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THE PRACTICES OF DESIGN

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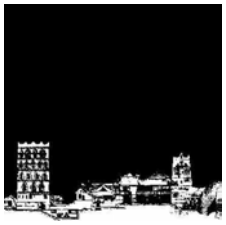

TRADITIONAL DWELLINGS AND SETTLEMENTS WORKING PAPER SERIES

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THE PRACTICES OF DESIGN

Traditional Dwellings and Settlements
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THE TECHNO-CULTURAL TURN OF THE TRADITION OF ARCHITECTONICS

Serdar Erişen

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THE TECHNO-CULTURAL TURN OF THE TRADITION OF ARCHITECTONICS

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In the rise of the digital culture of architecture, regarding the ornament with its profound cognitive connections to the cultural and symbolic turn, the study claims the necessity of performative implications of digital means to the material and tectonic qualities by the transformation of traditional infrastructures towards the virtual potentials of learning environments. In that regard, this research tries to survey on the possible integration of self-sufficient materials and interactive tectonics with the virtual potentials of visual recognition by the artificial agencies of the virtual traditions of the learning environments.

1. INTRODUCTION

Architecture is the culture of designing and creating structures. As an interface, architecture becomes an issue of technology and manufacturing, but also as disputable with its innovative elements in design, and in decision-making processes in recent years besides the symbolic and cultural meaning searches that reveal themselves in the discussions of the Ornament in the digital culture of architecture. Looking from that perspective, the Big Data of visual and other kind of sensorial inputs for technological developments also enhance architectural developments, so did the influences of any other technological advancements. Usage of smart materials that are accompanied with environmentally sensitive and adaptive environments, on the other hand, enriched the occupant-centered qualities. Thus, the smart systems integrated with self-sufficient materials and virtual potentials of informational agencies of the learning environments are the concerns of this study to reinforce the traditional environments and infrastructures.

As in the example of Jean Nouvel's Institute of the Arab World, the skin of the building can work as a smart filter of thresholding to external stimuli (of heat temperature, forces of wind, etc.). This is an instance for the development of tectonic elements of architecture utilizing smart materials of color changing, light emitting or absorbing, and operating heat transfer as well as smart systems conducting such of those around the desired behavior pattern. Since the façade is responding to the light conditions in a fluid of motion of these elements, it can be seen as one of the pioneers of architectural development of responsive materials in constructing and utilizing metallic *brise soleil* detail.

On the other side, the cultural and symbolic usages of the self-sufficient and camera-like diaphragms in the façade elements are delicately designed to have the traditional effect of *mashrabiya*, the special façade organization that particularly belongs to Arab culture. Apparently, the usage of *mashrabiya* in the Institute of Arab World cannot be seen as accidental or decided solely as symbolic element; and yet includes performative aspects of interior-exterior relationship including climate effects as well as the enrichment of functional usage

of space considering the new usages of contemporary environments and the light and ambiance conditions to become the milieu of exhibition.

2. ONE EXAMPLE FOR THE TRADITION OF THE SYMBOLIC TECTONICS & ORNAMENT: MASHRABIYA

As a traditional ancestor of the self-sufficient material usage and the embedded computation, the etymological roots of *mashrabiya* also implies for its performative usage of cooling as well as its functional usage of space for special design of the interior space that is embellished to be used for storing cool drinks[1]. As being the Laureate for the Fourth Aga Khan Award for Architecture Prize between 1987-1989 in the fourth-award term, Nouvel explains his project as:

> The Arab World Institute is a showcase for the Arab World in Paris. It is therefore not an Arab building but an occidental one. The representatives of the 19 Arab states that commissioned it were surprised by it. Some had wished for something more pastiche-like, like the Paris Mosque. But certain symbolic elements pleased them, like the "moucharabiehs" whose polygons of varying shapes and sizes create a geometric effect recalling the Alhambra. From an urban point of view the Institute is a hinge between two cultures and two histories. If the south side of the building, with its motorized diaphragms, is a contemporary expression of eastern culture, the north side is a literal mirror of western culture: images of the Parisian cityscape across the Seine are enamelled on the exterior glass like chemicals over a photographic plate. These patterns of lines and markings on the same façade are an echo of contemporary art. The frontiers between architecture, interior design, and furniture design are to my mind a total fiction. For that reason, I designed the whole of the museum, including the showcases, seating, and display furniture. At the Arab World Institute I also began to consider the question of light. The theme of light is reflected in the southern wall, which consists entirely of camera-like diaphragms, and reappears in the stacking of the stairs, the blurring of contours, the superimpositions, in reverberations and reflections and shadows.[2]

Beyond the post-modern cultural and solely symbolic aims to show, the performative aspects of the screening effect of *mashrabiya*, hence, is re-visited again by the architect Jean Nouvel at the Institute of Arab World. With and beyond its symbolic meanings, it has deep inquiries of performative issues using the *brise soleil* detail, as a tradition that Le Corbusier also significantly apply in modern style, *mashrabiya*, thus, can be seen as to reappear again after the demolition of the dwellings with delicate details in the Arabian territories (Fig. 1). Jean Nouvel's design for the Institute of Arab World as an example of symbolic semantics, on the other hand, strongly revealed the inquiry of ornament[3] that is closely analyzed by Picon in relationship to the rise of

digital culture in architecture. Having still a critical gaze towards the simplistic symbolism of the postmodernist style on the other side, Picon does imply to warn about the symbolism with and against the rise of the digital means that reflected to the tectonic details becoming out of scale due to the efficiency in design and production. Accordingly, it is possible to imply the necessity to reevaluate the new understanding of symbolism after Postmodernist period without falling into the simulacra of similar replications of traditional patterns.

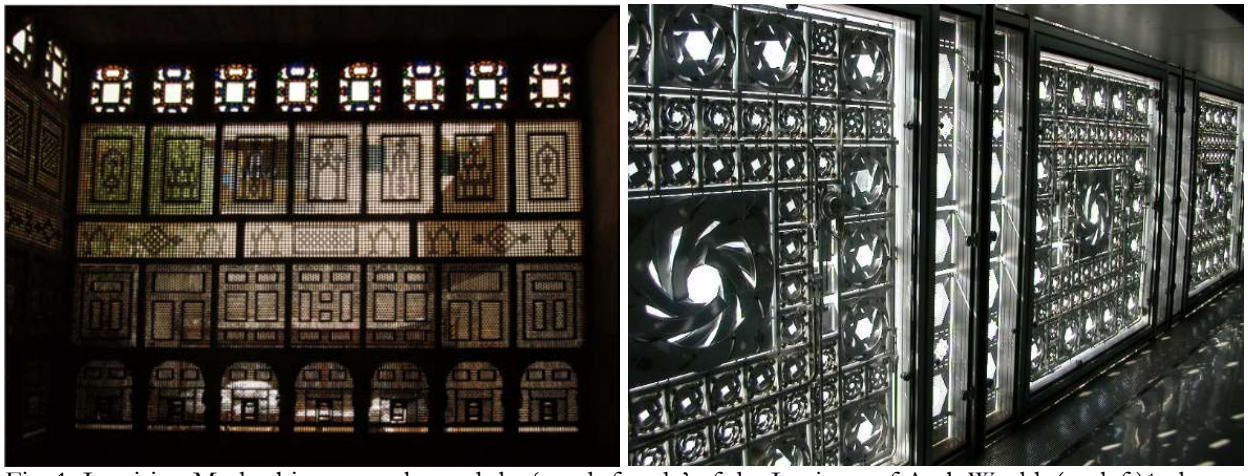


Fig. 1: Inspiring Mashrabiya examples and the 'south facade' of the Institute of Arab World, (on left)[1]; the south facade of the Institute of Arab World from interior (on right)[2]

> Meaning is still officially taboo, but what is one to make of so many iconic projects that seem to indulge in an almost naive form of symbolism? Retrospectively, one may consider that Jean Nouvel's Institut du Monde Arabe (1987) opened a new era of symbolic manipulation with the sunscreens of its main facade, which played on a mix of references including traditional Arabic mashrabiyas. Almost Orientalist, the use of Islamic-inspired decorative patterns has continued to this day with highlights such as OMA's project for the New Jeddah International Airport (2005) … Robert Levit clearly has a point when he evokes 'the return of the symbolic repressed' in the use of ornament.[4]

Nevertheless, according to him, ornament is not a thing that can be resisted long and once it becomes intimidated it emerges again as a form of the unconscious repression. At this point, it becomes very crucial to re-understand what can be the new cultural implications of the digital and virtual possibilities towards the tradition and its representation without falling into the mere imagery of easy symbolism.

> Irresistible as it may appear, the return of the symbolic repressed remains largely unacknowledged and untheorised. In these circumstances, there is a serious risk of falling back into easy symbolism. The best way to avoid this lies in a reexamination of the question of meaning in architecture. Such

> reexamination may appear as a manifestation of a more general need for the architectural discipline to break with presentism and reconnect with a sense of history that has been eclipsed by the rapid development of the digital.[5]

According to Picon, even though it differs from the past, the relation of the subject with architecture through ornament can also be reconstructed as political relations as well as through affect that are reflected as symbolic memory and the reveal of the unconscious form that are both facilitated through the means of new media. Ornament shows not only the political power depicting rank and prestige that is dictated on the tectonics, but also hierarchical, cultural, and symbolic meanings; and the creative role of the self that is placed among that order of the society. Ornament also reveals itself as a means of communication and knowledge (of making) that sets architecture as a discipline; and the basis for the appreciation of beauty and pleasure while they have evolved and not fully exploited yet in the contemporary age[6].

The derivation of orders that finding the balance between the power and the beauty can be understood by Perrault's inquiry on the order of the ancient columns that evolved and corresponded to the disciplinary progress from the itinerary of masterful experience towards the rise of modern architecture. In Hansmeyer's studies on the Sixth Column[7], the role of the digital apparently emerges as a power to reveal the aforementioned orders that are as a part of the symbols of the discipline and authority itself paradoxically when regarding Perrault's inquiry (Fig. 2).

Fig. 2: 'The Sixth Order', Hansmeyer (https://www. michael-hansmeyer.com/subdivided-columns, 2020)

In that regard, meanings of the ancient order can further be explored through architecture and cosmos[8] regarding the curiosity about the dominance, and the power of the universe. Accordingly, symmetry, order, proportion and chaos can be understood as coming from this ancient curiosity so that it may even become enough to reveal the order of the ornament that can be retrieved hence as a result of the unconscious pleasure that can reveal itself again by the opportunities that new media offer. So, it should be better analyzed, in that sense, that new tectonics and materiality can only be discovered also by overcoming such a repressed desire.

> Ornament presents us with a kind of mirror. In this mirror, we see ourselves as we believe we are and as we would like to be. Ornament is inextricably about knowledge and illusion.[9]

Corresponding to the sensational activity and the consciousness in its ultimate meaning affect can be described under the new materiality of ornament as such by Picon:

> …the main purpose of contemporary architectural décor lies in the production of affect. According to Gilles Deleuze, affects are not attached to a subject's mind in the way personal feelings are. Of a much more physical nature, they denote a change in intensity that concerns both the body and its surrounding space and time. From this perspective, affects represent a more primitive form of experience than emotions. Contrary to emotions that presuppose a localised psychological interiority, affects appear linked to a kind of generic superficial condition. They are both superficial and immersive, two features that correspond especially well to the characteristics of present-day ornament.[10]

The condition of affect when to be understood by the meaning of ornament, cannot only be evoked as a means of communicating through 'materiality', but as a mode of experience of the material that can only become meaningful when subjective faculties and the degree of consciousness has interfered with that phenomena[11]. Affect also legitimizes the authorship of that experience looking from a professional perspective that entitles the designer as the executor of the thought and the experience of the produced object.

> Actually, the notion of materiality provides us with a first clue regarding the renewed importance of subjectivity. For materiality, unlike matter, can never be considered as entirely objective. Materiality corresponds to a certain category of experience. The point becomes more evident when one considers its opposite, immateriality. Nothing is in itself immaterial. We call something immaterial

> when we cannot relate to it in certain ways – by seeing it with our own eyes or with the help of instruments that we trust, for instance. Conversely, materiality corresponds to a range of experiences that give us the impression of being in genuine contact with the physical world. Some of these experiences are based on immediate sensory evidence; others involve instruments and machines, binoculars, microscopes or computers. Whatever the case, materiality possesses a relational character. It implies an encounter between a subject and the material world. From this perspective, materiality appears as a mix of permanent ahistorical features and cultural factors. At any given time, materiality articulates physical constraints, such as the laws of mechanics or the physiology of perception as well as social constructs such as the value we attach to certain types of observations.[12]

New means of production in nanotechnology, in that regard, enables for unrestricted experience of materiality of the 'new' subject of architecture in the information age as Picon exemplifies this:

> It is no coincidence that so many material investigations in architecture present an ornamental character, from Gramazio and Kohler's robotic assemblages to Neri Oxman's explorations of the new permeability between the natural and the computable…Designed and fabricated with the help of the computer, contemporary ornamentation is inseparable from an inquiry into our rapidly changing definition of materiality.[13]

Continuum between the interaction of the subject and object is reinforced by the new experience of materiality that blurs the boundaries of the distinction of the visual and tactile in the digital age. To introduce the grounds of this new materiality by the rise of informational technologies, it is seen as crucial to identify the place of embedded computation with regard to functionality and the integration of technology and digital means with the physical concrete edifices of the built environment with their self-sufficient material qualities as well.

3. NEW TECTONICS OF THE ARCHITECTURE: EMBEDDED COMPUTATION

Evaluated with integral sensorial data and the probability of learning structures, architecture itself potentiates for a search upon the increase of spatial comfort as well as the rise of efficiency in energy consumption by minimizing the irregular utility of unnecessary conjunctions in between irreversible expenditures among the various technological advancements. Under a series of different utility scenarios, it may be possible to utilize, then, such kind of development in the research-based environments to account for a time dependent activity of short-term and long-term probabilities with considerable uncertainties.

Exploiting the potentials of silicon microcontrollers and microprocessors, the advancement in embedded computation in interactive and responsive environments of architecture are the most eminent practices that can be tagged as the pioneer of these developments. The contribution of architectural space, yet, can only be mentioned as authentically necessary on its own surface, of its tectonic elements of walls, doors, windows, ceilings, and structural elements to fully decide on the mode of implementation of these technologies. On the other side, digitalizing the data that coming from sensorial environmental stimuli can both be observed either embedded to these elements or not, which don't become a design problem. So, the development of architectural elements and their design consideration is a key issue to discuss here; and needs a clear distinction whether they are within the materialization practices or virtual to the environmental/physical connections as in the visual processing of the data. Respectively, the study proposes to evaluate the technological proposals not first with their technological degree of advancement or method of utility in the elements but classify them with respect to the elements themselves according to their place within the architectural tectonics first. It is then also possible to evaluate each development around the similar complexity of technological advancement.

Michael Fox and Miles Kemp define embedded computation as the name for utilizing microcontrollers, as the advantageous agents not only for their easier development and less complex hardware-software relation, but also their energy utility during controlling and processing the environmental data when compared to more complex digital solutions. The sensors used for the development of embedded computation can be controlled with those microcontrollers, as in the modern versions of Arduino. Then it becomes more meaningful to share again the focused advantage of microcontrollers in architecture in between the software and the reality in its own devoted literature given as:

> A microcontroller is essentially a different word for a computer, in that it contains a processor, memory, and input/output functions. It is very similar to the personal computers that we are all familiar with, except that personal computers are designed to execute thousands of programs, and microcontrollers are designed to execute one program very well. Because microcontrollers are designed to do one thing very well, they can be much simpler and smaller than their multitasking counterparts. These small computers are designed to have pin connections that allow information stored in the read-only memory (ROM) to be written and rewritten directly to the controller. These pins also allow for an outward signal to be transmitted to networked or linked devices. Microcontrollers are often low-power devices. A desktop computer is almost always plugged into a wall socket and might consume 50 watts of electricity. A battery-operated microcontroller might consume 50 milliwatts. A microcontroller is often small and low cost. The components are chosen to

minimize size and to be as inexpensive as possible. A microcontroller is especially good at three things: receiving information from sensors, controlling basic motors and other kinetic parts, and sending information to other computers.[14]

3.1 THE RISING TRADITION OF THE EMBEDDED COMPUTATION IN ARCHITECTURE

Floors and ceilings are the sheltering structures of architectural elements that mostly define the meaningful space above and below. Although the folding structure of architecture have changed the 3D practice of space beyond the typical usage of elements such as walls, windows, floors, and ceiling but just proves for a new spatiotemporal experience, the culture of architecture is yet strong enough to assert the rational usage of these elements in everyday life practice. So, it is here to share some projects that mostly be developed as a part of recreational aim but appear as a debut or in other words ground for a new technology to the world of architectural practice in millennium. It is possible to re-think again the evolution and mutation of these elements into a 3D folding or morphological topology, but integrating the reality of further developed technologies of sensorial assessment even as a further jump from a shift of development. According to the technological development level, in that sense, some of the projects focusing upon the motion detection can be listed with respect to this classification.

Walls and facades (or windows) are not only the mostly visible architectural elements but also the edifices that define the bound of architectural space, inner and outer realms. With respect to this, it can be said that not only the movement around these vertical elements but also their inner response (by self-sufficiently or controlled by microcontrollers) to the immediate surroundings is one of the most potential features of architectonics. Be that as it may, the responsive architectural elements of walls and facades are consequential not only in the inquiry of energy usage and environmental responsibility and flexibility but also as a performative element in users' spatiotemporal actions[15]. Once again, it is also possible to evaluate the developed projects according to their usage of technology and materials. Respectively, self-sufficient material configurations on one side, is strongly appreciable, while on the other side the embedded computation pushes forward for further spatiotemporal data flow from multiple agents.

3.2. VERTICAL EDIFICES OF EMBEDDED COMPUTATION

Known as one of the most prominent modern classic architectural works, Farnsworth House, designed by Mies van der Rohe has been berated due to its privacy conditions and over-transparent inside-outside relations. It even became an issue for lawsuit between the doctor-user and the designer as a psycho-social problem of privacy. The house has also inspired NMinusOne Studio for the development of a self-sufficient façade and a curtain wall design adapting and responding due to solar conditions[16]. According to these

projects as can be categorized as self-sufficient, Farnsworth Wall[17] becomes a 'dynamic digital wallpaper allowing one to see outside without anybody interfering to inside'[18] (Fig. 3). The wall consist of modular solar panels absorbs solar energy at exterior, and on the inner side an embedded system of low-energy LED lights illuminate interior, in a pattern of outside vista, reflecting the light not occluded by the landscape. In 2011, the team further developed their proposal with Farnsworth Curtain[19]. According to the project, the outer skin does sense the user motion by means of infrared sensors and LEDs illuminate interior with this self-sufficient pattern extracted out immediately. Finally, just to describe shortly again, the same team of Farnsworth Wall and Curtain developed another project just taking into considerations again the movement and user-behavior in privacy conditions by designing an 'invisible house' (Fig. 3). The project can be seen as responsible for saving energy in the light sources during daytime and night[20] as well. The objects and movements in space are detected by infrared beams and illuminated through locational correspondence of LED lights. So, the space between infrared and light beams can be seen as non-visually defined and active by the occluding patterns of objects and movements detected by photoresistors.

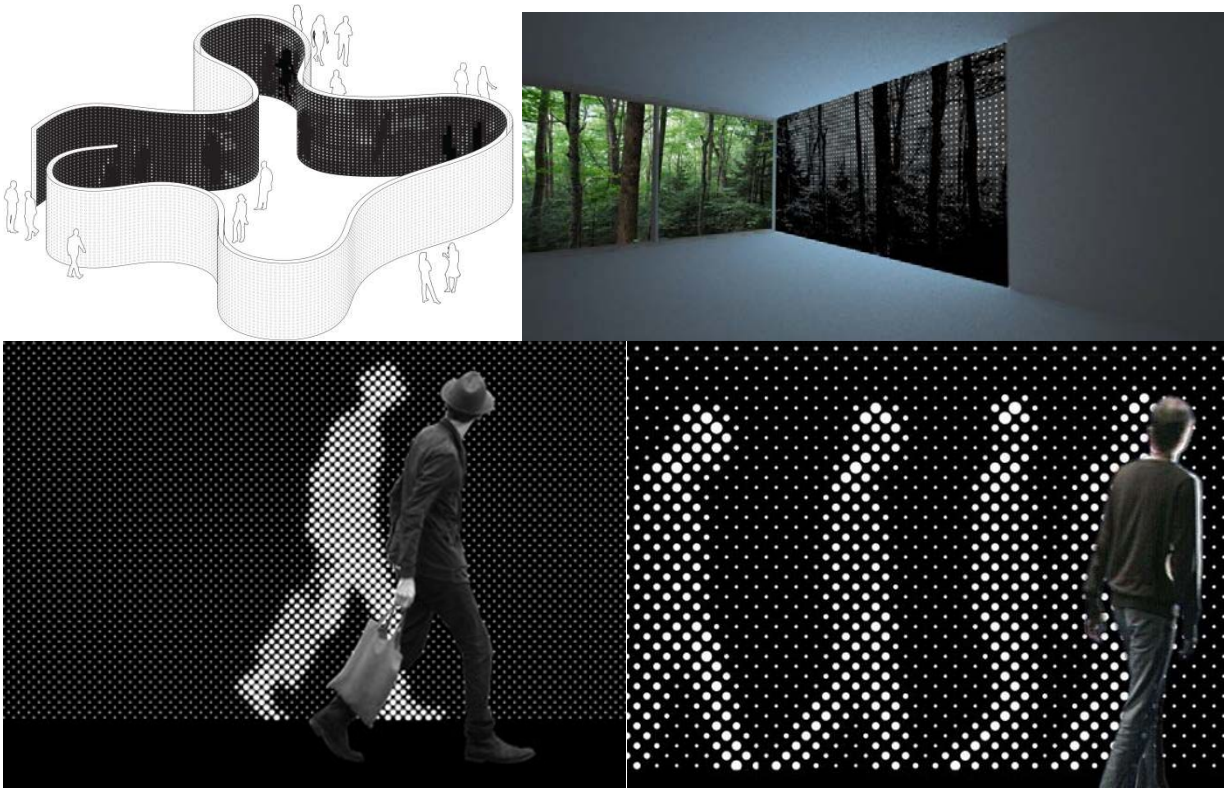


Fig. 3: Farnsworth Curtain (above left) & Farnsworth Wall (above right) by MinusOneStudio[15]; Aperture (Below)[14]

There are other similar projects that take a memory of duration of the experience of the agent encountered with surface, such as 'Aperture'[21], in 2004-2005 by Eyl & Green. The technical difference from Farnsworth

Curtain is that for the reaction to light intensity designers use 'iris diaphragms' as 'apertures' to LDR (light dependent resistors) sensors (Fig. 3). The outer skin system is connected to actuators of (servo motor/iris) that once the light coming to senses decrease due to the movement or duration of the agent in front of it, diaphragms open more to get more light in. To shortly summarize, self-sufficient systems are materially responsive and yet potentially strong to be developed more by embedded microcontrollers as in the cases of many projects that are described.

Many experimental projects, developed by certain research teams, further assess the 'human behavior awareness' by many different ways but majorly focusing on human motion and interactive behavior with the kinetic agent. 'Interactive Façade'[22] is one of those that detecting pedestrian activity via responsive bars. According to this, once motion is detected, bars move gradually toward the target. Since the system also recognizes pedestrian activity in the street, secondary to interactive action, the collaborative responses of multiple bars create more complex pattern as an evolving state. The outer skin is connected to microcontrollers and Java software to process and manipulate the described complexity of multiple-agent behaviors[23].

4. TOWARDS THE LEARNING TRADITIONS OF TECHNO-CULTURAL TURN OF THE ARCHITECTONICS

Departing from the functionality and performativity of the usage of *brise soleil* detail in Institute of Arab World– regarding the change in the ornamental scale itself, the study regards the traditional environments as the symbols by themselves such that ought to be integrated/reinforced with the novel technological infrastructural developments as an issue of sustainability in functional usage. The symbolic and cultural validation and protection of the cultural assets, thus, can be turned into the form of informational knowledge of interaction with the people and society of that tradition by the help of artificial intelligence and the Internet of Things. In that regard, new technologies offer to claim more than the means of security necessities such that beyond regarding the space under the surveillance for preservation and security, the digital tools can have more profound means to discover the social and functional usage of cultural and traditional spaces. Network-like connection of agents and sensations of the new materiality towards the topology of experiments "becomes analogous to a permeable interface, an osmotic membrane"[24] revealing the continuum of the interaction of subject with its environment. The collective (rhizomatic) experience of the networked society can be philosophically interpreted as:

> "our identity seems to flow outside our body into the myriads of cyber arteries and veins that connect us to others. With the multiplication of such canals, we need no longer stick to Japanese

> architect Toyo Ito's proposition that we, of the age of Internet, possess two bodies: one made of flesh, the other of electrons. We are no longer cyborgs obtained through a crude collage of flesh and technology, but existences finely distributed within various meshes, which articulate almost seamlessly the biological and the electronic."[25]

Integration of the subject to its environment, hence, reveals the ultimate basis of new materiality that can enable the fully connected conscious (rhizomatic) experience of the subject so that the power of architecture, then, can be better understood by reclaiming the role of executing the paths and arteries as well as the knots of sensorial and affective environments. Ornament as an interface between the self and the masses can be inquired with its mediating role according to Picon, when to be understood with its materiality connecting the knowledge and sensations such that it can be assessed to be experienced by analytical inquiry as SENSELab does in MIT[26] as a matter of urban-scale element. So, the surprising argumentations of Picon can even be seen as a critical response to this popular digitalization by taking consideration of function and cultural usage of the buildings themselves.

Towards the transformation of the buildings 'decorated' with the infrastructural bases of the virtual technologies themselves, the futuristic grounds of crowdsourcing and Internet of Things ought to be reconsidered with regard to the urban-scale coherence of culture and tradition. Picon declares the significance of transformation of the built environment when regarding the dynamics of the information age with the rising paradigm of 'Smart Cities'.[27]

> Again, the problem has more to do with the failure to take the diversity of city functions into account, and with the impossibility of reducing this to a simple question of intelligence. Writers from Richard Florida to Edward Glaeser have arguably placed too much emphasis on the importance of the 'creative class', which is supposed to represent the brain of the smart city, and not enough on the role of its muscles: traditional services and industry. Above all, there cannot be only one or two scenarios that lead to this city. Diversification is clearly necessary at this point, even if only because situations differ greatly from one country to another.[28]

He emphasizes necessary transformation of traditional infrastructure as the real repercussions of the virtual development of information age and the accompanying technological means. On the other hand, visual recognition by the digital tools has become the dominant research and development domain in the rise of informational technologies. In that regard, the study turns its face towards the practical means of application getting the inspiration from the roles of the traditional environments that are delicate to the material

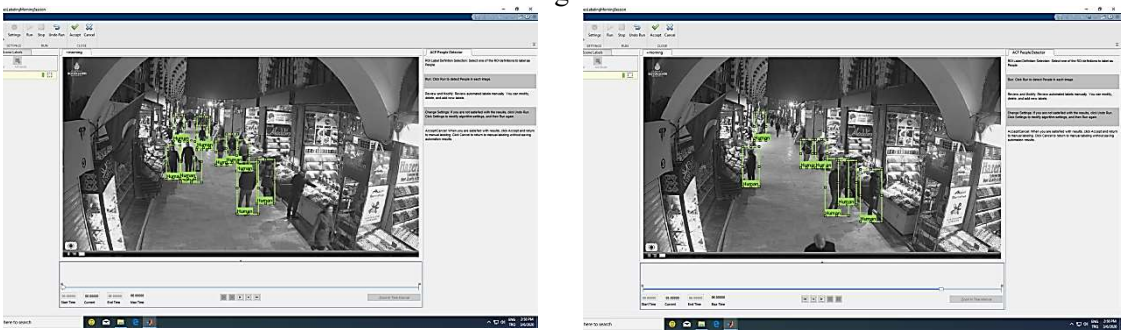
consequences of any change in the built environment directly, and yet necessitate certain development for the infrastructural development under the effect of the discourse on smart cities. In that regard, the study follows the responsibility of the integration of the new media for the traditional environment as the most precious entities/milieu with regard to the urban scale. The usage of traditional environments in the age of speed and flow of data requires a greater attention to ponder over the maximization of expected spatiotemporal experience under the frame of intentional as well as germane activities regarding the motion and interactions and changes and stabilities within the space.

4.1 VIRTUAL TRADITIONS OF THE BUILT ENVIRONMENT: VISUAL RECOGNITION ANALYSIS OF THE TRADITIONAL ENVIRONMENTS

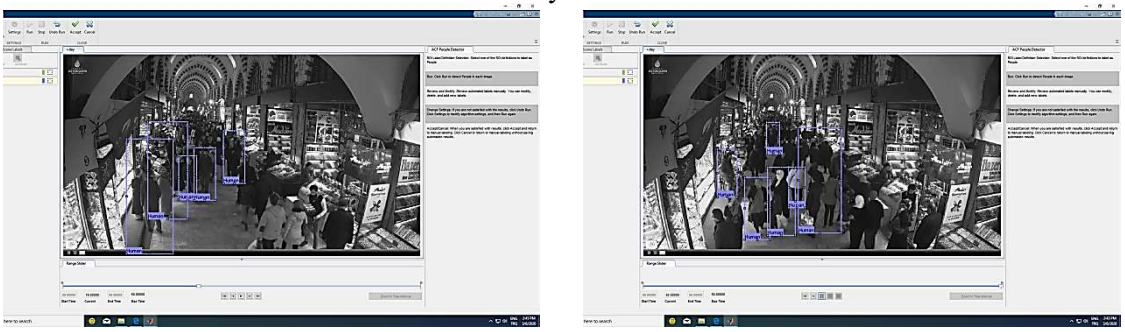
Just to move further towards how a hybrid culture of tradition of the digital integrated with the coherent whole of the symbol of the tradition can be constructed in that sense, it is tried to be understood by some peculiar traditional environments, in this case, which is Spice Bazaar. The necessity to regard traditional environments beyond easy symbolisms according to Picon, thus, necessitate to understand the reality of our own age under the heavy influence of informational technologies and means of maintaining our daily life habits as becoming traditions. Hence, the digital should be regarded by its all extents so that regarding the functional reality of the traditional spaces can be virtually transformed/evaluated by the responsibility of regarding the cultural function of space itself regarding the built environment as a coherent form of symbol by itself without any hysterical division of the subject.

Before shifting to demanding tasks of motion analysis accomplished on MATLAB® software rudimentarily, it would be useful to remind the significance of visual data. What makes or can make visual processing still germane in architectural design? It can be said that visual data is crucial in the decision of geometric configurations and shape decisions of materials, the form of the elements and their larger scale production in accordance with each other. In short, visual data is so significant in the voids of architectural spaces, and the generative forms of interaction of elements and people within and without. Since they are rather virtual to the material features as discussed, visual data can be used in the generation of form decision, and the dynamic configuration of shapes that can whether be transformed and changed according to this data. Additionally, the visual data is rather useful to predict the user behavior in larger distances and to design larger functional spaces. It would also be possible to derive information for change between successive states to understand the necessity of dynamic forces and states, as new modes of configuration for architectonic elements moving from themselves. It can also be seen as a step to dynamic architecture to decide on topological forms rather than only focusing on Cartesian rationality of stability in form and geometry.

Morning Session



Midday Session



Night Session

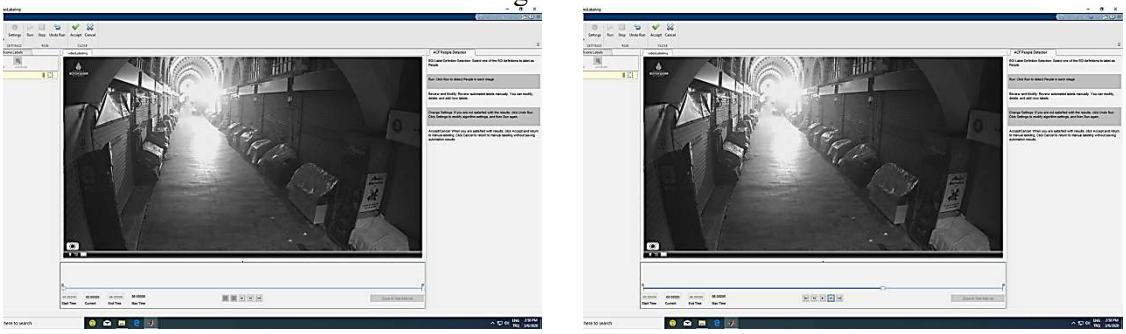


Fig. 4: Visual Recognition Experiment by ACF People Detector, MATLAB, on Spice Bazaar's traditional infrastructure

Additionally, visual has further advantages and disadvantages to process and give meaning to immediate experiences according to whether the data as stimuli is conditioned or unconditioned; in other words, consistent in a rule or bound still in an irregular pattern. It is such an important phase to prepare for analytical observation of results that may include noisy data to be extracted out. It is also important to identify the environment itself as conditioned and unconditioned when the architectural spaces become the issue in this regard. Consequently, to make a sharp distinction among the conditioned stimulus and unconditioned stimulus as well as the awareness about the actions that occurred whether in conditioned or unconditioned environments give strong feedbacks to the rough results to be further interpreted. These modalities can be

seen as essential to further discuss about the associative learning potentials among different sensorial mechanism and systems as well as among multiple agents that can be simulated together in certain time-series. Studying on the image sequences that are taken from Spice Bazaar on the month of February of 2018 as randomly selected different sessions, the study on the visual data set not only aims to get meaningful performance results (and their comparison) of automated neural networks but also advanced machine learning algorithms that are built for the project (Fig. 4). By exploring the potentials of the existing traditional infrastructures of the Bazaar, the security cameras, the project proposes to correlate the self-sufficient materials that are designed as part of embedded computation of the learning environments with visual learning models. The performance results of the regular automated ACF People Detection tool, in that regard, works better in the less crowded hours as in the case of morning session that is taken during 9.00-9.30. In the midday sessions, however, neural network struggles to track all moving people and even perform to find less people than the morning session (Fig. 4). Accordingly, the results that are critically analyzed with the help of data of performance results necessitates to provide solid grounds to develop associative models between tactile sense of embedded computation and the visual recognition models. Thus, it is seen as crucial to embellish the proposed learning environments by some other means such as embedded computation of microcontrollers.

Departing from the singularities of the performative outcomes of the visual recognition toolbox, hence, it is possible to provide a series of utility scenarios of technological solutions with regard to the changing complexity of usage during the day and the technological possibilities and constrains. For instance, the morning sessions can be chased by the visual recognition tools while in the midday session, the various parameters as changing the ratio of performance results can be decided by online data that is acquired through associative models that are correlated on the similar sensorial stimuli.

It is, actually, the case that by training advanced deep neural networks it is also possible to overcome the error correction of the sensorial data, but this can only be seen as one-sided reinforcement to the sensorial infrastructure of the built environment that may necessitate other development models essentially. If the night condition is taken into consideration, it may be a squandering choice to use neural networks that are trained by deep learning algorithms. On the other hand, eliminating all means of sensorial input once again may fall into the similar ignorance of the lack of the robust infrastructural solutions of the traditional environments that Picon warns us. In that regard, when even considering the temperature, noise change or energy usage of the technologically reinforced environments any other security conditions including the concerns over motion recognition, fire and other incidences, the embellishment of the environments with much more basic and yet efficient solutions for simpler cases seem essential to consider.

The particular experimentations on the site, hence, arrives to conclusion just to integrate the cultural and public environment with the performance-oriented[29] means of embedded computation but also as a 'techno-cultural' means to discover the social and even traditional interactions; so as to generate its knowledge source as a virtual data of data of informational transformation.

5. CONCLUSION: THE POSSIBILITIES OF TECHNO-CULTURAL TURN OF THE TRADITION OF ARCHITECTONICS

Necessary to regard the built environment with the new infrastructure, with the new code and specifications, the aforementioned discussions can only caricaturize what the informational and infrastructural transformation mean to the built environment. In that regard, proposing futuristic alternatives can synthesize the sensorial materials by the efficient means of visual and optical recognition. It is possible to talk about, for instance, the new materialities of the state-of-art technologies.

As tried to be implied before with reference to Antoine Picon, self-sufficient nanomaterials are obvious in this case to introduce what can be the next futuristic steps yet with the question of 'What if they also 'sense' and get flexible features about their maintenance?' In other words, it is about further development of hybrid solutions of self-sufficient technologies that can be integrated with the features of nano-controllers and means of visual and virtual data. It is such that nano-controlled processors can also enable to harvest data to decide on the immediate form of the elements as well. Then, it would be possible to talk about the atomic control of information flow from wave and particle interactions, just envisioning for a nano-mechanical computation of nano-electronic computation systems dictating on communicative production/interactive affectation among the different agents. In the place of microprocessors and microcontrollers, it can be suggested that such mind-blowing innovations not only process signal but also base for a ground of interactive communication with environment and with other tectonic and biological agents. The researchers on the development of such technologies say that:

> This novel processing domain of ultra-fast cognitive computing could have numerous applications where quick, temporally precise and robust systems are necessary, including adaptive control, learning, perception, motion control, sensory processing, autonomous robotics and cognitive processing of the radio frequency spectrum[30]

They claim the advantages of neuromorphic signaling of nanophotonic computing as:

> ...we consider the system implications of wedding a neuron-inspired computational primitive with the unique device physics of photonic hardware. The result is a system that could emulate

> neuromorphic algorithms at rates millions of times faster than biology, while also overcoming both the scaling problems of digital optical computation and the noise accumulation problems of analog optical computation by taking inspiration from neuroscience.[31]

The possibilities that are tried to be introduced throughout this discussion, hence, give a chance to develop recognizing the performative and learning systems that are naturally adaptive to circumstances of the built environment. Towards the rising influence of the discourse based upon 'Smart Cities' and 'Urban Computation' the initial measures in the transformation of the built environment implies the particular fringes of a larger change that defines the reality of our everyday life; with the rise of informational grounds of interaction, habits, and modes of usage as becoming the tradition of digital culture of ourselves.

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INTEGRATING TRADITIONS IN THE DESIGN PROCESS AND PRACTICE: CHALLENGES IN HISTORIC CAIRO

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INTEGRATING TRADITIONS IN THE DESIGN PROCESS AND PRACTICE: CHALLENGES IN HISTORIC CAIRO

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Tradition is embedded in the everyday life of people. It is precisely in this lived space where different acculturation attitudes and activities are projected. Historic Cairo is considered the world's largest medieval city where traditions are still alive in daily activities. However, professionals often do not respond appropriately to local traditions. A framework is proposed for the production of the public space, involving all stakeholders. Adopting a comprehensive bottom-up approach can be a useful tool in articulating good practice to assert the identity of the public space that is constrained by the networks of relationships established in historic urban areas.

1. INTRODUCTION: DEBATES ON TRADITION, PROCESSES OF CHANGE AND PUBLIC SPACE

Putting in mind the sense of place that has becoming increasingly blurred in historic areas nowadays, the aim of this research is to develop a framework to include the voices of the local community in the decision making process. The practice of tradition in public spaces is the focus of the investigation. The methodology is articulated in three sections, first the literature review related to insights on tradition; its meaning and evolution through the accounts of several scholars who addressed the phenomena in its various facets. Secondly, the case study of Historic Cairo is introduced; the research is based on materials gathered in 2017 for the preparation of a thesis related to the image of this particular area and the impact of revitalization interventions. These sources were updated and completed in 2020 to focus on the role of tradition. Finally, a decision- making framework is developed to integrate traditional social practices in public spaces of Historic Cairo.

Before plunging into the discussion of integrating traditions in the design process and practice, it is important to understand what is the meaning of tradition. Tradere, which is the Latin root of the word tradition, means to hand on. Many scholars have contributed to the definition of the concept, Edward Shils, the eminent American sociologist, has stated that it is "anything which is transmitted or handed down from the past to the present".[1] In an attempt to explain this broad definition he has added: "as a temporal chain, tradition is a sequence of variations on received and transmitted themes".[2] Actually, the theory of Shils goes beyond the differences between traditions and transmissions, and he also examines, among his various insights and classifications, the duration of tradition and its normativeness. He argues that tradition requires " at a minimum two transmissions over three generations… for a pattern of belief or action to be considered a tradition".[3] Thus, through images and knowledge of the past, the "normative potentialities of past things influence present thinking and action".[4]

Nezar Alsayyad, who had substantially studied the work of Shils, supplements his explanation of traditions by focusing on the evolutionary nature of the phenomena. Alsayyad assures that traditions, especially in the context of globalization, " are never the static legacy of the past, but rather a project for its dynamic reinterpretation in the service of the present and the future".[5] Hence, traditions must be resilient and dynamic to adapt to processes of change in contemporary societies. Even if tangible and intangible traditions are markers of cultural identity and constitute a continuum with a historic past, they must incorporate change "in order to sustain themselves through space and time".[6]

So, the relation of traditions to the present is investigated and opposed to modernity. Hobsbawm and Ranger have examined the concept of innovation and bricolage since the eighteenth century in Great Britain "adapting and regrafting old materials onto older ones". [7] Their seminal book " the Invention of Tradition" assembled essays demonstrating that traditions in folklore, rituals, behaviors, arts and literature have sometimes been recreated to replace superstitions, ignorance and backwardness with progress, scientific thinking, efficiency and common sense. In other terms, the authors argued that this transformation in the cultural system and historic continuity, including practices and beliefs, was the chance of survival and transmission of traditions.

The subject of transmission of traditions brings to the fore the more encompassing notion of nationalism and collective cultural identity. Actually, almost every study in the field of nationalism studies includes accounts of the arguments of the book of Benedict Anderson, which analyzed nations as "imagined communities".[8] By relating political movements to collective culture, he explains that imagined does not mean false or fictionalized, it is rather a created or an abstract thought.

On the other hand, anthropologists such as Nelson Graburn has analyzed tradition through the lens of sociocultural aspects, he has introduced the idea of tradition as a reservoir. He sees tradition as 'a strength to draw upon, a source of historically defined identity, and a source of a sense of safety, specialness, or difference'.[9] He also stress on the fact that the reservoir of tradition is not static. It evolves through activity and attention to maintenance, to face a rapidly changing and homogenizing world.
From the above-mentioned definitions, it is understood that the dynamic and fluid nature of traditions is a fact that has been asserted by many scholars, this dynamism, in a context of globalization, is even a prerequisite to the sustainability of tradition.

It is important to realize that, in the era of globalization and technologies of communications, tradition in historic cities is undergoing a significant transition: some traditional practices are struggling to survive and

other cultural expressions adapt to change. Cultural preservation seeks to validate not only the physical places of historic significance but also the traditions, heritage, and values that provide context to the sites of collective memory.[10]

Hence it is crucial to understand the context within which the design process will take place: this context includes the sociocultural space, in other words the meanings and cultural practices embodied in the urban space, but also all the people and stakeholders involved in the process. This entails an understanding of their social conditions, as the social aspects cannot be isolated from the cultural aspects.
So the present research is concerned with the context of public spaces in historic cities within which cultural manifestations are embedded in the experience of public life, portrayed in the festivals and traditional religious events hosted in its streets and the liveliness felt in the everyday activities of people. The definitions of public space, as a vital component of urban life, have raised the debate regarding ownership, control, access and use. According to Carr et al., "public space is the common ground where people carry out the functional and ritual activities that bind a community, whether in the normal routine of daily life or in periodic festivities", it is "the stage upon which the drama of communal life unfolds".[11]

This is particularly evident in traditional environments where cultural practices and events communicate cultural values held within the community. But it is also obvious in many contemporary public spaces that support this kind of dynamism and provide space for daily uses as well as extraordinary events. In 2011, the events of the 25th of January Revolution in Egypt demonstrated that people appropriated urban spaces and manifested their emancipation defying tight control of the State. The Tahrir Square in Cairo became a space charged with meanings and a carrier of lived collective memory.

Research related to tradition and sites of collective memory can raise important questions about power: who support the notion of tradition? Who defines what is of value as heritage and tradition and what is not and what are the consequences of these definitions in people's lives? This makes tradition a contested phenomenon with different set of values where local, national, and global tensions play out.

2. THE QUESTION OF POWER AND CHALLENGES OF PUBLIC PARTICIPATION IN EGYPT

He who controls the present controls the past and he who controls the past controls the future.

- G. Orwell [12]

This famous quote of Orwell means that if a state controls everything, it can rewrite the past to accommodate it with its notions of the future. Over centuries, it is noted that traditions have exercised power and influence but have been reinvented to serve contemporary agendas. This reality has been revealed by scholars who assert that tradition should be considered as the arena of mediation between the power of local or national culture and other groups of influences within that society. Within the public realm, it is clear that the systems of power and money, in the hand of the government and of large-scale developers, that are mainly interested in maximizing returns on their investments, have often created public spaces without paying attention to the socio-cultural context.

Being able to spatially express traditions within the design of public space requires an understanding of the social and cultural practices of the users of the space. These public spaces become more resilient if the users are able to take part in expressing this themselves through active civic participation and are able to engage in a communication loop between people, their ideas, and the public realm. The importance of public participation and this issue related to balance of power has been examined by many scholars; highlighting the essential contribution of "multiple voices to validate master plans".[13]

According to the Egyptian Building Code n.119 of 2008, civil society is granted statutory rights to participate in decisions regarding Strategic Planning Schemes of their cities but the problem is that different organizations and institutions do not interact gracefully with one another to activate these regulations. The recurrent practice is that people are not even informed of the changes and developments that occur in the public realm. Decisions are taken, projects are developed and local communities are not engaged in the process and are confronted with facts on the ground affecting their everyday life.

The case of Historic Cairo can clarify the challenges faced by planners in their quest of social justice for local communities and their aim to strengthening the sense of place, which cannot be possible unless a bottom-up approach is adopted. The first step of this approach is grasping the perception of people in respect of the interventions on their local built environment.

The methodology to integrate local traditions in the design process begins by understanding the local community's perspective, which is based on information collected during focus groups discussions following a qualitative approach. Four focus groups including residents, shopkeepers and workers representatives were conducted between April-May 2016 within a part of a thesis conducted by the researcher [14] in the areas of Al-Darb Al-Ahmar and Al-Khalifa.[15] Each group varied between 6 to 8 participants who were selected to be representative of different age groups, gender and activity. Each session lasted an hour and was sound-

recorded for more in-depth analysis. The researcher posed a series of questions concerning the current image of Historic Cairo and the changes in image through time, the development projects and the attitude towards them. Another survey was conducted during March-April 2020 in the area of Al-Khalifa and Al-Hattaba [16] and triangulation was used to validate the results obtained in 2016. The exploration about tradition and its integration, within the studied areas, was implicit in the discussions, even if interrelated environmental and economic issues seem to prevail at the top of priorities of the local community.

3. THE PERCEPTION OF INTERVENTIONS IN HISTORIC CAIRO: THE LOCAL COMMUNITY PERSPECTIVE

In light of the above-mentioned literature review, the question of integrating tradition seems to depend on the extent of participation of the local community and the capability of the planning team to develop a framework that would grasp the particularities of the sociocultural space. The problem of Historic Cairo is mainly complex due to the three interest groups who are involved: first, the local community who is interested in using the area in its traditional lifestyle; second, the worldwide community represented in organizations and individuals and whose main objective is to safeguard the international cultural heritage and last, the Egyptian government organizations in charge of main decisions in the area and its main objectives lie in the tourist-oriented activities.[17]

To ensure the sustainability of the "lived" heritage sites it is important to understand the impacts of various development patterns that occurred within the site on the perceived image of the place. In the case of Historic Cairo these enhancements focused on heritage through the regeneration of paths, edges, districts, nodes and landmarks.[18] The Urban Regeneration project of Historic Cairo (URHC) also developed some useful promotional tools in forms of logos, signage, and banners to be used for the site communication. Examining residents' attitude towards the regeneration interventions is an important step for the determination of local policies, planning and management of the site. Local people's negative attitudes towards development projects would prove to be more or less obstructive. On the contrary, their positive attitude can contribute in the creation of their place image and in return contribute to positive behaviors such as civic pride, sense of belonging and supportive behavior. Here the importance of the bottom-up approach is clear; the role of local community in the assertion of the place identity is crucial to deliver a true sense of place. Thus, the interventions must link between the values of the past and the values of the future, including the popular culture and everyday activities. The understanding of these values will rely on the degree of inclusion of the local community.

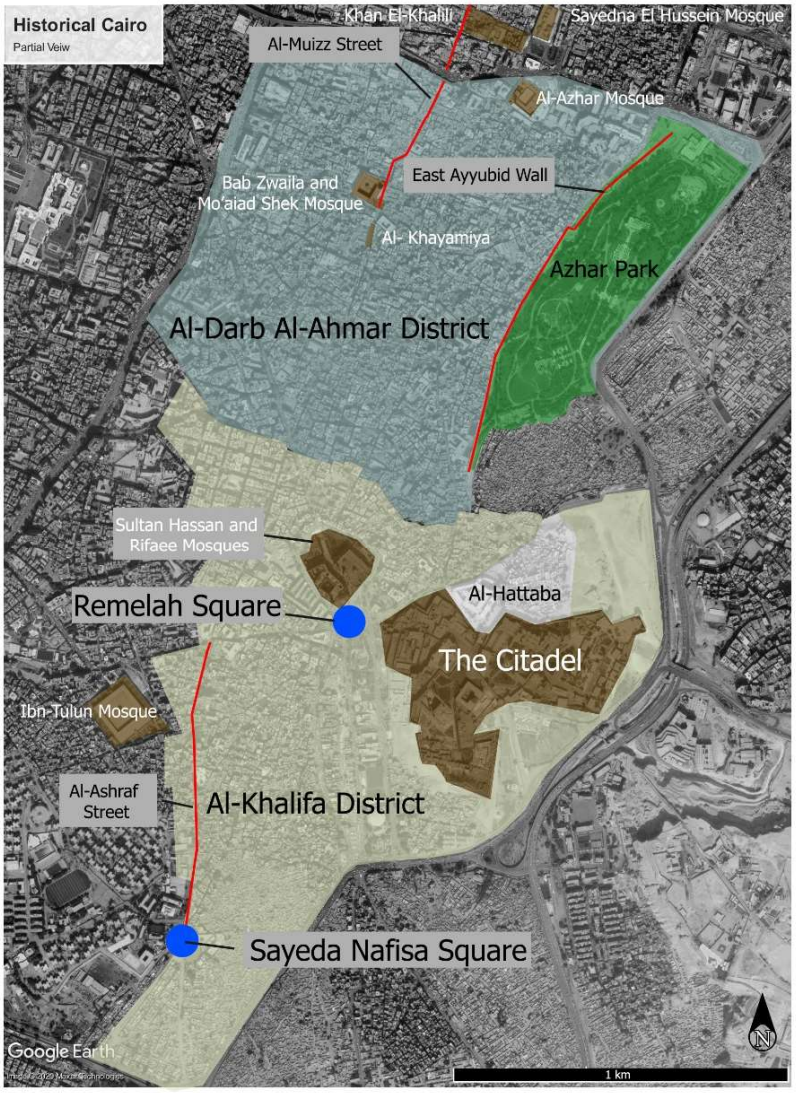

Fig. 1: A map that depicts the different areas of Historic Cairo covered by the research, (Source: the researchers, based on Google Earth).

Historic Cairo lies within the center of the modern urban areas of Cairo. Its location in the center of the Metropolitan Cairo has made it vulnerable to the challenges faced by the city. Since the inclusion of the site on the World Heritage list in 1979, the area witnessed a series of interventions to confront the different problems threatening the city. These interventions started with mere conservation of the existing historic buildings and monuments and developed into more wide approaches of urban regeneration. However, the deterioration of specific zones of Historic Cairo continues and accelerated after the 1992 earthquake.[19] Many attempts to include local residents in the regeneration process were undertaken from 1980 to this day. This shift in the perception of heritage moved towards the consideration of the urban morphology of the built environment encompassing the monuments and its surroundings including the social, economic and cultural features. But many of the goals set out in the programs were relegated in the ranks of wishful thinking, except

for the interventions of the Aga Khan Trust of Culture (AKTC) in the district of Al-Darb Al-Ahmar and the community-oriented activities organized by "Megawra built environment" in Al-Khalifa district.[20] So there is a lot to be done as many of the old districts are still suffering from major neglect and lost their ability to sustain themselves both socially and economically (Fig. 1).

So as an attempt to balance power in the process of regeneration, voices of the local community were heard, documented and assimilated; seeing opportunities is one of the most important part of the planning work, since this can lead to successful projects and dynamic collaborations. But understanding constraints and challenges is also indispensable to avoid foreseeable setbacks and to figure out ways around barriers. Thus, in order to integrate the expressions of tradition in the design process and practice, a holistic approach, including the needs and priorities of the local community, must be adopted. These priorities are actually a reflection of everyday life of people. From the input of the four focus group discussions, the residents' feedback was assimilated and the following priorities were identified:

3.1 ARCHITECTURE AND URBAN ENVIRONMENT

The respondents showed enthusiasm towards the urban and architectural conservation projects that took place in the area that included Al-Darb Al-Ahmar and Al-Khalifa district, stating that the area witnessed positive changes since the implementation of these projects. These positive changes were in housing and facades restoration, monuments conservation, street paving and the creation of recreational areas, public squares and car-free zones. Positive changes were ascribed to the AKTC [21] project in Al-Darb Al-Ahmar and different initiatives of organization such as Megawra (initiative named Athar Lina)[22] in Al-Khalifa district. Residents of Al-Khalifa talked about how the rehabilitation of old monuments and their reuse to provide services for the neighborhood and how it could make a difference to them. *'This place used to be a dump area before they came, now there are really good activities for everyone, the kids enjoy going there'* said one of the shop owners in Al-Khalifa street (Participant 6 Focus-Group 1).

May Al-Ibrashy [23], who coordinates the initiative of Athar Lina (run by Megawra-Built Environment Collective), conceives the conservation process as a driver for community development. She states: "We are working with governmental bodies in a historic neighborhood and we are keen to establish modalities of citizen participation in heritage conservation based on a vision on heritage as a resource, not a burden".[24] The initiative works in partnership with the Egyptian Ministry of Antiquities and Cairo Governorate.
The Athar Lina initiative became intermediaries between Al-Khalifa residents and the government; they transmitted the voice of the community for the rehabilitation of Al- Shurafa Mausoleum in Bab El Wadaa Street in Al-Khalifa. The Mausoleum used to host daily visitors and hundreds of them on religious occasions.

The tradition was that people reunite around the mausoleum and fly coins and banknotes inside, along with notes with prayers. The intercession of the saints, members of the Prophet's family and founders of Sufi brotherhoods, buried in Cairo or in the provinces, plays a central role in Sufi culture.

Sufi Muslim *moulids* not only venerate the prophet Muhammad and his descendants but founders of Sufi orders. In Egypt there are several Sufi orders (*tarikas*), each is headed by its own sheikh. The Supreme Council for Sufi Orders supervises these orders and their activities, and is controlled by the State. Hence, Egypt is the only Arab country where the existence of mystical orders has a very precise legal basis.[25] For the city of Cairo and its immediate suburbs alone, there are twelve mosques dedicated to descendants of the Prophet, two to great doctors of the Law, and fifteen to famous Sufis. The most veneered saints in Historic Cairo are the descendants of the Prophet: Sayedna Al Hussein, his sister Zaynab, Nafisa and Ruqayya whose mausoleums (or cenotaphs) dominate the Cairene 'pantheon' of Muslims saints or *Shurafa.*[26]

In Al-Darb Al-Ahmar, the urban interventions also played an important role in increasing the place attachment and restoring faith in the area and specifically for the young generation; a young participant explained: *'I see Al Azhar Park as a project that restored our faith in change. Before the project of Al-Azhar Park, this area was surrounded by a dump mountain and we were afraid to walk there after sunset, it was dark and unsafe' We never imagined that anything will change. When we started to see the project evolving we become more attached to the place'* (Participant 2 Focus-Group 3). Another participant in the focus group with residents of Al-Darb Al-Ahmar stated that this district was not on the map of Historic Cairo before the project of Agha Khan but was perceived by most of its residents as a slum area.

In Al-Muizz Street, renovated and pedestrianized by the Supreme Council of Antiquity (2009-2012), a real appropriation of the place by the local community occurred. One of the participants stated: *'I did not use to go to "Al-Muizz" for recreation, but my school was near, so I used to pass by it everyday. Now I like to go for leisure the street has become more beautiful, many monuments were unknown to us and were closed. We really see it a positive project, it is a good step from the government to give attention to these places. Every time a mosque or an old building is restored I feel relieved, and many people go to visit it from the area'* (Participant 2-focus group 2).

During the discussions, it is noted that residents are well aware that the spectacular monuments with their distinctive Islamic architecture and the spiritual, religious and cultural activities related to them, are the most valuable assets of the area. The unique ambiance of Historic Cairo was also mentioned: '*Historic Cairo has a special spirit, it is different than any other place; the people, the sounds that you hear in the street and the building facades. It is*

an area full of monuments, which are very noticeable and unique here. This area is different than any other low-income district because of the monuments' (Participant 3-focus group 2).

3.2 SERVICES AND INFRASTRUCTURE

Services and infrastructure are perceived as the less appealing image attributes of Historic Cairo, the majority of respondents described the traffic as one of the major problems facing the area and that this problem has seriously increased during the last thirty years. The lack of parking areas and the proliferation of tuk-tuks and street vendors have a very harmful impact on the image of some streets that have become less walkable and less safe for children. One of the participants said: *'after the Revolution, there is a chaotic situation in the area, and no laws are respected, and many people use the street to store old cars. Everywhere, the cars get inside the harras (alleys) and park in front of the houses, which has made movement difficult for us'* (Participant 2-focus group1).

Another major point is waste management; most of respondents mentioned that this problem remains unsolved since years until present. Low connectivity with the rest of the city, poor accessibility, noise pollution especially among major commercial streets and increases in utility prices were also cited.

3.3 SOCIAL CHANGES AND JOB OPPORTUNITIES

The residents of Historic Cairo signified themselves among other inhabitants in Cairo with the strong social bonds; a housewife among the participants stated: *'There is something good about it, the social bonds here are very strong, we are like brothers and sisters. We live here our husbands work here, when we think about getting married we marry from other families in the area'* (Participant 5-focus group3). When asked about the effect of interventions on social problems the responses varied between positive and negative impacts: the positive ones included the transformation of some crime zones into a safer environment and specifically the area of "Al-Batneya", in Al-Darb Al-Ahmar, that used to be a drug-trafficking area. As for the negative effects, noted are the rise in property prices, the lack of activities targeting youth, and internal migration from other parts of Cairo. Another point was perceived as a threat on the existing social bonds between neighbors, some of the participants stated that new residents have come from different backgrounds and were ignorant of the core social values of Historic Cairo.

A high number of respondents complained about their low-income status and showed more concerns to job opportunities and affordable housing than heritage conservation and building restoration. Unemployment was perceived by many residents as one of the major challenges facing the historic town especially after the flow of tourists went down significantly. Many families in the area were highly impacted groups such as shop owners and artisans. As manufactured goods replaced handmade traditional utensils and skills were in danger

of being lost, they decry the fading of the traditional crafts in favor of Chinese cheap products that dominate the current market.

Nevertheless, the creation of employment opportunities through vocational training introduced by the AKTC project in Al-Darb Al-Ahmar was a very important positive effect cited. Within the focus group sessions, residents stressed the importance of creating new opportunities in artisanal workshops to help families out of poverty. The participants stated the importance of breathing life back into dying traditional handicrafts of Historic Cairo such as carpentry (arabesque) and traditional woodwork, the Mameluk tradition of inlaying brass with silver or gold, copper works, enameled glass, traditional jewelries, carpets, home accessories, embroidery and Khayamiya.[27] Such skilled techniques are not documented in books, rather, they are handed down from one generation down to the next.

A woman who resides in Al-Hattaba comments on the workshops organized by the Megawara (Athar Lina) project saying: *"With the new project, they teach us a new kind of Khayamiya. We are very glad that someone is taking care of us and is looking to enhance our skills."*[28] (Fig. 2).

Fig. 2: Al-Khayamiya Street in Al-Darb Al-Ahmar, a view taken during the lockdown of April 2020; the rich architectural heritage is unchanged but the closing of the traditional commercial activities has a great impact on the vitality of the street and its sense of place (Source: the researcher).

3.4 CULTURAL ACTIVITIES

The respondents of the focus groups praised the restoration and conversion of the various old monuments. They mentioned that the cultural centers have provided a variety of activities and events. Nonetheless, some participants criticized certain events describing them as targeting foreigners or elite Cairenes. They also mentioned the importance of "*Al-Moulid*" but deplored the mismanagement of such events and the mess created by the high numbers of people attending the event. During the celebration of *moulid* of Sayidda Nafisa, for example, the urban space is transformed: with traditional tents and colorful carousels for the children. Festivities reach their highpoint after sunset and groups wait their turn to deliver prayers at one of the many shrines that scatter the streets of the area (Fig. 3).

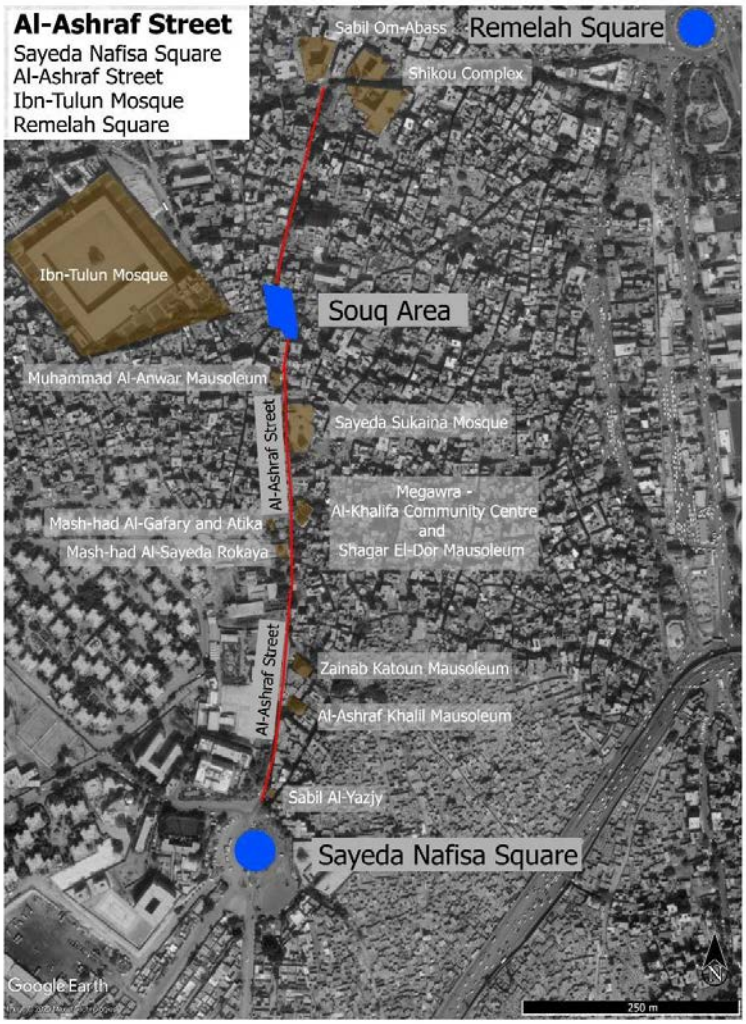

Fig. 3: A map depicting Al-Ashraf Street in district of Al-Khalifa, where many mausoleums and religious complexes are concentrated. (Source: the researchers, based on Google Earth).

In 2012, Megawra approached heritage using a bottom-up method in Al-Khalifa district, they spent six months conducting workshops and discussions with the area's residents about how they relate to the sites. Al-Khalifa Street was historically called *Al-Mashahid* (meaning the visions) as it includes several mausoleums, which are revered places, each mausoleum was built to commemorate the appearance of the holy figure to the founder of the shrine in a vision. About this project of urban renewal in Al-Khalifa, May El Ibrashy states "we cannot view them as disconnected from everything else that's happening in the neighborhood".[29]
In Al-Hattaba, the challenges are also overwhelming. The neighborhood houses about 500 families in a dire state of precarity. The area is considered a buffer zone of the historic Citadel and at the same time, the Informal Settlement Development Fund administratively categorizes it as an informal settlement. Consequently, according to local authorities, it is in need of re-planning: in other words: eviction, demolition, and threat of displacement for its local community. The testimonies of the local community show the attachment of people to their place. Some of the elderly residents of Al-Hattaba often evoke the Holy Carpet (*Mahmal*) ceremony that used to pass by a street that lies within the border of the area.

3.5 TOURISM

The political turbulence following the 2011 Revolution caused the unemployment of a large number of workforce involved in tourism activities. A bazaar owner in Khan-al-Khalili has brought up another phenomenon '*the nature of tourists changed; now they are uneducated, they do not really appreciate the culture of the place and have a low purchasing power, we honestly do not want them'* (Participant 2-focus group 2).

Nevertheless, some respondents had a different point of view; they admitted that the interventions opened channels for economic developments in the area. A carpenter who owns a workshop in the area stated that the projects introduced them to Egyptian rich customers: *'Now many of them appreciate our products and are more aware of certain traditional crafts like tent making (Khayamiya) and Neo Islamic furniture'* (Participant 1-focus group 2).
In Al-Hattaba, the residents have stressed on the significant impact of closing the Citadel gate that used to link the neighborhood to the historic monument. The local residents used to sell their handicrafts goods to the tourists who were passing by the streets of Al-Hattaba before entering the Citadel complex. After the closing of the gate, many shopkeepers lost their major source of revenue.[30] This demonstrates how a planning decision from the authorities can have a great impact on residents' everyday lives.

3.6 HOUSING AND UTILITIES

Common problems related to the housing stock of historic areas of Cairo concern the limited access to credit, the widespread insecurity of tenure and the absence of essential community facilities and services. On the other hand, in Al-Hattaba, the housing stock is deteriorating severely because of the jurisdictions. In fact, Al-

Hattaba has been classified as a level two informal settlement, which means that it is an informal settlement in need of re-planning. The result of this administrative category by the Informal Settlement Development Fund entails eviction, demolition, and removal.[31] In addition, the Law no. 117 of 1983 (As Amended By Law No. 3 Of 2010 Promulgating The Antiquities' Protection Law 2010), states that any form of intervention (maintenance, restoration, or even tree planting) cannot occur without permission from the Antiquities authorities.[32] In Al-Darb Al-Ahmar and Al-Khalifa, the government controls rental prices of old buildings to enable the low-income families to afford housing rents. However, this control does not apply to new buildings, so many landlords have demolished old buildings and replaced them with unaffordable high-rise apartment blocks disregarding height regulations and the character of the area. Interesting to note is the attachment of people to home ownership: a housewife stated during focus group '*I prefer staying in a deteriorated house which is mine, instead of living in a new house that isn't mine*' (Participant 6-focus group 2).

3.7 EDUCATION AND VOCATIONAL TRAINING

Residents perceived education facilities within Historic Cairo as inadequate and perceived this poor education as a main reason behind unemployment. Participants stated that education does not offer anything that is useful for the new generations and stressed for the need to provide more vocational training centers and technical education schools. They also stressed about the need for innovative strategies for traditional crafts, stating that they face a major problem in marketing their products because they are unaware of the means of marketing (Participant 4-focus group 1).

3.8 THE ROLE OF THE MEDIA

The representation of Historic Cairo in literature (Naguib Mahfouz among many others), and more recently, TV programs, series, songs, movies and the social media have played an important role in a better perception of the place architectural, aesthetic and historical value. The streets and *harras* (districts or quarters) of Historic Cairo have been the scene of several series and movies and many celebrities have come to perform or attend events. The local community feels now that the place is valued: this improved local community's sense of pride and belonging to the place. In Al-Hattaba, for example, a song untitled 'Al-Hattaba *Enawni*', meaning Al-Hattaba is my address, has become a slogan in the area to express the protest of the local community against the threat of demolition of the area and the main laws and jurisdictions of eviction associated with its classification as an informal settlement despite its heritage value.

3.9 INTERPRETATION OF FINDINGS

The main lines of actions pointed out by residents revealed their concerns and the most pressing needs of daily activities. The majority believes that there is still a need for more developments to reverse the poor

images associated with these areas of Historic Cairo: poverty, run-down houses, illegal construction practices, disorder, neglect, lack of services, problems related to traffic congestion, pedestrian safety, waste management and noise control. The results confirm that people are looking forward to changing socio-economic current conditions of these heritage areas. So, the importance of transmission of traditional crafts, vocational training for the maintenance of craftsmanship skills, job-creation, business growth, and the stimulation an entrepreneurial culture, within the area, must not be undermined.

The focus groups interview thus helped in developing a deep understanding of the holistic changes that occurred in the urban landscape of Historic Cairo and the causes behind these changes. It is clear that all the challenges facing the local community in Al-Darb Al-Ahmar, Al-Khalifa or Al-Hattaba are similar. Residents have a strong attachment to their place and they are bonded by a collective memory but the dire environmental, economic and legal issues and pressures are overwhelming and difficult to bear.

4. INTEGRATING TRADITIONS IN THE DESIGN PROCESS AND PRACTICE: THE FRAMEWORK

In Al-Darb Al-Ahmar, the Aga Khan Trust for Culture (AKTC) brought together institutional partners, local non-governmental organizations, municipal institutions, neighborhood representatives, local businessmen and people living and working in the area. The aim was to develop a masterplan grounded in the needs of the local community. For the project of revitalisation of Al-Darb Al-Ahmar to have a meaningful and long-term impact, local interest groups, public institutions, and donor organizations had to work together. One of the key aspects of this successful program was a strong coalition between different players of the socio-economic development. To raise raising family incomes, the Micro-Finance Program located in the area was established. Access to credit enabled men and women of the old quarter to expand their small businesses and existing workshops. It was also possible to develop vacant commercial properties and business start-ups.[33]

After examining the challenges faced by decision-makers and practitioners in the process of regeneration of historic cities, as explained in the previous parts of the present research, it is clear that one of the main problems in Historic Cairo is to grasp the complexities related to governance of the urban space, which extends over several different jurisdictions and several layers of local authority. Physical changes, but also permanent, repeated- temporal and temporal changes in the urban realm must be considered in the design process. Users patterns and the different forms of collective appropriation of public spaces by the local community often defy authority, especially markets and workshops, as well as traditional, religious and cultural manifestations, such as *Moulids* and wedding ceremonies. In order to integrate tradition in the production of the public space, including tangible and intangible heritage, and respond appropriately to

cultural manifestations of the local community, public participation is crucial, as tradition cannot be separated from its caretakers: the residents.

From the earlier interpretation of findings dealing with the priorities from the perspective of local people living in Historic Cairo, it is understood that any intervention in the urban context, especially within a heritage site, is a tangled web of complex issues. From the insights provided by the local community of Historic Cairo, it can be deduced that some people are too often marginalized from the design process. Their needs and aspirations are negated, or silenced in the interest (commercial, religious, political) of those in power. To offset this imbalance of power, a "Planning Unit" is proposed in this research: its mission is not only to mediate between the community and different governmental bodies, NGOs, local structures and institutions concerned with the revitalization program. In this Framework the socio-cultural dimension is engineered in the planning/design process and the community is actively involved in the decision-making process. The aim is to integrate the familiar, the popular culture, everyday landscapes and activities in the process to consolidate the local identity and preserve traditions, which are grounded, in everyday life in leisure and work practices.

In the Framework proposed, the aim is to build solid administrative channels between all partners in order, so public participation is facilitated and institutional mechanisms are revised to bridge the gap between legislative policies and residents needs and priorities. This can be achieved through focus group sessions, where the 'Planning Unit' is not just a facilitator. The aim is to make the other design participants and practitioners aware of the feasibility and implications of the various design decisions discussed, especially on the cultural context. Secondly, mobilizing local resources by providing poverty-reduction measures, vocational training and employment-generation programs can vitally help recreating the traditional expressions that are threatened by homogenization and consumerists' developments.

The difficulty lies in harnessing underused resources, responding to people needs and trying to reach a consensus between different parties that often have competing requirements. The local resources, in Historic Cairo, include the skills and know-how of local artisans and also the vacant lots available, garbage dump sites (that can be cleared), and the ruined and abandoned buildings that can be rehabilitated in the area, which can provide for the steady demands for services in the area. So it is fair to assert that the main priority now is to lay the ground for an integrated system that efficiently links community socio-cultural needs with the urban revitalization initiatives of the area (Fig. 4: The proposed Framework).

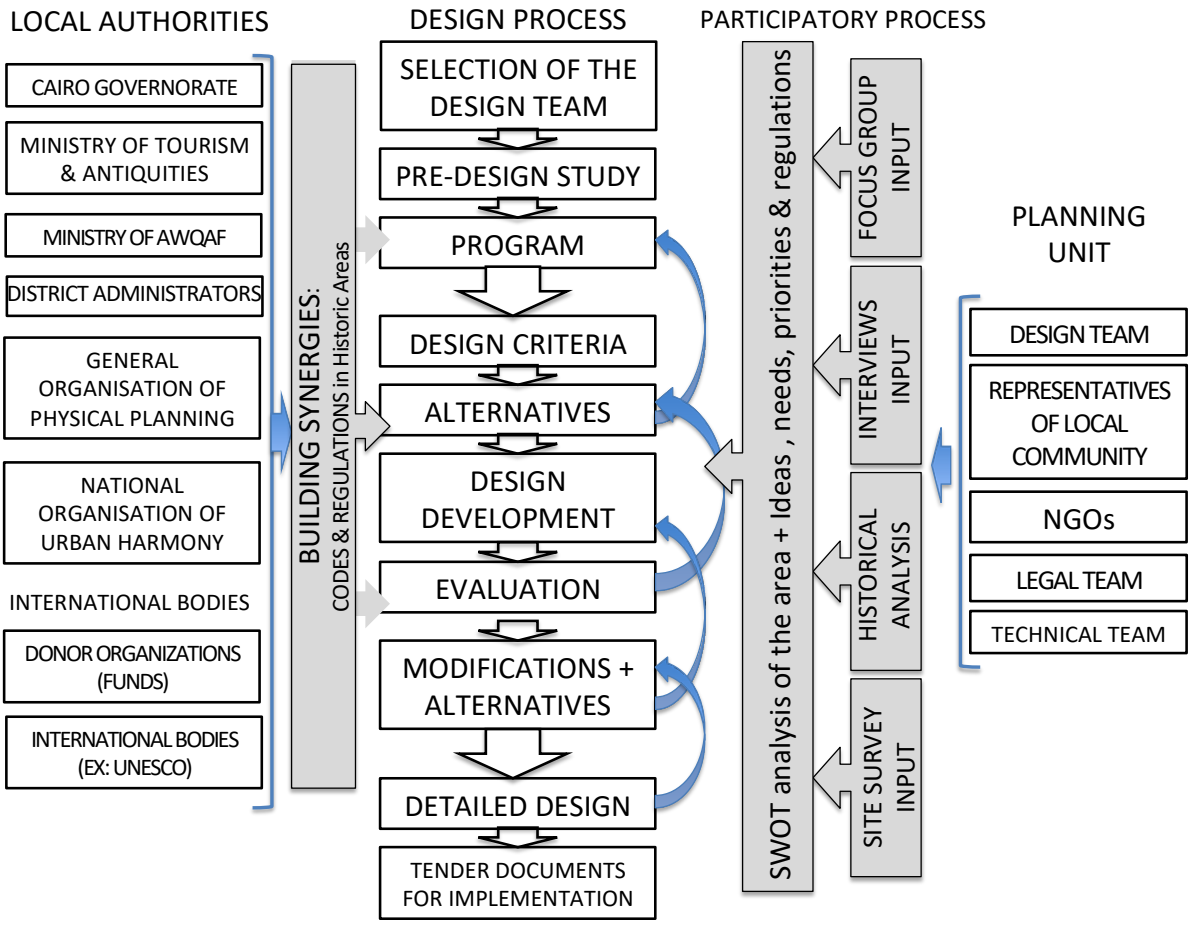

Fig. 4: The proposed Framework of the design process in public spaces of Historic Cairo integrating the public participation process and all concerned actors. (Source: the researchers).

The legal team that works within the 'Planning Unit' provides the design team and participants is the link with Local Authorities and International bodies to engage negotiations on the jurisdictional level. During focus groups and discussions with different actors, dominant and recreated traditions deployed in the making of space and invoked by specialists, residents and artisans can be asserted. The discussions can include: which narratives become privileged in spatial practices and to what end? What are the politics of choosing traditions, or transmitting them and to whom?

During the discussions within the proposed 'Planning Unit', local residents, artisans, shopkeepers and visitors of the area should explain how traditions are manifested in space and time: it is important to consider here which versions and particularities of tradition are anchored in these areas of Historic Cairo. How can these cultural practices be rearranged so that consequently traditions be preserved, and reconstructed in public spaces? The first step in the design process is thus to identify the different stakeholders and actors that will be included in the decision-making process, namely the local authorities of Historic Cairo: Cairo Governorate,

Ministry of Awqaf, Ministry of Tourism and Antiquities, [34] district administrators, the General Organization of Physical Planning (GOPP), the National Organization of Urban Harmony (NOUH)[35] and other concerned ministries. Besides, international development funds non-governmental organizations; development institutions and donors must also be actors of the process. Building synergies between these different entities may be the most challenging part of the process. On one hand, the 'Planning Unit' that gathers all the local community representatives with the design team, develops the SWOT [36] analysis, the ideas, needs, priorities, and technical and legal constraints. And on the other hand, the partnership between the different governmental entities and international organizations, can grasp the different urban dynamics controlling the built environment of Historic Cairo.

As seen in Fig. 4, the different phases of the design process: from the selection of the design team, pre-design study, program, design criteria, alternatives, design development, evaluation, modifications to the detailed design and tender documents for implementation, occur in an iterative, incremental, and collaborative approach. Cycles build the appropriate links with the broader environment and a continuous process in which each phase provides the foundation for the next. Hence, the Framework allows adjustments to better achieve the desired outcomes and improve the interventions. All these phases of the design process interact as a structured approach with information flowing from different partners by a continuous feedback loop from the participatory process and Local Authorities to integrate cultural values in the practice and design process of urban spaces of Historic Cairo.

5. CONCLUSIONS

Within the areas studied in Historic Cairo, the closely-knit community of residents, small shopkeepers and artisans expressed positive attitudes towards the interventions, appreciating gathering in refurbished public spaces. The quality of life in these areas, which has improved after the regeneration interventions, is then largely determined by their opportunities to appropriate public spaces. This appropriation of the local community of their environment has strengthened their attachment to the place. The satisfaction of belonging to the place is a strong bond, which reinforces interconnections and increase commitment among community residents and artisans. It is also a significant motivation to stay, invest and grow different activities, which constitutes a major asset for the future development of the historic area. So the concept should be broadened beyond just physical upgrading of places to also include raising human and social capitals.

The impact of jurisdiction related to conservation areas of Historic Cairo and its 'Buffer zones' as specified by the laws, as well as the legislation related to Informal areas, which threatens the residents of eviction are also

significant challenges that must be met in these historic urban environments. These laws must be revised to protect the traditional urban fabric and maintain the residents and artisans in neighborhoods such as Al-Hattaba. During the discussions, it was possible to grasp the complexities related to governance of the urban space, which extends over several different jurisdictions and multi-layered governmental and local authorities. Urban projects operate as part of a broader system and involve high degrees of uncertainty. By using an appropriate people-centered approach, the design team can adapt its proposals to different needs and constraints, and meet the objectives. Designers and planners can integrate formal and informal uses of public spaces; places of conviviality, where community events are held, and where permanent, repeated- temporal and temporal activities change in the urban realm.

The Framework proposed, designed to be consistent yet not restricting, is thus conceived as a platform, a space for dialogue that aims to reach a consensus capitalizing on the site's unique potential, supporting and validating traditional culture. The role of planners, designers and decision-makers is to use this tool within the regeneration strategy to make use of the place cultural assets and fit them in one narrative. The multiple voices integrated since the inception of the process until the implementation validate the plan and legitimize the decision process.

Decision–makers should consider this bottom-up approach as an opportunity to inform and guide the local community and obtain input from them at the same time. Thus, the content of the focus group discussions serve as the incentive for initiating questions and discussions. People become partners who assist the planners and the government in the decision-making process; this calls for a change in mindsets and the acculturation of the local community, the designers and the administrators. Hence, each group can assimilate the culture and interests of the other. Design, which is subject to vision and interest, is a creative activity that accommodates varying views on the interactive relationship between people and their context.
In different areas of Historic Cairo, people have shared spatial and temporal experiences and events over centuries. The analysis pinpointed how the whole area and its residents interact with the proximity of monuments and how their histories intermingle, this is why, reconnecting the residents with their monuments bearing the names of long-dead rulers and saints, is so important. These monuments come alive in oral histories of residents, who often talk about the dead and invoke their blessings. Public spaces in these areas, whether they are local markets, coffee shops or larger spaces that accommodates events such as *Moulids* are focal spaces that residents, artisans, tourists and people from adjacent neighborhoods enjoy and value. These spaces, that embody the sense of place and collective memory, should be preserved, continued and enhanced to maintain informal contact and community life. So planners should work out ways to improve their accessibility and enable pedestrians and vehicles to co-exist in comfort.

Through history, given that tradition was not always recorded in medieval communities of Historic Cairo, and depended, for the most part, on oral narratives, it is difficult to imagine that these traditions progressed without change. In fact, with the exploration of nowadays popular culture and everyday life of local communities in Al-Darb Al-Ahmar, Al Muizz street, Al-Khalifa, or Al-Hattaba, as seen through this research, it is clear that cultural identity is dynamic and fluid. The discussion with people and the survey visits showed that people make and remake connections between the past and the present, between the local and the global, between the everyday and the extraordinary. For the local community, the area holds a high economic value with the presence of tourism, traditional crafts and thematic markets. These crafts are seen as carriers of culture, which are evoking traditions and living culture and people are well aware that combining the spirit of innovation with the local culture is the only way for a sustainable future. The discussions also showed that local artisans encourage the presence of vocational workshops for the continuity of their traditional handicrafts and that they stress on the importance of transmission to the youth, even teaching them about new techniques and new materials. Local NGOs have worked with them to develop new articulations of practices to establish a continuum with traditions and promote touristic and economic activities.
Each generation will have to rediscover tradition for itself, finding in it; its values and its strength, and bringing new meaning to resist homogeneity and fading of place identity. A creative process for the reinterpretation and reframing of historical and cultural meanings would revive public spaces in historic cities, in this time of cultural shifts, to fit new circumstances and challenges.

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[15] Al-Darb Al-Ahmar is a vital old quarter within the boundaries of medieval Cairo, its significance lies in the concentration of historic heritage along its streets and its authentic closely-knit urban fabric. Al-Khalifa district (and street) are located in the southern quarter of Historic Cairo.

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[18] An approach based on Kevin Lynch's five elements forming the mental map: paths, edges, districts, nodes and landmarks, explained in his seminal book 'The Image of the City' published in 1960.

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[20] Megawra is an architectural hub a space for holistic debate on architecture and urbanism with a focus on it as art, theory, praxis and cultural heritage and its role in promoting sustainability and social responsibility in the built environment.

[21] The Aga Khan Trust for Culture (AKTC) focuses on the physical, social, cultural and economic revitalization of communities in the developing world. It includes the Aga Khan Historic Cities Program.

[22] Athar Lina (Heritage is ours in Arabic) is an initiative created in 2012.

[23] May al-Ibrashy is an architect with 25 years of field experience in conservation and heritage management in Historic Cairo. She is currently founder and chair of Megawra-Built Environment Collective, a twin institution consisting of Egyptian NGO and consultancy working on issues of the built environment.

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[34] The Egyptian ministries involved in the regeneration projects of Historic Cairo are: the Ministry of Awqaf, which is in charge of religious endowments and all new and historic mosques in Egypt and the Ministry of Tourism and Antiquities: on December the 22th, 2019 the two ministries of Antiquities and Tourism were merged into one ministry.

[35] The National Organization of Urban Harmony is affiliated with the Ministry of Culture to promote the aesthetic values of urban spaces in Egyptian cities.

[36] SWOT stands for Strengths, Weaknesses, Opportunities, and Threats, and so this analysis is a technique for assessing a current situation and develops a strategy.

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REVAMPING GERMAN EDUCATIONAL FACILITIES INTO COMMUNAL CENTERS AND THE ROLE OF THE ARCHITECT

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REVAMPING GERMAN EDUCATIONAL FACILITIES INTO COMMUNAL CENTERS AND THE ROLE OF THE ARCHITECT

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The German educational system recently underwent substantial changes initiated by new political programs. Based on young families' needs for spaces to accommodate their children while pursuing their careers, the government started a series of transforming existing buildings and also constructing new ones. Both architects and policymakers are aware that this method of alterations should definitely include the local communities in the process of decision-making. Through discussing some projects handled by our office, this paper explains the process undertaken by the triangle of local communities, authorities, and us as architects in order to realize the new needs of the society.

1. INTRODUCTION

> Our opportunity, as designers, is to learn how to handle the complexity, rather than shy away from it, and to realize that the big art of design is to make complicated things simple.' Tim Parsey[1]

The German educational system recently underwent substantial changes initiated by new political programs. One of the main concerns of those programs is to target the German social structure through complex transformational series of existing buildings or even constructing new ones. That being the case, architects nowadays are faced with new challenges and additional demands regarding their duties and skillsets. Both the authorities and architects are aware that this method of alterations would not be complete without including the local communities in the process of decision-making.

Reflecting on the needs of the community as a pressing priority, the German government followed a policy of offering extended childcare services for working parents in the past fifteen years. This initially started with a program that offers young parents the chance to take time off work for up to fifteen months after the birth of their child. The program specifically encouraged fathers to use this opportunity and support redefining parental roles within the German family' structure, and also to enable both parents to equally develop a career. In order to realize this strategy, the government granted every family the right of a space for their child at a daycare. This policy caused a booming establishment of new nurseries, kindergarten, and schools that are largely funded by the German government itself.

A step forward in supporting young families, the chance to leave their children in schools before and after the regular school hours was offered to support many parents to make advances in their careers. In order to create enough places for those children, local communities were assigned by the German government to provide enough facilities and remodel many existing buildings to accommodate the increasing numbers of

applicants. In general, school facilities befit a variety of functions than just education, for example elections, community gatherings, celebrations, and regular meetings of local politicians. This escalating program of reshaping the function of childcare/schooling facilities obliges members of the local parliaments to define specific concepts for their proposed projects in order to get the required funding and adequate finances. This paper explains the process undertaken by the triangle of the local communities, the parliament representatives and the architects in order to realize this typology of projects. Through presenting four projects of which our office has handled during the past ten years, we aim to highlight the approaches involved in mediating between the different stakeholders along the process. The paper also highlights the different mechanisms and the new challenges that are shaping the role of the architect nowadays in times of socio-political awareness.

2. LITERATURE REVIEW

Many researchers and scholars talked about the importance of family structure in achieving healthy urban developments. In Europe after the 1960s a noticeable demographic transition was evident, and the normal family pattern lost its popularity with a significant decline of marriages and births rates. Cohabitation became more popular, and an increase of single working parents took place[2]. The German sociologist Hoffmann Nowotny hypothesized the family's form which would best meet the requirements of the individualized postmodern societies of the West as unmarried, cohabiting couples who might be sharing a child, and bringing him/her up simultaneously between two households as two single parents[3]. In a recent report issued by the European Union, results showed that in Germany, like many other European countries, the lone parent household has steadily increased since the 1970s. It was at about 19% of all households with children in 2013. This is 1.6 million households with children under 18, about 90 % of which are headed by a single mother. With high fluctuation in relationships today, a large and growing number of children and parents experience lone parenthood at some point in their lives[4].

The struggle of young parents in providing for their family and also pursuing their careers pushed the German government to put in action substantial changes in the German educational policies based on the needs of the different communities, which will be explained in the following sections. The Brazilian philosopher Paulo Friere suggests in his writings that all citizens are assumed to equally hold valid knowledge that they can contribute to an active discourse within their communities[5]. Supporting this line of thought, the American activist Saul Alinsky in the 1970s called for the importance of connecting local autonomy to the accountability of authorities and the citizen participation. He believed that the main problem in different societies was the insensitivity of political institutions toward the people and their needs. He also explained how the exclusion of the users because of bureaucratization, centralization, and manipulation of information

can affect the stability of the society and its democracy. Alinsky believed that when people achieve a victory of some sort, they feel their effort has been worthwhile. It is only when grassroots empowerment is being achieved, the democratic institutions start working in their favor and economic interests start to function in the right direction[6].

Another important aspect to be considered is the societal needs of the youth which can permit them to make a unique contribution if given the right chance. Roger Hart's work in the 1980s investigated children's exploration, use, knowledge, and their feelings for a variety of spaces[7]. Attempts to design environments for children should be preceded by an understanding of their activities and experiences of the physical environment in which they are exposed to. In Norway for example, many municipalities developed action plans for children and youth based on the integration of young people into the society, and how they should be given responsibilities and opportunities to influence their own living conditions.

Corresponding to this concept, a study by Carnegie Foundation for the Advancement of Teaching found that young students' different attitudes about education directly reflect their learning environment and its spaces. Activities within schools are driven by educational and social aspects, and the quality of both is crucial for the operation and development of schools and the creation of healthy communities. In 2000s Henry Sanoff shared his thoughts about the fact that participation is contextual, it varies in type, level of intensity, extent, and frequency. He described participatory design as an attitude of forces to change the creation and management of sustainable communities for people. The strength of participation lies in being a movement that cuts across traditional professional boundaries and cultures. Its roots lie in the ideals of democracy where collective decision-making is highly decentralized throughout all sectors of society, so that all individuals learn the skills of being active through the making of all decisions that affect them[8].

Initial studies on educational landscapes in Britain and the Netherlands indicate that there is a positive connection between education and urban development. The thesis "Education is relevant to urban development" emphasized the importance of education for a sustainable and integrative development of districts and of the city as a whole[9]. Precisely at the level of communal policy, education has transformed from a weak into a strong locational catalyst for urban development and has become an essential factor for enhancing societal bonds. Researchers within the German debate on local educational landscapes constantly state that there is a positive connection between education and urban development. They are increasingly coming to the conclusion that issues around child raising, care, and local education such as all-day schools and childcare centers can no longer be dealt with separately from problems related to the urban development. In the following section of this paper, we will highlight the structure of the German

family, and how the German government dealt with its ageing country to reform and improve its community structure.

3. FAMILY STRUCTURE IN AGEING GERMANY

The average structure of a German family is composed of a married couple with one or two children. Recently, family models are becoming more diverse. According to the latest Family Reports, Germany had around eight million families with children below the age of 18 in 2015. Besides the average family model, there are also many single parents (1.6 million), most of them are women with only around 11% of children being raised by only their father. The number of same-sex couples with children is still comparatively low in Germany, though it has more than doubled since 1996 from 3,000 to 7,000. By contrast, the number of extended families with several generations living under one roof has declined since 1995 from 351,000 to 209,000.[10]

It is also worth mentioning that families in the eastern parts of Germany tend to use childcare facilities much more than those in the western parts. This practice began during the communist era, when women were required to be employed full-time while leaving their children at the age of one at a childcare facility. This preference has now prevailed with more women in the West choosing to be stay-at-home mothers than those in the East. Many young professionals in Germany put off starting a family as they first opt to pursue their education and then start a career. When their first child is born, they are on average over thirties. This also justifies the small average number of children per family; 53% of families in Germany have only one child. The role model of the father earning the money while the mother is staying at home with the children is regarded as outdated, yet still exists. Although 70% of mothers go out to work, 40% of them work only part-time.[11] In the recent years, the German government issued new decrees that would make a substantial change in the demographic profile of the society. With the new changes, the young fathers' generation will be able to spend more time with their children and be more involved in their upbringing.

It is a fact that Germany is in a state of constant aging, it needs more youth as it is now the country with the oldest population after Japan. Although the birth rate is at the highest level since the reunification, it is still lower than the EU average of 1.58. The number of young households (under 30) is lowest across the country. The head of (35%) of the German households is 60 or older, (21%) is between 40 and 49, and (17%) is between 50 and 59.[12] "We may soon have more children in Germany again", this is what the Minister of Family Affairs Kristina Schröder said at the annual conference of the German Association for Demography in Berlin. In order for this to happen, people have to be given the chance to achieve their own personal aspirations of life, and to unify their family and their job.

This is why there are many state aids programs that aim at promoting German families. The most important of those programs are child allowance, parental allowance, tax incentives, and subsidies for pregnant women and families whose income is too low to meet their children's basic needs, not to mention that school education is free. Also, a new decree was issued with large sums of funds that obliges all German states to provide the required educational spaces that would enable young families to leave their children while being at work. This new policy will boost the economic wheel and also tackle the loss of German fertility.

Town planners and architects along with policymakers are now constantly thinking about the most productive way to offer younger generations the best opportunities for development on both micro and macro levels. Another side of the equation that needs to be addressed by the authorities is that although the German Children's Fund has launched its own program for child-friendly urban design, many families still prefer to settle in rural areas. They are looking for Less traffic, more open spaces and places to play, fresh air and less chaos could play a role here, which resembles the traditional way of living as a family that is deeply entrenched in the countryside. This can mean less youth in the urban busy cities. In general, the German family policies have changed significantly in recent years. They have moved towards a gender neutral 'dual earner model' while stressing the need for social investment in children, who are seen as rare and valuable human resources.

4. THE NEW GERMAN POLICY

> "Schools are the spine of our societies and economies. Without schools, parents can't work, and children are being robbed of precious learning time and, ultimately, a piece of their future." Henry Tesch, School headmaster[13]

As previously mentioned, policymakers have been trying to make it easier for women and men to reconcile career and children. Since 2007 parents have been able to take a paid break from work, where the state pays a parental allowance amounting to 65% of net income for a total of fifteen months. Since 2013 every child was permitted a legal right to a kindergarten place from their first year of age. Germany's federal states have invested heavily in the expansion of childcare facilities for infants and schools for older children.

With the turn of the 1990s and the new millennium, social rituals, constant demands of work, and trends in life planning have dramatically changed, which required a swift change in the format of communal and educational spaces. This pressure gave the chance for politicians and policy experts to start reforming the existing templates of family policies. A sum of 5.5 billion Euros was assigned to support this reform through the 'Good Nursery Act- Gute-Kita-Gesetz' until 2022. Each of the sixteen states should decide for itself how

to use the resources provided by the Federal Government, for example for longer opening hours, additional staff, targeted language support, or lower fees. In addition to that, since 2019, low-income families no longer have to pay kindergarten fees. The Federal Government has also set the goal of permanently improving the quality of early childhood education and providing relief for low-income families. The German Parliament has also increased the financial resources available for the Federal Ministry of Education and Research by 7.6% compared to the previous year to reach 17.6 billion euros. Under the Higher Education Pact, around 2.5 billion euros were granted to the sixteen German states for additional university spaces in 2017[14]. Moreover, 60 million euros have been dedicated for the third year of the National Program to Improve the Quality of Teacher Training. The Federal Ministry of Education and Research also launched a set of measures to quickly respond to the challenges related to the integration of immigrants, which will help implementing key elements of the joint integration strategy of the Federal Government and the states. Under this strategy, the Federal Ministry of Education and Research focuses on language learning and creating the equitable spaces that would facilitate that. Furthermore, funding is provided for research projects to enhance the knowledge of immigration and integration.

Through the federal program 'Campaign for specialist early childhood educators- Fachkräfteoffensive für Erzieherinnen und Erzieher', the Federal Government is dedicating additional 300 million Euros for the states and local institutions until 2022 to be invested in attracting young people to the childcare profession, and also to retain existing specialists.[15]

With all the new reform policies and huge funds to restructure the family model, Germany is facing many challenges to accommodate the consequent changes. One obvious strategy is building new educational buildings and expanding/renovating existing school buildings. The introduction of all-day schools in Germany in 2003 was intended to give all pupils the best possible opportunities where the multi-professional cooperation between teachers and other pedagogical staff enables the interlocking of formal and non-formal learning. Today, more than ever, school is not just becoming an inviting place for learning, but also a new home for living.

Within this framework, in the following section we are discussing four of our recent projects that dealt closely with the idea of engaging the community during the process of decision-making in order to create the most fulfilling educational facility. We asked ourselves these questions while dealing with each project: How should the facility look like (either new or extended), what kind of spaces should it provide and who is using those new spaces, how should the common spaces be designed. And most importantly, how can the building (either a school or a kindergarten) become a catalyst for a coherent community development.

5. BRIDGING THE GAPS: FOUR PROJECTS IN HAMBURG

"There can be no definitive reorganization of the educational system which restores to it a stability impossible in a dynamic society. The education system requires a continuous rolling reform."

Hellmut Becker, German archaeologist[16]

In the context of urban development, schools are gaining particular importance as the central focus of community life in neighborhoods and districts within Hamburg. The implementation of good-quality educational facilities in what can be perceived as socially deprived districts might counteract issues such as social segregation, and even promote the improvement of sociocultural life in those areas by attracting young families and single parents who can manage to balance between work and life thanks to the new 'needs-based' childcare facilities. Consequently, the Federal Government has provided massive financial assistance to the states for years to create new kindergarten spaces and improve existing schools. This new policy requires highly qualified specialists and state initiatives to propose pilot projects that can serve the community as a whole. It is needless to say that educational facilities can become the catalysts for societal improvement, inadequate school facility planning carries fiscal, human, and academic costs, while a strong facility planning process can reap benefits beyond a pleasant environment.

Through our projects we discovered that it can become a valid source of pride for the community when the planning processes involve the right stakeholders, the right specialists, and a clear sense of purpose concerning social benefits in general. The ways in which communities design their educational facilities also help in determining the effectiveness of the money and time investments along the process, as well as the overall livability of the neighborhoods in which they are located.

In working with more than a dozen communities over the past ten years in Germany, we were involved with school districts of different scales, and budgets of various values. Throughout the process we found some common aspects during the planning process which kept appearing in different projects in a way that helped us to tackle new projects with more awareness and sensibility. We were also guided by the current learning techniques and teaching methods that indicated the need for a new form of learning environment and specific spatial settings, which is characterized by small-group activities within different activity surroundings. Throughout our direct contact with school leaders, politicians, teachers, and parent representatives we managed to conduct organized and productive planning processes. Through those meetings and community workshops we were able to find the right design answers for the simple questions of who, what, where, how, and when. The following four projects which are located in Hamburg are evidences on how the right

coordination between different stakeholders during the planning process have strongly helped us reach those answers.

5.1 PROJECT 1- THE RUGENBERGEN COMMUNITY SCHOOL IN BÖNNINGSTEDT

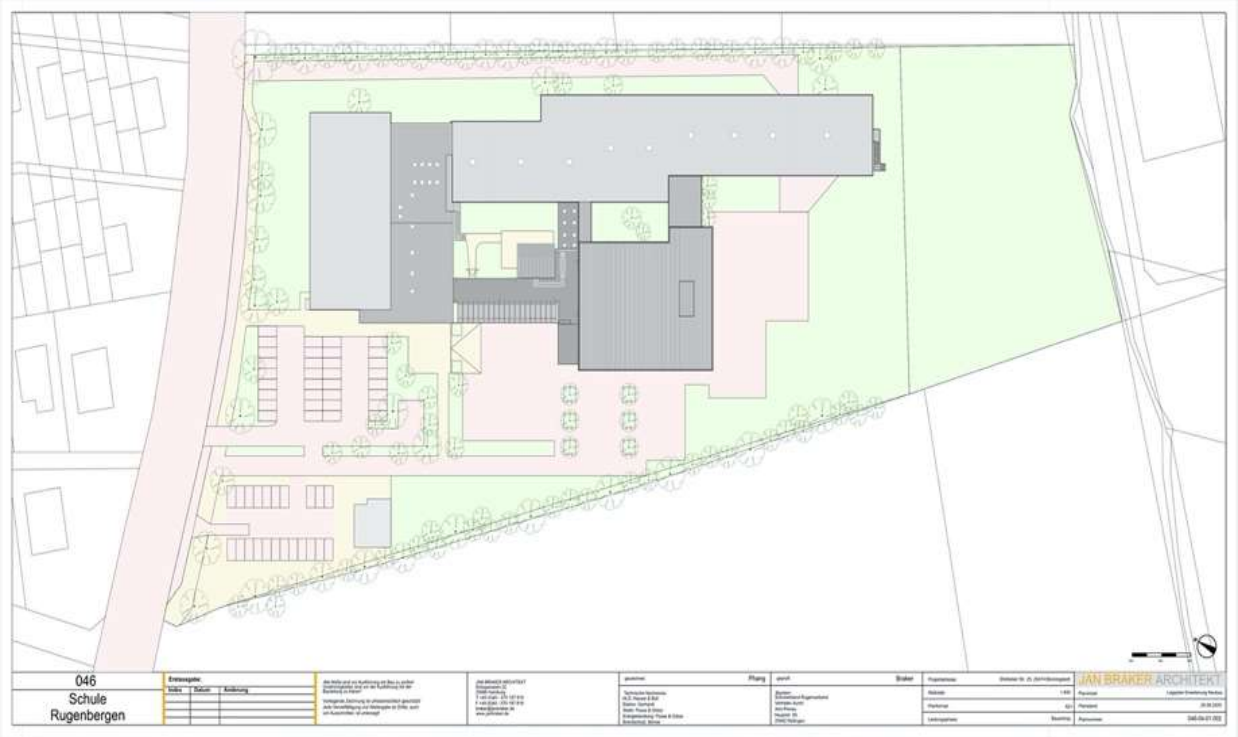

Fig. 1: The Rugenbergen community school in Bönningstedt, Hamburg-Germany. (Source: Author, janbraker.de)

The background: the school is a former secondary school 'Haupt und Real Schule' which was built in the 1970s performing as two schools in one complex. In the floor plan it is easy to acknowledge the mirrored spaces of both schools around one central axis forming one building as a whole. The building had a large hall that functioned as the main central space for both schools together during regular academic semesters. That space was also utilized during holiday intervals as a community venue for bigger events such as Christmas parties, school inaugurations and similar activities. The school accommodates students coming from three neighboring villages, and it is run by an organization called 'Schulverband' which is the school association that consists of chosen members from those villages. In the past decade the school was converted from two schools around one axis into one school due to the current changes in the German educational policies.

The process: our office was approached by the school administration to check some roof leakage in the existing building at the beginning. After a few meetings and intensive discussions with the local authorities and the headmaster, those discussions led to the conclusion that the school is too small to cope with the

current pedagogic policies. The new German law compels the communities to provide afternoon spaces and facilities for their kids to stay-in after regular school durations. This is a change in the education system on a higher level that obliged us as architects as well as the academic staff to work together and try to come up with the most adequate spatial solutions that would fulfil the new requirements.

The challenge of this project revolved around establishing the right method of communication with a client that consisted of fifteen politicians representing three villages. Our regular meetings tackled issues of what needs to be done, how it is being done, and who is funding the process. It is also worth mentioning that the client was supported by some local authorities who provided all technical and bureaucratical knowledge needed. We were asked to fulfil the need for more classrooms, as well as more spaces for so-called 'group-rooms'. This new spatial arrangement allows pupils who cannot speak proper German (for example immigrants' children), or pupils who needed a special attention due to some disability or special needs, it allows them to find a refuge where they can get the needed attention from assigned teachers. Those classes/spaces were accordingly dispersed in several groups around the school.

In addition to the enlarged space requirements of the school, the three villages complained about the absence of a proper local assembly space. In the past, big restaurants and pubs accompanied with large barns used to host big social events within the village like weddings and jubilees. Nowadays those spaces unfortunately are slowly disappearing, as well as their churches that suffer from a dwindling influence on their communities as the congregation is losing a lot of members constantly since the 1970s. Which meant the need for a new public space that would become a spatial substitute of both the pub and the church.

The outcome: the committee decided on transforming the existing big hall of the school into an assembly hall that can host gatherings, parties and other communal public activities for around 500 persons in addition to the educational purposes. The process of developing a scheme was reached throughout a series of meetings and several workshops on different levels: one level was with the school administration, the local authorities, teachers of the afternoon schooling, and the janitor who knew the buildings and the detailed technical problems. The discussions focused on assessing the current room schedule in order to come up with the necessary additional spaces. The next level was the 'project group' which involved presenting the design proposals to the politicians. They then discuss the proposals every three months through the 'Schulverband' committee to make decisions via democratic voting.

This project developed from a leaking roof problem into a rather large extension of the school facilities and creating a new social space for the three communities through altering the school as its heart and transforming it into a new communal hub for the three communities.

5.2 PROJECT 2- THE PRIMARY SCHOOL IN TRITTAU

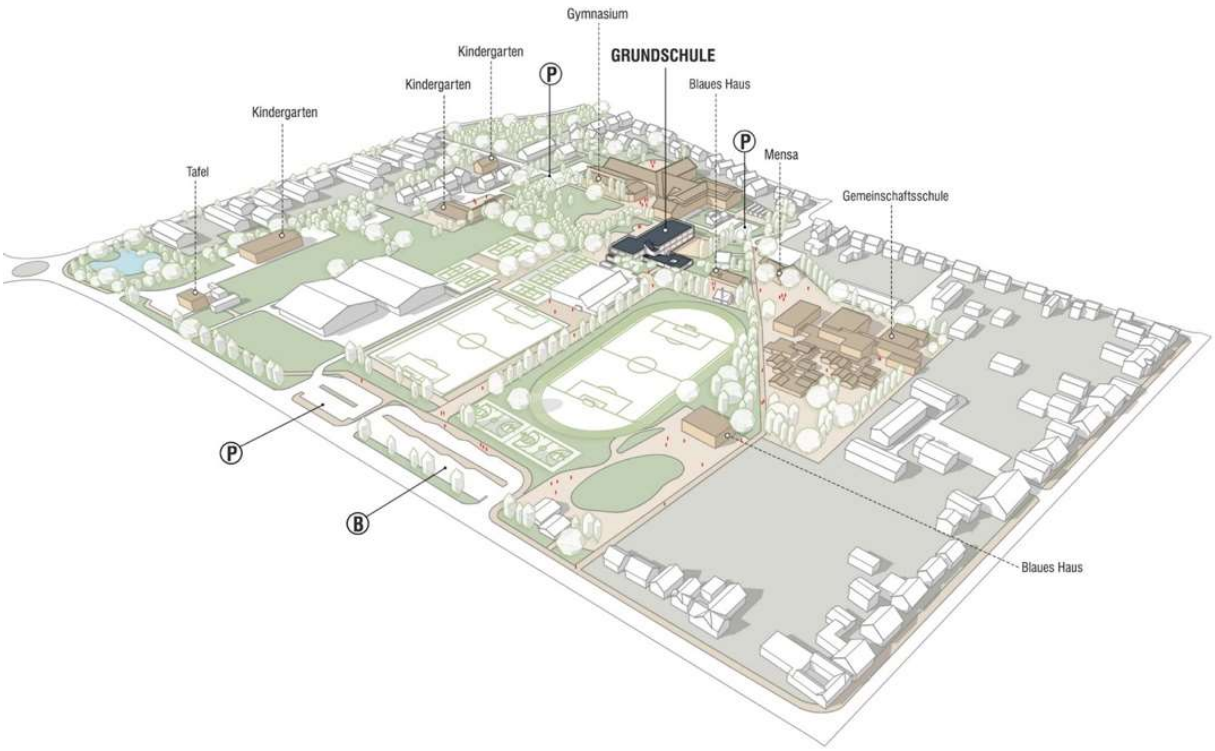

Fig. 2: The primary school in Trittau and its connection to the community center, Hamburg-Germany. (Source: Author, janbraker.de)

The background: Trittau is the original center of a large area, and the client is the 'Schulverband' which was a committee consisting of fifteen villages represented by fifteen mayors. The existing school is considered the nucleus of an old school campus that consists of a gymnasium hall adjacent to another school on one side, and on the other side there are several kindergartens, big sports field, a sports hall and a tennis club. All facilities are being used by the pupils and the community.

The process: we were invited to take part in a competition to get the job of extending the existing primary school from the 1970s. The building was originally built with a prefabricated concrete structure and has not been substantially refurbished since its establishment, its current condition was slightly run down. After winning the competition, we were given a feasibility study that had been previously undertaken by another urban planning office which offered several options for extensions. Our office however proposed that the

extension should be looked at from a different angle. We proposed a scheme that highlighted the importance of the primary school as the center of the community complex. The importance of its location should guide the extending directions of the school, and how future additions can be evolved.

The process started in the beginning with a fairly unorganized pattern of decision-making, as there was no project team, no substantial communication with the school administration, which led to random nonbeneficial meetings with different parties. At this point our office insisted on initiating a series of organized meetings to overcome a decade long of misunderstandings between the different stakeholders, who failed to reach a unified decision for so long. It is also important to mention that the urgency for organizing those meetings, involving all fifteen villages, was pressing in order to get the necessary approval of funding and the green light to move forward with the design processes. At that stage our office proposed to start 'project team' meetings with the school administration, some representatives of this large committee, local authorities, and parents' representatives. The meetings resulted into a broad vision that helped our team to develop our conceptual design scheme, which was based on creating a wholistic vision for the entire campus development in the long term. Such strategy would cover the aspects of fitting new extensions, more refurbishments, or even new buildings within the larger scheme of the entire campus in order to work in unity. This proposal was presented in the next phase to several committees and discussed in heated manner. The way those discussions occurred helped us understand how a very long process of non-decision making and rivalries really prevented this school campus from being further developed. In order to progress with our scheme, we went away above our initial assignment and designed in tandem the extension to the school with vision for the school in their mid-term, and the vision for the entire school campus in the long-term.

The outcome: through a series of workshops and a lot of committee' meetings we managed to reach an agreement that the building would be a lot more 'future-proof' than how it was originally anticipated. The plan is to continue designing the building's connection to the other schools, while at the same time we are getting more involved in other designs that are being commissioned to us for smaller parts of the landscape. It is also worth mentioning that some small extensions of other buildings were being undertaken by other offices who did not try to create a connection to the other schools. And although we are not commissioned yet to create that connection, our team is voluntarily working on developing a vision for the entire school campus which has a much larger impact on the original life than the people involved in the committee seemed to admit the challenge.

Throughout the process of this project, we learned how to act as the mediator. We managed to put a set of rules and guidelines that helped move forward and proceed in creating some major decisions regarding the

school improvement. We also managed to establish a productive bond between the fifteen villages and unite them for the greater good of their community. Our scheme also highlighted the importance of considering the important social role of the school as the community center that will guide the expansion of the community on the long run.

5.3 PROJECT 3- THE KINDERGARTEN IN PRISDORF

Fig. 3: The kindergarten with its symbolic tree in Prisdorf, Hamburg-Germany. (Source: Author, janbraker.de)

The background: the community of Prisdorf is a small village of 2000 inhabitants located close to Hamburg. The community had a kindergarten which was considered very small due to the new German regulations. As mentioned previously, since the 2010s German communities were obliged to provide a kindergarten spaces for children starting at one year of age on. This new role was not a common practice in western Germany as how it was in the eastern part of it. Consequently, the existing small kindergarten of Prisdorf needed new alterations in order to fulfil the required spatial quota. The existing kindergarten was located between the edge of the village, and a forest area which made it a bit difficult to extend the existing building.

At the same time, the village had an existing community hub in the center of the village consisted of a sports hall and a center of the local Fire Engine Department. This department had an important communal role in this community due to its nature as a service where the villagers participate voluntarily in their free time. It is also a place where many events, meeting, celebrations take place and is being passed on from one generation to the next, especially in the countryside.

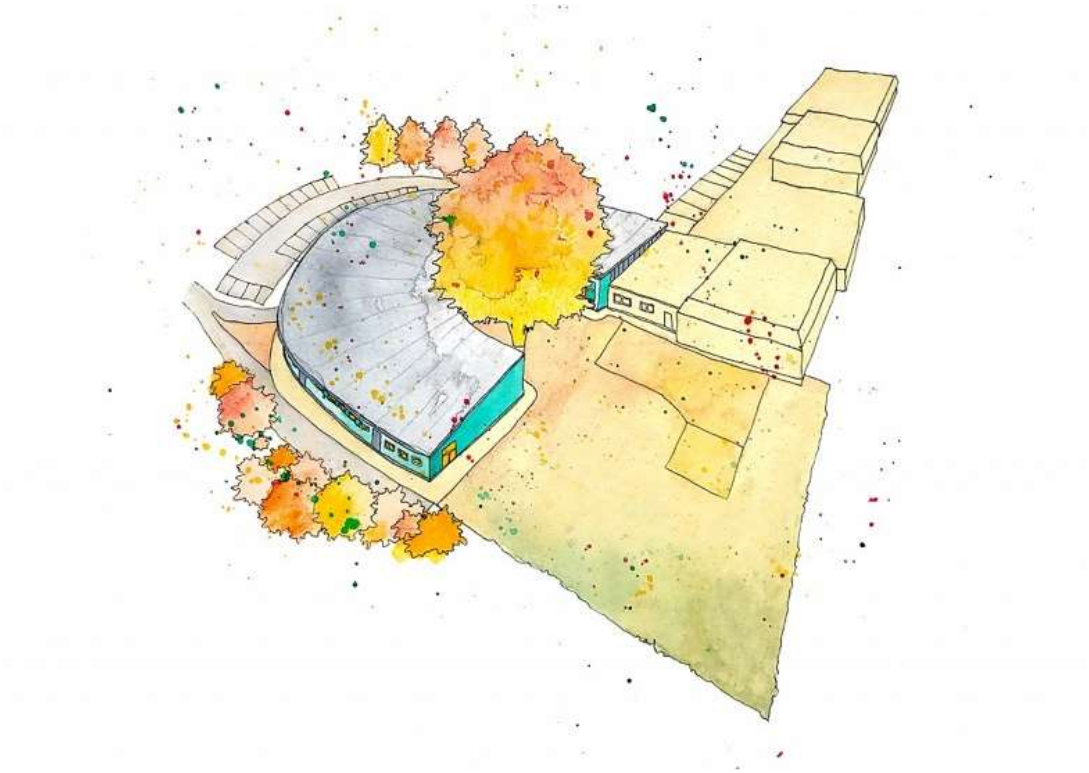

Fig. 4: The connection between the community center and the kindergarten in Prisdorf, Hamburg-Germany. (Source: Author, janbraker.de)

The process: the mayor at the time decided that he wanted to enhance the existing community center which was the place where the local committee meetings of the politicians would take place. It was also a place where old people would be taken care of, not to mention evening celebrations. The German Red Cross as well used the space for annual blood donations. The objective was to enhance that space through creating a new adjacent kindergarten. (Fig. 4) Our office took part of an architectural competition among several offices and won at the end. After we were commissioned to build the kindergarten our team coordinated a series of productive meetings with the community representatives, funding authorities, and also the staff running the kindergarten. During the process of planning, designing, and also building, several local politicians were involved along the processes. Those politicians were active members of the community who ran full time jobs in the day and attended our meetings at night on weekly basis for a whole year. In that case the policymakers were also the users of the space which benefitted the process of design greatly. Our team learned a great deal

from their objective input and valid comments, their active participation also helped keeping the process on track.

The outcome: the project's main idea revolved around a 100-year-old tree that was adjacent to the community center, and we were asked to build our project around that tree as a symbol for the community's heart. Five years now since this project was finished, and we are still involved in Prisdorf because we have been asked to build a new extension to our kindergarten. Our long involvement with this village takes the form of an ongoing process of enhancing the society and creating a sense of community through the triangle of the community, the decisionmakers, and us the architects.

5.4 PROJECT 4- THE KINDERGARTEN IN APPEN

Fig. 5: The kindergarten in Appen, Hamburg-Germany. (Source: Author, janbraker.de - illustration by Moka studio)

The background: The community of Appen is around 5000 inhabitants, and they have a traditional agglomeration set up. They have their church, a primary school, and a kindergarten that was always run by that church. In the 1990s an old large farm building was transformed into a beautiful community center which accommodated the local committee meetings, weddings, and even annual classical music concerts. The village as many other German villages is currently suffering from a series of changes in their social

infrastructure. Local pubs where people used to gather for a drink or having a meal are massively disappearing, not to mention the diminishing role of the church within the society. For example, Sundays used to be the day when the community meets, it was a tradition that people go to the church in the morning and then gather in the afternoon at their pub-restaurant. A tradition that does not exist anymore, mainly because of the easy access to big cities due to the close proximity, and the other aspect is the fact that churches are slowly getting less popular. On top of that the traditional partnership between the church and the political community is breaking up, and now priests are not officially involved in many social and political events as it used to be.

The process: the community was growing and needed more space since the existing kindergarten was small. There was a vacant area behind their community center (which had a prime location in the center of the village), so the community agreed on using that empty area for their new kindergarten. Normally the church would have asked the community to fund the new building while remaining fully in charge of that facility, but the community of Appen fought against it and decided that they do not want the church to be in charge of their new kindergarten anymore.

When our office got involved in designing the new kindergarten, we took part in many meetings with the politicians and representatives of Appen. We moderated a lot of discussions regarding the design directions, the social benefits this new building would provide to their community, and the funding processes. The large sums of funding by the German government to establish new kindergartens helped realizing the old plan of the politicians of Appen to utilize this specific space as a kindergarten. The involvement of the local politicians in the design decisions led to many changes in our schemes, for example, they did not want the new building to compete with their community center especially from the side of approaching the center. This led to changes in our initial proposal regarding the external materials which would have created a unique identity for the building, and instead we used calmer tones so the building stays in the background. During the process of design, we had biweekly meetings with around seventeen representatives of the local parliament, we also had 'design team' meetings to present the design progress to the entire village in the space of their community center.

The outcome: the new kindergarten houses 120 children which is a big size for a village like Appen, but at the same time it means that over a hundred families of young parents almost from the same generation are opted to utilize the spaces around the kindergarten and the community center (Fig. 5). Both the kindergarten and the community center share a large car parking lot, and also have a small green park area between them. The parking lot and the green space provide a successful setting for the community and young parents to

intervene and communicate, and so basically to encourage that the community has spaces where they would naturally meet during the day when bringing the children to the kindergarten, and in the evening at the center. The new kindergarten is also serving those young parents to take care of their children while they can go to work and pursue their careers. This kindergarten is slowly becoming the young catalyst for the heart of Appens' community.

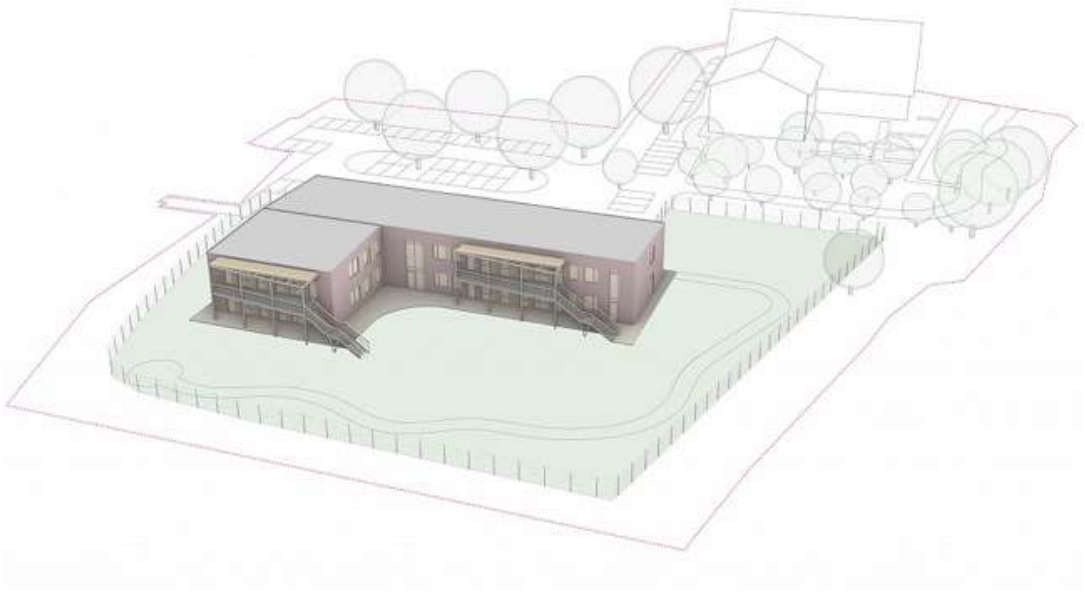

Fig. 6: The physical connection between the kindergarten and the community center in Appen. (Source: Author, janbraker.de)

6. REMARKS

The use of standardized solutions guided by local regulations are no longer acceptable, in light of the variety of new teaching/learning approaches that demand different spatial requirements. There is a pressing need now to create an evaluation mechanism that is capable of sensing the evolving needs of the educational system and accordingly the spatial requirements. Depending on how the urban space is being created and structured and what kind of community approaches being implemented, this can enable or restrict the opportunities of individual educational processes.

Throughout our experiences with those four projects, it was clear to us that community buildings integrate traditional top-down decisions with bottom-up approaches which created a network of partnerships between the community and the authorities. Community members assume ownership in the process through their active participation in setting goals and developing implementation strategies. Participation in design processes represents a valid sense of influencing the decision-making process of proposed designs, and an increased awareness of the consequences of the decisions that have been made. For us as architects, the

process of direct interaction and concessive discussions with policymakers and different communities provided us with relevant information for our database that helped creating the right design solutions. It was clear to us as professionals that community-driven initiatives can have a greater chance for success because they are more aware of the realities of their own societal needs than outside professionals. For us it was also important to identify each community's assets and problems, we also learned that working with a manageable size of communities is crucial in order to reach the right decisions as well as developing unique spatial strategies for each neighborhood. Creating a stable and productive relationship with the different institutions of each community meant for us that we can be hired again for future extensions and also to assess the success/failure of our designs. We also need to stress that generally, decisions concerning educational facilities tend to be made by groups of people who are not going to be the direct users of the building, often ignoring the direct involvement of teachers and students. The Participatory process that allows the empowerment of grassroots and direct interaction with the decision-makers can result in a sense of ownership of the project, and the users start to develop a new sense of belonging. Since communities are diverse by nature, formed by people who reflect differences in age, culture, ethnicity, gender, aspirations and ability, this range of viewpoints enriches the design process, and it is highly valuable for the diversity of perspective which enriches the process. We also strongly believe that involving the youth in the process of decision-making is vital, their involvement in community activities creates an indispensable sense of belonging and increases the opportunity to become socially productive especially when it comes to creating schools and kindergartens.

> 'If alternatives change not by mutation, but by recombination, there will always be familiar elements in the new combination. And if the softening up process is as critical as we have claimed, it would be exceedingly surprising if wholly new ideas suddenly appeared on the scene (...) and immediately received a serious hearing. When the time for action arrives (...), it is already too late to develop a proposal from scratch. It must have already gone through this long process of consideration, floating up, discussion, revision, and trying out again.' John Kingdon[17]

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THE DYNAMICS OF DESIGNS OF NEW MOSQUE IN INDONESIA: THE EXPRESSIONS OF PIETY AS A LIFESTYLE

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THE DYNAMICS OF DESIGNS OF NEW MOSQUE IN INDONESIA: THE EXPRESSIONS OF PIETY AS A LIFESTYLE

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Expressions of constructed identity in design has shifted, from a singular form in the pasts, whether modernism or neo-traditionalism, into a very fluid state of designs. This paper intends to interrogate this re-calibration and reformatting of identity of a Muslims in Indonesia, informed by advances in information and communication technology. It explores designs of new mosques as a site of its investigation. How has the negotiations in the reformulations of this constructed identity unfold? In particular, what would the relationships be between virtual space created by new ICT and real, lived spaced created by architecture?

1. INTRODUCTION

Today's world witnesses the surge of influences of religions in every part of public life, including in political, economic, social, and cultural arenas. South East Asia is not an exception, as the region has been experiencing a similar phenomenon. Indonesia, the largest country in that part of the world and home of the largest Muslim community in the world, has seen the rise of Islam and its visibility in public and private life in the past twenty years. Historically, Islam entered the Indonesian archipelago in the twelfth century and quickly replaced Hinduism and Buddhism as the primary religion.[1] Although the political bodies quickly took the form of Islamic polities, such as in many sultanates in its history, Islamic values took much slower pace to get hold of the cultural and social realms of Indonesian society. In daily life, Islam in the archipelago for a long time took syncretic forms with local beliefs.[2] The history of colonial and post-colonial Indonesia reflected the dynamics of the roles of Islam. The Islamists, the nationalists, and the leftists were the major forces leading the struggle for independence.[3]

In the decades after independence, these three forces vied for dominance and this dynamics shaped and colored the social, political, and cultural life. After a failed coup in1965, the military purged the left and established an authoritarian and repressive regime that ruled the country for the next thirty-two years. Among other things, the regime repressed political and cultural Islam. However, in the late 1980s, the regime made a remarkable u-turn and started to court Islamic groups.[4] Overnight, it made concessions to Islamic groups and facilitated the process of Islamization, for examples, through lifting the restrictions on headscarf, letting Islamic groups to flourish, and allowing the publication of a national, Islamic newspaper. The authoritarian dictatorship fell in 1998, ushering a democratic era in the country that led to the opening up of the political and public spheres.[5] Many political parties sprung up and the control of state over media was relaxed, leading to the emergence of a relatively free press. Indeed, changes in the political atmosphere have led to transformations of public and cultural life in the country.

2. EXPRESSION OF ISLAM IN PUBLIC LIFE

The most prevalent change in the post-authoritarian Indonesia after 1998 is the conspícuosness of the visibility of Islam.[6] In this atmosphere, expressions of Islam in public and political spheres has been flourishing tremendously. Legislative and administrative bodies at all levels ratified and implemented faith-based policies; social and political organizations embraced faith-based values; businesses of faith-sanctioned goods and services flourished; wearing headscarf has become of common practice; and the number of construction and renovation of mosques increased. Besides the political contexts, economic and social factors also shaped and informed the surge of Islam in Indonesia. As many scholars noted, the decades have witnessed the growth of its urban middle-class.[7] The growing prosperity of the large, educated urbanites facilitate the upward mobility of the new Muslims bourgeoisie, economically and politically, attaining and achieving political leverages and high-level position in economic realms. In turn, they also aspire to express themselves in public life. This desire for self-expressions leads to expressions of Islamic piety in public life.

These desires for public expressions of religiosity relates to the issue of identity. In this case, it is the formation, promotion, and expansion of being modern Muslims. In this context, these processes have been mediated and mediatized, through television or electronic media in the late 1990s and early 2000s into current digital-based media. Benedict Anderson characterized modern societies as an "imagined community," a construct in which a group of people developed a set of concepts and ideas that they shared together and defined their identity.[8] Crucial in this argument was the role of media in disseminating and perpetuating this construct. In his analysis, they were printed media, including newspaper and books. These media were capable of reaching out a wide range of populace over a certain geographical area. Crucially, they promoted the use of a similar language. Through the use of a same language, these media facilitated the formation of shared imaginations that bonded separate groups of people, forming a collective identity, including the idea of modern nationalism. Media have evolved, from printed media into electronic and eventually into digital media. In this vein, contemporary information and communication technology has taken the mantle of printed media in shaping, informing, and fostering collective imaginations, which in turn shaped collective identity. New forms of technology, such as social media and messaging apps, have taken over the role of conventional media, facilitated the reformation of existing imagined communities, or even the emergence of new imagined communities. New media differ from the old, however, as they decentralize productions and disseminations of information. Printed media concentrated the production of information in the hand of limited authors and publishers, while the internet and social media allowed any person to produce and disseminate information. The ever-increasing connectivity of the cyber world, and the speed and extents of the disseminations of digital materials, challenge the conventional distinctions of social groups and

geographical regions. Physical distances and boundaries become less relevant and the distinctions between local and global has been blurred.

According to the latest data, in 2020, the numbers of social media users in Indonesia has reached the number of 160 million or fifty nine percent of the total population, while the number of internet users is 175 million or sixty-four fifty nine percent of the population.[9] In this line of thought, digital media have permeated into our life, including in practicing religions and expressing piety in public. Indeed, information and communication technology enable public expressions of piety and religiosity. Muslim middle-class in Indonesia, and South East Asia in general, embraced information and communication network and technology as a means to engage with the religion, both in public and private dimensions.[10] Indonesian Muslims tapped into capabilities and potentials of information and communication network and technology, for examples, in the phenomena of televangelists proselytized through television in the early 2000s.[11] In recent years, research has documented and analyzed varieties of the intertwining of media and religions. Social media have become the means for disseminations and promotions of Islamic way of life, such as proselytization of the religions, the widespread acceptance of the use of headscarves, and promotions of Islamic goods and services. Another example is the fast advance of the hijrah movement among millennials in Indonesia.[12] This movement preaches Muslims to engage in personal transformations into a better state in religious life, of which social media facilitate its popularity. In a way, the accelerated presence of Islam in public life is a process of a formulation of lifestyle.

A crucial aspect of the use of social media is its visual components. Current phenomena in Indonesia demonstrates the power of visual language to capture attentions, and more importantly, to convey messages. Studies demonstrate how savvy media operators in the country use imageries and visual languages to package and deliver their Islamic messages to the populace.[13] These operators appropriate visual communication and marketing techniques and strategies the package their products into attractive products for the market. In this sense, products include religious messages, services, and goods. This intersection of visual culture and the promotion of Islamic lifestyle highlights the role of the visual aspects in expressions of piety as a lifestyle in public spheres. In this sense, architecture stands as a physical embodiment of such a visual culture. Along this line, mosques signify a typology that represents Islamic lifestyle. The growth of mosque in Indonesia is a case in point. At first glance as one travelled across the country, the presence of mosques is very apparent. The boom is disputed, however, based on statistical numbers.[14] Nevertheless, the Council of Mosque in Indonesia claimed that the number of Muslim places of worship has reached the number of around 800 thousands, which correlated to roughly a mosque for every 250 Indonesian Muslims.[15] If this number is not true, then at least that is the aspiration. As it stands, the presence of mosque or the space of worship has become

ubiquitous in contemporary Indonesian landscape, whether in urban or non-urban areas. They permeate in the built environment, becoming a part and parcel of everyday life, in which these spaces emerge and be a part of space of residential, governmental, space of commerce, even on transportation network. In this sense the qualitative dimension of the presence of this space of worship is more telling than the quantitative numbers. Looking at this phenomenon as a spatial condition, it appears that the presence of has become normalized and formalized.

3. MOSQUES IN YOGYAKARTA

This paper focuses on the phenomena of designs and constructions of mosques in the city of Yogyakarta, Indonesia. It is one of the major cities in the country, as well as the cultural center of the Javanese, the largest ethnic group in the country. This paper uses the city as a site of observations of phenomena in designs and constructions of mosques that reflect that of the nation. The study builds upon a general survey throughout the city, then focuses on examples. This study aims to situate mosques in the city within the architectural contexts in the area, the first of which is by mapping locations of mosques and their relationship to the worshippers. The first group is community mosques, which is those that are located and embedded in neighborhoods in the city. Traditionally, each neighborhood would have a mosque that accommodates religious activities, including weekly services, daily communal prayers, and celebrations of religious holidays and festivals. It also accommodates educational activities related to religion, from those dedicated to children up to those for the elderly. However, these mosques also serve as a place for community gatherings, often turned into an informal community center. These mosques are constantly in use, everyday in a year from morning to evening. As a result, they become an institution that is an integral part of the community in each particular neighborhood. As such, worshippers in these mosques are people in the neighborhood who attend the mosque on a constant, regular basis. They form a community that is united by the space. The relationship between the space of worship and its location is not only in topological dimension, but also in social aspect. Hence, these mosques are an organic part of a community, both in architectural and social terms. Naturally, these mosques have been around for a long time. and some of these mosques retain their original, historical forms. However, many of them have undergone transformations, having been renovated or rebuilt over time. Hence, they show a wide variety of stylistic and formal appearances. Their scale also ranges from a small, single story mosques to large, multi-story structures.

The second group is the institutional mosques, which is mosques that are a part of institutions, including schools, universities, offices of governmental agencies and private corporations, and military facilities. This type of mosque is a recent phenomenon, one that blossomed from the 1990s. Prior to the 1990s, usually a

school would have a prayer room to accommodate students and teachers who performed daily prayers, while using the school hall to accommodate the weekly Friday service. Since the late 1990s, however, schools have been making great efforts to build a mosque in their campus, funding the construction through fundraising among parents and alumnae. These mosques often appear as the most prominent structure in a campus and are located in the most visible spot. This transformation from a modest, small room into a full-fledge building is very telling. Along this line, universities also embarked on projects of constructing mosque. These university mosques are a building on a monumental scale and serve as one of the iconic buildings in a campus. Similar phenomenon also happened with government agencies, in which the integration of a mosque into an office compound has become a standard practice. Obviously, these mosques are frequented by students, teachers, and office worker because of their schedule of activities and active on daytime on weekdays only. The relationship between worshippers and the place of worship is a mechanical one, guided by the necessities of daily work schedule. Design-wise, mosques in schools and offices tend to appear in a similar fashion, a rectangular building in concrete frame with repetitive large windows. The most important feature of the structure is the shape of the roof that usually took shape of a pyramid hip roof.

Fig. 1: A community mosque (left); a school mosque (right). (Source: Author's photograph)

The third group is the transient mosques. These are mosques that are built in public facilities, including shopping malls, shopping strips, big restaurants, gas stations, and rest areas on highways. This type of mosque flourishes in the last couple of years and emerges everywhere in the landscape, both in urban and non-urban areas. They vary widely, both in terms of their scales and in stylistic and formal expressions. They range from a very small building in a gas station to a large mosque in shopping malls. Given the nature of their location, these mosques serve mostly people on the move, providing a space for worship for people who happen to visit such facilities or on traveling. As an illustration, in shopping malls, these mosques got very crowded

during the time of the daily prayer in which a long line of queue forming around the mosque of shoppers who want to perform their daily prayers. Hence, the relationship between worshippers and the space is transient and accidental. It is a very loose connection between a space and its users.

The fourth type is the celebratory mosques, which is mosques that are associated with the power of state or of individuals. Traditionally, a mosque is one of the primary elements that formed the basic structure of the urban form of Javanese cities. This urban structure centered around a large city square, around which the typical elements of an Islamic Javanese city, including the palace of a king or a regent, the main market, and the royal mosque were located. The colonial Dutch administration and the modern Indonesia adopted this practice of integrating a mosque into the urban organization that symbolizes the power structure. Thus, in regencies in Java, a large mosque would be built near the central square and the seat of the local government. Their formal expressions followed a more conservative trait, appearing to mimic traditional mosques. Recently, successful businesspersons adopted a practice of funding the construction of large mosques to celebrate and edify their achievements. These mosques are often located on prominent locations, such as along primary roads in cities. The formal appearance of these mosques are more exploratory, exhibiting hybrids of different influences. Naturally, this type of mosque is of a monumental scale. Worshippers visiting these mosques are a combination of the varieties of those of the three types above, including residents of the surrounding neighborhoods, people who work in institutions nearby, and passerby.

In terms of stylistic and formal expressions, the varieties of mosques in the city include traditional Javanese, domed, vernacular, neo-traditional, and hybrid mosques. A traditional Javanese mosque comprises of two main parts of equal dimension, an open hall at the front and an enclosed hall at the back.[16] They are aligned in east-west direction following the orientation to Mecca. The most important feature of these mosques is their shapes of the roof, a trait of architecture in Southeast Asia in which different shapes of roof signified different functions as well as social hierarchy. In this vein, pyramid hip roof is reserved for religious structures, including for mosques. The enclosed hall of the mosque is adorned by this pyramid hip roof; its significance is enhanced by the layering of this pyramid roof, while the open hall is covered with hip roof. Similar to traditional architecture in the archipelago, these mosques are a timber frame structure. Meanwhile, domed mosques are a type of mosque that appeared after the independence of the nation. The emergence of the new nation-state led to the search for architecture that transcended traditional, ethnic-based architecture. In terms of the design of mosques, in the 1950s, domes started to appear replacing the pyramid hop roof.[17] These domes made free references to multiple sources in the history of Islamic architecture, including onion-shaped domes or hemispherical, Turkish domes. The design of these mosque also privileged the expressions of simple geometric massing. Instead of using timber frame structure, these mosques utilized masonry and

concrete frame structure. The use of dome became a popular feature, and it became an accepted vocabulary in the design of mosques. Further, it started to enter the vernacular expression mosques in Indonesia. This phenomenon reflected in the popularity of installing a small, onion-shaped dome at the summit of the pyramid hip roof. These domes were fabricated from aluminum. This formula of a combination of pyramid hip roof and a dome at its summit becomes a basic feature of vernacular mosques.

Fig. 2: A traditional mosque (left) and a domed mosque (right). (Source: Author's photographs)

In the 1980s, the regime in Indonesia launched a wide-ranging cultural program to express the identity of the nation. If the period of 1950s to 1970s espoused modernism as a means to express modern Indonesia, the architectural expressions of identity in the1980s turned to local, traditional architecture. Obviously, what constitute as Indonesia in this context was a highly scripted narrative set by the political regime, which included a selection of features from various cultural group in Indonesia that then were promoted as a representative of Indonesian culture. With regards to architecture of mosques in the country, the then-president launched a campaign to build mosques all over the country, sponsored by his charity foundation.[18] These mosques followed a similar, standardized design that prominently articulated the roof. The design of the roof was an iteration of traditional, Javanese pyramid hip roof. Hence, this design was in the line of neo-traditionalist sensibilities. Regardless of the locations in this multi-ethnic nation, all of the mosques that they built followed this Javanese-oriented design. The space of the mosques itself was a simple rectangular space built on a modular, concrete frame system.

The post-authoritarian Indonesia opened a gate of different sensibilities in cultural expressions, including in architecture. This era saw varieties of architectural expressions entering the architectural discourse in Indonesia. In architecture of mosque, some of the tendencies include the

incorporations of features associated with Middle Eastern architecture or with design from the Islamic world, such as intricate geometric patterns, varieties of arches, and different types of minarets. Besides arches and minarets, intricate detailing often features prominently. This practice has led toward hybridization of various design features. For example, a mosque would maintain the use of a roof shape that celebrated traditional, pyramid hip roof. However, the massing of the building combines that with various arches and minarets, while geometric patterns and calligraphy adorned surfaces of mosques, both inside and exterior.

Fig. 3. A neo-traditional mosque. (Source: Author's photographs)

4. SOME EXAMPLES

Three examples aim to highlight current trends of design or mosques in the city. The first example is a mosque inside a shopping mall that exemplifies the transient type. It is a part of one of the biggest and most visited shopping malls in the city, the Ambarukmo Plaza. Originally, the shopping mall provided a space for praying, something that is common in shopping malls in Indonesia. Eventually, between 2012 to 2013, the management of the shopping mall built a mosque at the top level of its parking garage as a structure exclusively dedicated for praying. It is a relatively small structure of about 200 square meter in the shape of a simple, rectangular box. The roof features a layer of smaller rectangle with small, minaret-like elements on its

four corners. A pointed dome crowns the flat roof; while each minaret-like feature is topped with a hemispherical dome. The facade of the mosque displays on a combination of design elements associated with the Islamic world. Each facade is symmetrical, with a door at the center, flanked by two windows at each side. A pointed arch framed each window. The wall and the tympanums are covered with masonry screen walls based on geometric patterns. The space inside the mosque is simply an open, rectangular space which is very bright. It is accessible from three sides, and the prayer space is lined with a narrow, enclosed terraces. The space is symmetrical, with the three rectangular openings indicating the lines of symmetry. The solid qibla wall is centered on a rectangular mihrab. The arrangement appears to be based on a three-by-three grid.

Fig. 4. The Ambarukmo Plaza mall mosque (left); the Suciati mosque (right). (Source: Author's photograph)

The second example is the Suciati Mosque in North Yogyakarta that was funded by a successful local businesswoman. It is located on a roadside on the part of the city that has experienced very rapid developments, both in terms of demographic as well as physical urbanizations. The design of the mosque appears as a simple rectangle with four minarets on each corner, with the fifth minaret, on its southwest corner, larger and higher than the rests. The shape of the minarets drew heavily from Cairo architecture, with a rectangular base following by tubular upper part. Each minaret is divided up into parts with balconies, complete with muqarnas on the underside of the balconies. The two entrances on the southern and eastern sides of the building feature a three-partite scheme of pointed arches. The space inside the building is a large, two story, rectangular space. A grid of columns fills the space, with polychromatic arches interlacing these columns. An opening at the center connects the first and second levels, and it continues to the underneath of

a dome on the ceiling. The ceiling also articulates crisscrossing beams. Details of the mosque, such as the use of masonry screen and wall patterns, also articulate geometric patterns. Even the choice of materials of the wall geared toward a similarity of the colors of Fatimid architecture of Cairo. However, the design of this mosque hybridized this otherwise Egyptian-inspired design in its choice of the roof. The prayer hall is crowned with a three-tiered, pyramid-hip roof derived from traditional Javanese roof.

Fig. 5. The SMP 5 mosque. (Source: Author's photographs)

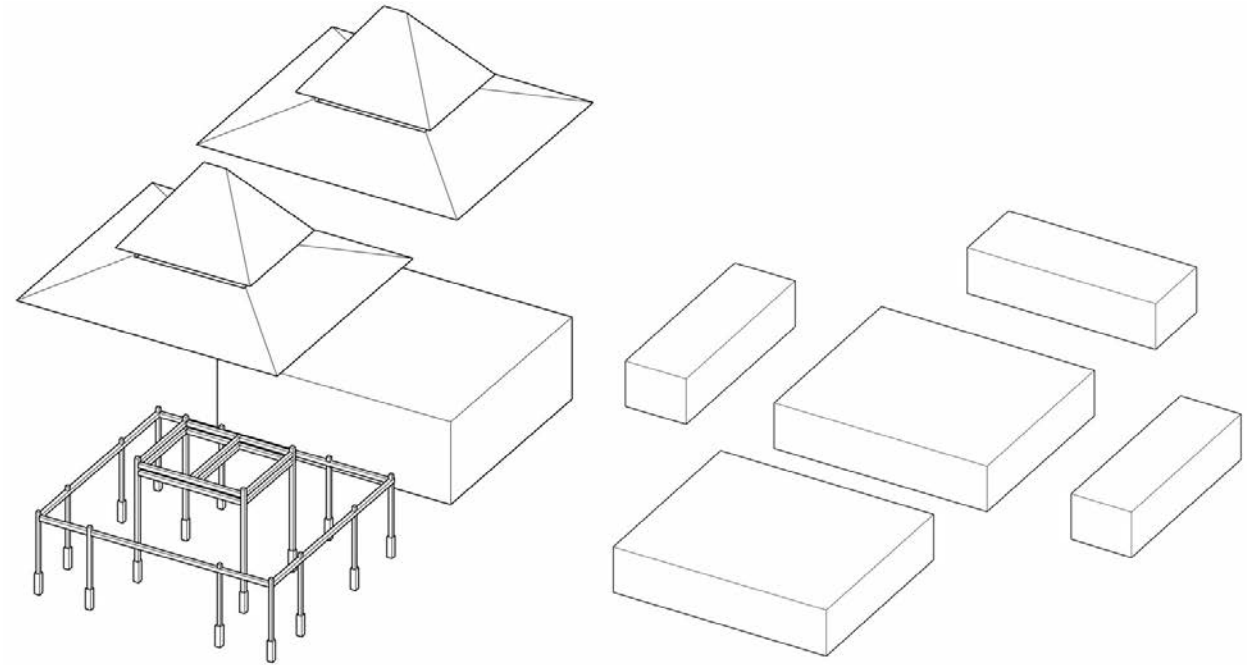

Fig. 6. Diagrams of the elements (left) and organization (right) of traditional architecture in Yogyakarta. (Source: Author's drawings)

The third example is a mosque in a major high school in the city, the SMP 5 or the Public Middle School number 5. The mosque is an upward extension of the multi-purpose hall of the school. To replace the previous mosque, the school renovated its multi-purpose hall, adding a second level to the structure, and turning that into a prayer space. The building has since been renovated again. Following the plan of this first floor, the prayer space is a large, elongated rectangle in the east-west directions. This gives the mosque a vast, open space for communal prayer, with concrete columns in gridded organization. It is a concrete frame structure with masonry walls enclosing the space, with large windows on the north and south side of the vast interior space. Staircase on the side of the building provides the access to the space. The qibla wall is adorned with decorative tiles in geometric patterns. The columns are also decorated with features that resembled arches. The space is dominated with white color with strong green accent. A large hip roof topped the structure. The roof is also green, in harmony with the color scheme of the mosque.

5. COMPARATIVE FEATURES

The plan of these mosques is based on a rectangular shape, whether a square or an elongated rectangle. Its organization is very straightforward, consisting of a large prayer hall with the qibla wall and the mihrab on the western side, indicating the direction of Mecca. Doors and windows line up the north, south, and east sides of the hall, opening up to terraces that surround the player hall. Supporting spaces, are organized behind the

qibla wall. Thus, the eastern side serves as the front of a structure, while the western side is reserved as the backside. The spatial organization of mosques follows a simple grid order that is determined by the structural grid. In mosques with multiple floors, the different floor levels separated worshippers, with male worshippers on the lower level, and female worshippers on the upper level. In contrast, the plan of traditional mosques demonstrates an organization of different spaces, based on rectangular geometry. The plan incorporates of two large and a series of smaller, elongated spaces. The organization of the plan consists of a large, open prayer hall that is surrounded by terraces on the north, east, and southern sides. This open hall leads to the enclosed prayer hall with few small windows that created a rather dark interior. The functional organization in this single-story space separates female and male worshippers into front-and-back or left-and-right areas.

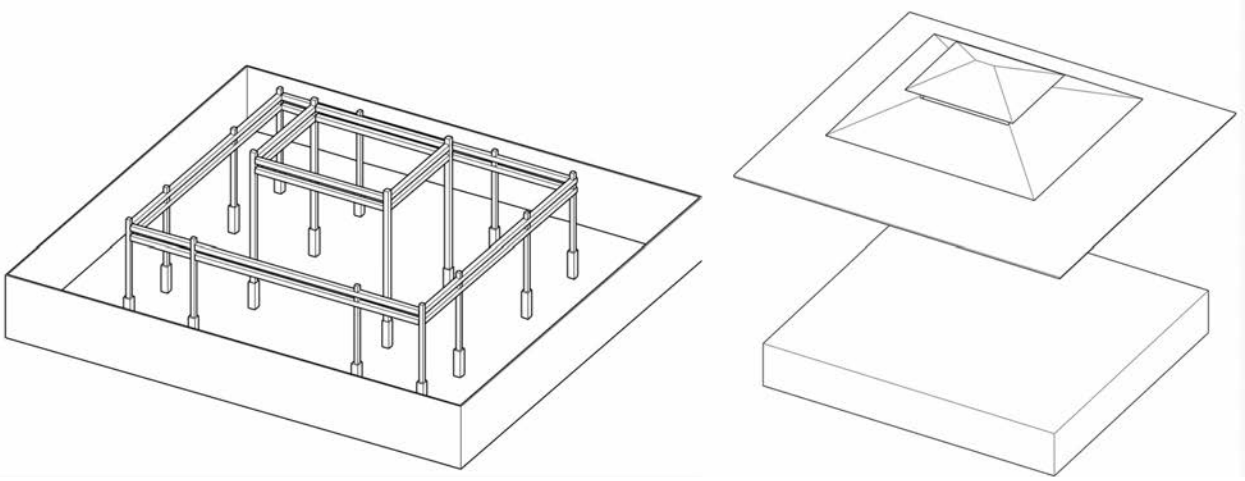

Fig. 7. Diagrams of space defining elements in traditional architecture in Yogyakarta (left) and the massing of typical contemporary mosques (right) in Yogyakarta. (Source: Author's drawings)

The spatial organization in traditional mosques hinges on the primary and secondary axes that governed the alignment of spaces and masses of the structure. The primary east-to-west axis aligns the two primary spaces, signified by doors and the mihrab. Terraces are organized along the north-to-south direction. Meanwhile, each of the main spaces follows a centralized scheme, in which the center of the space is defined by the four primary columns and surrounded by layers of space in a concentric manner. The shape of the volume of the space follows the shape of the sloping roof, enhancing the centrality of the organization. This feature introduces a vertical axis, complementing the two horizontal axes. Overall, the spatial organization foregrounds dual centers and articulates horizontal and vertical axes. Contemporary mosques foreground the primacy of the orientation to the west by the contrast of a solid wall on the west side, and a more transparent enclosures on other sides. However, they employ neutral grid as their organizing device that subsumes this axis. As a consequence, this spatial organization is devoid of a strong sense of axiality. The access to the main space in contemporary mosques suggests the emphasis on the orientation of the space. In Javanese mosque,

however, the access to the space is never clearly articulated, as the structure is accessible from all four sides. Only on entering the front hall does the access follow the direction of the primary axis.

The spatial and organizational principles of traditional mosques foreground axiality, symmetricality, and hierarchical and sequential organization of spaces. These features and the range of the ways different spaces are defined lend to the creation of a range of spatial experiences, creating a sequential procession from open, bright spaces to an enclosed, dimmed space. Changes in the intensity of light highlight this sequence of experiences. On the other hand, spaces in contemporary mosques are enclosed space with walls that often have large windows. These spaces are always bright, giving off a singular spatial experience. These mosques, while still maintaining axial and symmetrical organizations, do not convey a sense of hierarchy and sequence of spaces. The use of the universal grid to organize the space creates a singular space, with the main facade on the eastern side

The design of traditional mosques follows a cluster order, while that of contemporary mosque is simply a stand-alone object. Hence, the latter removes a part of the cluster of a traditional mosque and turns it into a solitary figure. This shift fundamentally changes the reading and perception of formal and spatial characteristics of such a structure. A cluster organization articulates the primacy of parts-to-whole relationship, while a singular object articulates the centrality of a figure in space. Further, traditional mosques appear as an organization of volumes and solid mass. The open hall and terraces are lined with columns as linear space-defining elements, followed by the main prayer hall that is defined by solid walls. Hence, the reading alternates between a volume defined by columns at the front part and a solid mass at the back. From the outside, the building appears as an open building with columns in a rhythmical fashion. This emphasis on volumes and linear elements that define spaces creates a sense of lightness. On the other hand, contemporary mosques appear primarily as a solid mass. Even in buildings with terraces, the proportional relationship diminished the effect of these terraces, leading to the foregrounding of the structure as a solid mass. As a consequence, contemporary mosques give off the impressions of a heavy and grounded figure.

The primary formal expression of mosques, both traditional and contemporary, is the emphasis on the roofs. Because of the cluster organization, the formal expression of traditional mosque appears as an aggregation of varieties of shapes of roofs. Terraces and the open prayer hall are covered with hip roof, while the main prayer hall has three-layered, pyramidal hip roof. These varieties in shapes and sizes creates a sense of hierarchy and a dynamic profile of the roof. They appear to float above the ground, resting on top of columns that support the structures. In contemporary mosques, the formal expression appears as solid mass with a roof on top of it, creating a combination of two geometric solids. While the profile of the roof makes

references to the shapes of traditional mosque, they do away with the intricacy of the composition of multiple shapes of roof that of traditional ones. Instead, these mosques only use the layered, pyramid hip, shedding the hierarchy of forms in the composition of the roof. The primacy of the shape of roof, that is, the pyramid hip roof is still prevalent, often with an addition of a dome. Sometimes, the dome has become more dominant than the pyramid roof in the composition of the roof. Indeed, the use of flat roofs and large domes has become a common feature. Formally, minaret is a feature that was incorporated much later in the history of mosques in Java.[19] However, it has become an integral part of formal vocabularies of contemporary mosques.

In terms of techniques and materials, the primary characteristic of traditional mosques is the articulation of the timber frame structure. In this system, wooden columns appear in varieties of heights and sizes, establishing the hierarchy of the structural elements. The four tallest and biggest columns define the center of each primary space and smaller columns are organized around this central module. This structural system also foregrounds the intricate structures of the roofs. The center columns support a layered bracketing system from which rafters are arranged in a radial fashion, creating an umbrella-like effect. The roof structures are exposed, giving the tectonic expressions that characterize the interior space. The design articulates joins, structural elements, and details of construction. Decorative elements are integrated to the tectonic aspects in the form of carvings on beams and columns. Their motifs are derived from Hindu-Buddhist influences in Java, while few calligraphic plates are attached to the walls.

This is a far cry from contemporary mosques, which employ reinforced concrete frame structural system. This system of a grid columns and beams of equal size and dimensions allows for flexibility in the construction, both in horizontal and vertical directions. It suits both small and large structures and allows for vertical extensions into multiple levels. In place of the thick walls of traditional mosques, contemporary mosques utilize thin, curtain wall made out of brick masonry. As masonry walls are flushed with the structural grid, the structural system appears to blend in with the enclosures.

Concrete, gridded frame system is a ubiquitous practice in constructing building, because of its simplicity in construction. As a consequence, the structural grid becomes the datum that organizes plans, sections, and elevations. However, its simplicity eliminates the possibilities for intricate details of joints and a concrete frame system lacks of details. Further, the character of spaces is the result of the manipulation of surfaces of enclosures. These mosques appear as a closed volume dominated by their walls, with standardized, industrial doors and windows adorned these walls. These buildings incorporate decorative elements that are applique on surfaces of the enclosures, rather than using elements that embedded in the tectonic logic of the structure. These decorative elements on the surfaces have become the primary features that characterize mosques. In

place of carving and motifs derived from Hindu-Java pasts, Arabic calligraphy and geometric patterns now take precedents.

6. SPACE, FORMS, AND EXPERIENCES

The structure of experience in an architectural work is the result of the formal and spatial arrangements of a design. Mosques in the city demonstrate changes in the spatial characteristics. The unique configuration of spaces that organized outdoor, open, and enclosed spaces in a sequential, hierarchical order gave way to a singular space that articulated gridded, neutral space. It was a transformation from a spatial organization imbued with a set of meanings that were experienced through the condition of space into a space of pure functionality. It appears that these spaces have been drained from bodily experienced as well as memories. However, through this mode of emptying and neutralizing its spatial features from rich experiential and historical contents, contemporary spaces of worship have been able to intrude into every domain of everyday life. In essence, a space of worship is not any different from any other space, whether that is a space of production or consumption. It is a similar phenomenon that appeared in educational, institutional, and commercial domains. The distinction of spaces appears thanks to the labelling or naming of such a space, designating it as a space of worship. As a consequence, worshippers performing services in this space are unattached to each other or to that space of worships. They come into such spaces simply to use it and then leave, because they happened to pass through or in close proximity. This is the second condition that allows this space of worship to permeate in every domain.[20] In this line of thought, the collective identity as Muslims appears from the frequentation of this space. The space itself acquired its existence through its label, whether written or visual, that gives it the identity as a space of worship.[21]

Lefebvre has outlined the history of space that proceeded from absolute space, turning into historical space, and eventually becoming abstract space.[22] At the stage of absolute space, humans settled in natural space and established social organization, turning such a space into a political space. In this trajectory, this space was relativized, and the symbolic dimensions of space became prevalent, giving memories and associations to this space. However, this space could turn into abstract space which was originated in and ruled by financial apparatus. It dissolved historical and symbolical dimensions. The primary characteristics of abstract space was that it was repetitive and homogenous, yet diverse. Due to this repetitive nature, abstract space placed a premium on visual elements to conceal their repetitive nature.[23] In this vein, the differentiation of space appeared through visualizations and metaphor, foregrounding the reliance on the visual and optical.[24] Abstract space necessitated the triumph of visual perceptions of space over the bodily or haptic experiences. Abstract space reduced real space into a plan, that is, an abstraction of space, in order to achieve

homogeneity. Further, it turned such as space into an image or spectacle. It is a process of double abstraction. In this sense, abstract space aimed for homogeneity, but, at the same time appeared diverse.[25]

This type of space in Indonesia comes about as a function of the modern, vernacular way of constructing space. The construction of this space utilizes simple, standardized, reinforced concrete frame system and brick masonry. It is a system that capitalizes on cheap, untrained, yet widely available workforce. This standardized and mechanized construction techniques have led to the loss of craftsmanship and local knowledge. The craftsmanship that related to aesthetic refinements as well as collective memories, inherent in traditional methods and techniques, is lost. It is a system that could be applied at every type of construction at every scale. Further, the grid of construction conflates with the spatial grid, the result of which is the prevalence of a banal, repetitive space. The standardization in techniques and materials of construction facilitates the spread of space of worship in any guise in any location. Hence, they turn from a place of worship, which implied a relational and historical connectedness, into space of worship. Its ubiquitousness renders such a space to be simply a location of action.

Design-wise, they exemplify the decorated shed writ large, in which the identity of such a space relies heavily on its formal appearance.[26] The gridded, concrete frame that defines such a space are wrapped in a varieties of enclosure that are connotative of Muslims identity, whether the use of arches, geometric decorative patterns, domes, or pyramid hip roof. In this line of thought, Luis Fernandez Galiano, discussing contemporary architecture in Europe and the United States, argued that the lingua franca of today's architecture is sprawl and spectacle, in which the essence of architectural design is to produce spectacular wrapping.[27] In essence, his argument tilted to a celebration of banality, of universal gridded space enclosed with exuberant surfaces. Relating this argument to the phenomenon of mosques in contemporary Indonesia, their emphasis is on formal appearances that convey the message of public religiosity in the built environment. It is less about the design of space but using the appearance these space of worship as an advertisement of a lifestyle that partakes as a brand of Islamic lifestyles. Indeed, in regard to branding, Thomas Frank argued that branding has evolved into a life on its own that are capable of creating meanings around which people organized their life.[28] Underneath this thought is obviously Debord's keen observations of our society as an image-saturated culture.[29] Here, images act as spectacles that conditioned human life, both individually and collectively. Spectacle incites our desires and conditions what we want in our everyday life. Such phenomena recalibrate our relationship with society and the world.

The discussions of architecture and spectacle often revolve around monuments and famous architects. However, everyday buildings around us also condition our lifestyle, in which spatial and formal organizations

of the built environment helped in shaping our behaviors. It is a haptic way of conditioning and disciplining us. Along this line of thought, Kevin Early Kelley unabashedly celebrated the role of designers of the built environment in branding and spectacle. Arguing in the context of designs of retails, he argued that the task of an architect is to offer "perception design," that is, designing cues and signals in the built environments to influence perceptions of people. In other word, it is creating a brand, the goal of which is to persuade people to consume a certain lifestyle.[30]With regards to this topic, the cueing of the brand involves the mobilization of fragments and vignette of visual materials associated with Muslim culture. Hence, a Middle Eastern style mosque topped with a Javanese roof, a form of hybridization.[31]

7. CONCLUSION

In the end, the aim of this study is to inquire the relationships between changes is social and cultural life as results of the advance of the information and communication technology. In contemporary Indonesia, Indonesians in general and Muslims in particular engage in the production of identity through the production and consumption of lifestyle. To be a Muslim is to lead a certain lifestyle, which is perpetuated and accelerated by current information and communication network and technology. A part and parcel of these perpetuation of lifestyle is the use of forms of visual culture that disseminate and promote Muslim lifestyles as a brand, ranging from wearing headscarf, consuming faith-sanctioned commodities, to creating a certain built environment. In this sense, designs and constructions of mosques partake actively. Indeed, architecture has been a means to express constructed identities. Institutional buildings in Indonesia, including mosques, in 1960s and 1970s often appeared in modernist style, shifting into neo-traditional in the 1980s and 1990s. Since the late 1990s, designs of mosques covered a cornucopia of styles, ranging from traditional, contemporary, middle eastern, to green-buildings.

The phenomenon of designs and constructions of mosques points to the construction of identity, which inevitably relates to the politic of identity. In present day Indonesia, the narrative of this politic identity is no longer a singular one that is dictated by the nation-state. In world in which boundaries has been constantly challenged, the narrative of a nation state is constantly challenged and even become plurals. New narratives are not only shaped by major economic powers, but also informed by plethora of voices emerged from the proliferations of social media. The change in which the polysemic narratives replace the singular narrative of identity is a symptom of the condition of the country, which has shifted from a repressive, authoritarian regime into an opportunistic regime that co opted multiple forces for its continuity. Poignantly, it is an emergence of a market of brands of Islamic lifestyles that offered a wide range of offering that were considered in conformity to the teaching of Islam. The imagined Muslim lifestyle appears in multitude of

forms, each of which is constructed as a collage of pieces that came from various sources, local and global. Information and communication technology facilitated multiplicity of information, including visual information that feeds the branding of Muslim lifestyle. Images of mosques are not an exception, hence the hybridizations of styles of mosque. It is no longer sufficient to generalize into traditional, modern, or neo-traditional as the dominant formal expressions. The notion of identity projected through visual means in architectural design no longer hinges on previous conceptions such as critical regionalism or quotations and ironies of post-modernism. Nowadays, the visual manifestations embrace surface architecture that projects collages of desires and imaginations.

The phenomena of mosques in Indonesia indicates that the dynamics in architectural design is not a direct result of dynamics resulting from contemporary information and communication technology. However, they bear a parallel to phenomena in many facets of contemporary visual culture. In this sense, it points to the notion of visual culture as surface appearances of forces that worked in our socio-cultural life. It is a phenomenon of expression of piety and religiosity in public sphere through productions and consumption of culture. In this sense, the productions and consumptions of image take precedent. In the case of mosques, the imageries of a mosque wrap universal space of modernity that is constructed using banal techniques. Elements of images, however, pointed to dual dimensions in architecture. Some elements are deeply embedded and hard to change, for example the shape of the roof, while some are more fleeting, such as facade and decorative elements. It is a surface appearance of search for expressions of identity of Indonesian Muslims through consumptions of culture.

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[20] "If a place can be defined as relational, historical and concerned with identity, then a space which cannot be defined as relational, or historical, or concerned with identity will be a non-place. The hypothesis advanced here is that supermodernity produces non-places, meaning spaces which are not themselves anthropological places and which, unlike Baudelairean modernity, do not integrate the earlier places: instead these are listed, classified, promoted to the status of 'places of memory', and assigned to a circumscribed and specific position." 77, Marc Auge, *Non-Places: Introduction to an Anthropology of Supermodernity*, trans: John Howe, (London: Verso, 1995), p. 77

[21] "… Certain places exist only through the words that evoke them." p/ 94; "..non-place creates the shared identity of passengers, customers or Sunday drivers.." p.101; ibid.

[22] Henri Lefebvre, *The Production of Space* (New York: Willey-Blackwell, 1992), pp. 48-49

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[28] Thomas Frank argued that : "to think of the brand as a static thing .. is to miss its dynamic nature .. The brand ... was a relationship, a thing of nuance and complexity, of irony and evasion. It was not some top-down affair, some message hanged into consumer's heads. The brand was a conversation, an ongoing dialogue between companies and people. The brand was a democratic thing, an edifice that the people had helped built themselves by participating in the market ..(253) Thomas Frank: advertising is a means of contributing meaning and values that are necessary and useful to people in structuring their lives, their casual relationships, and their rituals (254*)"* Michael Sorkin, "Brand Aid: or, The Lexus and the Guggenheim (Further tales of the Notorious B.I.G.ness" in *Commodification and Spectacle in Architecture: A Harvard Design Magazine Reader*, William S. Saunders, ed. (Minneapolis: Univ. of Minnesota Press, 2005), 22-33; p. 26

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[30] "We designers are not really producing what people need; we are producing what people want. Our economy is based on creating those want ..." (p. 47) " successful retailers ... switching from product marketing to "lifestyle marketing … Appealing to consumers' core values can be achieved through a display that acts a s surrogate for the brand and merchandises lifestyles by 'vignetting." Vignetting is mocking up a desirable scene with all the right props (merchandise)" (pp. 51-52) "our service as "perception design" - we help prompt consumers to buy through environmental "signaling" that influence their perceptions. ... Brand cueing takes place in the built elements, but also the menu, uniform, logos .... (p. 53)..."Images are strategic weapons in our society ... we are designers of perception through image-making (p. 54) Kevin Early Kelley, "Architecture for Sale," in *Commodification and Spectacle in Architecture: A Harvard Design Magazine Reader*, William S. Saunders, ed. (Minneapolis: Univ. of Minnesota Press, 2005), pp. 47-59

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RETHINKING THE PEDESTRIAN EXPERIENCE IN BEIRUT

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RETHINKING THE PEDESTRIAN EXPERIENCE IN BERUIT

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Beirut still allows distinctive possibilities for pedestrians within its urban environment. This is particularly observed today along urban public staircases, forming dynamic pockets of urban heritage. However, multiple challenges threaten the experience of walking in Beirut. They are better understood through the city's historical urban development which prioritized vehicular mobility infrastructure and failed to preserve the city's historic urban landscapes.

The paper then looks at recent design initiatives that envision the co-existence of different modes of transportation in the context of Beirut. It argues that, when fueled by community-based urban aspirations, design is a powerful tool to question an urban context struggling to preserve its historical and communal qualities and to produce coherent urban spaces where sustainable forms of mobility are prioritized, and heritage is valued in an integrated manner on multiple scales.

1. INTRODUCTION

> Since the city is the product of growth rather than of instantaneous creation, it is to be expected that the influences which it exerts upon the modes of life should not be able to wipe out completely the previously dominant modes of human association.[1]

Beirut's urban public staircases, spreading across different neighborhoods, still host today multiple pedestrian possibilities and social practices intrinsic to urban life. When analyzed in light of their morphology, architectural development and social practices and sensory experiences, they demonstrate the growth of the city as a product of intricate interactions of the built-environment, nature and people, layered over time.[2] They form pockets of historic urban landscapes that still preserve a communal aspect through a unique negotiation of the public and private realms.[3]

These pockets provide a distinctive urban experience: through walking, a daily aspect of "being" in the city, Beirut's dwellers create the city's rhythms and practices, appropriate its spaces, engage in its social life and associate with its historical layers.[4] However, multiple challenges obstruct the pedestrian experience on the staircases and streets of Beirut. While the experience itself is increasingly becoming unsafe and inaccessible, the city's urban heritage, which presents rich possibilities for pedestrian motions, is disappearing at an alarming pace.

In order to understand the present condition, a brief overview of Beirut's history of urban transformation, through the specific development of modes of transportation and mobility networks, reveals the patterns of imposed planning which has been constantly producing an urban space in constant conflict with the historical fabric and social practices throughout the years.

Beirut's urban transformation seems to have failed to address the layering of complex urban conditions that were produced historically, shaping the city as we live it today. When positioned within Lefebvre's frame of space production, Beirut's conditions systematically prove the dominance and rather dissociation of professional conceptions (the conceived) that took place throughout the city's history of modernization and planning over the daily acts of spatial production and people's motions (the lived). [5]

The paper presents three contemporary design proposals that highlight a community-based approach to city making through the comprehensive integration of urban heritage and sustainable urban mobility. First are the alternatives to Fouad Boutros highway in 2013: an imagined vision to stop the highway project from destroying the traditional fabric of Mar Mikhael (Hekmeh) neighborhood and its networks of public staircases and alleyways, orchards and built heritage. Second, is the proposed Liaison Douce pilot project in 2013 that introduced sustainable modes of transportation and activated green public spaces on a site of great historical significance and collective memory. Finally, is the rehabilitation project of Jeanne d'Arc street into a pedestrian friendly model street in Hamra, Beirut, executed in 2018. It is a lived experience showcasing positive urban impacts and great potential to spatial, social and cultural productions.

To conclude, these experiences are read within today's complex context. On the one hand, Beirut, like many cities across the globe, observed massive changes in mobility patterns due to Covid-19 lockdown measures. On the other hand, the city is witnessing an unprecedented urban disaster, due to the port of Beirut explosion in August 2020 that wiped out entire urban clusters and architectural jewels.

Therefore, integrated visions of the urban space where health and equity are prioritized, urban heritage is actively re-integrated, and where open public spaces and sustainable urban mobility are provided are of utmost urgency to help the true recovery of the city on both the short and long terms.

2. AN URBAN OBSERVATION: PUBLIC URBAN STAIRCASES AS POCKETS OF BEIRUT'S URBAN HERITAGE

Within Beirut's public urban staircases, pedestrian motions unfold and create dynamic interactions making a tangible impact on the built environment. At neighborhood scale, public urban staircases are intricately interwoven within the urban fabric, providing essential shortcuts and accessibility to different spaces: linking between a lower and upper street but also accessing private and/or commercial spaces. Inhabited buildings, empty lands, abandoned structures, green pockets and businesses coexist along the public staircase, fostering intangible social and cultural practices.

The complexity of public urban staircases of Beirut lies within the fact that they form pockets of urban heritage which give a fading glimpse of the city's history; they form spaces that catalyze dynamic urban practices in the present and exhibit multiple signals of potential future urban transformations, all at once. Visual and spatial evidence of the development of Beirut's urban layers over time are manifold and specific to each urban public staircase. Around these pedestrian passages is formed a vernacular urban landscape which retain a human-scale, allow communal interactions to take shape and negotiate the relationships between public and private realms. As such, they offer endless lessons on the hierarchy of private, semi-public and public space and allow a great potential of a communal urban life, very-much needed in the context of Beirut. Simultaneously, the users' daily practices and creative initiatives are ever evolving they activate and re-interpret the spatial qualities that these public urban staircases are offering in multiple ways. These lived experiences still have an urban space to come in harmony and tie meaningful linkages in the city.
The visual and spatial analysis of selected public urban staircases around Beirut illustrates the creation of interactive dynamics through which the public and private spheres are negotiated and a wide spectrum of activities to re-appropriate these rare urban spaces of Beirut is displayed.

Generally, three types of practices are identified: necessary activities that are mainly the compulsory daily acts of commuting from one end of the staircase to the other or accessing one of spaces located along the staircase, second are the optional activities that are catalyzed within a favorable built environment that allows inclusivity, visibility and accessibility and finally are the social activities that shape human interactions of different scales and nature.[6] These three types of activities are distinguished through various combinations and intensity specific to the spatial qualities of each urban public in Beirut, as demonstrated by the following three case-studies.

Fig. 1: Ein el-Mreysseh staircase (Source: N/A).

This staircase is located in the neighborhood of Ein el-Mreysseh, linking between John Kennedy and Arsalan streets. It provides an access to the lower part of the neighborhood where the fishermen's port is located. Often unnoticed, it is well-hidden within a dense fabric of residential buildings of different architectural periods. Following the urban morphology of the surrounding plots, the staircase wraps around and provides access to the buildings located along it.

When passing through this staircase, sensory cues come in play to display both the spatial and social negotiations of the public and private realms. "Being" in this public urban staircase becomes an opportunity for passers-by to interact with the surrounding private spheres through overheard conversations, smells of cooking, and peaking visibility to the interior of dwellings.

Fig. 2: Saint-Nicolas staircase (Source: N/A).

The Saint-Nicolas staircase of the Gemmeyzeh neighborhood links between Gouraud and the upper Sursock street. Wide enough and straight, this staircase remains one of the most successful public spaces in Beirut. Along this link are located residential buildings as evidence to the urban development of the area since the 1860's. However, most of their ground floors is occupied by small scale businesses, art and exhibition spaces as well as restaurants and bars.

The mixity of social groups using this staircase in addition to its spatial qualities allows for a variety of activities to take place: accessing a residence, exhibiting a work of art, having a meal and assisting to a film festival held in open air. The Saint-Nicolas staircase remains a rare space of social and cultural productions within a quickly evolving urban environment.

Fig. 3: Masaad staircase (Source: N/A).

This staircase is located in the neighborhood of Hekmeh, linking between the two streets Armenia and Al-Khazinien. Form a busy active street, this link ejects its users to the inner neighborhood of Hekmeh where a residential character prevails. Around this staircase has formed a unique urban fabric where religious institutions, residences and small-scale businesses co-exist.

The peculiarity of this staircase resides in the shifting practices along its length. While the lower part is actively used by passers-by and employees of the busy Armenia street who gather, rest, and sit. The upper part is mostly reached by the neighborhood's residents to access their dwellings. Only recently, the threat of demolition by the developer of one of the neighboring plots was imminent, aiming to give vehicular access to its planned building.[7]

Sharp criticism and pressure of the local community and NGOs succeeded in denouncing this action and initiating a rehabilitation project completed in 2019 by the Municipality of Beirut, which turned this staircase into a green open space to re-engage its historically practiced activities. [8]

3. THE PEDESTRIAN EXPERIENCE IN BEIRUT

> Their story begins on ground level, with footsteps. They are myriad, but do not compose a series. They cannot be counted because each unit has a qualitative character: a style of tactile apprehension and kinesthetic appropriation. Their swarming mass is an innumerable collection of singularities. Their intertwined paths give their shape to spaces. They weave places together. In that respect, pedestrian movements form one of these 'real systems whose existence in fact makes up the city'. They are not localized; it is rather they that spatialize.[9]

The observation of public urban staircases demonstrates the potential of pedestrian motions, as an elementary form of experiencing the city, to create rich possibilities to appropriate and re-integrate the city's layers of urban heritage into daily practices and aspirations for the future.[10]

In fact, Beirut presents geographic assets that make the implementation of sustainable options of urban mobility such as walking and cycling possible: small scale, gentle topographic profile and a moderate climate throughout the year.[11] On the urban level, the city's organization into tightly-knit neighborhoods of unique architectural and socio-economic character with a wide array of mixed-used functions on ground floor level is an inviting factor to explore the potential of walking as an inclusive, safe and accessible activity. The network of pedestrian mobility (streets, alleyways and urban staircases) has been developing as mixed-use open public spaces where city dwellers actively interact in multiple ways within their urban environment. This is due to the scarcity of public open spaces (parks, gardens and public beach) which amount to 0.8 sq.m of green space per capita in Beirut.[12]

Unfortunately, multiple physical and spatial challenges obstruct the pedestrian experience in Beirut, rendering it unsafe and unpleasant. At a first level, the city's walkability is alarmingly hindered by the absence of effective planning frameworks and safety measures to allow for safe pedestrian flows. According to the World Health Organization report of 2018, pedestrians form 37% of deaths by road users in Lebanon.[13]
From a spatial perspective, most of Beirut's streets lack proper sidewalks, pedestrian signage, and safe access to disabled people, the elderly and children. Different kinds of obstructions can be discerned which contribute to a degraded experience.

On the street scale, obstructions materialize physically through the use of sidewalks as parking spots and/or a fast lane for motorcycles in addition to an invasive extension of privately-owned shops, restaurants and other businesses to the sidewalks.

Furthermore, misplaced urban equipment (such as bollards, park-meters, trash bins, trees) and the lack of maintenance by the Municipality are equally observed on sidewalks and public staircases (Figure 4). These conditions are all exacerbated by a severe garbage crisis and lack of civic responsibility that leave these public spaces as garbage dumps due to littering and dog poop spread everywhere.

Fig. 4: Obstructions to the pedestrian (Source: N/A).

On the neighborhood scale, obstructions to pedestrian movements happen when shortcuts and alleyways are completely blocked around public institutions and residences of politicians for "security concerns". Furthermore, the laissez-faire approach to urban development left to profit-driven stakeholders the floor to ratio area (FAR) resulted in the degradation of street life and a chaotic urban growth. The unregulated development of high-rise buildings is in constant conflict with the urban fabric of their specific context. Gated entrances, wide setbacks from the street and prioritized vehicular access to underground parking, are

among the planning and building practices that have been transforming Beirut's street life and slowly erasing communal exchanges of pedestrians on ground level.

4. BRIEF HISTORY OF URBAN MOBILITY IN BEIRUT

The degradation of pedestrian possibilities and threats to historic urban landscapes in Beirut have been the product of years of questionable planning practices. More specifically, Beirut's urban development unveils a layering of a highly prioritized vehicular transportation infrastructure that seems to consistently clash with the urban fabric in response to growing linkage and commuting needs. Taking a look at Beirut's modern history of urban development sheds light on the processes of mobility infrastructure growth in light of some of the different political, cultural, social and economic factors that affected its ever-evolving built-environment. The earliest seeds of Beirut's urbanization started to appear in the 19th century during the Ottoman rule.[14]

The growth of the city outside its walls and the gradual development of suburban nodes was supported by the development of a transportation network to link the different areas.[15] The most notable transportation infrastructure of this period was the construction of Damascus Road, a major east-west artery completed in 1863, to link between Beirut and the hinterland via Damascus.[16] The wave of modernization of the late 19th century had a major impact on urban management and growth in terms of modes of transportation, infrastructure and urban design.[17] A railway line linking Beirut to Damascus (Beirut as the *tête de la ligne*) was completed in 1895 and a tramway line, which included 5 lines with end stops at the pine forest, Nahr Beirut, the light house and the port, was inaugurated in 1909. As a result, streets were enlarged, aligned and paved.[18] Ottoman modernization measures profoundly shaped the urban fabric, which is especially discerned within the old city through the elimination of gardens, expansion of roads, and the creation of a prominent transportation node.[19] One can argue that the earliest evidence to conflicting urbanization practices and built heritage started to emerge. Paradoxically, it was the only time in the history of Beirut where public transportation, a sustainable way of commuting, was officially addressed.

The French Mandate (1919-1943) brought in new models of spatial organization in response to the growth of the services sector and modes of transportation. In light of the city's demographic development, infrastructure and connectivity were enhanced.[20] By 1939, around 2900 km of new roads were constructed (in comparison to 700km in 1920).[21] Urban expansion patterns were noticeable in neighborhoods situated along the tramway lines.[22] Moreover, an important use of automobiles surged whereby the number of motorized vehicles increased from 100 in 1919 to 11,000 in 1939.[23]

After Lebanon's independence from the French Mandate (1943-1975)[24], Beirut knew an important wave of densification coupled to economic and cultural prosperity especially in the 1950's and 1960's. Although important infrastructural projects were undertaken such as the port's expansion and the construction of Beirut's international airport in 1951[25], a laissez-faire approach to planning prevailed. Cars as a mode of transportation and their required infrastructure were prioritized causing the decline of the tramway line in 1968 and a severe problem of traffic congestion across many residential neighborhoods in the city.[26] This prosperity was soon to be disrupted. The fifteen-year civil war (1975-1990) was devastating on multiple levels across the whole country.[27]

In Beirut, the clashes were geographically expressed through the city's division into two sectarian enclaves East and West Beirut, severely disrupting urban mobility. Moreover, the momentum of urban development shifted towards the suburbs and peripheries, reducing the central role of the capital.[28]

At the end of the war in 1990, the urgency of reconstruction could not be addressed by the fragmented government and its weakened institutions.[29] Generally, the post-war reconstruction process prioritized the physical recovery of infrastructure through sporadic projects.[30] However, it missed the chance to provide a long-term comprehensive urban vision in terms of sustainable mobility infrastructure.

While the reconstruction project of Beirut's historic city center was entrusted to a private real-estate company, SOLIDERE[31], other neighborhoods suffered the lack of a comprehensive plan for recovery. The only official project pertaining to mobility targeted the Greater Beirut Area was proposed in 1994-1995. The Urban Transport Development Project (UTDP) is followed up today by the Municipality of Beirut in cooperation with the Ministry of Public Works and Transport. The proposal prioritizes vehicular modes of transportation through the execution and rehabilitation of vehicular roads, tunnels, crossroads and traffic lights installation.[32]

5. URBAN MOBILITY AND HERITAGE TODAY

Current official practices of urban management coupled to fragmented decision-making across the governmental agencies has eliminated possibilities of sustainable urban mobility throughout the years, resulting in an unbalanced hierarchy in modes of transportation. Vehicular mobility through the exclusive use of private cars and motorcycles is imposed as a dominant mode of transportation, whereas public transportation is reduced to a limited privately managed network of buses, mini-vans and privately-owned taxis. For a population of 6,006,668 inhabitants in 2018, the total number of registered vehicles (including cars, motorized 2-wheelers, trucks and buses) is 1,866,407.[33]

This has been translated in several aspects: spatially through physical ruptures due to the creations of roads and highways and the absence of pedestrian-friendly streets, socially through a prioritized preference to the daily use of private cars and economically through the elevated costs of vehicular transportation and citywide traffic congestion. Urban space has thus become a neglected byproduct of progress and functionalist organization, transformed into a "blind spot in a scientific and political technology."[34]

The top-down approach to transportation projects in Beirut has proved to be insensitive and inadequate to the urban characteristics of Beirut's neighborhoods. This finds its roots at the lack of coordination among the different stakeholders involved in the process of city planning: the transport sector is regulated, planned and implemented by the Council for Development and Reconstruction (CDR) and the Ministry of Public Works and Transport acting on a national level, while the role of the Municipality of Beirut is marginalized. [35]
In addition to this, the lack of integrated sustainable urban visions for mobility and the absence of nation-wide frameworks for the preservation of historic urban landscapes and their re-integration to contemporary urban life resulted in a flagrant clash of mobility infrastructure and urban heritage.[36] This has severely affected the pedestrian experience. When walking around Beirut, one can notice how traditional neighborhoods are sliced by highways and rare historic public gardens are destroyed to make way for parking spaces.

6. PRACTICES RETHINKING PEDESTRIAN MOBILITY AND URBAN HERITAGE

The urgency to address these conditions has grown more pressing. Professionals of multiple disciplines, networks of urban activists and community-based groups are proactively engaging as custodians of a better livable built-environment in the city. The fight for heritage preservation and sustainable urban development in Beirut has taken different forms and yielded incremental yet hopeful results.

This section presents three projects that advocate for sustainable visions for the regeneration of historic urban landscapes in Beirut through an innovative, site-specific approach to urban mobility and design: the campaign and alternative plans imagined against Fouad Boutros highway project planned to cut through the historic neighborhood of Mar Mikhael in 2014, Liaison Douce proposal, a pilot project of sustainable urban mobility along Damascus Road in 2013, and finally the rehabilitation of Jeanne d'Arc Street in Hamra area into a pedestrian-friendly model street, executed in 2018.

6.1 THE IMAGINED: ALTERNATIVES TO FOUAD BOUTROS HIGHWAY

The neighborhood of Mar Mikhael (Hekmeh), located at the eastern edge of Beirut, stands today as a unique illustration of the combination of clashing planning conditions and sprawling urban growth. Tightly knit

through networks of pedestrian links and vernacular green spaces, the neighborhood's urban fabric still preserves multiple elements of the city's tangible and intangible heritage (Figure 5). Despite the ongoing challenges transforming the neighborhood's socio-economic conditions and built-environment, social and cultural practices are still to a certain extent continued in its private and public spaces. Some of Mar Mikhael's pockets of traditional urban space, remain a distinctive environment that still showcases the city's lived heritage urbanism against a rapidly evolving context. The neighborhood's hilly topography dictated a unique spatial organization linked through a network of pedestrian and vehicular alleyways and public urban staircases[37]. Moreover, the neighborhood's location has been historically associated with the development of modes of transportation and infrastructure in Beirut through the construction of the railway station in 1891, and the service spaces for tramways (for the ottoman tramway company, Société Anonyme Ottomane des tramways) in 1909, in addition to the important infrastructure modernization of the French Mandate[38].

Fig. 5: View of Hekmeh neighborhood (Source: N/A).

For the past 10 years, the neighborhood of Mar Mikhael has been witnessing an important process of gentrification causing significant transformations of its socio-economic profile in addition to the proliferation of up-scale arts and crafts functions and recreational amenities. As a result, important changes are rapidly shaping the built environment through the demolition of traditional buildings, the surge in construction of

high-rise towers, transformation of urban morphology land use and property value[39]. Amid these unsettling conditions, another threat was imminent to the neighborhood's urban heritage: the outdated Fouad Boutros highway was revived for execution in 2012 despite its proven inefficiency and failure to relief the traffic congestion of the Ashrafieh area.[40] Passing right through the Hekmeh sector of Mar Mikhael's area, it destroys significant portions of historic urban fabric and landscape features.[41]

The project stirred waves of public outcry among professionals, NGOs and community members who joined efforts to lobby against the project expected to cause irreversible damage to the built-heritage, deforestation and pollution, displacement of inhabitants and other negative socio-economic impacts. A city-wide mobilization in the form of media campaigns, on-site protests, official petitions and complaints and alternative proposals succeeded in stopping the project once again in 2014 (Figure 6).

Fig. 6: Protest against Fouad Boutros Highway 2013 (Source: N/A).

The campaign against Fouad Boutros Highway motivated designers in academic and professional settings to envision, design and share alternatives for the neighborhood through site-specific interventions and community-informed design decisions.

One example of such alternatives is *On the Pursuit of the Pedestrian Link*, Dina Mneimneh, graduation project presented at the Architecture and Design Department of the American University of Beirut in 2013 (Figure 7). The yearlong research and design processes were grounded to the events happening around the execution of the project. After extensive fieldwork, surveys and mapping, the proposal advanced a multidisciplinary strategy located around the garden over which passes the highway is planned to pass. The intervention drawing lessons from the social and economic conditions of the site in terms of resident profiles, economic status and legal status of plots and structures retain urban spatial hierarchy, preserve semipublic communal spaces and introduce sustainable site-specific functions knit by a network of existing and proposed pedestrian links. The preservation and activation of valuable historical fabric through adaptive re-reuse and sensitive interventions on the existing built fabric and the re-activation of the site's open green spaces was at the core of the neighborhood's rehabilitation into a vibrant green pocket of the city.

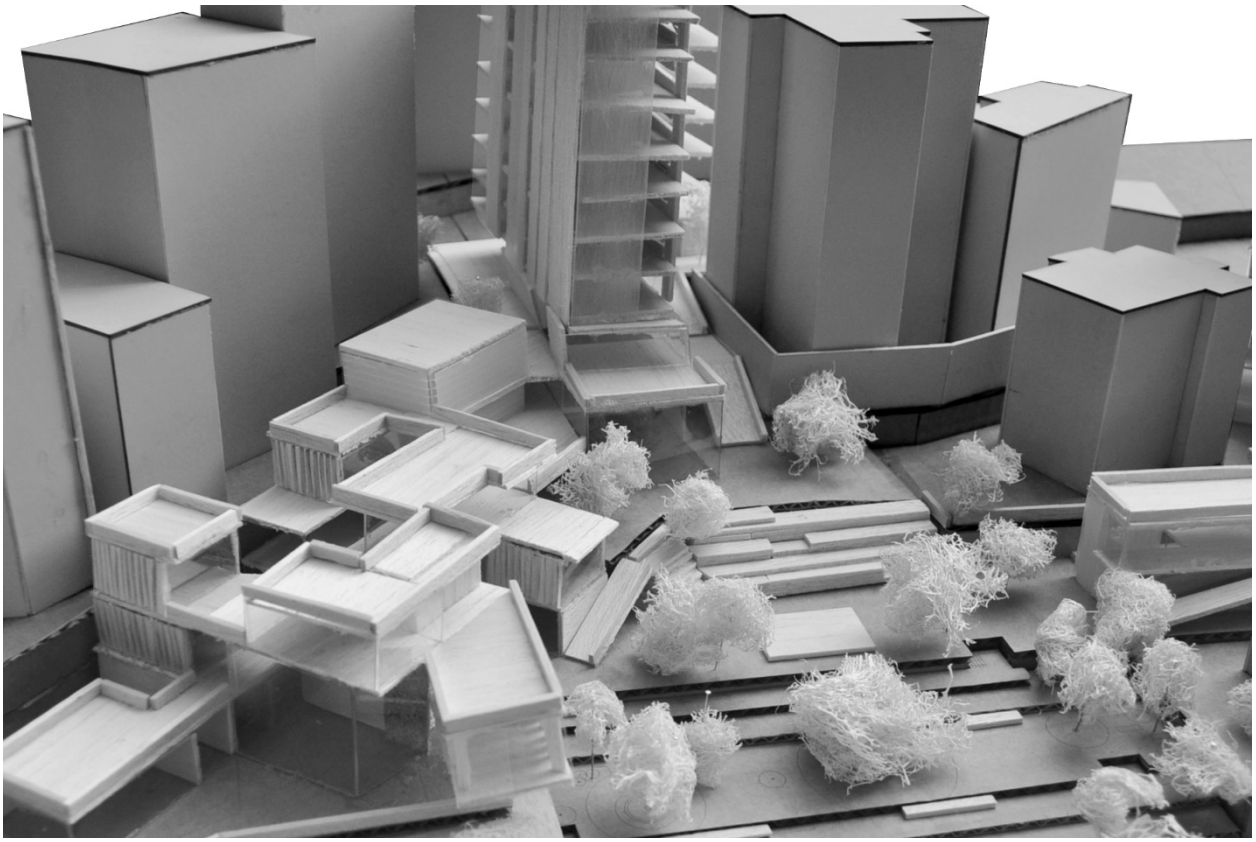

Fig. 7: Model showing a design proposal of communal spaces and pedestrian linkages, alternative to the Fouad Boutros Highway in Hekmeh neighborhood (Source: N/A).

The alternative addressed the site's complex conditions to develop a built environment that would retain urban spatial hierarchy in order to preserve semipublic communal spaces in the city of Beirut. Different interventions on a micro-level, in addition to site-specific public and private functions (such as affordable

housing, communal kitchen, a library and design workshops) were introduced to stir a regeneration process economically and socially and maintain the site's social mixity. This work has also been part of the campaign advocating against the project, published on the Coalition against Fouad Boutros Highway online platform.[42] The significance of this proposal unfolded on multiple layers. Positioned amid other professional initiatives to fight the planned Fouad Boutros Highway project, the proposed alternative strategy expanded beyond the academic setting. It was a unique opportunity to imagine creative narratives for urban life and actively participate in engaging debates and actions on the ground.

The research and design processes materialized into a true potential to explore and conceptualize holistic guidelines for the future of urban development in Beirut. Sustainable urban mobility and heritage preservation were at the core of the intervention to the revitalization of the historic neighborhood of Mar Mikhael/Hekmeh. Most importantly, the community's participation was stressed throughout the process. Design was explored as a flexible tool, gathering feedback from the different stakeholders to inform site-sensitive interventions that are more integrated.

6.2 THE PROPOSED: SOFT MOBILITY LINK BETWEEN THE PINE FOREST AND DOWNTOWN VIA DAMASCUS ROAD *(AMÉNAGEMENT D'UNE LIAISON DOUCE ENTRE LE BOIS DES PINS ET LE CENTRE-VILLE DE BEYROUTH PAR LA RUE DE DAMAS)*

In December 2013, the Liaison Douce which translates to Soft Movement Link proposal addressed the challenging conditions of mobility in the city through a groundbreaking sustainable urban design strategy that valued the co-existence of different modes of transportation and the re-integration of historic urban landscapes. This pilot project aligned to the strategic frameworks of a wider program of sustainable urban practices within the city initiated by the Municipality of Beirut in cooperation with French experts of the Région Ile-de-France.[43]

Developed from 2011 to 2013 by the local firm Urbi (Habib Debs, Architectes - Urbanistes), and Sitram Consultants (transport and mobility experts), the project's significance unfolds on multiple levels.
On the one hand, the intervention links between two major nodes of historical and cultural significance: the historic *Bois des Pins,* main green park of the city and downtown Beirut. It stretches primarily along Damascus road, an urban spine that showcases multiple layers of Beirut's urban history across different time periods. This road historically developed as an indication of the growing role in Beirut during the Ottoman period. Built in 1869 as a vital vehicular connection to Damascus, an important urban growth followed with the establishment of religious and educational clusters, mainly the Saint-Joseph University in 1875.[44]

Today, Damascus road holds great symbolism to the collective memory of Beirut as it demarcated the city's divisions into two sectarian parts throughout the 15 years of civil war (1975-1990). Named the Green Line, the road was turned into a no man's land where wild vegetation grew. A locus of heavy bombardments, many buildings along this road still bear the physical traces of the war. Although initiated 22 years after the end of the civil war, the Liaison Douce's social and urban objectives have the potential to mediate for true recovery among the mixed community.

From a design perspective, the project provides an integrated infrastructure for different modes of transportation where sustainable urban mobility through walking, cycling and public transportation is prioritized. The creation of public open green spaces and the re-activation of urban nodes allow multiple cultural and recreational activities to take place. These incremental urban and landscape design interventions are introduced in response to site-specific intricate urban conditions to form a coherent holistic strategy that responds to the residents' needs and preserve the memory of the place.[45]

The design process was informed by extensive yearlong research and fieldwork: interviews and surveys with the residents allowed an essential contribution of the community. The area's inhabitants shared their imagined visions and aspirations of dwelling and commuting in Beirut. Therefore, Liaison Douce was a pioneering proposal in terms of process and design. It allowed professionals and city-dwellers to collaborate on a sustainable vision of city making. Through a bottom-up approach, the designer hence becomes a facilitator of space creation and the intricate design components catalyze true reconciliation within the community.

6.3 THE EXECUTED: JEANNE D'ARC STREET URBAN REHABILITATION

Shifting scales and location, is the rehabilitation project of Jeanne d'Arc in Hamra into a pedestrian-friendly street. Just like the rest of Beirut's streets, pedestrian mobility along Jeanne d'Arc street was restricted and needed to be addressed given the important flows of pedestrians on a daily basis. The two-year project was the product of joint efforts of the Municipality of Beirut, the AUB Neighborhood Initiative and Center for Civic Engagement and Community Service.[46]

The site remains quite significant to the context of Ras Beirut as it links Hamra street to Bliss Street within the neighborhood of Ras Beirut at the western side of Beirut. The history of the street's development should be positioned within the urban, social and economic conditions that led the development of Bliss Street in the early 1870's, the establishment and growth of the major two institutions of the neighborhood: the Saint Mary orthodox church and high school since 1861 and the American University of Beirut since 1866, and the gradual urbanization process of Ras Beirut. It is also linked to the development of Hamra street as a cultural and business hub of the 1950's and 1960's. The street is studded with architectural traces of the different

periods of this unique urban development in Ras Beirut such as 1920's housing stock and 1960's modern buildings.

Today, Jeanne d'Arc Street is a busy artery where functional mixity through the co-existence of a wide array of small-scale businesses is echoed through a social mixity where user-groups of different age ranges activate the street on a daily basis. The design process involved an extensive research phase through fieldwork and interviews with the community to identify obstructions to pedestrian movements along the street and envision future solutions that are anchored to the social and daily life of the different users. This participatory approach took form through regular town hall meetings to discuss and accommodate for the community's aspirations. Residents and business-owners contributed to the proposal's development. Moreover, accessibility and inclusivity being at the core of the proposal, in fact by the team's anthropologist had studied the movement of a wheelchair user and a visually impaired pedestrian to inform the design. [47]

Today, the project's results can be witnessed. Barrier-free sidewalks and allocated urban furniture are nurturing a comfortable and safe pedestrian experience and allowing for rich social and cultural interactions. It is important to note that the success of this project as an active public space was further strengthened by the introduction of activities that brought the community, neighbors as well as visitors together: the local market is held on an empty plot at a corner of Jeanne d'Arc that exhibit the production of local farmers and arts and crafts, book exchange stand and reading booth was installed allowing cultural exchanges. [48]
The significance of the three projects unfolds across several layers, as potential tracks to explore and conceptual guidelines for the future of urban development in Beirut. At their core is the community's involvement in different form: they offered a rare opportunity for users, professionals and members of the community to imagine creative narratives for urban life and participate in engaging reflections and actions on the ground. It was a unique situation to put forward community-informed design processes and novel frameworks to make a positive impact on the built-environment of Beirut. They demonstrate the potential that sustainable urban mobility embodies to creatively address historic urban landscapes and reintegrate them into the daily interactions of city dwellers.

7. CONCLUSION: SUSTAINABLE URBAN MOBILITY: LESSONS FROM THE PAST, PROSPECTS FOR THE FUTURE

Looking at these previous initiatives, many lessons in city making emerge. Lessons that allow imagining a bright future and a healthy built environment for the city and its dwellers. Local initiatives and community-based efforts have been crucial in fighting for urban issues throughout the years, namely heritage preservation and sustainability.

Unfortunately, the urban situation in Beirut today is beyond dire. Complex conditions on multiple levels have deeply affected the urban environment and the quality of life of all city-dwellers. On the one hand, an unprecedented economic collapse has drained the country's resources for the past year limiting any potential proposals for urban regeneration or future development. Moreover, Covid-19 pandemic and the lockdown measures brought in further challenges. Among the several social, economic and urban impacts of the pandemic, Beirut has witnessed an accelerated disfiguration of its urban heritage through the increase in demolitions of heritage buildings within an atmosphere of laissez-faire and the complete absence of public monitoring. In terms of mobility, the lockdown has paradoxically shaped new urban practices, long advocated for in the context of Beirut. When the lockdown measures started to ease up, new socio-spatial practices could be discerned within Beirut's urban space. On one level, due to restricted vehicular use (as a result of the license plates permissions) coupled to recurrent fuel crisis, walking and cycling have gained popularity as modes of transportation across the different neighborhoods.

On a second level, due to the closing of public gardens and other recreational spaces (malls, etc.), streets and open public spaces such as plazas, alleyways, spaces in between buildings were activated by social interactions that took place. While it was the time to start the discourse on how to more forward beyond the pandemic impact on urban space, the massive explosion of Beirut's port on August 4 2020, has turned the situation upside down. The city is today in a disaster mode shifting all priorities into relief and post-disaster urgency of shelter and basic needs.

Within a context of weakened public decision-making and fragmented institutions, the role of community-based actions has been crucial in post-disaster first aid to the affected areas. Capitalizing on the strong role of local initiatives and the previous experiences in Beirut's context, the time is urgent now to mobilize all stakeholders and envision sustainable urban spaces in Beirut where the physical and emotional well-being of all city-dwellers is prioritized, multiple modes of transportation can co-exist, and urban heritage is valued.
It is an opportunity today to question planning tools and bring forth sustainable urbanism as a vision for the future, a future that promotes inclusion, well-being and equity, in a multidisciplinary manner that addresses the social, economic and architectural conditions of our streets and allow the participation of the community.

AUTHOR'S NOTE

Revisiting this paper was a truly difficult and painful task in light of the recent events in Beirut. The massive explosion of the port of Beirut on August 4th 2020 has severely hit several locations referenced in this paper, especially the neighborhood of Mar Mikhael. Presenting the rich urban heritage of Mar Mikhael/Hekmeh remains a way to document what was lost, learn from the potentials the area always offered and possibly dream of its true recovery on all scales.

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[14] The expansion of Beirut *al-Qadimah* or the "intra-muros" city, a space of dense organic growth of intertwining housing stock and businesses, outside of its walls started around 1830 when the Egyptian rule brought major administrative reforms and infrastructure works through the enlargement of the port supporting flourishing economic activities. M. Davie. *Beyrouth et ses faubourgs: Une intégration inachevée*. No. 15. (Presses de l'Institut Français du Proche-Orient, 1996), pp. 31-32.

[15] When Beirut was announced the capital of the province of Saida by the Ottomans in 1842, the city's position within the network of coastal cities of Bilad *al-Sham* was better anchored to the commercial and economic map. This brought an initial wave of urbanization by Beirut's elite families in the closest suburbs to the city center. Gradually, other localities in the suburbs started to emerge especially in the 1860's.

Read: L. Fawaz Tarazi. *Merchants and Migrants in Nineteenth-Century Beirut***, (Cambridge, MA: Harvard University Press, 1983), pp.1. and** M. Davie. *Beyrouth et ses faubourgs: Une intégration inachevée*. No. 15. (Presses de l'Institut Français du Proche-Orient, 1996), pp. 31-32.

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[24] Lebanon got its independence in 1943. The French Mandate officially ended in 1946 when the French troops left Lebanon and Syria.

[25] The period of 1950's-1960's largely consolidated the gradual establishment of Lebanon as an independent state on the multiple political, economic and administrative levels amid an unprecedented economic and touristic vitality.

S. Kassir, *Histoire de Beyrouth*, (Fayard, 2003), pp. 416-417

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[29] The creation of the Council for Development and Reconstruction (CDR) in January 1977 is among the early efforts for reconstruction. It was conceived to be an autonomous public institution, freed from the typical bureaucratic constraints of governmental bodies, accountable to the Council of Minister. http://www.cdr.gov.lb/eng/profile.asp

[30] The project Horizon 2000, was the main governmental reconstruction plan. It exclusively focused on the rehabilitation of physical infrastructure of public services such as electricity, health, waste management, communications, transport, water, education, social welfare, agriculture, industry, fuel oil, services, public buildings, management and housing.

[31] The project resulted in a gentrified space, physically, socially and economically disconnected from the rest of the city which abided by the masterplan's market-led guidelines to project an image of the city as a financial hub.

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A. Atallah, A report on the Fouad Boutros Highway and its consequences on Ashrafieh and the Hikmeh neighborhood, Save Beirut Heritage

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The housing stock dates back to different historical period with a coherent alignment of traditional houses dating back to the French Mandate on Armenia street. The multiplicity of pedestrian public and private links has given the site a unique character.

[42]https://stopthehighway.wordpress.com/

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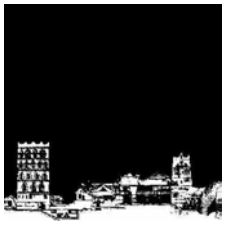

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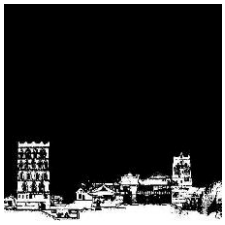

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