investigated and analysed. The study made up on 35 students (28 females/7 males) from the 2015/2016 interior GRADS.

2 RESEARCH AND DESIGN

2.1 *Research design*

As stated above, the Interior Design students for the graduation year 2015/2016 were asked to work on a design research project that should encompass two phases: the first was to investigate and explore the requirements and specifications of a particular design project and the second was to explore and analyse a chosen pattern (historical, natural, social or invented) and accordingly form a solid outcome combining both the functional and the philosophical aesthetical aspects of a specific interior design project.

Their research was intended to reinforce the students' knowledge and skills by providing them with the practical expertise needed in all phases of the design process. Its main goals were to qualify the students to identify and apply their knowledge in formulating research issues and the aims pertaining to the topic of their project, and, also, to effectively write the literature review, the research methodology and the results of their studies. Moreover, it teaches students how to use effective communication aids in presenting their research outcomes and leads them to further develop their project's design programme and concept throughout the design phase.

2.2 *Thematic issues*

'Pattern Metamorphosis' was the theme given to the students, in which they were greatly encouraged to thoroughly explore, analyse and study a pattern of their choice. The types of patterns are explained in terms of historical, natural, social and invented:

Historical patterns: to explore the visual identity of a specific period of time, its contextual factors and transformation through time, as well as the reasons for its change and its logic.

Natural patterns: to discern patterns in cosmological phenomena; in natural resources, such as rivers and topography; in environmental factors and forces, such as water ripples and earthquakes' visual consequences; and in biomimetic which imitates any biological occurrences.

Social patterns: to observe and document behaviour and activities whether seasonal, self—generated, economically driven and/or cultural personifications.

Invented patterns: to analyse a variety of design directions, such as parametric design and digital fabrication, glitch art or abstract design.

The thorough exploration of a particular pattern led each student to deeply understand the meaning and philosophy behind the chosen pattern, and to be able to apply this knowledge in the following design phase. For the students' research projects, it was important to note that, despite efforts to define the design's research approach and to establish it more clearly as a research discipline in its own right (Friedman, 2008, cited in Lockton, 2012), there remains little consensus regarding the boundaries of what counts as 'design methodology' in an academic sense (Kimbell, 2011).

This justifies the suggestion of a mixed academic research with a design project, as design is thought to be a mixture of many other disciplines, such as sociology, human factors, physiology and architecture, and this concept is particularly relevant to the design approach of interior design, as it is concerned with understanding users in terms of culture, behaviour and characteristics. According to Pontis (2010) 'research through design involves both understanding the process of design itself and developing new design actions, artefacts or methods'. It is also noteworthy to mention that 'research is systematic enquiry whose goal is communicable knowledge; systematic because it is pursued according to some plan; an enquiry because it seeks to find answers to questions; goal-directed because the objects of the enquiry are posed by the task description; knowledge-directed because the findings of the enquiry must go beyond providing mere information; and communicable because the findings must be intelligible to, and located within some framework of understanding for, an appropriate audience' (Archer, 1995). Students were encouraged to follow the above-mentioned criteria in their graduation research project, and they have been able to establish and consolidate a solid research outcome that helped them to inform their final design project.

3 DESIGN CONCEPTS DEVELOPMENT

In this section, an introduction about concept design formulation has been given, along with an explanation of the projects chosen by the students and their design concepts. Design concepts development is the backbone of any design project, as it is the process by which designers and innovators approach various design solutions with regards to a specific problem. A concept development process involves using a set of creative processes in order to achieve the desired goals; these processes include brainstorming sessions, visual analysis researches, affinity mapping and sketching ideas. The existence of a conceptual framework helps designers to think in context and to always be focused on specific design goals and intents (Kotsopoulos, 2007).

Interior Design students are required to learn how to envision spatial solutions as well as to create functional and aesthetic values; the nature of interior design requires the ability to represent the contextual relationship between humans and the surrounding environment (McAuliffe, 2007).

3.1 *Current design discourse*

In recent years, design has been inclining towards the recent developments and innovations in mathematics, physics and biology, and this has led to a strong relationship with the form generation process. Although these developments appear as if they are concerned with the spatial values, programmatic solutions and building structures, the fact is that the main issue that directs these developments is the problem of form generation. For instance, fractal geometry, non-linear geometry and topological geometry are used in architecture design as a tool for form generation (İnceköse, 2007). Other developments such as parametric design, biomimetic and non-Euclidian geometry, have also been used as tools for form generation. These trials and tools are made to present distinct and novel forms and they have already had a significant effect on the form generation process.

The current discourse reading architecture and interior design has highlighted that architects and interior designers are always attracted by the new geometrical concepts and theories, such as the afore mentioned developments, in order to produce complex, dynamic and novel forms and structures. This notion is accentuated by the fact that several of these developments and attempts have been adopted by a number of giant design firms and consultancies, such as Foster + Partners, Greg Lynn Form, Zaha Hadid Architects and many more. These developments are thought to show the current direction of solving form problems through various methodological processes of visual research, form analysis and algorithmic mathematical form generation developments. The geometric analysis of patterns and forms has made a great contribution to the process of form generation and spatial design. Through the analysis of the structural aspects behind each chosen pattern, designers go through a process of the visual exploration of patterns, trying to reveal the system behind the formation of this pattern and thus develop this system and integrate it into their conceptual design process (İnceköse, 2007).

3.2 *Concept and form generation*

The afore mentioned theme was given to students as a methodological way of introducing them to these concepts and techniques, thus allowing them to provide their design project with the outcome of an extensive visual, conceptual and philosophical research. Students were advised to follow a complete concept development process through the analysis of a specific pattern of their choice. Likewise, guidance was offered to them regarding the selection of the relevant pattern for each design project, as well as directing them through the visual analysis and form generation processes and mentoring them on the techniques and methodologies of 'concept and form' generation.

Students were introduced to the double diamond process developed by the British Design Council (2007) so that they could work within its framework, which consists of four distinct design phases: discover, define, develop and deliver (Figure 1). This framework maps the

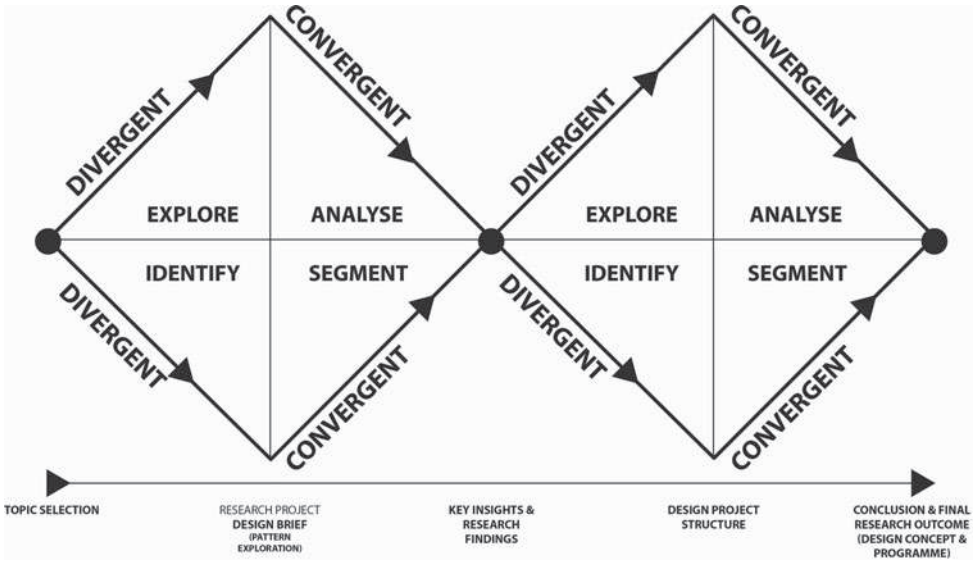

Figure 1. The double diamond process model. Copyright Ammer Harb.

divergent and convergent stages of the design process, thus showing the different modes of thinking that designers use.

Considering the above, the students went through a comprehensive design process from design research to a complete design project; this included design problem identification, design thinking, verbal communication, data gathering and a literature review. Visual aspects of the design were explored and reflected through sketches and 3D models. Throughout the process, there was a clear transformation (metamorphosis) in their ideas during the research and concept development process. It has to be noted that visual representations in the students' projects, such as sketches and 3D models, are seen as an aesthetic problem-solving method, in which the conceptual ideas of the design projects are consolidated in visual form.

4 DESIGN OUTCOMES

4.1 *Theme implemented*

A total number of 35 students have completed their design projects, and the results have shown a tendency towards adopting the natural patterns as a core element for the form generation process; the number of students who adopted natural patterns was 17, historical patterns were implemented by 9 students, invented patterns were implemented for 7 projects and, lastly social patterns were used in 2 out of 35 projects.

Within the scope of the natural patterns, the students' selections have shown a tendency towards both the patterns created from natural resources and biomimetic inspired patterns. Students also used the historical patterns as a source of inspiration and found in them a significant opportunity to approach a design style that is both global and local. This was achieved by analysing a very local pattern yet applying different geometric transformation methods and techniques on them, thus approaching this mixture of a traditional inspired form but in an international design language. Both the invented patterns and the social patterns were not of great interest to the students; this low uptake might be explained by the difficulties in adopting those directions. These difficulties arise from the fact that a social and/or invented pattern would need a defined in-depth analysis and numerous observation sessions, in order to reach an expressive and relevant pattern. This might take a longer time and greater efforts than a straightforward pre-created pattern that can be found in nature or

history. It is also worth noting that one student had a mixture of two approaches, which were the glitch art and the parametric design directions; this mixture would have been approved based on the philosophical point of view of the student that the project would need to implement both directions in order to achieve her vision.

The projects taken are segmented into nine categories: Adaptive Reuse, Community Service, Culture Centres, Educational, Healing Environment, Renovation, Roads' Facilities, Sports Centres and Tourism.

Within the natural patterns selections, almost 89% of the project categories have been tackled however, for the historic patterns, only 55% of the categories have been tackled, which is the same as for the invented patterns; with the social patterns scoring only 22%. It has to be noted that some of the project categories have been tackled by more than one project and some of them have a very limited uptake; while the community service project category scored the biggest number with 11 projects out of 35, the roads facilities category had the lowest uptake, scoring only one project out of the 35 projects. However, the results have shown the diversity in the projects' selections and this has been proven by the fact that almost every category has at least one project selection (Figure 2).

Table 1. The numerical relationship between the selected patterns and the selected projects.

Types of patterns		Adaptive resuse	Community service	Culture centres	Educational	Healing environment	Renovation	Roads facilities	Sports centres	Tourism	Total
Historical patterns		2	3	2	1			1			9
Natural patterns	cosmological phenomena		1								17
	natural resources		2	1	2	1				1	
	environmental factors			1	1		1		1		
	biomemtics	2	2						1		
Social patterns	seasonal										2
	self generated										
	economic driven										
	cultural personification		1				1				
Invented patterns	parametric design				0.5*					1	7
	digital fabrication		1								
	glitch art				0.5*						
	abstract design	1	1		1				1		

(*) The 0.5 indicates that one case has combined both types of patterns: the parametric and the glitch art.

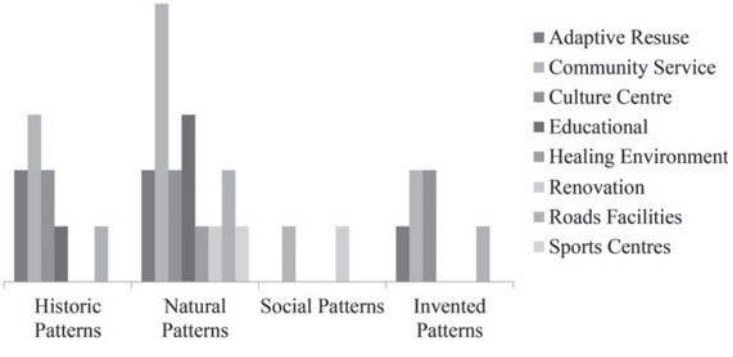

Figure 2. Bar chart showing the proportional relationship between selected patterns and selected projects.

Table 2. The results of pattern implementation in the projects.

	Pattern implementation	Fully implemented			Partially implemented			Non-implemented	Total number of projects	Results
Types of Patterns		2D&3D	2D	3D	2D&3D	2D	3D			
Historical patterns		1	3	0	0	1	0	4	9	56% of the students have implemented the historical patterns in their design projects and 44% have not.
Natural patterns		5	1	0	0	2	0	9	17	47% of the students have implemented the natural patterns in their design projects and 53 % have not.
Social patterns		0	0	0	0	2	1	0	2	100% of the students have implemented the social patterns in their design projects.
Invented patterns		4	2	0	0	0	0	1	7	86% of the students have implemented the invented patterns in their design projects and 14% have not.

The students adopted various design approaches that can be segmented as follows: geometric transformation; metamorphosis and evolutionary; morphological progress; biomimetic; and, finally, abstraction and symbolic representation of spatial aspects.

These categories can be seen clearly in the students' works; in their visual analysis research, exploration methodologies and their design projects. The choice of patterns, visual analysis methodologies and the selection of projects show how the background, cultural identity and personal experience of each student affect the design process; in each particular category of projects and with the same adopted pattern, each student came up with a totally different design project and direction, thus fulfilling its unique vision.

Sixty percent (60%) of the students implemented the patterns in their final design projects, yet 40% of the students were not able to implement the pattern. This relationship is shown in Table 2 as percentages for each type of pattern. This uptake indicated that some of the students' choices were not suitable for the types of projects selected and, thus, the implementation of such patterns would not serve their intended design goals. It is worth noting that, although the teaching staff were already aware of this, they allowed the students to freely choose what they thought was suitable in order to let them learn from the full experience.

3.2 *Student projects*

In the following section, a sample project for each type of patterns has been briefly explained and illustrated in order to show the development (metamorphosis) of the patterns to the final design projects.

Historical patterns: Zienab Salam has chosen to work on an Islamic Cultural Centre in Spain. She has implemented the Islamic geometric patterns in her design concept, as well as working on a complete pattern analysis process to reflect the modern and unique identity of Islamic Spain. The objectives of the cultural centre were to provide a gathering point where Muslims can perform their prayers, and to accommodate a wide spectrum of educational and cultural activities, such as lectures, seminars and exhibitions. Through these activities the centre helps to provide the non-Muslim community with a clear and better understanding of Islam (Figure 3).

Natural patterns: Neveen Hadi's project is an educational and health care centre for rural villages in Egypt. Her concept is inspired by the process that ants use to build their colonies, and this process has fed the form generation process and the design concept in general. She has analysed the colonies' building systems and then imitated these efficient systems in the design of the centre. Her project is a sustainable model and system for educational and health centres, which can be used in any of the rural villages across Egypt; she has also chosen 'Nazlet Khater', an Egyptian rural village, as a case study for her project (Figure 4).

Social patterns: Youssef Sherif's project was renovating the current 'El-Sawi Cultural Wheel'. Youssef' s design concept was inspired by a very special social pattern, which is the 'Tanoura' dancing pattern; he has linked the concept of the dancing to his project and this link was made on the understanding that both the cultural activities and the Sufism activities

have a lot of common values. One of the values on which he built his concept is the 'Catharsis' philosophy by Aristotle; it emphasises the meanings of emotions' purification and soul isolation through the art of dancing. He analysed and de-constructed the movement pattern of the 'Tanoura' dancers to get several forms of inspiration, which he then turned into spatial forms (Figure 5).

Invented patterns: Farah Khaled's project was to design a TV channel building and training centre. She has worked on the concept of 'cellular automata' along with the 'glitch art' in order to formulate her design concept. Cellular automata is a mathematical model in computability theory, physics and microstructure models; it is a pure unexpected behaviour and

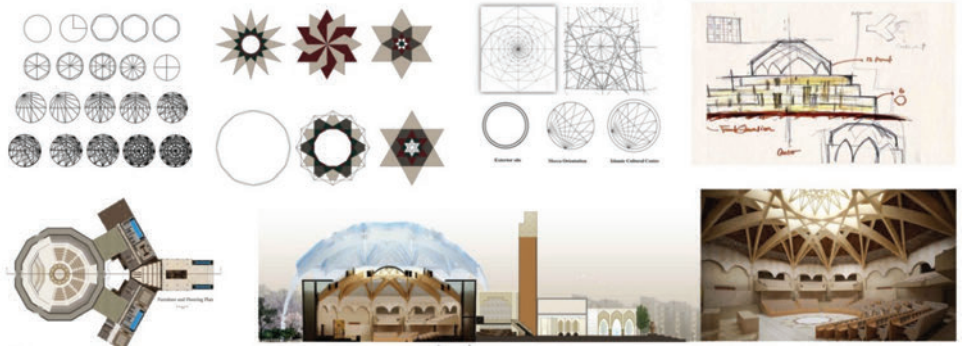

Figure 3. Development and implementation of historical geometric patterns in the design of the Islamic Cultural Centre in Spain—Copyright the designer—Zienab Salam—used with permission.

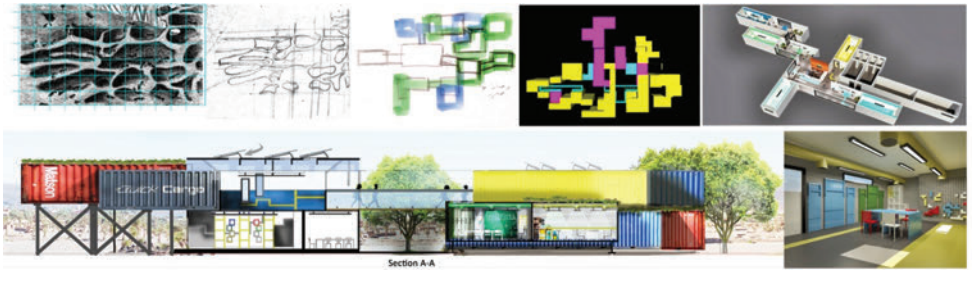

Figure 4. Development and implementation of natural patterns in the design of an Educational and Health Centre in Egypt—Copyright the designer—Neveen Hadi—used with permission.

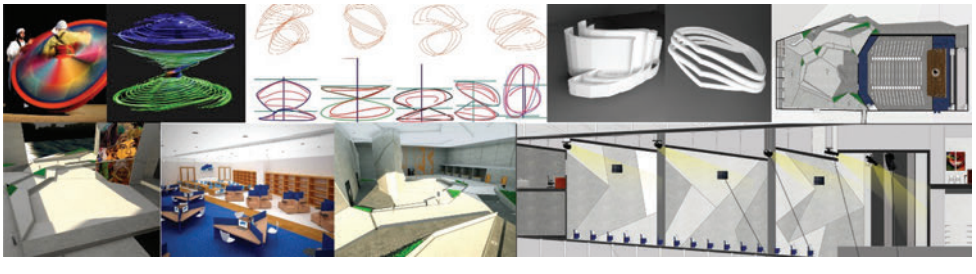

Figure 5. Development and implementation of social patterns in the renovation of 'El-Sawi Cultural Wheel' in Cairo. Copyright the designer—Youssef Sherif—used with permission.

Figure 6. Development and implementation of invented patterns in the design of a TV channel in Cairo. Copyright the designer—Farah Khaled—used with permission.

an abstract environment pattern formation of cells of an infinite number of states (on and off). However, 'glitch art' is the deliberate introduction of digital interference artefacts into digital photographs; it is an image marked by all kinds of 'errors' in its structure. Errors occur either in the form of undefined colours, or as pixelated parts, or with vertical stripes offset against each other. It could also be the combinations of all three types of 'errors'. In order to mix the cellular automata with the glitch art, Farah has analysed the 'Conway's Game of Life', which is a very common application for the cellular automata, and then she applied the rules of the game in order to generate spatial forms (Figure 6).

5 ANTICIPATING FUTURE VISIONS

Trends analysis is a method frequently used in design to analyse current and possible future trends. It might have different terms used to describe the same meaning; however, it essentially highlights the knowledge and awareness of current and potential tendencies in design directions. A trend is the general direction in which something is developing or changing (Evans 2005). Lindgren & Bandhold (2003) argue that a trend is considered to be some act that affects a deeper change than a 'vogue'. The existence of a trend means that it already has some tendency and inclination; that is, any direction could be a trend, yet the uptake of this direction, either a limited or extended uptake, would indicate its importance. A trend is discovered rather than created (Cornish, 2004); it should be easy to spot and segment in a clear manner. The value of trends analysis extends to the fact that it helps design practitioners to make better decisions for today, and to anticipate the future consequences in the form of opportunities and threats and help in planning to address them (Malhotra et al., 2014).

The researchers have performed a trend analysis of the students' projects and have identified possible design directions that could be the leading design trends in the upcoming years. Analysing the students' projects has accentuated many possible future directions in interior design and in design thinking in general. The analysis also indicated the affinity of the students towards the global and international design directions, and the clear effect of globalisation on the design thinking and design decisions taken throughout the process. This effect might be relevant to the hypothesis that the world is going through a fusion of cultures as a result of technology and the ease of accessing the cultures of others. However, and it has to be noted, some of the students, although a very limited number, have adopted some ethnic and local design directions. The trend analysis has shown a tendency towards the following:

- Adopting biomimetic approaches in interior architecture;
- Sustainable and green interior architecture;
- Complex morphological processes in interior architecture;
- Reforming and rehabilitation of informal settlements;
- A limited uptake for ethnic or traditional design directions.

Last but not least, this research represents a case study assessment with results that are indicative but could not be generalised; hence, further studies in this domain are needed

together with comparative evaluation between similar cases in different cultures. Hereafter, the authors are looking forward to pursuing other research in the area of 'Global vs. Local' design approaches from an educational point of view.

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Contemporary Egyptian theatre and heritage

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ABSTRACT: There are a number of different types of spectacle and paratheatrical forms that constitute popular Egyptian heritage. By the end of the twentieth century, and the beginning of the twenty first century, new and diverse theatrical attempts had appeared, which tried to invest these forms in order to promote Egyptian theatre and give it a local identity through the use of themes and characters derived from heritage and traditional sight relationships. These forms renewed the relationship with other arts and forms of celebration and spectacle. The idea of gaining inspiration from heritage merged from the desire to reach the minds of the citizens and to modify the present through the revival of ancient folk traditions. Some of the findings of the research are that the theatre is a social phenomenon that affects society and is influenced by its culture and heritage. Moreover, the contemporary theatre uses new theatrical spaces and performances that are inspired by heritage and are trying to preserve the Egyptian identity.

Keywords: paratheatrical forms; Egyptian heritage; Egyptian theatre; contemporary theatre, theatrical spaces

1 INTRODUCTION

'The Egyptian history in the Middle ages till the 18th century interested the orientalists during the 19th century, especially after the release of the book 'Description of Egypt' written by the scientists accompanying Napoleon's campaign to Egypt. They draw many paintings, and wrote many books discussing this period, and after the foundation of Cairo University in 1925, many thesis analyses its main features' (Paul, 2015, P15). From these books and theses we could recognise the different types of spectacle and paratheatrical forms that existed in popular Egyptian heritage. Among these forms we can list the storyteller, the narrator, the imitator, the shadow show, the puppet (*Al Aragoz*) and the rural Samer. The research studies the new and diverse theatrical attempts that tried to invest these forms in order to promote Egyptian theatre and give it a local identity through the use of themes and characters derived from heritage and traditional sight relationships. The research discusses the main ideas and movements that have tried to develop the modern and contemporary Egyptian theatre by returning to its roots. Moreover, it studies the new theatrical spaces, and analyses plays and performances that are inspired by heritage and are trying to preserve the Egyptian identity.

For the extrapolation of the future of the Egyptian theatre, we have to contemplate the people's nature, their signs, indications, culture, heritage, origins, and also their present. Also, we have to contemplate how much the Egyptian theatre was influenced by western theatre, with its openness to the prevailing theatrical currents in the world, in order to reach a clear plan enabling us to develop theatre as a cultural institution in an attempt to upgrade the theatrical culture of the Egyptian audience and enable it to catch up with the movement of civilisation and culture. Meanwhile, a critical awareness of heritage is needed, and this is the first step on the way to finding our true cultural identity. True heritage awareness cannot be completely achieved in a frame of cultural isolation. The correct perspective cannot be achieved, nor can the real aspects of communications be unfolded, amid the different cultural

varieties without comparing our heritage with the harvest of human experiences in different cultures. In the last few years, most of the creative people in Egypt have headed towards heritage elements for inspiration, in order to establish the Egyptian heritage theatrical forms and derive their creative entities from heritage.

In the second half of the twentieth century, especially since the beginning of the sixties—which witnessed the peak of Egyptian theatre's glory—Egyptian theatre witnessed many serious experiences that dealt with the most important trends and distinguishing features of the contemporary theatre, such as inspiring elements from heritage, image theatre, the use of untraditional theatrical spaces, audience participation in the theatrical game, touring theatre, people's theatre, provincial theatre and mixing cultures. The Egyptian theatre knew the epic theatre through watching Bertold Brecht's works. The recognition of epic theatre coincided with the orientation of Arab theatre to use elements derived from local heritage, such as the storyteller '*Al hakawati*' and the narrator '*Al rawi*'. Brecht's theatre was also one of the things that drew the attention of the Arab playwrights to the possibility of returning to their heritage and seeking local elements in it. Brecht's theatre was one of many local and international branches that were found in the Egyptian theatre. The accompaniment of these theatrical currents, with the conflict between their philosophies, had the greatest effect in enriching the theatrical renaissance.

This evolution in perspective coincided with the multiple attempts that had taken place since the beginning of the twentieth century to revive forms of theatrical performances from the past and from different cultures. It was also crystallised as a result of the evolution of human sciences, such as anthropology, sociology, psychology and semiology, which were concerned with theatrical performance, and by studying the celebration phenomena that preceded the appearance of the theatre in historical societies. 'The attempts of the Western theater to return to theater origins became a distinct orientation when it was associated with the desire to search for new formulas for the reviving of the theatrical phenomenon, through returning to the old forms that accompanied the birth of theater, and through trying to benefit from the rituals and the ceremonies that are still practiced in their primitive forms in other cultures' (Elias & Kassab, 1997).

'During the journey of theater in Egypt, there were attempts to found a theater, through the mating between the public celebrative manifestations with their dramatic roots, and the techniques of the western theater, Yacub Sanu initiated them when he benefited from some dramatic manifestations in Farce actors 'Al Mohabeziin', shadow play 'khayal Al zel' and the Puppet 'Al Aragoz', on both form and subject levels. These attempts widened with the increased interest in folklore academically and technically' (Hussein, 1999, P246).

The playwright Alfred Farag stressed two basic ideas, those of social thinking and identity instilling. He says: 'The concept of identity was developed in the fifties, and firmly urged the young creative to translate it into a creative reality; our job is not just taking a story from One Thousand and One Nights to consolidate our theater with, but to do so in a way that reflects the Egyptian reality'. (Alra'i, 1997, P95) Yehia Haqqi explained that in order to establish an Egyptian identity for theatre, we have to turn to folklore and resort to folk storage. Due to this thinking, Yusuf Idris probably headed towards the Samer Theatre. (Alra'i, 1997, P97) Tawfik Al-Hakim also wanted to give his theatre a folk dye. The most important things with regards to consolidating and identity instilling were not only returning to folklore but, essentially, raising social issues through these frameworks. An orientation emerged that searched for the secrets of the strength and greatness of the Egyptian people through searching and studying their heritage, which led to inquires that preoccupied the playwrights. The motivation for these inquires was the expansion of national sentiment and the increasing role of the people. 'The two inquires that the revolution had inspired the playwrights' consciences with were: was this theater closely related to the heritage of the country, or was it an imported translated one, and why shouldn't we have our own Egyptian theater? Also, was the presented theater a real folk theater, or was it just for the intellectuals?'. (Alra'i, 1997, P101). 'The attempts to answer those two inquires have led to the search for a new theatrical form expressing the People in a language and techniques that were close to their folklore, the

folk spectacle that ruptured the playwright's sense of being Egyptian, and also imitating the multiple attempts of socialist countries to benefit from heritage as an inspiration' (Hussein, 1999, P217). Benefiting from heritage was not only limited to folk literature, but it also surpassed it to benefit other forms of spectacle.

We can separate the methods of trying and benefiting from literature, heritage and folk art in the search for an Egyptian theatre into two routes:

First: trying to benefit from the different forms of folk literature, such as myths, biographies and tales, to create dramatic themes that are used to project ideas on to contemporary reality, or to create a mating between heritage (originality) and reality (contemporaneity), just as Naguib Sorour did when creating the plot of his play From where to bring people '*Mnen agib nass*' where he coupled between Isis and Osiris myth with its Pharaonic origin, and the folk tale of Hasan and Na'ima and edited them into a texture of contemporary reality of the pre-revolution Egypt. 'And from folk tales with social impact, Naguib Sorour inspired his anecdotal material of Yassin and Baheya, he also resorted to other sources like myths and folk Mawwal from contemporary reality' (Hussein, 1992, P215). Thus the playwrights surpassed One Thousand and One Nights as a playwriting source to other forms, thus Shawqi Abdel hakim wrote Shafiqa and Metwali based on the fictional Mawwal known with the same name, Yosry Al Gendy wrote Ali Al Zeibaq and Ya Antara, but Alfred Farag was committed to One Thousand and One Nights in The Barber of Baghdad.

Second: the attempt to find a new form of theatrical spaces, or to benefit from the folk spectacle forms in creating a theatrical performance with an Egyptian identity and character.

The theoretical callings adopted by Yusuf Idris, Tawfik Al-Hakim and Ali Alra'i began to demand the search for an Egyptian theatrical form in 1964.

Yusuf Idris began with a series of articles calling for the search for an Arab theatre, where he said that he believed that in order to have our own theatre we have to take account of all forms of celebrations and folk spectacle, in order to create a theatre with new content and new heroes. He confirmed that the theatre that we currently presented depended on an imported formula that was strange to us, and it was our duty to search for an Arabic form of theatre that was already known and accepted by our audiences, which was the rural Samer Theatre. (Hussein, 1992, P227).

He invited the playwrights to participate in the search for a theatrical form stemming from heritage. Yusuf Idris' theory is summed up in the definition of the concept of theatre, and he believes in the need to provide group co-operation between the performer and the recipient in order to be able to call the theatrical phenomenon a play. He says: theatre is neither the place nor the gathering where we watch something, our people had invented for this the words: spectacle, or watching and seeing, but the theatre is a meeting that each one of the attendants must participate in. In all of these theatrical forms, two elements should be found. First: the group and the group attendance; and second: the whole group action. From this perspective, Yusuf Idris believes that theatre is not proprietorship to a specific people or gathering than another, because of its innate nature that is associated with the human presence regardless of place and time. From this perspective, our people created their own theatrical manifestations.

Yusuf Idris selected some of the gatherings or theatrical forms that are frequently seen in our daily lives, in the occasions and celebrations that people created. 'The solution that Yusuf Idris believes in returning to the heritage forms in folk spectacles like the Samer that was crystallized for the vast majority of the folk masses in the country side and cites, and was held as a mass ceremony in special occasions and markets, it mainly depended on singing and dancing, and some chapters and improvised novels to some extent which depended upon the spontaneous character of the farfour' (Hussein, 1992, P228).

Yusuf Idris presented an example of this heritage theatre in his play *Al farafeer* in 1965, into which he put characters and sketches taken from national and international folk comedy. This play is considered an application to his theory. He wrote in its introduction: 'this novel is written on the basis of the audiences' participation with the actors in presenting the theatrical work. And the perfect theater for performing this novel is not the traditional theater (the Italian box set) but the arena theater or the ring formed due to the gathering of a group people. And there

is no need for entry and exit doors, as the actor can penetrate the rows on his way to the circular stage in the middle' (Hussein, 1992, P229).

Thus Idris defined the most important feature of his theatre, which is a theatre that depends on group participation between the actors and the audiences, unrestricted by a specific type of architecture or building; however, it is a ring or a place where the audiences gather, the only lighting existing is what illuminate the theatrical events. 'Despite the fierce arguments raised by these opinions between supporters and opponents, they refreshed the theater movement, and provoked the playwrights to take attention of the local folk acting phenomena and benefiting from their fertile potentials' (Moses, 1996, P770).

'Tawfik Al-Hakim believed that the Samer was not the right expressing form of the Egyptian spirit, and that if we wanted to reach the theatrical roots that expresses us through searching in our heritage, and in an attempt to search for the form or the suitable mold, we have to return to the Pre-Samer, and to stop specifically at the imitator, and the storyteller' (Moses, 1996, P770). 'He called in his book Our Theatrical Mold in 1967 to use the folk theater method based on imitation through the storyteller—the imitating narrator—and not the acting; thus, it is preferred to present a play by a narrator and an imitator, both depending on the performance that doesn't aim at the merging of the actor in his role, nor seeking to convince the spectator that what he is watching is events occurring in reality and not acting' (Hussein, 1992, P231).

'Al-Hakim believed that we should be returning to the stage when we only knew the storytellers, and the imitators, and people found a great pleasure in listening to the storyteller telling the biographies and epics, and the imitators mimicking people, without any settings, costumes, or theatrical stage. He believed that in order to call it a real mold, it should be valid for all different types of plays to be cast in: national, international, old and contemporary' (Moses, 1996, P770).

He depended on full communication with the audiences, which is the essence of theatre that is based on the live communication between man and art. 'And though Yusuf Idris has provided a technically feasible model, Al-Hakim call and experience didn't find approval nor was it implemented. This call had come after he tried to present some folk arts, as in The Piper 'Al Zamar' which he wrote in 1930 inspired by the rural Samer' (Hussein, 1992. P231). 'Then he wrote The Deal 'Al Safqa' in 1956 trying to emerge the folk arts as dancing, 'Tahtib' and singing in the frame of the play, where it all took place in the outdoors, the barn or in front of the mastaba 'terrace'. In 1962, there was another attempt to link our old folk features with the most recent manifestations of the contemporary art in O' Tree Climber 'Ya Tale' Al Shagara'' (Al-Hakim, 1967, P11).

Ali Alra'i resorted to looking at a stage a little bit closer to the current time, which was the stage of the improvised theatre. In his book The Improvised Comedy in the Egyptian Theater, he called for benefits to be taken from the nature of the improvised theatre that was introduced to Egypt by the Syrian artist George Dakhol at the end of the nineteenth century, which depended on an improvised dialogue between the actor and the audience, and which he kept presenting in the coffee shops and the improvised folk theatres until the twenties of the twentieth century.

His goal was to create the actual participation of the audience, which was the main feature of the theatrical phenomenon, and the search was still ongoing for it in order to create an Egyptian theatre based on heritage. Because of the dependence of the folk shows on a great deal of abstraction, there were no settings, no special costumes and no written scripts, just an inherited idea around which the improvised performance took place. This is how it was in the shadow play, the Samer, the shows of the storyteller, and the narrators of biographies, where the role of the audience went beyond watching to participating.

However, the reality of the Egyptian theatre showed that practical experience had preceded theorising. The operetta of O' night O' eye '*Ya Leil Ya Ein*', written by Zakaria Hijjawi in 1958, surpassed the employment of the heritage of folk literature to the manifestations of folk spectacle. The experience was presented to show and embody folk art in a theatrical form and in folk dance.

Also from these earlier performances came the play The Barber of Baghdad by Alfred Farag. These theatrical calls were accompanied by shows that were more penetrating in the search for heritage, as in Shafiqa and Metwali by Shawqi Abdel Hakim; many trials and experimental attempts appeared to arrive to theatrical forms for dramatic shows that depended on some folk spectacle manifestations.

Karam Metawea had initiated these when he directed Yassin and Baheya in 1964, which provoked critics on two levels; the new dramatic phrasing of the known fictional Mawwal written by Naguib Sorour, and the form choose by Metawea depending on the storyteller, the poet and the narrator, creating a sort of mating between the folklore in the folk spectacle forms and the imported from the epic theory in both form and content. This form still exists in our contemporary life in the form of folk performers, who narrate folk biographies and epics, and some of these are still scattered in the village markets and *Mawlid*. 'Karam Metawea used the stage of the Pocket theater close to the audience, and free from coulisse and traditional curtains to keep his show away from the traditional theater architecture that was not suitable with this folk form which depended on the intimate relationship between the actor and the recipient' (Hussein, 1992, P238).

The call to use the Samer formula in theatre was accompanied by the desire to create a new theatre away from the prevalent city culture, by the attempt to discover folk spectacle forms in the rural societies, and by the desire to be inspired by the well-known topics in the folk memory that were known in the rural theatre. 'The playwright Mahmoud Diab gave the folk Samer a more specific definition and successfully used it in his play The Harvest's Nights 'Layali Al Hassad' in 1967 and The Worthless 'Al Halafit' in 1969, where he found his goal in the rural Samer that he saw in one of the villages, when he was watching a group of peasants chatting in a ring mimicking each other, and through this mimic the imitator was expressing his opinion about the character he was mimicking, showing what is hidden in it. Only then, an image of a genuine Egyptian theater was revealed to Diab. This was the Samer definition developed by Diab, which was different from Yusuf Idris' definition that he sought in the comic act or the improvised comedy. However, improvisation and folk humor remained a common feature between the two formulas or the two Samers' (Moses, 1997, P770).

'The efforts succeeded for the detection and clarification of the character and feature, trying to link the art of theater new to us to some old artistic manifestations in our folk societies' (Al-Hakim, 1967, P11). The enthusiasts of this movement had called for the foundation of a national theatre with a folk character, which considered the rural theatre to be a representation of the true face of the unknown people on the literary side. Within this orientation, the play The Deal by Tawfik Al-Hakim is considered to be the first play about the countryside in the Egyptian theatre. Other plays were written afterwards, such as The Guarded '*Al Mahroussa*' by Saad El din Wahba and Naguib Sorour's play Full of Night '*Ghazir Al Leil*', which was presented by the *Al Warsha* troupe in 1993, and used the Samer formula and all the dimensions of the spectacle forms in the countryside and dramatically employed them.

Both modern and contemporary Egyptian theatres have tried to benefit from their heritage, while keeping pace with the international theatre. In the show, The City of Dreams, the scenographer and director Nagy Shaker used the image theatre method together with some folk spectacle elements, such as the shadow play and the puppet. The show was presented by Cairo Puppet Theatre in 1965 and gave plastic art the full opportunity to be the main tool of expression on the theatrical stage; this was done by merging the puppets and the settings in a simple artistic form, varying the existing relationships on the stage from one artistic form to another and being accentuated and deepened by the music. The idea was taken from a poem written by the poet Fouad Qa'oud, which was inspired by an old folk tale. The designer was impressed by the new content that reverberated inside the old folk form. The show portrayed the ethics falling behind the social and political achievements and the need to change the internal configuration of the individual to fit the reality of the society. There was no dialogue except for some verses of poetry that were said separately, and the communicating language between the form and the recipient became the movement, the music, the abstraction and the symbol. Nagy Shaker chose the black theatre and the shadow play as two methods to express

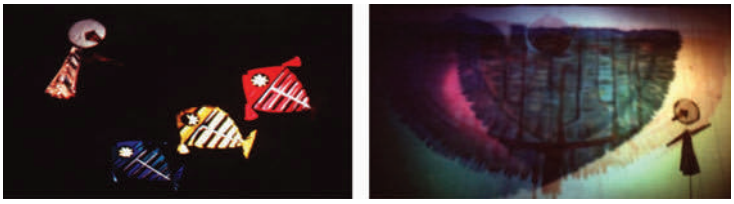

Figure 1. The black theatre and the shadow show in The City of Dreams show. Private archive Nagy Shaker.

the content of his ideas; thus the black theatre expressed the society controlled by matter, while the coloured transparent shadow play expressed the new ideal society.

The City of Dreams was preceded and prefaced by folk selections that were called The City of Dreams' selections, which were presented in a chromatic and dynamic form that confirmed that our folklore was a rich source from which we could take different methods of artistic expression from music to the spoken word, singing and plastic arts. In addition to the folklore art, there were obvious influences from the old Egyptian art, and the music was Egyptian, based on sundries of folklore. The City of Dreams travelled in an artistic tour to Europe, where it impressed all who saw it. Some of the critics' comments in Europe were: 'The artists coming from Cairo force us to shyly think about our arts and folk traditions', and 'Despite keeping the modern outlines, the design doesn't forget the Egyptian folklore, which gives the show a special glamour'.

In the fifties and sixties, some performances were political and presented 'the features of the severe crisis suffered by the Egyptian mind, while moving from the walls of the bourgeois society and agricultural prospects to the industrial progress and scientific mentality. The Egyptian mind was unable to balance between the intellectual affiliation and practical situations' (Eissa, 2015). After the war of 1967, the Egyptian theatre presented some plays that represented the defeat in a symbolic way, using elements and tales from heritage. Right after the war the National Theatre presented the play *AL-Zeer Salem*, written by Alfred Farag and directed by Hamdy Gheith, and with the settings and costumes by Nagy Shaker.

Alfred Farag used a historical folk tale and discussed contemporary issues through it. The show contained multiple disparate scenes, and the designer used an abstract symbolic setting, a multi–levelled theatrical ground and multiple curtains made of gauzes that divided the stage into different levels of depth and created different abstract forms that changed the theatre space depending on the interaction between the gauzes and the light, which resulted in a network of shadows that scattered on the theatrical stage and its components in different levels in time and place and the historical dimension of a script that went beyond 40 scenes. Those curtains did not prevent the audience from seeing the preparations for the next scene. Thus, the contemporary perspective was fulfilled in the set design. This was consistent with Brecht's method, which considered that what was happening on the stage did not aim to delude or merge. This was why the designer did without the curtain, thus leaving the theatre open to the auditorium throughout the whole time of the show. In order to achieve a historical atmosphere, the designer depended on the bright costumes with contrasting colours that carried an obvious symbolic significance for each character.

'Few of the shows presented in the seventies and early eighties were inspired of heritage and folk, on both form and content levels, such as Abdel Aziz Hamouda being inspired by Isis and Osiris myth in his play People in Thebes in 1981, where the playwright changed a lot in the axes and symbols of the myth in order to project contemporary significant. Yosry El-Gendy, was committed to casting away the folk biography of Antara Bin Shadad during the adaptation of his play O' Antara presented by Avant-garde theatre in1977. He succeeded in keeping the biography core, employing it to explain his contemporary reality' (Elias & Kassab, 1997, P456). 'The folk Coffee Shops were places for meeting and watching, where the shadow play show and the storyteller sittings took place, and the coffee shop theater with

Figure 2. Scenes from *Al-Zeer Salem* play.
The national centre of theatre.

Figure 3. Scenes from All in One, showing the change in settings.
Private archive Nagy Shaker.

its western meaning wasn't known then, except one attempt: The Coffee Shop Theater Troup in 1970' (Bakir, 2000, P27).

Among the serious theatrical models in the eighties was the play All in One, directed by Mamdouh Tantawy, with settings by Nagy Shaker and costumes by Abdel Ghani Abu El-Enein. The mass culture and the folk performance arts sectors both produced the play. It tried to link Tawfik Al-Hakim's biography, life, thinking and theatre to the historical, cultural, social and artistic conditions in Egypt, through using some scenes from his works along with dancing, singing, performing and the supernumeraries' movement. The show also combined narration with monologue. The director based his directing on the fact that all elements are key elements; meaning that the actor, the settings, the lighting and all the other elements integrate to create a piece of art. The show revealed an era in Egypt's history, and also revealed the struggle and unity of the Egyptian people against colonialism throughout history. The set design was the framework that allowed the presentation of multiple atmospheres for the different plays of Al-Hakim and for the different performing and acting forms, using a fixed setting and very limited added elements (curtains, tent fabric and flags), so that the change would depend mainly on lighting.

The idea of establishing The Touring Theatre appeared in the eighties, and aimed to create theatrical troupes that toured with their shows throughout Egypt's provinces, which were lacking serious theatre on a technical level. The Touring Theatre achieved its experimental goal, which was an attempt to rescue the Egyptian theatre from its peccadilloes with young elements in writing, directing, acting and settings, besides taking an interest in public issues through paying attention to the political theatre. These shows appeared, in their experiments, to be closer to the techniques of the political theatre in the west. Also, its shows were experimenting with heritage.

Among the important topics that were raised in the theatrical field during the eighties and the nineties was that of the provincial theatre. Dr. Nehad Seliha talked about it, saying that the theatrical activities' centre had moved from the main cities to the provinces, and this appeared in the shows of the theatrical festival held by the mass culture for one hundred nights on the Samer Theatre. 'The repertoire concept endangering the Egyptian theatrical heritage was applicable through the provincial theater. The theater was experimenting the most recent multiple methods in the international theater, in an attempt to select the most suitable ones for the Egyptian spectator. Thus, the message of the provincial theater was that theater was a script, an actor and a place, not settings, stars, and high costs, as some shows depended on a simple stage' (Seliha, 1986, P171). When Ali Alra'i wrote some studies about the people's theatre, he aimed to send a message to the playwrights to help them to discover the hidden treasures of people's culture and arts that people produce in their daily lives, creating the spectacle complemented by thinking. The folk actors voraciously took ideas from the heritage of the folk tales, myths and the everyday conflicts, their memory storage and what was accumulated from their collective and individual awareness.

The director, Ahmed Ismail, tried to develop the people's theatre based on the folk drama in his village, Shobra bakhom. He returned to the Egyptian countryside in an attempt to seek a simple, spontaneous folk theatre through the peasants. Ahmed Ismail presented his shows with his theatrical troupe with the aim of being inspired by folklore in both form and content, but developing it to be closer to our contemporary reality. One of the national artistic ambitions and dreams was to achieve an Egyptian theatre that differed in its imprints from the foreign theatres, a theatre whose vocabularies were all Egyptian: including the themes, the characters, the writing style and the portraying. This theatrical troupe was—perhaps—the only one that had a clear artistic method, which could be summarised as the search for a theatre with an Egyptian privacy, and they had a large number of shows based on this method. After the initial success of the troupe, the experience was generalised in other cultural locations. The members of the troupe were from different classes from the same village or neighbouring villages and they were practically trained in the theatrical arts. This experience is worth studying, not only because it presented its shows in a theatre built by the personal efforts of the village, but also because it represented a great success in the revolutionary dreams of the coalescence of art with the people in its attempt to make a real difference. The troupe has presented many shows, some short acting sketches and spectacular songs. The troupe in its initial stage presented its shows in a limited courtyard in the village on a small stage, and the number of spectators from beginning to end ranged between 300 and 500. The crew presented a series of shows, such as A Point of View about the Third Sex by Yusuf Idris in 1983, in which the director presented an experimental show built on a dramatic structure of heritage, folk, audio and visual vocabularies.

Ahmed Ismail presented the trilogy A Rural Evening for ten years, using the trees and the village houses as a natural open theatre, where the actors and the audience, both from the same village, coalesce on their land and social reality. The experience reverberated among both the audience and the critics and the success encouraged the director to go on, presenting *Al Shatter Hasan*, which was performed for four years both inside and outside the village,

Figure 4. A Rural Evening show and the village children helping with the theatre preparation and décor. Private archive Ahmed Ismail.

and, many years later, he also presented The Harvest's Nights show. A Rural Evening was an improvised celebrative group experience, which represented an important step on the way to creating an Egyptian folk theatre. The first part was presented in the courtyard of the village youth centre in 1982 and was followed, until 1986, by two other parts. For the presentation of the first part, the theatrical stage was a high hill on one of the corners of the playground of the club, while the spectators sat in the playground. This high hill had a background of rural houses that were employed in the show scenes as décor, adding some simple elements to the scenery, in addition to a large number of benches from the neighbouring houses. The audience represented the core of the experience. The number of spectators increased in 1984 for the presentation of the second part by approximately 50%. In 1986 the number of spectators reached almost 6,000. Thus the idea of a new space and a permanent theatre for the shows emerged. The troupe found that the summer theatre was the most appropriate one, and that the simple form that is consistent with nature was the most appropriate form; the theatre stage was built in the form of a ring surrounded three quarters of the way round by the auditorium, and the background of the stage was a high rectangle. This stage achieved two things; first, the ring form in the markets while watching the magicians and the praisers. Second, the rectangle in the background acted as a semi-traditional theatrical stage, thus, the theatre became a part of the village's reality and geography. The stage offered flexibility for different show forms. The theatre's stage and hall were intertwined and the auditorium was simple and made of clay. The setting was some simple accessories of the village's remains that the children used in the embodiment of places in a satirical way. The show was enhanced by the folk songs of the village children, which were entangled with the events.

Ahmed Ismail said: 'I wasn't isolated from the rising spirit in the Egyptian theater of the sixties, the storytelling theater by Roget Assaf in Lebanon, and the celebrative theater by Al-Tayeb Al Sidiki in Morocco, or the theatrical experiences in the Egyptian villages. Also the artistic and cultural movement especially those writings that linked our renaissance with the cultures and the achievements of the developed world. Yehia Haggy and I—the two designers of this theater—are villagers, who had seen how the village people gathered around its chanters and storytellers in the Mawlid, and its praisers and magicians in the markets. We had a great deal of a clear vision while constructing a simple theater that was consistent with the privacy of the village'. The troupe re-performed the trilogy A Rural Evening. The show focused on the triangular relationship between the performer, the receiver and the theatrical space; nonetheless it could not be isolated from the rest of the elements that were entangled with it. The actors had done a field gathering of the events from the village reality, also the village people attended to narrate and personate what actually happened and, with a small amount of guidance from the director, life was presented in an artistic way inspired of the reality that the theatre artistically rephrased, and was consistent with the shape of the rural gathering in the sprees. The critic Nahed Ezz Al-Arab said: 'Some provincial theater attempts searched for a theatrical show that was consistent with the folk spectacle and its heritage'. (Seliha, 1986, P173).

Arab theatre has seen many attempts to search for a new theatrical form that originated from the folklore, trying to present a theatre that is different from the well-known European theatre. Among the important experiences in this field was the show presented by Ahmed Ismail in '*Wekalet Al Ghoury*' in 1984. The show was a model of a folk theatre that was inspired by the awareness of our folklore. Dr. Sabry Hafez emphasised that the show interpreted the folk tale in a contemporary manner, and that it was a totally modern theatrical presentation for the Egyptian theatre that was rich with its own artistic traditions and capable of presenting some of the contemporary reality issues. He wrote: 'The show belongs to the series of Avant-garde attempts that the director went through depending on the actor and the conventions of what we might call the ascetic theater based on a good script and an actor with various abilities'. (Seliha, 1986, P180) Ahmed Ismail's theatrical attempt started with *Al Shatter Hasan* from the moment he chose the script written by Fouad Haddad and Metwali Abdel Latif, which was a contemporary adaptation of the popular folk tale *Al Shatter Hasan*. The director was able to portray it as a drama, where the poetic picture mixed with the dramatic events, the myth and the spirit of the folklore, in a framework that absorbed the

audience, and in a theatre that was specially designed for the show and which looked like a semi-circle surrounded by the auditorium.

Ezz El din Naguib wrote: 'Ahmed Ismail participated with a selection of new creative playwrights in creating an artistic current that was serious in its search for a genuine and contemporary identity for the Egyptian theater. The director went through a difficult challenge by directing this work; as it wasn't a theatrical show in the conventional meaning, but rather a form of folk biography and spectacle told by the narrator on the tunes of the Rebec, as it had neither dialogue nor characters, except within the context recited by the narrator using the past tense'. (Seliha, 1986, P182). The narrator and the rebec poet portrayed a character and spoke with its tongue. The anecdotal material did not represent a dramatic event, just a great number of novels revolving around a superhero. Nabil Badran wrote: 'the narrator recites and narrates, then portrays the situation he was narrating, or the character he was talking about, then goes back to the narrator's role once again', which reminds us of Jerzy Grotowski's theatre. (Seliha, 1986, P183) The show's participants emphasise the essential role of the storyteller or the narrator in the folk theatre, who recites with the rebec a tale from the folklore, only this time he performs by using pointing and gestures and, with the ability of expression of the human body, he also adds contemporary indications to the folk tale. The text is mixed between the common prose language and the dialect poetry, creating a literary linguistic texture that expressed a holistic vision where the reality, the fiction and the myth blended. Dr. Nehad Seliha believed that the director created a theatrical experience from the folk narrative text that was both new and genuine. She added that the new thing about the contemporary vision of the story was the redefinition of *Al Shatter Hasan's* identity, where he was transformed from a legendary hero to a symbol of the Egyptian man. (Seliha, 1986, P186). After the traditional beginning that pulled us into the atmosphere of the inherited folk tale, prince Hasan began his transformation journey from a legendary character into a realistic one, from a symbol of an intellectual heritage pattern based on one hero, into a modern pattern where work is the new standard value. The two poets were keen to strengthen the characteristic of heroic courage, which was one of the most prominent characteristics of the heroes in the folk biographies and tales. Nabil Badran wrote: 'the spectator is eager to find out the new image that the heritage folk tale hero will appear in. This communication is doubled by the director's insistence on keeping the spectator's mind away from the idea of watching a traditional performing show. As the folk tale narrators drew close to the audience to the point of direct contact, the narrator sits amid the spectators for a little while then goes back to stage continuing the narration of the tale'. (Seliha, 1986, P183).

The folk tale was characterised by the flexibility that made its contents scalable and editable by the new narrator according to his attitude or the conditions of his social environment. The myths and folk tales were often used to portray social issues and reality. The new thing that Ahmed Ismail brought with the dramatising of the text and the folk tale was the creation of a new dramatic/narrative formula that combined the actor and the narrator. Mixing the narration and the novel with the acting and portraying was a common thing in the modern theatre, especially in Brecht's epic theatre. Thus, Ahmed Ismail achieved what Brecht was aiming for, which was the objectivity of the personating actor, where he made him both a narrator and a performer at the same time. He mixed the choral chanting clips with the individual portraying and narrating clips, and he embodied the paradox in the scenography of

Figure 5. Scenes from *Al Shatter Hasan* show directed by Ahmed Ismail in *Wekalet El Ghoury.* Private archive Ahmed Ismail.

the show, as the place he chose embodied the historical paradox. The director successes in creating a communication between the narrators, the singers, the musicians and the audience through the poetic. Ezz El din Naguib believed that the director was trying—through dramatising this tale—to revive the folk art and the natural climate for the folk biography; the rebec poet on the wooden bench and the spontaneous folk artists, both singers and musicians, with their rural gowns on their primitive folk instruments. (Seliha, 1986, P190) He did not resort to professional actors, instead he hired a very limited number of amateurs who were fluent in acting and singing; each one of them played the role of the narrator of one of the characters. The director borrowed the genuine folklore melodies and used the contradiction between stability and movement on the two levels of the stage; the upper level where the rebec poets sat in a theatrical setting inspired by the village, and the lower level where the spectators circled around the singers and actors while they were moving, eliminating completely the barrier between the actors and the audience. The director chose the folk Samer form in a simple scene that consisted of a set of benches and some folk motifs that could be easily moved to any location, barn or folk courtyard. Ezz El din Naguib added that the simple inspiring décor done by Salah Bissar played an essential role in directing the spectators' imagination towards the rural environment, through using real peasant tools, such as the thresher, ornate straw mats, horse saddles and colourful flags, which are usually seen in the Mawlid festivals and wedding nights. (Seliha, 1986, P190) The director used the elements and the tools inspired by the folk environment; the background made of straw mat and the stage covered with sackcloth, as if the spectators were in a village barn waiting for a folk troupe to present chanting, biographies, tales, Mawwal or rural songs. The setting became the natural cradle in which the story turned into a living theatre. The director used the lighting to move from one scene to the other, and was keen not to use the colourful lighting. He mixed the stage with the audience seats, he also engaged the audience in the singing and acting of some scenes, and also involved them with the actors and chanters in the performance of some climaxes.

Fouad Dawara wrote: 'The spontaneity took over the performing method and singing in the Harvest's night play, so that it seemed to the spectator that the show had no playwright, director or composer, and that they were just a group of peasants gathered to entertain and listen to the tale. The director left a limited space for improvising and heading towards the audience in an attempt to integrate and involve them in the show'. (Seliha, 1986, P192).

Some serious attempts appeared, such as The Puppets' Act '*Shoghl Aragozat*' show, written by Mohsen Meselhi, directed by Ahmed Ismail, and on a stage designed by Nagy Shaker at The Ghoury Agency Theatre in 1993. The theatrical space suggested an atmosphere of folk festivals, specifically the Mawlid, and of the touring troupes that built their marquee in the districts to present their shows. The performance, the singing, the dancing, the acrobats, the costumes, the puppets and the music were all elements that worked on the fine line between the professional theatre and the state of the touring troupes in the Mawlids and the folk festivals. The show was considered to be an experimental folk spectacle, a new theatrical form and a special experience of searching for a theatre inspired by the folklore, depending on the folk spectacle form represented by the puppet. The main idea that the show presented was a criticism of the negative side of the Egyptian character through the puppet (*Aragoz*), who appeared in the show in the same way that it was known in the folklore; as a sharp tongue that criticised the human and social contradiction. Throughout these events, the dramatic structure of the work stemmed from the folklore structure in a sophisticated manner, despite encountering the modern currents in the contemporary theatre, while retaining the Egyptian privacy. The show is based on the relationship between the actor and the puppet, and in the relationship between them a third level is produced: the level of fiction and fantasy. Thus the method became neither the total delusion, according to the Aristotelian theatre, nor the breaking of the delusion (breaking the fourth wall), according to the epic theatre. The exclusiveness in the show was the core of the folklore based on the fine line between fiction and reality, in the frame of a philosophy based on a particular perspective of the Egyptian cultural evolution that accommodates the means of the modern times and reacts with them. The wooden puppet had a philosophy and a history, which is why it was the most capable—on the folk side—of criticism and it was seen as the voice of the simple people and the nation's conscience.

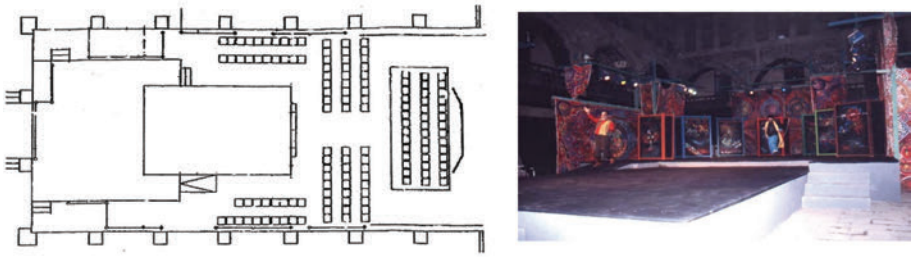

Figure 6. Plan and image showing the relationship between the stage and the auditorium. The theatre takes the form of a thrust theatre where the audiences surround the stage from three sides.
Private archive Nagy Shaker.

Figure 7. The wooden cutters used to show the puppeteer and his dolls from behind it.
Private archive Nagy Shaker.

Many ideas of the contemporary theatre were presented in the play Al-Kohl pillow '*Mekhadet Al kohl*' in 1998, such as the inspiration of heritage and the audio theatre. Moreover, the idea of mixing cultures, raised by Peter Brook, clearly appeared in the play, where the Eastern, Bedouin, Sudanese and African cultures mixed, and performers and chanters from different nationalities with multiple instruments and percussions participated in this work. In the play, the director, Intisar Abdel Fatah, presented the world of the oriental woman with all its charm and mystery.

The show is a journey inside the secret world of the woman, illustrating the restraints imposed upon her, the suppression from which she suffers and the condemnation she would receive from society if she wanted to rebel. The kohl pillow, where the kohl containers are held, is one of the characteristics of the oriental woman; where the kohl container symbolises the customs and traditions. The show begins with an oriental folk theme, which is the entrance to the woman's world with its privacies, vocabularies and contradictions, and also an entrance to the inherited folk celebration of the journey of searching for a theatrical privacy and oriental Arab identity for the theatre. The play is considered to be a new vision in form, content, directing, acting, expressive means and techniques; it raised an issue that had been in evidence for a long time in a totally new way, and the director tried to seek solutions for it through using the new expressive means. The body performance, acting, dancing, singing and musical methods were able to achieve a persuasion that was not achieved by the prevalent methods. Intisar Abdel Fatah introduced the spectator into a special world in order to enable them to receive the details of the story that was being told to them in words and songs, accompanied sometimes by music. Music and songs exchanged places in the symphony led by the director.

Mekhadet Al kohl, in its reliance on the folklore and the oriental musical formulation, is a development of the director's efforts and musical research that was previously handled in his initial shows, using the same folk, oriental and African musical instruments and the tools that stemmed from the environment. As for the singing, it was at times oriental, sometimes gulf and at other times African, thus conjuring all the places where the woman suffers the same

concerns. The singing forms varied in the show; there were carols, folk Mawwal and Arab hymns that were all driven from the heritage and the old folklore. The folk songs merged with the percussions and the Nubian musical instruments. Abla Al-Reweni wrote:

'the woman of the show is an ornamental woman, coming out of the oriels and One thousand and one night's books. (Theatrical magazine, 1999, P45).

That aesthetic profiling of the woman and this tunica of charm and mystery that was portrayed by the patronizing of the female characters whether gathering or moving as symbols was emphasized by the scenography designed by Naima Agami through converting the entire theatrical hall into a brass bed with its decorative poles divided into six parts, with eight girls sitting inside it, they were a female choir reflecting the woman's world, and through a white transparent tunica we see the girls wearing their makeup'.

The grandmother sat in the centre of the hall, amid them all, starting the sewing machine. It is the entrance to the woman's world that the scenography design was aiming for, where the deliberate impression was given to the audience that they were not entering a theatrical hall but a woman's room. The show depended on body language rather than on verbal dialogue. It abandoned the actor and the actress after treating them as a dancer or a décor set or simply as a colour or a material that is reshaped inside the theatrical space. The black curtains form the girl's room, where her brass bed and her red kohl pillow appear, while the girl is sitting in front of it in awe, wearing her black clothes, as if sitting in a sanctuary, and on the ground there are the glowing candles and the folk mat, which gives a charming mysterious atmosphere to the secret room of the girls. The theatrical space is a rectangular hall where the audience sits on three of its sides, while the show is presented on the fourth one in the heart of the hall.

It is a small hall with no stage, where the spectators sit beside the actors on a platform approximately 50 cm high on the theatrical sides. Only one set design is used throughout the show, made of a black platform in the forefront and in the background appears a two-level bed with brass poles and handicrafts inspired from the folk art. The presence of cushions extending in to the recipient space gives the spectator the feeling that he has entered the world of a woman, and the shape of the bed with its brass material gives a feeling of oldness that suggests the steadiness of these ideas in society. The bed contains all the elements of the show, including the recipient, and there is only one man sitting on the edge of the bed, symbolising the oriental man with all the thoughts that control his look to the woman. The set designer used the ceiling to add a horizontal curtain with Bedouin fringes hanging down from it, in addition to the lighting and the small hanging lanterns. Also among the setting elements used were the vocabularies of the oriental environment, such as the Bedouin rugs hanging on the walls, the Islamic oriel that was used as a symbol of the woman and her position in the oriental society, and some elements representing the Egyptian countryside were also found. The costumes were simple, expressing the environment and the time, using only an Arab gown that had centred on its chest a red square with old folk engravings and symbols. All the girls wore black gowns.

The costumes were generally inspired by the folk Bedouin style, and the anklet was used as one of the accessories of this style. The grandmother's costumes were limited to a black gown

Figure 8. Scenes from *Mekhadet Al Kohl*; the theatrical space and the shadow show scene. Photos by the researcher.

embroidered with folk symbols, mostly in red, and an embroidered scarf with yellow copper rings hanging from it covering her head. The musicians wore wide trousers and a vest that was embroidered with Bedouin engravings. One of the oriental traditions was that the mature girl must hide her face with a veil. The veil used in the show was red, while the white veil was used to hide the grandmother's face, expressing her death. The lighting played an important role in expressing the situations and emotions. In one of the scenes, a white curtain was dropped over the bed, highlighted by a blue light from behind, showing the shadows of the girls, which added an atmosphere of charm. The show won the Cairo Festival of the Experimental Theatre award in 1998 for all its hardworking attempts in seeking a theatrical privacy.

The Life Box '*Sandoq El Donia*' show in 2000 was a collaboration between the director, Hanaa Abdel Fatah, and the Polish Witkacy theatre troupe. The show was an Egyptian/Polish dual production, where the director was Egyptian while the playwright, the scenography and the actors were Polish. The combined play is based on the scenes that we see in the small districts of the city and in the Egyptian villages, which are inspired by the Arab customs and traditions. The show is also based on the Arab Drama, the theatrical shows, the shadow play and Alfred Farag's theatrical adaptation of the fiction tales taken from One Thousand and One Nights. The melodies and monologues are overflowing with stories about life in Egypt, which are presented to the theatre through the storyteller. Dances are also performed, such as the candlestick dance where the candlestick is carried over the heads of the actresses. Hanaa Abdel Fatah also employed the condolences phenomenon and a part from the play Al Hussein a revolutionary and a martyr by Abdel Rahman Al Sharkawi, trying to make both of the Egyptian and the Polish teams reach a stage of an extreme Sufism. The show overflows with a lot of things that are unknown about the Arab theatre in Poland. The Polish actors discovered the varied culture without losing their entity and identity. Thanks to these actors, the director was able to enrich his artistic character while keeping his own culture. This theatrical mating resulted in both troupes discovering themselves. Hanaa Abdel Fatah tried to introduce the Polish actors to the Egyptian heritage, customs, traditions and folklore forms, and he also tried to find the common values between the Arabs and the Polish, presenting them to the theatre. In the Salam Theatre the stage took the shape of an axial thrust theatre and the audience sat on the theatrical stage surrounding the acting space from three sides, and on the fourth side there was a low platform with a shadow play screen on it, which was installed in front of the audience during the show. Breaking the fourth wall and using a different theatrical space aimed to create an intimate relationship between the actor and the spectacle in a game that looks like the folk life box. The setting consisted of some theatrical stuff and the box that the actors carried and entered with in the beginning of the show, then opened it bringing out the theatrical stuff.

The play The Harvest's Nights by Mahmoud Diab was presented for two years (1999–2000) at the Shobra Bakhom Theatre. The script was one of the most difficult scripts that Ahmed Ismail directed. This was because the dramatic structure was unconventional and mainly based on a rural evening and the village's Samer in The Harvest's Nights. The peasants attended to their amusement and entertainment by listening to the harvest songs while mimicking each other, and through this game they introduced their problems, thoughts and dreams. The theatrical space was consistent with the show in most of its elements, and the dramatic structure was based on narration and imitation. Ahmed Ismail presented the show in a big courtyard that summed up the Egyptian rural features; its nature, buildings, residents and the people's enthusiasm for the Samer theatrical game. Thus the show achieved many vocabularies on the technical and audience sides that can be disclosed by several points; the position of The Harvest's Nights in the Egyptian theatrical heritage, the relationship of the script and the show with the ideas that were introduced in the sixties about seeking a new theatrical mould and the cultural inspiration of folk in theatre. The critic Nahed Ezz Al-Arab wrote: 'Mahmoud Diab wrote The Harvest's Nights in response to the calls of Yusuf Idris, Tawfik Al-Hakim and Ali Alra'i for searching in the folk forms seeking an Egyptian theatrical identity'. (Radio and Television Magazine, 1999) The script was one of the most prominent works to benefit from the folk Samer.

The mixture between reality, narration, imitation and fiction reflected the unique value of the script and led to the search for a relationship that links its artistic structure with the

Figure 9. The stage and the auditorium in The Harvest's Nights.
Private archive Ahmed Ismail.

ideas of the theatre leaders, who asked for the search for an Egyptian theatrical mould that was inspired by the folk forms; the Samer and the dramatisation state could be found in the artistic structure of the play, the storyteller, and the imitator in Al-Hakim's call could be found in the structure of the script through a narrator who controls the theatrical game and different types of peasants who alternate on the imitation game, moreover, the script also achieved a very important element mentioned by Ali Alra'i which is the possibility of acting in the minimal equipped places and with minimum costs. Nahed Ezz Al-Arab emphasised that the experiment gave hope of achieving a theatre with an Egyptian identity that was well connected to its audience. (Radio and Television Magazine, 1999) In addition, Dr. Thanaa Mounir believed that the show was characterised by the theatrical experiment's exclusiveness in dealing with the audience and the surrounding environment. The theatre was established in the village's courtyard among the trees, which represented a natural scenographic scope. (Theatrical Magazine, 1999).

The play was presented in this setting with its simple technical facilities, deep in its audio-visual values. The critic Ahmed Abdel Hamid believed that Diab's script had found the right place to be presented geographically, intellectually and theatrically, when the show was presented in a village, in an open theatre in the folk Samer form, and thus the artistic shape of the experience accomplished the basic element that Mahmoud Diab was aspiring to while writing the play. It was inspired by the folk Samer form, with its spirit stemming from spontaneity, where the events took place with no preparation and self-developed during the show, which was characteristic of the Egyptian folk Samer. (Gomhouria Journal, 1999).

The directors first mission was to delude the recipient that it was a non-composed incident, and that it was a real spontaneous show. The script was inspired by the artistic formula of the traditions and techniques of the village Samer and based on the core idea of the theatre, which is that of being an entertainment that relies on the rebec poet and folk biographies. Ahmed Abdel Hamid added: 'The experience transforms the narrating drama, the imitation and the Samer with its old folk form into a contemporary living theater. The main difficulty lied in the psychological makeup of the roles and the dimensions, where every character in the show played more than one role' (Gomhouria Journal, 1999). Mahmoud Diab mixed entertainment, narration and epic drama in one artistic mould. The narration was undertaken by narrators who had multiple roles, sometimes coming in to contact with the chorus role in the classical theatre, while at other times achieving Brecht's method of breaking the delusion. The epic style of the script was represented by the style of dramatisation and the entry and exit of the actors in the show. The performing and portraying of multiple characters was an artistic method that aimed to emphasise alienation and the lack of the full integration of the spectator with the dramatic act. The Harvest's Nights was a poetic, philosophical and social play, as well as a political one, which was not free from symbolism and projected on the war of 1967. The show was considered to be an important experience, as it tried to create a theatrical mould that had the mechanism of communicating with the spectators in the village. It also presented realistic solutions to the problem of providing theatre on a small financial budget, was deep and influential in its ideas and artistic structure, and accentuated the theatre's values and its role in leading the audience into a better life. These shows were sponsored by The Cultural Palaces Organisation, while The Central Organisation of Provinces and Artistic Matters strongly

supported the experience. The show was experimental in inspiring the Egyptian folk dramatic phenomena to present contemporary theatre with a theatrical privacy.

In the twenty first century there are many organisations, associations, and cultural and creativity centres in Egypt that are trying to present plays or other kinds of performances inspired by heritage and folk, using different historical sites to preserve the Egyptian identity.

The Artistic Creativity Centre in Al Ghoury Dome, with its outstanding location, is treated as an international lighthouse that embraces all the heritage forms, such as music, theatre and plastic art. Its main purpose is reviving the Egyptian artistic heritage in a new and sophisticated way that conveys the language of modern times, and giving people the opportunity to be introduced to the arts of different people and civilisations through opening fields of conversation between the Egyptian creatives and creatives from all over the world. Among the plays performed in Ghoury Palace was The Mevlavi Phantoms '*Atyaf Al Mawlaweya*', which is an outstanding theatrical show directed by Intisar Abdel Fatah. It was presented in 2009 within the international experimental theatre festival. The show discussed the Egyptian's relationship with God; Sufi songs were used with Coptic melodies and selections from ancient Egyptian heritage. The show was mixed between myth and reality, and stressed the uniqueness of the Egyptian character and the depth of the Egyptian culture based on references from their heritage, the proverbs and the parables in ancient Egyptian literature. The play showed that the main spring from which Egypt took its religions always aimed to the elevation of the spirit.

In 2015 the Prince Taz Palace in Cairo presented The Prince '*Al Amir*' show within the theatre. Many projects were sponsored and organised by the cultural developmental fund, with its historic creativity centres. This project was based on showing the charm of the archaeological and heritage sites by providing a dramatic simulation of the historical events that took place in the yards of the palaces and houses in the historic Cairo region. The Prince show displayed the biography of one of the princes in the Bahri Mamluks sultanate era. In 2016 the Prince Taz Palace hosted the theatrical show 'Theatrical Miniature' by Saad Allah Wanous, directed by Tarek Ghaleb. The show was produced by the public association of cultural palaces. The events of the show took place in Damascus when it suffered from the Tatar's attack, offering a panoramic view of the community in a defining moment in the history of the Arab nation.

In the first decades of the twenty first century, some troupes and centres tried to preserve folk music, songs, religious chanting, such as '*tawashih*' and rare '*maqams*', and paratheatrical forms inspired from heritage. For example, The Drums' dialogue for the Peace and the Egyptian Nubian Drums troupe is interested in the ancient Nubian heritage, in order to keep the singing and percussion heritage that stemmed from the Nile River. The troupe now contains the most important set of different folk musical instruments chosen from all the provinces of Egypt and which touched the spirit of the Egyptian character through its folk arts. Among the cultural centres in Cairo is **'**Makan Centre for arts and culture', which is keen to present the heritage arts in their traditional form, and also folk music in its various forms with the Sufi songs and the Zar parties. Makan is a wide space with a theatre in the centre and the audience intertwined with the theatre. The details in the place are few and are all based on the very ancient heritage forms. Great musicians among the heritage keepers of Egypt were participating in this creative musical experience. It is considered an attempt on the way of renovation that stands on the rich bases of the folk music in order to build new forms, sounds, melodies and various structures. The Makan centre hosts '*Mazaher*', one of the folk troupes, to present the folk Zar arts, in order to revive one of the Egyptian heritage colours, presenting it to the audience with its traditional meaning and all of its details in a civilised way.

2 CONCLUSION

The theatre is a social phenomenon that affects society, and is influenced by its culture and heritage. The human being is a social creature by nature and, as the theatre depends mainly

on human gatherings, thus the theatre is a celebrative ritual that fulfils this need and is the essence of the concept that the theatre has been built on since the beginning of time, extending in to the depths of history, insuring its survival and continuity for many centuries to come. The theatre is an anthropological phenomenon too, and is derived from all of the spectacle and paratheatrical forms of different cultures.

The critical awareness of heritage is the first step on the way to understanding our true cultural identity. The Egyptian theatre aimed to revive the theatre through using folk spectacle forms that were mostly based on narration and storytelling, such as the shows of the storyteller '*Al hakawati*', the narrator '*Al rawi*' and the Samer. It tried to benefit from some dramatic manifestations of Farce actors '*Al Mohabeziin*', shadow plays '*khayal Al zel*' and the puppet '*Al Arajoz'*, from both form and subject levels. The Arab theatre orientation was to use elements derived from the local heritage, where the role of the audience went beyond watching to participating.

True heritage awareness cannot be completely achieved in a frame of cultural isolation and without comparing our heritage to the harvest of human experiences in different cultures.

Both modern and contemporary Egyptian theatres tried to benefit from their heritage, while at the same time keeping pace with the international theatre. It witnessed many serious experiences that dealt with the most important trends and distinguishing features of the contemporary theatre, such as image theatre, audience participation in the theatrical game, touring theatre, people's theatre, provincial theatre, mixing cultures and the use of untraditional theatrical spaces.

The contemporary theatre uses new theatrical spaces that are different from the traditional theatrical architecture, such as the Thrust and Arena stage to fit the performances, and also forms inspired from heritage, to make the relationship more intimate between the performer and the recipient.

Many Egyptian sectors, organisations and cultural centres, such as the mass culture sector, the folk performance arts sector, The Cultural Palaces Organisation, The Central Organisation of Provinces and Artistic Matters and the cultural developmental fund, help contemporary theatre to survive through funding and organising performances inspiring elements from heritage and ancient folk, and through performing in historical sites and so trying to preserve the Egyptian identity.

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