

A Continuity of the Past in Contemporary Architecture: Investigating a “Cultural Continuity”

Hazem Abuorf¹, Sulaiman Wafi²

¹Faculty of Applied Engineering and Urban Planning, University of Palestine, City of El-Zahra, Palestine

²Faculty of Applied Engineering and Urban Planning, University of Palestine, City of El-Zahra, Palestine

Abstract— Analysis in this article has at its stake the continuity of the traditions into the present. Analysis in this article in doing so investigates the concept of a “cultural continuity” (or, a “continuity of memory”) that evokes a place’s “unique identity” in the architecture design of the present, however, the search for identity in architecture design does not lead to a design that is merely marked by either “falsifying history” or “being identical” with the traditions. Analysis in this article chooses the Masdar City (UAE) as a case study and suggests that a contemporary architecture inspires its conceptual design from the architecture of the past striving for a place’s identity by neither literally copying the traditional motifs nor importing the universal models inherited in modernist/postmodernist architecture.

Keywords— a “continuity of memory”, place’s “unique identity”, traditions, architects’ skills.

I. INTRODUCTION

Analysis in this article addresses the question of how a traditional architecture (or, the architecture of the past) continues to be adopted in the contemporary architecture. The latter substantially contradicts the functional and rational synthesis of the modernist architecture by celebrating pluralism and diversity. The goal of a modernist movement is a wish to exhibit the technological process by using a “rational and empirical methodology” [1]. Its style remains a purely aesthetic categorization, while largely overriding the respective buildings’ response to their site conditions. Following Colin Row, the modernist architecture appears to be “an icon of change, an icon of technology, and icon of good society, an icon of the future” [1]. Its style would be accordingly classified as merely object buildings that have had no intention to integrate into an existing urban fabric. The problem arguably points to the lack of modernist commitment to place, context, climate and history, and in particular to place and time. The postmodernist style of architecture arises to bring back on track the historical and architectural contexts that become vital once again. However, the desire towards reviving historicism, pluralism, and eclecticism has led to the appearance of a rather superficial architecture that profoundly lacks in connotations and place-associates. Like modernist architecture, the technological aspect dominates and what might endorse the uniqueness for reinforcing a place has been unfortunately lacking.

A “cultural continuity” [2] and its “authenticity” [3] represent a reference to counter the placeless architecture of the modernist architecture. A “cultural construct” [4] in this respect arises to evoke the particular meanings (or, culture values) that overwhelm the places. Such meanings stem from

the cultural values, not merely from the cultural materials marked by, for example, textile or poetry, or by the physical appearance of place. Rather, a particular culture labels meanings to places through how humans perceive their places [4]. The role of architecture becomes significant [5], and in particular Kevin Lynch’s concept concerned with “imageability”, to claim that architecture goes beyond a design anchored in its spatial realities. Rather, architecture in practice triggers the interaction occurred between the humans living in a particular place and their relation developed over the time within this place [5]. Identity thus becomes vital [6] because it evokes in the place its particular meanings. To explain, the humans’ interaction within a place reveals a sense of “belonging” (see also [7]), which reconstructs the many places as one community’s identity [5]. In this vein, belonging leans upon a language grounded in the architecture vocabularies that help us associate our identity with the place, explaining as to why we feel “comfortable” with this place’s architecture qualities [5]. Yet, identity on its own appears to be insufficient. A culture remains essential which its concept underpins the many aspects of the place towards both evoking the place’s cultural values and supporting our belonging – as analysis in this study further suggests.

A particular approach to insight a culture stems from the history. Here, the traditions are key which go in their meanings beyond the physical qualities of a place, namely with the latter’s vocabularies [8], and also concern the individuals (or, “agents”), who use their knowledge (or, experience) to overcome the day-to-day’s circumstances [9]. The traditions therefore embody the cultural values of a particular society which have been acknowledged throughout the history [9]. This is due to a society’s identity outlined by the particular cultural values that are accumulated, or passed, through the history. The accumulation process also involves recognizing and/or incorporating the cultural values [9]. In this process, a traditional architecture becomes coined with not only the cultural values inherited from the past but also a “vernacular” style of architecture necessary to accommodate the local environment. Both lay the seeds for the architecture of the past, or of other cultures.

The question that begs itself now concerns how architecture design in our time incorporates in its concept the two seemingly split styles [10]: a vernacular style and the modernist architecture. Relevant is a “distinction” [11]. For the latter, a contemporary architecture design relies upon a visual criteria to be noticeable from what has been labelled as “old”, or the architecture of the past. A “distinction” is also

overshadowed by “compatibility” [11] that has a local, subjective and a neutral style of architecture at its heart. A compatible architecture, despite its inherent subjectivity, goes beyond a visual difference to extend its judgment to include both human (for example, cultural or social values) and environmental criteria. The latter are not new, as these have been already acknowledged in a traditional architecture. Not surprisingly, therefore, the architecture design remains contemporary despite revisiting some aspects of the past [11]. Yet, how a traditional style might be maintained in our time awaits an answer [12]. Analysis in this article attempts to respond to this question by introducing in the next section the framework that guides this article’s case study, followed in the final section by drawing on the key concluding remarks.

II. A “CULURAL CONTINUITY”

Remarkably, few studies ([11]; [2]; [13]; [14]) have referred to a continuity to be conceived as a concept that adopts the traditions of the past into the architecture design in our time. A “cultural continuity” adopted here calls for the “continuity of memory” [9] that targets the present, however, with aspiration for the future. Accordingly, a “cultural continuity” draws on the “essence of the past” by moving away from a focus on the physical design of the traditional vocabularies towards developing a thorough insight into their values that would in turn result in “meanings, inspiration and emotional rooting”. The architecture design becomes anchored in a place searching for the place’s “unique identity”, however, this occurs without “falsifying history”, that is, the search for identity does not lead to a design “being identical” [15]. When recalling memories into the present, architecture captures a “spirit of local identity” [13] that, despite a change occurred in a society, is realized through “recreation, invention and appreciation” [13]. The concept of a continuity thus resembles the chain necessary to adopt a “cultural identity” (or, a “sense of rootedness” [13] of the past into a contemporary architecture.

The literatures reviewed here also show a rather different interpretation of a “cultural continuity”, for example a “contextual continuity” [16] or a continuity being coupled with a conservation to preserve the traditions in our time [17] – these are not followed in this article. Whilst the issue of identity, and the latter’s relation to architecture, has been widely recognized in the literatures (see, for example Ashraf Salama’s publications), architecture design in our time yet remains “crippled”. As analysis in this study further suggests, what is yet missing is not only weighing up a context and acknowledging the past but, more importantly, nesting a constructive guidance concerned with how architects might in contemporary architecture practice applying a context while referring to the past. One result that endorses this argument points to the architects in our time who are overwhelmed by the technological aspect necessary to develop the complex forms, as it is in Zaha Hadid’s work, while arguably appearing to struggle with the postmodernist’s concept due to a postmodern society that infuses this style’s nature with a diversity and a freedom.

A further issue lies in history. Architecture practice in our time represents a shift since the industrial revolution which has been overshadowed by a common perception, that is, the “old” architecture that is aligned with the “backward”, thereby necessitating a change to create a “modern” image (or, “objective reality”) in which the traditional values are turned away in favor of a contemporary design [2]. The challenging question for a continuity is then how architects could maintain the cultural values in the face of a change occurred in the present. The literature reviewed here offers varied responses. One concerns the “essence of the past” [13]. The other response refers to a continuity coined with searching for identity, notably, without “falsifying history” and equally without being “identical” with the traditions [19]. A further response concerns architecture design that “initiates, or reinterprets, or contrasts with old architecture” [11]. Such architecture is not only limited to inhere a modernist (or, traditional) design but rather embodies “a mixture of both, or design altogether” [11]. Yet, these responses remain theoretical in their hypotheses.

What the above responses miss is the architects’ skills to develop the architecture design in contemporary time, thereby uncovering a place’s unique identity. A “[...] cultural continuity finds a corollary concern with cultural authenticity in new building. The issue is not whether the structure conforms exactly to the criteria of the past; it clearly cannot do so and remain relevant to today’s concerns. Instead, the issue is whether the designer [architect] has learnt the lessons of the past, internalized them, and use them as input, although partial, in defining the solution to a contemporary problem for contemporary clients” [14].

The notion of weighing up the architects’ skills is not new. The architects not only uncover the “meanings, inspiration and emotional rooting” of the traditional motifs [13] but rather reform the “meanings, inspiration and emotional rooting” into “lessons” and translate the latter into an “input” thanks to the architects’ skills and also due to their understanding of the key issues at hand [14]. A model of “translation”, instead of a “transfer”, arises which “alters, modifies or displaces” the design concepts [18]. The key to this model is “involved actors” [18] and architects [14], both holding on the “contemporary clients”, where the architects seek to meet their needs. The debate around architects, their skills and their understanding of the key issues has been arguably absent in the modernist, late modernist and the postmodernist architectures.

The review cited above nevertheless lays the seeds to formulate the framework (see TABLE 1.) adopted in this article to guide the discussion in the section that follows.

TABLE 1. The Framework of a “Cultural Continuity” (Compiled by the Authors)

Approach	Design realms	Strategies	Description
A “cultural continuity”; or, a “continuity of memory”	A context	“Input”	- Architecture design: awaken a place’s identity; - Without “falsifying history” and also

		without “being identical”; and - Architects’ skills are key
Referring to the Past	“Lessons”	- The “essence of the past”; - The “meanings, inspiration, and emotional rooting” of the traditional motifs; and - Architects’ skills are key

III. THE MASDAR PROJECT

A. Background to a Masdar City Plan

The Masdar City provides an excellent example of a valuable effort. It holds on the traditions, however, considers the modern technology, thereby responding to the question of concern for addressing in this article. Briefly, the Masdar City, designed by Foster and Partners, has been labelled with a “first zero-carbon” design; free from a carbon dioxide, waste products and also from the private cars ([19]; [20]). The Masdar Project is positioned over six millions square kilometer to implement a sustainable development, approximately two square miles far from Abu Dhabi’s International Airport (Fig. 1.). The project area is 281 hectares to host 50,000 inhabitants, 1500 businesses, with 6000 labors expected to commute daily to the Masdar City for work.

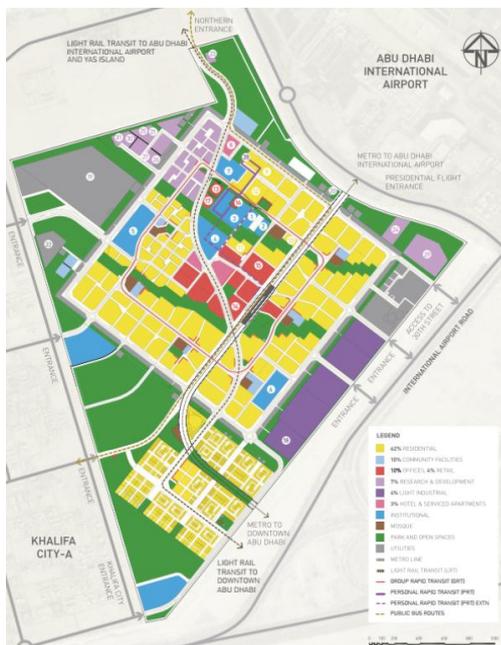


Fig. 1. Masdar City Plan [21].

The Masdar project’s “essence” has at its heart the sustainable approaches [22], or achieves “a hub for green technology innovation” [23], however, its design is based on a culture (see the next two subsections). In doing so, the strategy “[...] reinvent[s] the traditional Arabic city [...] – were the person, not the vehicle is paramount, where design responds to the climate, and where a community lives the highest quality of life that is also sustainable” [24]. The Masdar Project twists the technological intelligence with a traditional architecture of

the Gulf region [23]: it translates this goal into the sustainable strategies, including a low-rise building, a courtyard, linear gardens, and wind towers, in addition to enhance a proximate walkability. The sustainable approaches of the Masdar Plan revolves around a passive design, achieving a natural ventilation while encouraging a mixed use. The sustainability approach extends its concept to also include shading. A particular strategy (see [24]; [25]) concerns rotating the whole plan (Fig. 1.), namely 45 degrees from the North towards the north west/south east to capture a cool breeze through the Masdar’s street network. Another strategy that provides for shading is the two parallel green “spines” that cut the Masdar City from the northern east to the east to smooth in the night time a cool breeze. How the project has incorporated the traditions with the modern technologies is a question that the next two subsections attempt to answer it.

B. Referring to the Past

A traditional “Mashrabiya” (or, a traditional Arabic oriel window inserted into the façade) (Fig. 2.) has the environment central to its design, for example, a shading devise, caring for a light control, monitoring the air circulation into the building, in addition to buffering form a humidity and providing for heating while ensuring a visual privacy.

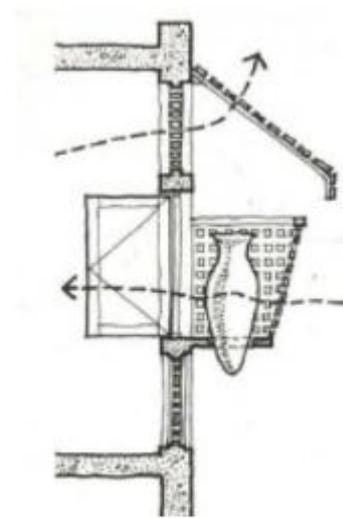


Fig. 2. A traditional “Mashrabiya” [25].

The Masdar Project (Arabic word for a “source”) (Fig. 3.) has benefited from the original “Mashrabiya”’s concept dedicated to accommodate the environment in its design [26]. The project has held on the “essence of the past” by adopting in its design the sustainable criteria of the “Mashrabiya”. The “lessons” drawn from the past concern, for example, a passive cooling despite using a solar-responsive dynamic shading screen (a modern technology). A screening, as it is in a traditional “Mashrabiya”, has been the basis in this example to reflect on the interplay occurred between the light and the shadow. A direct sunlight has been in this respect avoided, as similar as in a traditional “Mashrabiya”, by limiting the “solar gain” reflected on the façade’s surface through the provision

of shading, however, (Fig. 3.) using a large sized glazing and also using a large spacing installed within the balconies, when compared to the rounded Balusters of a traditional “Mashrabiya”. The apartment unit has been equipped with a “screen-shielded” window frame to hold on the residents’ privacy, while the windows are installed not only behind the large-sized screens (showing openings and decorative pattern on their surfaces) but also near the ceiling to maximize a natural lightening [20]. Notably, the glazing surface has not been abandoned. Rather, the excessive size of glazing has enabled the access of a natural lightening; therefore, its use is not standing in opposition to realizing sustainability.



Fig. 3. The Masdar City’s “Mashrabiya” [16].

Another example concerns the original style of “Mashrabiya”, including for example a traditional shape (Figure 2.). In this vein, the Masdar Project has not literally copied the original form already seen in a traditional “Mashrabiya”’s surface but rather has adopted the latter’s “essence”, that is, the latter concerns the environmental functions. The screen’s shape (Fig. 3.) has been therefore meandered. On the first glance, the different form reminds us of a “distinction” from a traditional “Mashrabiya” to fit in with the nowadays users’ tastes, in addition to maximizing the shadow through its curved shapes which has been witnessed on the other screen’s surfaces.

Notably, the architects, worked for Forster and Partners firm, have shown not only a sound understanding associated with functions, pattern and the design parameters of a traditional “Mashrabiya” but also a creativity dedicated to design a “sustainable form” [25]. The argument endorsed in this article weighs up the architect’s role towards understanding the key issues at hand enabling the architects to use their skills to draw the “lessons” from the past.

The past, in the UAE, has been in harmony with the “harsh” desert climate [20]. The design strategies adopted in doing so include: “narrow streets, natural shading, high density/low-rise, public streets, mixed use, walk able distances” [20]. These strategies have aspired the Masdar City to draw the “lessons” from the past to suggest a “marriage” between a traditional style and the modern technologies [20] which has been marked by “adaptability”, “flexibility” while leaving in the design its footprint drawn from the “essence” of the traditions, namely sustainability. In this vein, the Masdar City at the neighborhood level revolves around a “compact”

urbanism coupled with appropriate streets’ width and their orientation to fit within the city’s microclimates, a high-density (130-160 occupants per hectare) and a low-rise density [20]. At the architecture level, similar to the “essence” of a traditional courtyard’s function, the atrium space allocated between the residential buildings which not only eases access to the apartments but also provides for both shading and natural ventilation [20]. The atrium also maximizes a natural lighting and avoids a direct sun light, in addition to offering a roof surface for PVs.

C. Context

The Masdar Project “initiates, or reinterprets, or contrasts with old architecture”. In this respect, the Masdar project has utilized adoption as a strategy that has kept the “essence” of a traditional “Mashrabiya”, whilst redesigning it with other materials (namely, a palm wood coupled with a terracotta cladding), a curved surface, other pattern, in addition to inserting a modern technology related to a shading screen. For example, a lattice projected oriel window (a screen), constructed using an “undulating” glass-reinforced concrete (GRC) while being colored with a red-sand’s color to not only match the Masdar City’s desert’s color but, more importantly, to function as similar as a traditional “Mashrabiya” [20]. The screens care for shading, thereby minimizing a solar gain to sneak through the wall’s surfaces, protecting the residents’ privacy and permitting the air flow to cool the interior (a passive strategy). In addition, the external walls’ insulation, which functions as similar as a traditional wall with regard to buffering from the heat, is highly “sealed” and “insulated”, besides being “wrapped by 90% a recycled aluminum sheeting”, however, colored with a rose-red color as similar as GRC [20].

By infusing the Masdar City with a modern technology, the strategy of adoption [26] uses a “high-tech interpretation” of the original’s function while incorporating a modern technology, however, without “falsifying history” and also without “being identical” with the traditions. A design involved in the project and has been quoted in [16] reports: “the solution was already there in the old architecture. We just developed this old architecture using technology to make it more efficient”.

Therefore, the Masdar Project has maintained the past, however, being adopted to the present. A particular example is a wind tower (fig. 4.) that has been inspired from a wind catcher. The latter has been used in the UAE due to its passive cooling ([20]; [25]). Accordingly, a wind catcher pulls in a breezy air from the top into a shaft that its opening faces the northern side. The air direction in the shaft goes first through a row of “porous pots” filled with a cold water. Second, at the shaft’s bottom, the air goes through a “charcoal on grating” followed by passing over a pool of water onto the exit to the house. A wind catcher has been in the Masdar Project remodeled (Fig. 4.) in two ways: 1) without “falsifying history” by holding on a wind catcher’s cooling strategy while 2) using a modernist structure (rising a 45 m above the ground) that incorporates both a natural ventilation and a mechanical air circulation to cool the courtyard already

existed beneath the tower. The remodeling has resulted in the wind tower not “being identical” with the origin model, a wind catcher. For example, the wind tower functions as a landmark (itself an idea borrowed from the modern philosophy) while using a modern technology, including the sensors installed at the top of the steel structure. The sensors are necessary for the operation of the high-level louvers that are opened towards the prevailing winds, thereby diverting the wind down the tower. The height also enables the tower to pull in the cool wind from the upper level into the public square existed at the ground level. In addition, the two other modern techniques has helped in pulling in the wind down the tower; these are a “polytetrafluoroethylene” membrane and a Mist generator (Fig. 4.).

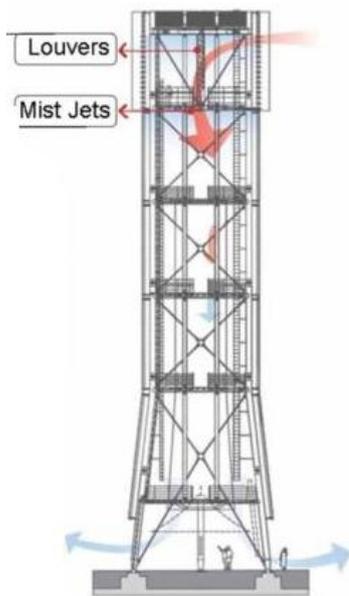


Fig. 4. Wind Tower (Masdar City) [25]

Another example concerns the streets existed within the Masdar City which have been designed wide enough to easing the traffic routes, incorporating a variety of transport methods, while allowing for a shade (here, the concern is with adopting a “self-shaded” strategy). Notably, a twisted, “meandering” and narrowed alleys (termed in Arabic language: “Al-kasabah”) have been the key remarks of the traditional fabric to be seen within the UAE which usually end into the “cul-de-sacs”. In an attempt to not “falsifying history” and, equally, without leading to a design marked by “being identical” with the traditions, the streets (Fig. 5.) of the Masdar Project have been designed straight on the ground level and are categorized into three hierarchies to accommodate the different uses of the traffic, with a minimum width of 8.5m [25]. The aim has been to widen the streets accommodating the current needs, however, keeping with a certain level of a self-shading. At the upper stories, the facade has been featured with a cantilevered shape (see Fig. 2.) to place an emphasis on the narrowed alleys and therefore ensure a self-shading. The Masdar Project has translated such an “essence” by incorporating the cantilevered wall positioned at the upper stories, equipped with an

“undulating” facade that visualizes the street on the ground as being meandered while serving for a shading. The photovoltaic panels placed at the roof do also so (see Fig. 5. and Fig. 3.) while ensuring a guidance for the pedestrians.

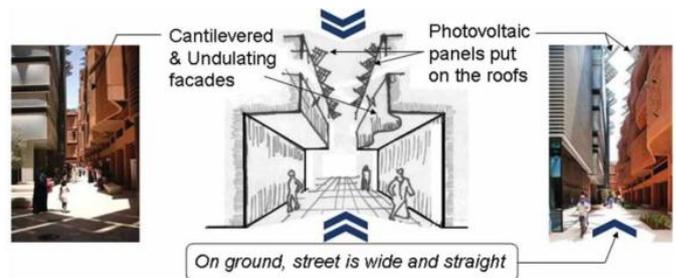


Fig. 5. The Masdar City’s streets: wide and street at ground level [24]



Fig. 6. Re-configuring the Courtyard in the Masdar City [24]

A further example concerns the courtyard that functions in principle as a “thermal regulator” [25]. The courtyards in a traditional fabric care for a cool breeze and provide for shading, thereby the courtyard’s space being featured with a well-balanced air density [25]. The courtyards thus show a natural air flow, in addition to configuring the inner space for a social gathering [18]. The Masdar City has kept the courtyard’s original function, in terms of acting as a “thermal regulator”, however, appealing to the modification set in the design without “falsifying history” and equally not “being identical” with a traditional courtyard. In doing so, the courtyard has been configured at two scales. First, at the architecture level, the courtyard has been reallocated between the buildings (the atrium). The courtyard (Fig. 6) has been secondly inherited in the urban structure at the urban design scale, that is, within the relation occurred between the solids and the voids [26] while introducing a particular orientation (Fig. 1.) and adjusting the height to width proportions of the neighboring urban structure. The Masdar City has benefited from a modern technology by using the “analytic models” of a “generic” and a “detailed simulation” seeking both an “optimised envelop” and a “system efficiency”, both aiming at

“air flow, light and heat” [16]. A drop of 5 to 15 degrees in the temperature follows.

The Masdar City draws on a social sustainability, or how inhabitants would use the public space [27]. The configuration of a traditional fabric has been accordingly marked by a compact building structure, narrow passages, mixed use or high-density quarters. The key to such compactness is the courtyard necessary to facilitate a functional arrangement of the physical layout [27]. The configuration of a traditional urban structure has aspired the Masdar City to be clustered into varied neighborhoods (not necessarily residential) and these are organized around urban squares which are directly connected with a traffic mobility, thereby achieving the “social dynamics”. That is, mobility has been achieved between the nine neighborhoods through the pedestrian routes, transit network and a light transit method of transport [27]. A variety of transport modes therefore becomes available encouraging the inhabitants to use the public transport. On the other hand, similar to a traditional courtyard arrangement, the neighborhoods represent in their configuration (see Fig. 5) the “microclimates” that benefit from a passive cooling and the also from the living environment of both the internal courtyards and the urban squares.

IV. CONCLUSIONS

This article investigates how a traditional style of architecture might be maintained in the present using a “cultural continuity”. The latter, as this study reveals, uses architecture as a tool of continuity, which seeks to bring the past back on track.

Analysis of the Masdar City not only supports [10], [2]; [11]; and [12], but it goes beyond their arguments. The contribution of the case study analyzed here offers a response to how the architects might practice a context while referring to the past by applying a “cultural continuity”. Critical to the latter’s synthesis has been in this article the architects’ understanding of the key issues at hand, or their skills, which has been vital in the analysis cited in this article towards uncovering the “essence of the past”, thereby touching upon the key “meanings, inspiration, and emotional rooting” embodied in the traditional motifs. The latter have not been in this article studied from their “objective reality” to be visually applied into the present. Rather, the traditions have in this article presented the “essence” of the past which lies in the metaphor of traditional values. Analysis in this study also suggests that a traditional architecture has aspired the architects in our time to conceptualize their architecture design, in this article “a hub for green technology innovation”. Which aspects to include and/or exclude from either the present or the past have been rationalized in the architecture design of the present on the basis of the vernacular architecture – as this article suggests.

What has been remarkable in the Masdar Project is how the architects have weaved together the traditions and the modern technologies in their design. A particular finding witnessed in this article and concerns twisting both the traditions and the modernist architecture, namely through the lens of neither “falsifying history”, nor “being identical”.

Analysis in this study also yields support for the argument concerned with a contemporary architecture that “initiates, or reinterprets, or contrasts with old architecture”. Central to twisting has been the notion of adoption in this article which first involves a conceptual design in the present which holds on the key functions of the traditions to be maintained into the present, thereby embracing a place’s identity by reflecting upon a design context. Secondly, these functions have been wrapped up with the modern technologies. The result is a “hybrid” architecture. This is not new, as hybridity lies at the heart of a postmodernist philosophy. Yet, how the architects practice hybridity in practice remains vague in the previous knowledge. And here lies the importance of this article by aspiring other scholars to further investigate how the past and the present might coexist in contemporary architecture.

REFERENCES

- [1] *Common Place, Toward Neighborhood and Regional Design*, Kelbaugh, Douglas, Seattle, University of Washington Press, 1998
- [2] Noha Nasser, “Cultural Continuity and meaning of place: sustaining historic cities of the Islamic world”, *Journal of Architecture Conservation*, Vol. 9, issue 1, pages 74-98, 2003.
- [3] Helaine Silverman, “Heritage and authenticity”. In E. Waterton and S. Watson (eds.), *The Palgrave Handbook of Contemporary heritage Research*, Palgrave, England, 2015.
- [4] Abed Badran, “Space design, making and tektonics in Palestinian architecture in Israel: impact of the Israeli project”, PhD dissertation, Cardiff University, Welsh School of Architecture, UK, 2017.
- [5] Aida Hoteit, “War against architecture, identity and collective memory”, *International Journal of Development Research*, Vol. 5, issue 2, pages 3415-3420, 2015.
- [6] Yasser Mahgoub, “Hyper identity: the case of Kuwaiti architecture”, *International Journal of Architectural Research*, Vol. 1, issue 1, pages 70-85, 2007.
- [7] Kari Jaeger and Reidar Mykletun, “Festivals, identities and belongings”, *Event Management*, Vol. 17, pages 213-226, 2013.
- [8] *The City in Muslim World: Depictions by Western Travel Writers*, Mohammad Gharipour and Nilay Ozlu, London, Routledge, 2015.
- [9] Maha Al-Zubaidi, “The Sustainability Potential of Traditional Architecture in the Arab World-With Reference to Domestic Buildings in the UAE”, PhD dissertation, University Of Huddersfield, UK, 2007.
- [10] Roha Khalaf, “Distinguishing new architecture from old”, *The Historic Environment: Policy and Practice*, Vol.7, issue 4, pages 321-329, 2016.
- [11] Juhani Pallasmaa, “Newness, tradition and identity: existential content and meaning in architecture”, *Architectural Design*, Vol. 82, issue 6, pages 14-21, 2012.
- [12] *Space for Freedom: the Search for Architectural Excellence in Muslim Societies*, Ismael Serageldin, London, Butterworth Architecture, 1989
- [13] Rick Joy, “Identity through the grounding experience of place”, *Architectural Design*, Vol. 82, issue 6, pages 40-45, 2012.
- [14] Muege Riza and Nancy Doratli, “The critical lacuna between new contextuality juxtaposed freestyle buildings in historical settings”, *Journal of Architecture and Planning Research*, Vol. 32, issue 3, pages 234-257, 2015.
- [15] Salahaddin Baper, “The role of heritage buildings in constructing the continuity of architectural identity in Erbil city”, *International Transaction Journal of Engineering, Management and Applied Science Technologies*, Vol.9, issue 1, pages 1-12, 2018.
- [16] Ahlam Sharif, “Sustainable Architectural Design between Inscription and De-scription: The Case of Masdar City”, PhD dissertation, Faculty of Humanities, University of Manchester, UK, 2016.
- [17] Steven Velgrinis and George Katodrytis, “Drawing on sand: cities in the making”, *Architectural Design*, Vol. 85, pages 72-79, 2015.
- [18] Iman Ibrahim, “Liveable eco architecture, “Masdar city, Arabian sustainable city”, *Urban planning and sustainable design*, pages 46-55, 2015.
- [19] Raid Kherdeen, “Masdar City: Oriental City of the Twenty-First Century”, PhD dissertation, US, New York University, 2016.

- [20] D. Kamrowska-Zaluska and A. Gołędzinowska, "Tradition in a context of hyper-dynamic multicultural urban space", in *48th ISOCARP Congress*, 2012.
- [21] Kasim Randeree and Nadim Ahmed, "The social imperative in sustainable urban development", *Smart and Sustainable Built Environment*, Vol. 8, issue 2, pages 138-149, 2018, 2019.
- [22] Nnamdi Madichie, "IRENA – Masdar City (UAE) – exemplars of innovation into emerging market", *Foresight*, Vol. 13, issue 6, pages 34-47, 2011.
- [23] Mohammed El-Aby, "Towards sustainable urban development in arid regions: Masdar City as a case study", *Journal of Al Azhar University Engineering Sector*, Vol.12, issue 42, pages 199-211, 2017.
- [24] Abbas Hassan, Hyowon Lee and UooSang Yoo, "From medieval Cairo to modern Masdar City: lessons learned through a comparative study", *Architectural Science Review*, Vol. 59, issue 1, pages 39-52, 2016.
- [25] Ayten Akcay and Hiba Alothman, "A theoretical framework for the evaluation from traditional Mashrabiya to modern Mashrabiya", *Journal of History Culture and Art Research*, Vol.6, issue 3, pages 107-121, 2017.
- [26] J Jiayi, "Urban Design for Sustainability: A Case Study of the Carbonneutral 'Masdar City' in Abu Dhabi (Case Study Report)", *City Reader*, Vol. 40, issue 10, pages 73-83, 2012.
- [27] Steven Griffiths, "Masdar City: 'City of Possibilities'", *Oxford Energy Forum*, Vol. 96, issue 2014, pages 18–21, 2014.