The Impact of Cultural Context on Innovative Iraqi Architecture: Houses Façades as a Case Study

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Abstract:
This research aimed to discuss the notions of innovation and cultural context, common terms in architecture, with regard to their various applications in attempts to achieve coherent results related to context. As a case study, the research analysed the practice of private house design at façade level in Baghdad city in the 1950s and 1960s, which act as a benchmark for modern Iraqi architecture. The results suggest that changes in cultural context enhance architectural practice by inspiring designers, leading to the introduction of innovative models that in turn elevate practice and improve cultural contextual values with regard to architecture.

Keywords: Culture, Cultural Context, Individual and Society, Innovation.

1. Preface
Many researchers have interpreted innovation as a global phenomenon; however, each culture approaches it in a different way according to its values, resources, technologies and the nature of individual and collective roles within that culture. Innovation is also interpreted in many studies as the product of cultural contexts that encourage or discourage individuals’ innovative actions, and as innovation is a complex concept that includes both learning and developing new ideas, it is certainly the case that culture is integral to innovation.

2. Innovation
Innovation is defined as producing something new, perhaps product or tool, in a manner different from that previously known, which may involve the use of process, strategy, or technology [1]. O’Brien and Shenna define innovation as the state of change that arises in the move from an established balanced system towards a newer, more uncertain state that could never be achieved taking only known steps [2]. Others have opined that for innovation to happen, something that has never been done before must occur, or a thing must be done in a totally new way. The concept of "new" is hard to define in most cases, however, and a chain of incremental innovation may lead eventually to a radical change [3]. Innovation therefore works on two levels: the incremental level that deals with the act of developing and improving things, and the radical level, which deals with the act of change and initiation.

Garcia [4] defined four levels of innovation, based on the nature of change such innovation achieves within its context: 1) the technological level, in which new technologies replace old ones and thus open...
up new potential in the construction market; 2) the organisational level, which refers to the changes in strategies and frameworks caused by the accrual of radical innovations; 3) the market level, which refers to the development of new markets that use new technologies; and 4) the cultural level, in which radical innovations demand that users who adopt them must abandon their existing knowledge base. This final aspect can cause users to resist these changes due to the risk of damaging their certainty, increasing conservatism.

Innovation may thus be defined as the introduction of a novel product, act, or problem solution by innovators that impacts users’ everyday lives. Such actions thus affect the cultural context and thus are converted into commonplace knowledge.

The question that arises is thus how designers, as individuals in particular societies, can innovate according to the changes in their cultural context, and how this impacts on their practice. This research thus aimed to investigate the relationship between designers as individuals within society and their cultural contexts by extracting indicators and applying these to Iraqi architectural practice as seen in the designs of the façades of houses in the 1950s and 1960s.

3. Culture

Culture is defined by all components of a society, including knowledge, beliefs, art, ethics, habits and human preferences [5]. Herbig and Dunphy defined culture as a coherent system of communications that includes both biological and artistic human behaviours and their verbal and non-verbal expressions; it can also be defined as life patterns, including the expected behaviours, values, language, and practices shared by individuals [6].

Others define culture as a system shared by members of entities such as societies, nations, or governments. It thus indicates a set of behavioural criteria that are learned and transmitted socially, being expressed, however, by individuals with their personal values, preferences for activities, and intellectual processes. Culture thus has three attributes that support its diffusion within societies: 1) shareability; 2) transferability; and 3) a contextual nature [7].

4. Cultural Context

Some researchers believe that in order for people to accept an innovative idea, any mental gaps they have should be filled by it being presented in an explicit way, which supports the assertion that an implicit level of understanding among the audience is needed for them to accept such ideas [8]. Others see innovation more as dealing with context, with reference to pieces of scripts created between the product of an innovative idea and its receptors; the idea’s success is related to the degree of acceptance to the changes engendered by the idea; it may thus not be welcomed if it portends drastic changes and increases risk levels [9].

Jean Nouvel categorised context in architectural practice into four levels: 1) Historic context, with reference to the place and time of building; 2) Anthropological context, referring to the need to work within society and to consider interactions with the others; 3) Geographical and economic context, which deals with the work environment and logistics available; and 4) Cultural context. This last segment was important to Nouvel’s theory, as he considered architecture to be not an autonomous profession but rather to be directly to the nature of the culture surrounding it [10].

In his book "The myth of innovation", Burken defined several contextual factors throughout history that have impeded innovative practices: 1) Culture, whereby even innovative products must fit with a given society's cultural values; 2) Dominant paradigm, which may only be changed by the imposition of a later successful paradigm; 3) Inheritance and tradition, due to the fact that inherited ideas are heavily protected by those who respect traditions and heritages, increasing the impact of tradition as a cultural factor; and 4) The subjective nature of goodness based on differences between individuals in terms of tastes and preferences, which plays role in determining what they really need in certain contexts [11].

Robert Mckim presented his theory about innovative thinking in 1959; this highlighted the role of human need in enhancing innovation in design activities: the rise of new needs in societies leads to the rise of new and diverse design solutions in turn trigger novel cultural developments [12].
This highlights the dynamic and high vitality nature of cultural context as an intellectual environment that impacts individuals within societies. The democratic open context tends to strengthen individual practices and approaches, allowing the achievement of radical innovations. The development of culture values within context may also lead to innovative practices and solutions emerging, and vice-versa, however.

Cultural context must also take into account individuals’ roles and the implications of these within societies, with innovators studying how to communicate with the others, and how to learn and apply new meanings in a given context. Previous research thus suggests that there are four aspects to cultural context: individuals’ roles, societal stance, communication, and social learning.

4.1 Individuals’ roles
Some researchers believe that the effect an individual may have related to the variation level between society members and their point of views, and how each individual determines what is proper in a given cultural context [7]. Other researchers, however, have assumed that the nature of context plays a role in shaping these individual roles: western and similar open cultures emphasis on individuals’ roles seem to cause more novel ideas to arise, while other cultural contexts emphasise personal preferences and attributes conforming to contextual values, enhancing the role of traditional and known approaches. Individuals require at least some personal cultural attributes to practice innovation, including a readiness to face doubts, an ability to balance risks, insistence, good timing, the ability to accept change, and a long-term dynamic orientation [6].

Csikszentmihalyi notes that an individual can reach a level of cultural influence when they have a critical number of followers who adopts their ideology and practice. He describes such individuals as initiative persons, and suggests that their actions play major role in shaping the context of their cultures [13]. The nature of the individual's complexity with regard to personality and preferences plays a role in forming integrated relationships with the cultural context. Both play a role in enhancing each other, with context and the nature of its values and practices affecting the individual, and the latter’s aspiration to achieve change influencing the relevant context.

4.2 Societal Stance
Certain cultures may encourage or suppress the spread of new ideas among their members. Some ideas look ambitious yet achievable in some cultures while being denounced as risky and inappropriate in more conservative ones. It is the readiness of the society members to accept novel ideas that defines whether a culture is open or conservative [7].

Arieti, among others, thus developed term "Creativogenic", referencing societies that encourage creativity by offering the affordance of cultural means, usually an elite group with access to the required logistics; being open to cultural changes; offering freedom in the expression of new ideas; facilitating interaction with different and contradictory cultural stimulators; offering tolerance of new viewpoints, encouraging the interaction of influencing members in society; and enhancing the concept of awards and recognition [14].

However, most societies restrict their practices to the dominant and common paradigms, making them miss the opportunities to develop radical change as these do not meet "safe" expectations. It is thus the role of complex integration between effective members of societies to achieve change by introducing radical or novel innovations to the challenges of everyday problems [15]. Scarcities also play a role in enhancing the individual role in terms of the adoption and acceptance of new and different ideas, and the way these ideas are transferred into a wider context by societies’ prominent or more effective members as they seek to improve their cultural context in new directions.

4.3 Effective communication and learning
Cropley highlighted both the importance of the communicative ability of the individual as an innovator and the need for innovative products to enhance the act of change and to diffuse in certain contexts;
successful communication is, however, related to validation and verification by both clients and users even after a successful product is introduced [16]. Csikszentmihalyi noted the interchanging relationships between three integral factors of innovation in communication, which he defined as person, field, and domain: the person (user, critic, expert) acts as the gatekeeper in a domain, which is itself a system of rules and signals [17]. For Peruta and others, it is important to reach a level of understanding that transforms into implicit knowledge in order to develop the translation from old to new in a certain context; such meaning is broader than literal explanation, and may refer to invention or to divergent new agents constructing a bond that has never before been create [18]. Communicating innovation requires, according to Burken, the act of making things easy to learn and adopt as users interact with them. Great ideas must be simplified when presented to others [11]. This requires the development if mechanisms for exchanging thoughts and practices in conversations, meetings, etc. that recognise the need for a learning process within the context, identifying the experience and tools necessary to strength both formal and explicit knowledge [18]. The importance of learning lies in the means to pass knowledge from individuals to groups to society to later generations; this includes social values and traditions and certain attributes that come with these. In more collaborative societies, cultural contexts thus focus on bonding, cooperation and public interest [19]. However, such effective communication plays a role in developing new interpretations that are impeded within apparent knowledge and offer opportunities to shape new innovative values in a cultural context. The importance of learning in terms of enhancing cultural context and accruing innovations derives from the experience and knowledge gained from the interaction of individuals within that context.

5. Architectural Practice and Cultural Context

In relation to architecture, the designer’s role in innovation is related to initiating change within a given context by introducing new and improved innovative ideas and methods into various projects. The existing research shows, however, that the role of culture and its components as a resource in extracting new and unique meanings from classical, historical or traditional meanings remains vital. Individual aspects such as competitiveness also play a role in stimulating designers to develop new and different methods and paths to facilitate innovation, especially in the more open cultural contexts discussed previously.

Many changes accrue as designers work towards initiating an innovation culture, a culture that adopts change and improvement as the main discourse in the thought and practice of architecture, and diffuses this by communication and shared learning between practitioners and receptors, improving and enriching the meanings and values of the cultural context and its impact on architectural practice. Culture may thus be enhanced by the role of architectural pioneers and mentors whose works become a source of influence for architectural practitioners, and by societies being open to adopting and applying new innovative designs. Table 1 introduces the main research indicators for architectural practice and cultural context.
Table 1. Innovation and cultural context in architectural practice

| Aspect                              | Indicators                                      | Potential Variables                                      |
|-------------------------------------|-------------------------------------------------|----------------------------------------------------------|
| Individual role                     | Sub-diversity within the cultural context       | Competitiveness                                          |
|                                     | Initiating change in context                    | The prominence of urgency                                 |
|                                     | New styles and approaches                       |                                                          |
| Society stance                      | The role of society                             | The need to constantly change and reinvent                |
|                                     | The nature of society                           | within varying contexts                                   |
|                                     | Cultural values as knowledge sources            | Tendencies to embrace innovation                         |
| Effective communication and learning| New paradigms in the context                    | The effect of the new paradigm                           |
|                                     | Realising contextual problems                   | Enhancing innovative values in learning                  |
|                                     | Improving new techniques                        | among younger generations                                 |

6. Method
The research utilised a descriptive analysis approach to examine the role of pioneering Iraqi designers in terms of innovating new styles at façade level in house design.

7. Case Study
This research studies the practice of house design in Baghdad in the 1950s and 1960s. This practice at the time was considered a benchmark for the design of private houses in modern Iraqi architecture, as these houses presented a drastic change from the house designs based on the traditional approach used in the previous decades of the twentieth century.

The choice of houses for the case study was influenced by the following inclusion factors: 1) having been designed by a consultant architect or office; 2) being in a good neighbourhood, 3) being within Baghdad city; and 4) belonging to a middle or high status client.

7-1 Characteristics of the cultural context:
The Iraqi cultural context witnessed drastic and tangible changes at the time in question that significantly impacted cultural openness to innovation. The characteristics of these changes were

- The need to find a new national identity outside of the colonial Britain mandate and its influences on policy;
- The flourishing economy, which was reflected at the residential level in an increase in both middle class society and the plot areas selected for private houses;
- An enhanced individualism, which saw the rise of new modern and individual styles and techniques in fine arts, as represented by the products of elite artists such as Jawad Salim and Faiq Hasan.
- The influence of western modernism created by the return of many Iraqi graduate architects from the British and American schools of architecture.
- Factors such as competitiveness and leadership increasing significantly within the cultural context, leading to the expansion of consulting offices, and the establishment of the first school of architecture.

7-2 Characteristics of Innovation in Private Houses (sample analysis):
The major characteristics of the houses at time were their large plot areas, their direct relationships with the streets, and the well-educated nature of their owners. The main approach adopted in designing for these large house plots was to surround the houses with gardens, and this approach offered designers the
opportunity to explore new ideas and techniques as well as offering additional freedom with regard to façade design based on the enhanced relationship between the outdoors and the indoors, as shown in the samples:

a) Mr. Munther Abaas’ house, by Rifat Chaderji, 1955 (Figure 1): the emergence of modernism in the local context is shown in the house elevation, which channels the main elements and spirit of the movement in its white surfaces, large windows, openness and slim columns.

b) Mr. Shaker Ibrahim’s house by Qahtan Al Madfai, 1955 (Figure 2): the use of structural and utilitarian elements (steel trusses and roof water drains) as façade features showcase the attempt to create a unique elevation distinguished from both the other work of this architect and that of others.

c) Al-Dahan House by Qahtan Awni, 1960s (Figure 3): an individual interpretation of De Stijl lines is shown in elevation design, while the unique details in brick to add richness and complexity.

d) Mr Shamarah’s house by Gabriel Khammo, 1961 (Figure 4): this modernised local style emphasises the use of traditional materials and elements (brick and arches) combined with the strong elevation lines of modernism and a faced concrete parapet

e) Al-Khudaree’s house by Mohammed Makiya, 1963 (Figure 5): the presentation of concrete possibilities is expressed in the cantilever concept, which is then framed with delicate brick detail.

f) Mr Ya’soob Rafiq’s house by Rifat Chaderji, 1965 (Figure 6): the elevation shows a unique form for the time, with the use of arches in planning reflected strongly in the elevation and the local context emphasised by the use of brick as a traditional material. This house was an attempt by the architect to design houses in an unorthodox manner by the standards of the time, which was possible only with client encouragement and approval. [20]

7.3 Case Study Discussion:
The changing nature of the societal context and its members made it easier for the architects to shift into a more open, dissolving form that reflected a new class of educated society emerging from the more conservative traditional one. Innovation in the samples is based upon combining continuation with modernism, however, offering new translations embedded in tradition.

House façades in the fifties reflected the emergence of modern values, with clarity and simplicity meshing well in the modern city scene of the time. The façade features developed in the sixties shifted further towards modernism, combined with abstract or detailed traditional metaphors and the application of new techniques to local materials to extract new meanings that retained the inherited context.

The case study thus highlights the integral relationship between the designer, as an initiator of new meaning and values in design, and the cultural context that shapes the practice’s main framework. The samples show the role of Iraqi architects in shaping new cultural values within architectural practice by initiating new ideas and innovating personal styles (sample f) or by incorporating innovative patterns and techniques in their façades (samples b, and c). However, the samples also show the effect of cultural context upon practice based on the presence of modernist principles as the major resource, combined with abstracted traditional solutions. Table 2 offers the case study indicators.
The individual designers in Iraqi practice in the 1950s and 1960s reflected the ongoing innovation in culture in their practice by initiating novel models and applying individual flexibility in combining traditional and modern aspects; this confirms the importance of individuality in shaping practice at the time, and the use of radical or experimental approaches to achieve novel results.

| Table 2. Innovation and cultural context in architectural practice: case studies |
|---------------------------------|---------------------------------|---------------------------------|
| **Aspect**                      | **Indicators**                  | **Potential Variables**         |
| Individual role                 | Sub-diversity within the cultural context: personal attempts to create new types of planning. | - Competitiveness based on the expansion of practice and offices |
|                                 | Initiating change in context: introducing new approaches in house design. | - New context and changes leading to a desire for individual prominence |
|                                 | New styles and approaches: introducing houses with personal or combined styles. |                                |
| Societal stance                 | The role of society: openness towards modernity enhanced the rate of change in houses design. | - Embracing modernity within traditional metaphors |
|                                 | The nature of society: the well-educated nature of society led to openness towards applying new ideas in house design. | - Embracing innovative approaches by clients. |
Effective communication and learning

- Cultural values as knowledge source: the prominence of modernist western values was apparent in the collective practice of the time.
- New meanings and paradigms in context: new innovative designs at façade level.
- Architects’ work become a benchmark for the period after this era
- Meshing modern innovative values with traditional values

Realising context: identifying the importance of incorporating local meanings to create a modern identity for Iraqi architecture

Improving techniques: employing local materials in new ways and patterns.

8. Conclusions

- Changes in cultural context lead to enhancements in architectural practice based on encouraging individual as designers to introduce innovative models that in turn elevate the general practice level and improve cultural contextual values with regard to architecture.
- Aspects related to societal cultural values, such as the openness to try new ideas and high intellectual and economic levels, play a major role in the adoption of innovative practice by aspirational architects. To successfully innovate in the context of architectural practice is to deal and communicate with a society that also seeks to improve the status of its cultural context.
- Achieving innovation at the individual level is about extracting new meaning and techniques from the cultural context and dominant paradigms and values to generate legitimate and known sources for designers to use to facilitate communication with the others. This also requires the exploitation of non-architectural resources such as economics, logistics, and technology.

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