ASSESSMENT AND REVIEW OF INFILL DESIGNS' GUIDELINES FOR RESIDENTIAL URBAN CONSERVATION AREAS

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ABSTRACT

Building in traditional existing context has always presented a serious challenge, raising critical questions on how new designs should interact with the context. Some theories are claiming that interaction is achieved by relating the new buildings to older buildings' aesthetics and replicating the old style. Other theories are declaring that a new design should respond to its own period of time since architecture always represents its time. Old historical contexts are characterized by high level of mixed uses, and residential use is the highest. Therefore the cooperation and agreement of local community seems to be essential in each infill design case, in order to understand local communities' culture and needs, and thus aesthetics dilemma becomes a problem to be related to community not just keep it exclusive to designers and theorists. The current paper critically studies the guidelines and design criteria commonly applied to infill design in urban conservation areas by specialized control agencies and centers. It intends to assess the relation between these guidelines and laypersons' response and preferences especially that many actors are involved in infill issues related to special historical contexts starting from local communities, control agencies, intellectuals to professionals and designers. Most of the guidelines' lists focus on the formal aesthetics of the environments and its physical qualities, especially visual and spatial qualities. The paper critically reviews the necessity of focusing on the content of the environment form and the way lay persons see it and relate to it, by having a comprehensive design brief specific to the site of infill, the brief has common key physical and formal guidelines to preserve area character and ways to include local community in design decisions in order to relate to community preferences, values and needs. The paper stresses the idea that including the

community in the design brief helps the infill project to be deeply related to the context and the local community, thus increasing its chances of success. The paper deploys an Egyptian infill experience carried out by Agha Khan Trust of Culture (AKTC) in Al Darb Al Ahmar –Aslam neighborhood- a historical residential area in Islamic Cairo, assessing the processes followed by AKTC to include the community in the infill design process, and whether the results succeeded in meeting community preferences, values and needs.

Key words: Historical Contexts, Infill Design, Design Guidelines, Formal Aesthetics, Symbolic Aesthetics.

<u>Introduction</u>

Building in historical contexts is a challenge; new building links past to present and future therefore new design should understand its cultural, social, historical and physical environment. Infill building has always been a dilemma in design schools and design theories, raising many questions: should the new building aim to provide continuity in the built environment or aim to seek an iconic or individualistic image, should it echo older building aesthetics or respond to its own period. Design questions are usually about visual and spatial values and understanding character of spaces by studying its grain, existing tissue pattern, view, materials, scale to create new relationship between the building and its setting.

Old historical contexts are characterized by high level of mixed uses, and the residential use is usually the highest. Therefore the cooperation and agreement of local community seems to be essential in each infill design case, in order to understand local communities' culture and needs and thus aesthetics dilemma becomes a problem to be related to community not just keep it exclusive to designers and theorists. The development process of historical residential settings is a process that involves many parties such as developers, landlords, institutions, homeowners, renters, merchants, intellectuals interested in historical quarters, beside professionals and designers.

The current paper reviews some guidelines developed by international organizations and relevant commissions either as charters, recommendations, declarations or statements and explores the weight of physical and formal aesthetics to symbolic and intangible values of urban historic settings, questioning the necessity of considering formal and intangible aspects together, and to include community opinion and preferences in design guidelines in order to raise the potential of people accepting and relating to new design in existing context specially in historical mixed use contexts. The variability in preferences among individuals is a problem that should be included in the development of guidelines so that the infill projects can get the agreement of most parties involved in infill development.

The paper is divide in Four sections, the first discusses the infill design guidelines between architects and laypersons, the second discusses the weight of formal

aesthetics to symbolic aesthetics in guidelines drafted by international organizations, the third discusses different processes to include individual's experience in design guidelines, the fourth refers to a case study of infill in Islamic Cairo historical context to assess the process followed to include community's preferences in an infill design project.

Infill Design Guide Lines Between Architects and Laypersons

Architects and lay observers usually disagree about the aesthetics quality of buildings. According to different research studies, architects and laypersons use different approaches in thinking about buildings which may result from the specialized training architects receive [1]. According to Nassar architects are specialized by their professional education in ways that widen aesthetic gap between themselves and the public. Beauty should be experienced not only by architects but also by members of community, if architects' aesthetics evaluation of buildings differs from lay persons, then they must understand how lay persons perceive and evaluate buildings [1].

Many studies try to understand both point of view and define clear reasons why architects and lay persons agree or disagree in order to create buildings admired by larger proportion of the population and to prevent complete separation between community and building which may end by refusing and rejecting it.

One of these studies is conducted by Nassar trying to define building features in two categories: those related to the structure of forms that he called formal aesthetics and those related to the content of forms that he called symbolic aesthetics. Attributes of formal aesthetics include according to him: shape, proportion, rhythm, scale, complexity, color, illumination, shadowing order, hierarchy, spatial relations, incongruity, ambiguity, surprise and novelty, (and these attributes are in most of design control guidelines). Attributes of Symbolic aesthetics: reflects individual's response of the building and meanings associated with that response, and explains that the meaning and aesthetic response to a building depends on the viewer's expectations in relation to the building type and style, it also depends on viewer's cultural background and values [2].

Formal and symbolic variables interact, both affect individual's judgment. Individual's experience of a building depends on an interaction between its features and the individual's knowledge and experience therefore considering formal aesthetics of contexts together with symbolic aesthetics, intangible values and human experience of urban historic settings is a necessity.

Infill Guidelines between Formal and Symbolic Aesthetics

New buildings and changes to existing buildings in historical contexts affect the quality of the streetscape that is why design controls such as design guideline and design review are essential according to Nassar to prevent destroying historical contexts from architects' aesthetics failure, and to control building appearance [2]. Design controls attempt to control environment for the good of the community, and

they must be based on appropriate appearance guidelines concluded from serious research.

The current work review design guidelines drafted and adopted by international organizations such as UNESCO or ICOMOS, and more specific ones developed for special districts and quarters by relevant local commissions and councils. Most of the design controls deal expansively with spatial and visual aspects trying to understand the character of spaces, and to preserve the special qualities that give place its character. The current paper critically assesses the weight of intangible and symbolic variables in reviewed guidelines showing the necessity of finding a relation between guidelines and lay persons' response and preferences.

Guidelines concerning design in historical contexts are a research subject specially in old countries with historical centers, among the well known design controls the heritage council of NSW (New South Wales) and the Royal Australian Institute of architects, they have their own guidelines for infill development, and they are aware that each place requires different solutions, they are also aware that the use of their guidelines (design criteria) can result in a multitude of architectural outcomes. The guidelines respect the designers' conception and school of design he represents, whether designers adopt traditional approach or contemporary solutions, both are valid, it is the quality of response that is the key for them.

The NSW guidelines provide information on the context for infill design and outline six key criteria that are used in assessing infill development: character / scale / form / sitting / materials and colors / detailing, they also provide information on how authorities assess the infill building [3].

Another agency concerned with formal aesthetics is the CABE (Commission for Architecture and the Built Environment) and English heritage national; they also have their own building in context toolkit to help having better design solutions in historic areas, and trying to bridge the relationship between existing context and new development. The toolkit also tries to understand local conditions according to which a successful infill development will: Relate to geography and history of the place, Respect the pattern of existing development and routes, Respect views, Respect scale, Use high quality materials and building methods as high as those used in existing buildings, Create new views and juxtapositions [4].

Other well known guidelines are The Venice charters developed by ICOMOS (International Council On Monuments and Sites) an organization with European back ground due to the origin of its authors, it established the principles of research understanding sensitive intervention and protection of monuments. These charters are used by practitioners in cultural heritage since 1966 [5].

The Venice charter one of its merits is that it considered a historic monument is not only the building but also the urban setting in which it is found, therefore a new construction or modification in a traditional setting which may alter the relations of mass and color must not be allowed according to the charter [6]. ICOMOS has been encouraging new design to be distinguishable from settings to protect historic fabric and compatible with context to continue harmony in the historic fabric.

The previously mentioned are examples of guidelines that included mainly formal variables related to the structure of form, though they tried to be context specific and flexible to design schools and aesthetics interpretations. There is another group of guidelines more context specific among which; The Burra charter (Historic mining town south Australia) that defines the basic principles to be followed in the design work in Australian heritage places, the charter can be considered among charters including formal variables and intangible ones related to cultural and social values, it was written for the Australian context using the Venice charter as a starting point and expanding in understanding the significance of a place before making policy decisions, believing that conservation process should vary according to the nature of significance of cultural resources.

The key differences between the Burra charter and The Venice charter according to Brooks is that the Australian document is applied to all places of cultural significance not just the monuments. The Burra charters provides guidelines for plans that identify the cultural significance of sites identified as having "aesthetic, historic, scientific or social values" and suggest policies that protect that cultural identity. According to Brooks most local governments now require consideration of potential impacts on a place's cultural significance before new development can proceed [6].

Another trial for guidelines drafted to a specific context by a relevant local commission was developed by Philadelphia organization and has formal guidelines for new buildings but worded differently according to each district, they stress on: compatibility with the size, scale, color, material and character of the neighborhood, the height is the strongest design guideline and the height of adjacent buildings will help dictate the height of new construction. They also stress a uniform setback of buildings as they create street wall which is essential to preserve the character of the district [7].

The Indianapolis historic preservation commission is another type of agency that set its own guidelines for infill development and renovating buildings in historic contexts, these guidelines were designed for a special context, the Cumberland district (Indianapolis, Indiana), which has a special architectural significance [8]. These guidelines are interested in the kind of activities that is suggested in new developments and reuse of existing buildings. The guidelines encourage the commercial buildings along wide streets to continue village mixed use atmosphere and they encourage the construction of new houses in order to strengthen the residential area. These Guidelines focused on buildings' aesthetics, zoning and land use to meet users' needs.

From previous review of design criteria, most of the design guidelines address similar points and issues but very few include human experience, intangible and symbolic values that consider the response of local communities to new designs introduced to the historical settings. Usually design controls taking intangible values into consideration are designed for a specific district by local councils in direct relation with local communities' needs and patterns. Variability in preferences and symbolic aesthetics among lay persons is a critical issue that should be included in design

controls and design reviews in order to reach a design more related to communities and parties involved.

Design Control Guidelines and Individual Experience

Developing guidelines reflecting individual's experience needs regular evaluation to design guidelines. Feedbacks from practicing professionals, town planners and policy makers are usually considered, as they are the people directly involved in shaping physical urban environment, but the response of communities to professionals' work may be very different from their expectations and therefore may lead in some cases to community rejection of some projects and their deterioration. The current study explores the effect of non physical aspects and symbolic aesthetics on new building in historical context, trying to understand the effect of participants' background on new design by examining respondents' perceptions of aesthetics, their preference ratings of aesthetics for new and old relationships, their attitude toward change in their built environment, to develop guidelines specific to particular contexts.

To develop such guidelines many processes can be involved among them: reviewing new design proposals through review panels involving related parties, and encouraging public participation in early phases of decision making [9].

Panel review is a process approved and applied by many organizations involved in redesign in historic quarters; it includes parties involved in the design process such as: representatives of the design group, historic preservation planners, staff of public agencies, and individuals involved in general planning. Involved parties would review new design proposals and comment the aesthetics and functional efficiency of these designs according to their point of view.

This panel process when applied in Philadelphia by the preservation alliance for greater Philadelphia many issues were raised beside the typical issues related to height, massing, materials, rhythm.

- Design guidelines can often be too limiting to architect from an innovative response to site and context.
- Historic districts vary in character; no single set of design guidelines is likely to fit all districts. Guidelines need to recognize the character that is specific to each district.
- Achieving good design in an historic context is the result of a process more than explicit guidelines, a process that includes a dialogue between community and preservation interests and project architect [9].

Such issues are to be considered while designing guidelines for a historical setting, our study focus on the issues related to the uniqueness of each area under a development project and inappropriateness of applying general guidelines not considering specific area character, it also focus on including a dialogue between community, developer and professionals to get a better understanding of respondents

expectations and preferences in order to gain their support to the project. The study examines the participation process through a case study applying such process, to assess how it affects decision and design process and whether it leads to a better acceptance of new infill in historical settings.

Aslam Square –Al Darb Al Ahmar- Cairo, Egypt

The case study review the work of the Agha Khan Trust of Culture (AKTC) in historic Cairo and focus on a small infill project in a residential square (Aslam square) and the process followed by the design team to upgrade the square and add new infill elements in the historic quarter.

Aslam is a small neighborhood square selected for improvement by AKTC team. The square is close to Bab Al-Mahruq one of the historic principle gate along the eastern Ayyubid wall. According to Siravo the Gate was connected to Aslam square and from the square to the Fatimid gate Bab Zuwayla. To re-establish this connection, AKTC considered Aslam square to serve as a pedestrian link and as a forum for commercial activity and social interaction in the Aslam neighborhood [10]. The square is a densely built –up quarter and a hub for artisan activity, it contains a rich array of social and economic activities, small artisans' workshops are in carpentry, shoemaking and metal work [11].

FIG 1. Aslam Square before work on the café [15].
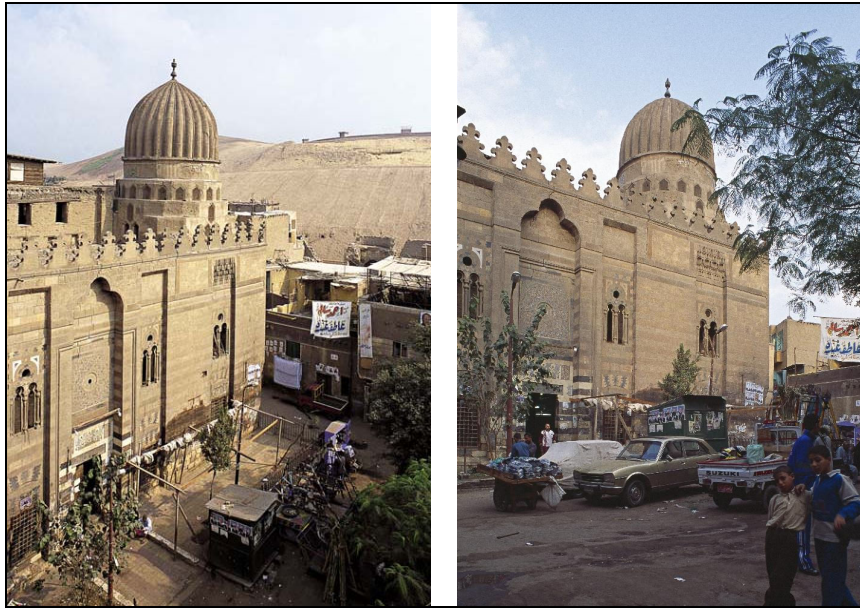
FIG 2. Square before the project showing the informal vehicular parking deteriorated paving condition [15].

The work in Aslam square involved local residents with developers and professionals; it included elimination of informal vehicular parking, upgrading public utilities, creating new seating area and a pedestrian area in front of the mosque. An important part of the scheme was a façade improvement program for the residential and commercial buildings facing the square, and the design of a new cafeteria added to the square facing the Aslam mosque as a public facility and a forum for social interaction, in addition to a lime production center and a carpentry workshop which provide training and employment for local carpenters [11].

FIG 3. The addition of the café on top of the existing redesigned activities [15].

FIG 4. Square after the project showing the redesign of
the façades and activities reorganization [15].

The Agha Khan aimed to reverse the image of Al Darb Al Ahmar area by uncovering new opportunities in the area. Restoration and reuse of historic landmarks and public open spaces as focal points was one step towards this, together with the revitalization of resources' of local communities by socio economic development projects to raise living standards, provide employment, support existing enterprises and deal with heath and education. Agha Khan adopted an integrated approach involving a wide range of professional disciplines and corresponding interventions to deal with the various layers of problems in historic cities and relate to laypersons [12].

The redesign of the facades and the new social forum in Aslam square was the result of a mutual effort between the AKTC team and local residents in what concerns the activity needed in the area and the way of doing the activity according to their habits, values and lifestyle.

FIG 5. Plan of the planned development in Aslam square [15].

Community involvement occurred through vast surveys of the urban, social and economic needs of the local residents, meetings to identify the priorities of conservation, seminars during early design phases, focus groups to determine residents' needs and understand their preferences and expectations, review sessions to evaluate design proposals, such involvement leaded to a wide range approval to the new design, change of residents' attitude towards their contexts, appreciation of the efforts done by professionals and will to help and change. The housing rehabilitation policy as a pilot project in the area reversed people pessimistic expectations, and people acceptance to new public facilities was successful [13].


**FIG 6.** Socio economic development work [15].

FIG 7. The café; public facility chosen by community.

Spatial and visual facades details and the added Café are the work of AKTC team after getting the approval of national agencies responsible of the historic area, specially approvals on height, scale, colors, street wall and setbacks, the project was considered by the national organization for urban harmony HRP as a reference to guidelines for historic areas to be implemented on national level [13].
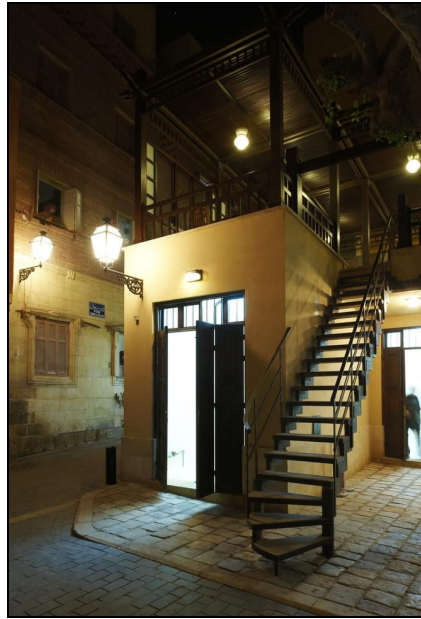
FIG 8. Staircase leading to 1st floor of the café.
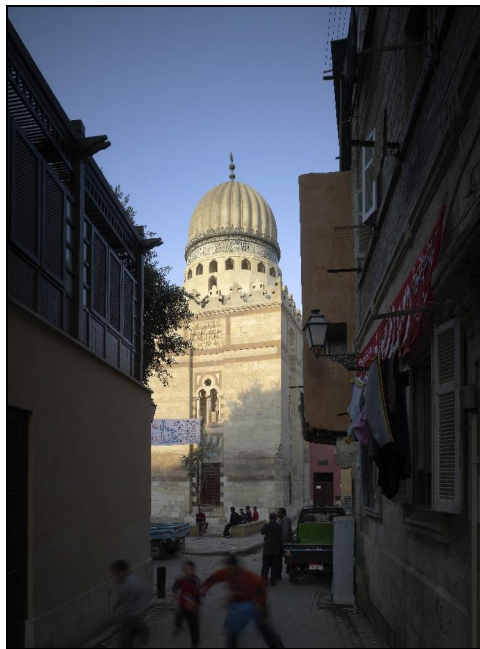
FIG 9. The dome of the mosque seen from side St.

The AKTC team adjusted demolishing policies adopted by national government aiming to demolish many parts of the historical fabric to save monuments, and replaced it with rehabilitation policies that gained public approval and support, the guidelines the team followed were important to preserve area's character in addition to the strategies followed to relate to residential communities are essential for the infill project to be approved by local communities.

Conclusion

Historic contexts are different from historic monuments. They are alive and require coping with the changing needs of their inhabitants in order to flourish and be sustained. The complexity in building in historic areas is in respecting historic and environmental characteristics of surrounding urban fabric, and also respecting cultural tradition, economic condition, and social aspects of inhabitants.

Infill design in historic quarters needs more than formal aesthetics guidelines it needs a process generating a dialogue between community and professionals [2]. The previous case study demonstrates the necessity of including community opinion and preferences in design guidelines, by following a participation plan appropriate to the area subject of research in order to raise the potential of gaining public support to new design in existing context. The participation in early design phases helps professional understand laypersons' response to their ideas and meanings associated with that response. Participation and review after early design stages helps getting feedbacks from involved parties such as developers, landlords, institutions and intellectuals interested in historical quarters.

Historic contexts vary in character, guidelines should respect the uniqueness of each area subject to infill design and should be worded differently according to each area, general guidelines drafted by international organizations are an important reference but when applied on a certain context guidelines need to recognize the character of each district.

Community aesthetic response to a building depends on viewers' cultural background and values, therefore when community's opinions and preferences are considered in design phases through surveys, meetings and seminars, majority of laypersons will approve new design's functions and aesthetics, which protects the new design in its settings, and also protects contexts from architects' aesthetics and functional interpretations.

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