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Architecture
Planning
Built Environment Studies
Volume (8) - Issue (3) - November 2014
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TEACHING SEMANTIC ETHNOGRAPHY TO ARCHITECTURE STUDENTS

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Abstract  
Learning about human behavior, cultural diversity, and user perspectives are all part of  
the NAAB-required curriculum for educating architects. Beyond that, these skills help  
architects compete in a global and diverse world. Semantic ethnography offers a  
method for understanding the user perspective in cultural settings. We present a  
research and design project centered on semantic ethnography as a way to teach  
architecture students about how to design for user groups. A survey administered to two  
years of students indicates that this project is indeed helpful for teaching students about  
how to find and listen to the user perspective.  

Keywords: Design pedagogy; Ethnography; User perspective; Teaching architecture  

INTRODUCTION  
The latest 2014 National Architecture Accrediting Board (NAAB) criteria streamline and distribute  
social criteria through the five values that all architecture programs have to demonstrate. Since  
NAAB does not want to specify these values in a way that would homogenize programs,  
programs need to share information about the different ways that these values are translated into  
student performance outcomes. Accordingly, this paper shares our experience teaching “Social  
and Cultural Processes in Architecture and Urban Design” is a core course at the University of  
California, Berkeley that incorporates human behavior, cultural diversity, and applied research  
into architectural education. It introduces key concepts in person-environmental studies,  
demonstrates how these concepts vary by subculture, teaches programming and evaluation  
research methods, and promotes thinking critically about the values embedded in design. Students read a wide selection of articles, chapters, and books about theory, methods, and  
various building and place types with attention to variation by American cultures. One of the two  
major assignments in this course is an individual, original “semantic ethnographic” research  
project that leads to redesign of an existing place based on data gathered from the insiders point  
of view, bolstered by library research, representing the outsider’s view.  

In Boyer and Mitgang’s 1996 report on the state of the architecture profession, Mitgang states that “architecture education centers…on preparing future architects capable of designing
sturdy, beautiful, and useful structures that serve users, strengthen communities, and enhance the environment” (Mitgang, 1996, xi). In so doing, they echo the Vitruvian principles of building (as paraphrased by Henry Wotten) as commodity, firmness and delight (Vitruvius & Morgan, 1960). Firmness refers to a structure which supports itself, bears loads, protects from the elements, and is made to last. Delight refers to aesthetic experience including the sensation of elation and inspiration that comes with perceiving a building’s form, elegance and art. Commodity refers to social purpose, the capacity to accommodate use, and to sustain social action. Then, to update Wotten and Vitruvius both, we could say that the three pillars of Architecture are Structure, Aesthetics and Social Function.

Salama (2008) also has three areas of architecture, calling it “in tension between reason, emotion and intuition,” asserting that architectural education should focus on supporting students’ abilities to “conceptualize, coordinate, and execute the idea of building” (p. 100). Responding to these three areas requires comprehensive knowledge and also understanding knowledge production, and thus design education should focus on both “critical inquiry and knowledge acquisition and production” (Salama, 2008, 101). In architectural education, the term function often refers to a specific aspect of architectural design. For many architects, function means the right size for each space, how spaces come together, circulation between those spaces and organization of architectural elements within each space. In the context of social aspects of environmental design, function is a much broader term that includes all psychological, social, cultural aspects of architectural design. Function comes as a product of use by and usefulness to users. In this sense, function is user-centered. In order to understand social function, one must understand the social context or the culture from which the function arises.

However, architecture students have not typically been exposed to techniques for understanding cultural differences, and social science is taught as a series of precepts instead of as a method (Salama, 2010). Similarly, scholars studying space and the uses of space, especially spaces of a specific sub-culture, use ethnographic methods (Brown, 2007; Doxtater, 2005; Nayak, 2010; Yiftachel & Yacobi, 2003). Anthropological methods have been used in the study of the history of architecture, but there is little ethnographic research into contemporary architecture (Cranz, 1974). The ethnographic method presented here fills this gap. We are using ethnography as a method to understand user perspectives on the uses and meanings of space. While semantic ethnography is the primary focus of the data collection, we also ask students to note their own observations and conduct a precedents and literature review.

Ethnography is the description of a culture in its own terms in real settings. Of all social research methods it is the most sympathetic with the needs and preferences of architects who want information about the context of the design problem without being limited creatively. For decades Galen Cranz has championed semantic ethnography as the best way to bring qualities, not just quantities, into social research for architectural design. Emphasis on qualities leaves the architect room for finding distinctive physical expression of those qualities. Also called cognitive ethnography, semantic ethnography relies on what people can tell you about the nature of the world they live in. It is less time demanding than participant-observation, a technique that requires becoming one of the group under study, and is far more revealing that observation alone. The recent popularity of ethnography in the study of human-computer interaction relies more on ethnography as a way to observe behavior in natural settings. In contrast, semantic ethnography relies more heavily on learning the categories of speech and thought that people use to give meaning to their worlds.

Understanding cultural differences is an important tool for designers, and one that has sometimes been neglected in studio classes, which educators and theorists have accused of alienating women and students of color (For examples, see Anthony and Ahrentzen, 1993; Crysler, 1995; Groat & Ahrentzen, 1996; Groat and Ahrentzen, 1997; Moore, 2001; Rubbo, 2001; Stevens, 1998; Willenbrock, 1991). Others defend studio practices as a requisite and unique experience, one in which students learn to think about design (For examples, see Dorrian & Hawker, 2003; Frank, 2008; Wheelwright, 2004; Westfall, 2008). In this paper, we expand studio
practices to offer an additional educational experience for students. The method outlined here can be applied to the studio model of design education as well as to education on programming and user experience design.

Since the 1970s, the emphasis on social and cultural issues has declined, and especially since the advent of CAD; with the seductiveness of digital designs and previously unbuildable forms, Schuman notes that it has “been difficult for a socially based architecture to hold its own in the competitive world of the design studio” (Schuman, 2006, 8). A somewhat ambiguous set of changes has occurred regarding social factors in NAAB criteria from 2009 to 2014. The executive director has explained that the organization wanted to streamline the long lists of student performance criteria by eliminating redundancies. After a long three-year process involving the consultation of about 10 professional associations of those in architectural education, NAAB identified five subject areas that they felt were broader than performance outcomes and therefore identified them as values—critical thinking and visual representation; building practices, technical skills and knowledge; integrated architectural solutions; and professional practice. Since 1949 the organization has committed itself to helping the nation’s architecture schools produce equally competent graduates without dictating the number of semesters in any given subject. Therefore, they reduced (by generalizing) the number of student performance criteria that flowed from the five basic values. NAAB claims that they have redistributed the social and cultural criteria rather than eliminated them. However, some critics feel or worry otherwise.

Several items in NAAB’s 2009 Student Performance Criteria related to environment and behavior studies’ literature and methods used to be an accreditation requirement. However, in NAAB’s 2014 criteria some of those important items are either less pronounced or totally eliminated. For instance, while previously “A.9. Historical traditions and Global culture” explicitly listed the word tradition, the new criteria under “A.7. History and Culture” omits that. Another example is that architect students may be held responsible for Access for disabled populations, but not for designing in a way to meet various cultural and behavioral needs of differing populations.

The new criteria may be interpreted as indicating that an understanding of cultural diversity is adequate, while the additional step of possessing the skills to translate this into design solutions does not require “A.11. Applied Research,” which was defined as “Understanding the role of applied research in determining function, form, and systems and their impact on human conditions and behavior” is one of the eliminated items from the criteria. Hence, onsite research that would specifically inform user-centered design is no longer deemed necessary. A whole section of “C: Leadership and Practice” that related to environmental and behavior studies closely is dissolved into other items in the new criteria. For instance, “C.3 Client role” and “C.9. Community and Social Responsibility” that were part of 2009 criteria separately are now considered a business and legal issues in 2014 requirements under “D.5. Legal Responsibilities: Understanding the architect’s responsibility to the public and the client as determined by regulations and legal considerations involving the practice of architecture and professional service contracts.” “C.2 Human behavior,” which was already vaguely defined in 2009 criteria is not mentioned as separate criteria at all. Previously “C.8. Ethics and professional judgment” criteria incorporated social, political and cultural issues. The new criteria limits “Professional ethics” with the requirements of AIA code of ethics, and does not mention social, political and cultural issues in a broader sense.

Such institutional change bears close observation to see if “a thousand flowers bloom” as NAAB hopes, or if it allows programs to neglect instruction in social-cultural factors, and eventually leads to a cultural shift that allows architects to feel less responsible for creating spaces that serve community, cultural, and behavioral needs. Understanding clients and empowering them, using onsite research as a basis of design can never be over emphasized. Because the new NAAB criteria do not specify social and cultural issues in regards to design, it is all the more important for academics to set their own standards through their course design.
Many societies have a cosmopolitan character, or multiple subcultures living closely together. This is especially true for American society. In addition, an ability to attend to social and cultural differences may also help students cope with a global economy, one in which architects are increasingly called upon to design for cultural difference. Luckily, students need not travel the globe to learn how to understand another cultures: “students who are knowledgeable about the experiences of other American cultures are better prepared to participate creatively in our changing profession and society” (Davis, 1993, 36).

How best to teach architecture students is a vibrant and controversial topic (Salama & Crosbie, 2010), and a variety of approaches address the issue of how best to teach design—and even what good design looks like. One solution is to pair studio and seminar classes to create a hybrid class (for an example, see Bendiner-Viani & Maltby, 2010). However, such multi-class approaches are not always possible. Salama (2008) identifies a significant gap in the literature on how to introduce real-life issues in theory and lecture courses. Many educators call for real-life experiences (Salama 2008), but how to incorporate the real world into the classroom has not been answered, although books and journals have been devoted to the subject (for examples, see: Nicol & Pilling, 2000; Salama & Wilkinson, 2007; also, the International Journal of Architectural Research and the Journal of Architectural Education have both devoted recent issues to the subject—IJAR in 2010 (Volume 4 Issues 2-3) and JAE in 2014 (Volume 68 Issue 1)). In some cases, a course project is focused on one issue, such as wayfinding (Kamal et al., 2010). In other cases, studio instructors interpret the notion of “real-world” to mean a sited project focusing on the materiality of a space (Marinic, 2010). Furthermore, typical architectural education certainly requires site visits or other engagement outside the classroom, but these exercises are often casual and unstructured (Salama 2008, 103); the assignment described here helps structure the time a student might spend on-site, and provides tools for the site analysis that architects must undertake.

The semantic ethnography assignment presented here asks students to go outside their own culture and thereby learn to listen truly and deeply to how their ‘clients’ use a space. Because perceptions are effected by one’s social-cultural experience, we argue for inclusion of user’s social and cultural perspectives on design. Architects need social acumen in order to tease out spatial solutions and aesthetic values from social or functional issues. They often design for people who have little or no spatial vocabulary, who speak only in terms of human needs or functional contradictions. Therefore, architects need to understand people at many different levels. We do not view such awareness as a constraint on architectural creativity, but rather a source of inspiration. We would like this attitude to become a standard part of architectural education, which would benefit students— and the buildings they go on to design.

Some studios, like North Studio at Wesleyan University and Rural Studio at Auburn University explicitly engage the students in real-world projects responding to community requests, some of which are design-build. Here, students explored “architectural concepts while gaining hands-on experience, presented their work to clients, participated in meetings with the local municipality, and tested their ideas beyond the walls of the academy” (Huge, 2009, 66; for a host of examples of real-world studio projects, see Hardin, Eribes, & Poster, 2006). However, learning about other cultures or American sub-cultures need not be left exclusively to the studio experience; students would be better served by having such a hands-on cross-cultural focus integrated throughout architectural curricula.

Our ultimate goal is a balanced education of design students. These students are at the forefront of defining and literally shaping the future of our world. The stakes are high. All of us inhabit or use buildings. Design education is a rich site of transformative possibility, with practitioners having a direct (and sometimes unwitting) impact in the daily lives of the users of their structures. This impact, depending on the specifics of the site designed, is felt at least to some degree by all social classes, all races, all genders, all users. Architecture is praxis in the Gramscian organic intellectual tradition: a direct, informed intervention into material lives of users. When students become professionals, they will occupy the privileged position of being experts,
trusted to understand how their buildings work and responsible for their creation's function. Thus, this paper is part of an effort to reassert the importance of emphasizing for students the social effects of their designs, and to sketch a way to enable students to develop that power in concert with their clients and users through interactive ethnographic research.

ETHNOGRAPHY PROJECT OVERVIEW
For several decades Galen Cranz has taught Architecture 110AC: “Social and Cultural Processes in Architecture and Urban Planning.” (The AC designation is for courses which have met University of California, Berkeley's requirements for teaching subjects from the perspectives of at least three American cultures.) The course is designed to expose students to a range of social science methodologies in conjunction with direct experience in the field, culminating in original student research and design. We offer a step-by-step introduction of the ethnographic research, a project that takes students outside the classroom, interacting with people from outside the students' own culture, and that requires research and writing skills beyond what is normally required in studio. We conclude with results of anonymous student course evaluations from 2009 and 2010 in order to give evidence about the influence of ethnographic research knowledge on students’ design education. This course incorporates articles and exercises from a variety of methodological viewpoints, while the ethnography project focuses on one multi-faceted technique. Students conduct ethnographic research on an actual location that is easily accessible to them for semester long visits and they redesign this building or outdoor site based on their research. The course is designed around a workbook inspired by Spradley and McCurdy's 2004 book on ethnographic research. The workbook itself is a guide to the ideas behind and process of semantic ethnography, offering students tools and examples on how to develop their own ethnographic projects through understanding the user experience of space.

The concept starts from the standpoint that complex societies do not have homogeneous national values and knowledge. Instead, smaller groups, microcultures, share knowledge. We have added the term "sited" to the anthropological term because microcultures can exist independent of space, whereas in a sited microculture, the group members define themselves partially through and within their relations to their site. Most groups exist in a physical setting, but social scientists do not foreground the environment as environmental designers do. Designers understand that social activity and site interact, each producing the other. The project is broken down into seven distinct parts completed throughout the semester.

**Part I: Selecting a Sited Culture**
Students choose a single sited microculture. Ideally, the student will choose a small sited microculture from a culture unfamiliar to them. We advise the student's choice; a student who chose a transit station as a site would have considerably difficulty in finding a shared set of meanings amongst users of the site, whereas a decades-old teen music center produces a much more well-defined sited microculture. This provides the student the opportunity to approach the sited microculture as a naive outsider to the sited microculture's unique practices and spatial engagement. Students have chosen a vast variety of sites. Local coffee shops and other eating establishments, places of religious practice, ethnic community centers, and art schools have been popular choices. More unusual choices have been tattoo parlors, local hot springs, a semi-abandoned rail station, and a mobile dance studio. Once students have chosen their site, we ask them to do basic site research, take photographs or draw any diagrams they feel will help them, and us, understand the site.

Based on these initial informal observations, the students propose their suggestions for improving the site. Redesigning the site at the beginning is important because it creates a baseline for comparison later. Without it students think that their final redesign is what they would have done from the beginning. They have a written record for how much their thinking has changed between their initial redesign and their final redesign that emerged after understanding
the insider point of view through ethnographic study. We ask students to describe the site verbally as well as provide relevant images and diagrams, when they describe and justify their redesign. Moreover, since our course always includes some non-design students, this initial phase of the project gives them a chance to think like designers regardless of their level of skill at visual representation. It is particularly rewarding to hear the students critique their initial work at the end of the semester; it is as if they view their sites with entirely different eyes.

**Part II: Acquiring an informant and semantic interviewing**

Next, students approach someone familiar with the site to act as an informant. This builds on observation skills from the previous section, as discovering who will be most familiar with a place requires familiarity with that place and the activities of the people within it. Students should find an informant who knows a lot about the student's chosen site, but also someone with whom they feel they can establish rapport for repeated interviews. They turn in a description of who they have chosen, and why, role of this person in the sited culture and the rapport between the informant and the student.

Semantic ethnography does not rely on previously established questions to conduct interviews. Instead, it has its own special sequence for collecting information. One begins by asking the informant to give a tour of the site. Students pay attention to the words their informants are using as they describe their sited culture. They record the terms used in the introduction to the site and ask for further clarification of each term. This aids students in understanding the sites as their users do. Because many architects do not get to visit sites, teaching students this method of deep listening affords them the opportunity to learn how clients think about their own activities. We teach semantic ethnography as a way to give future designers an important practical tool that they can use in professional life. Part II establishes talking with people as a data collection technique and gives students a chance to begin to practice a special interviewing skill that relies on close listening. Also, the students get the user's perspective. Unlike conventional interviewing with a prepared list of issues or questions, in this project, we especially ask students not to have any predetermined questions. Rather we want them to have complete understanding of their sited microculture with no bias that comes from their architectural education and the questions architects might ask.

Much of the education that studio provides is by necessity insular; students are used to hearing a professional's perspective rather than user's. In practice, users who do not necessarily speak a language of design still have opinions about the space. This encourages the student to engage with the informant on the terms of the specific culture of the site itself. They are asked to accept as true the social reality that their informant presents to them. These carefully “unstructured” conversations follow up on each term the informant uses.

**Part III: Developing Taxonomies**

After students collect semantic data, through at least three interviews about their informants' view of the site and the sited culture, we ask them to create a graphic taxonomy based on that data. Creating a visual diagram of the insider point of view taps into the students' visual design skills, and helps them tackle the problem of how to convey complex semantic ethnographic information in an understandable, objective, and interesting way through graphic representation (Figure 1). This portion of the project often requires considerable instructor involvement and guidance. Few are used to seeing mere conversation as revealing the categories and underlying structure of thought. We ask the students to watch for particular organizations of thought in their informants and their site users. Once the students assemble a list of terms that their informants or interviewees use, they are asked to arrange them in a taxonomic order starting with the most general term, known as the cover term. Students discover the relations between the terms that their informants use and group them into a visual display of their relationship in a map of
categories. Typically, terms cover three areas: people, activities, and spaces. Other categories have been feelings, perceptions, qualities, histories or visions/goals.

Students prepare a draft taxonomy and to show it to their informant, cross checking for validity and additional clarification. Sharing their taxonomy reinforces students’ positive relation with their informant; the informants are invariably impressed and flattered to see students paying so much attention to their words and worldviews. This aids the project as a whole as it maintains rapport with users and includes their feedback into the analysis and redesign process.

**Part IV: Literature Review**

After gaining a user perspective, students conduct a literature review and present their findings in an annotated bibliography. This provides an outsider’s point of view that both balances and values the contributions of the user’s point of view. Sources include precedents regarding how other designers have solved whatever spatial problems the students have uncovered in their investigations.
We also encourage students to think broadly about their design problem, for example, if their site is a local coffee shop, they should look at the ample research that coffee chains have conducted about how they design and redesign their stores for very specific uses and moods. If their site is a café, and their problem is acoustics, what might research on theaters or libraries have to offer as solutions? Students should research similar but not identical sites, because their specific site is not likely to have been studied by another person, and design inspiration comes from a variety of sources. To use the above example, if the student is studying a local coffee house, they may use texts on local restaurants (to gain insight into local dining cultures), other coffee shops, or even information on coffee production. The student must assess the usefulness of each source to their site and its redesign.

When students struggle with this section, we observe that they have not yet clearly defined the central design problem their informant brought to their attention, or because they are not used to conducting literature reviews for redesign purposes. Some students point out that they are majoring in architecture partially because they dislike writing papers and the research that goes into them. Even though architecture students often have a much more visual learning style than their non-design peers, this assignment is so geared to their project that it does not feel like an ordinary abstract library research paper. Learning to appreciate library research for its insights may build a habit of using studies in person-environment relations and evidence-based design; without it students would continually reinvent the proverbial wheel. Furthermore, many students will go on to careers other than design, or will be one part of a design team, and learning library research skills adds to their toolbox of techniques for learning about the world.

**Part V: Programming and Redesign**

Once the students have learned about their site through their own informal observations, carefully unstructured ethnographic interviews, and library research, we ask the students to consolidate/synthesize these emic and etic points of view and employ them to redesign the space. Rather than a simple list of activities, we ask them to think about the qualities of spaces that are needed to accommodate specific needs and patterns they have discovered through social research. Thus, this approach offers a new approach to architectural programming, one that combines drawings, images from precedent examples, modes, feelings and qualities of space with minimum spatial requirements.

For all our students, design and non-design majors, we stress that evaluation on this project is not based on quality of the drawings or the aesthetic quality of their design, but rather how well their designs respond to their newly gathered information. This portion of the project is evaluated on the students' comprehension of the gathered data and its translation into spatial form that acknowledges and accommodates the needs and aspirations of the users. Their justification of how they arrived at their re-design choices demonstrates to them how research on person-environment relations can influence designs positively.

**Part VI: Communicating with the Public: Poster**

The last two parts of the assignment are concerned with the presentation of ideas. In Part VI, students are asked to present their final redesign visually in a single poster of 24x36 inches. We ask the students to present not only their re-design, but also the justification for how they arrived at that design, including the taxonomy that they created based on the informant's view of the space. Thus, we expect them to present drawings of the new space, as any design studio would have them do, as well as the causes of those design interventions. We ask for an argument, a cause and effect relationship, to be apparent on their poster. Although this is not an easy task, we consider it an important design challenge for students who communicate visually. Handling text appropriately – color, font size and style, amount and distribution of text, its relation to images and diagrams – on a poster board is a big part of this assignment (Figure 2).
As brevity often requires a deeper understanding than lengthy explanations, students sometimes complain about the space limitations. However, learning to present ideas succinctly is an important task for students, especially students whose careers may involve community presentations, design competitions, or sending drawings to clients across the world.

**Figure 2: Student poster design for the ethnography of San Francisco Japan Town Peace Plaza (Source: Stella Liang, Fall 2007).**

**Part VII: Final Report**
The last step is to synthesize learning and produce a final report, formatted more or less according to standard social science practice. That is, these final reports have: an introduction, where students introduce the site and the project; a methods section, where students lay out the three methods they employed in their research on the subject, namely, informal observation, semantic ethnographic interviewing, and archival or library research; a findings section, in which students present and explain their taxonomy and their final redesign, both visually and verbally; and a conclusion, in which they comment of the differences between their initial redesign and their final, post-research design. This is an important measure of their own learning experience. In the conclusion, we also ask students to address how the different methods influenced their final design, and how they can employ similar methods in future projects. Most of the report is drawn from earlier sections, and although we expect 15-20 pages including drawings, producing a substantial paper is not an onerous task, even for the least text-oriented undergraduates, because they have already written most of the material. For the final report we ask them only to reorganize it, respond to their Graduate Student Instructor's editorial suggestions, refine language, and be sure to use correct bibliographic entries.
By preparing this final report as an academic paper they are learning another option for presenting research. Part VI, the poster, is one way to present research, and a common method in the field of architecture. Additionally, we want students to be familiar with social science literature and presentation methods. By requiring students to present their own research in this modified standard format, we give them access to understanding what goes into any research papers they might read when investigating future projects or conducting future literature reviews; they understand the format because they have had to produce it. For those who choose to go on to graduate school or professional work in areas other than design have another tool available for presenting their ideas. The final report gives the students some experience in presenting a detailed argument justifying their design decisions.

Further, writing a cohesive final report can provide a sense of accomplishment; students are often surprised at how much they now know about their site and the culture it holds, and about how much they can write easily even at the end of the semester when other course work is demanding and they know so much about their own site that they might feel daunted by all its nuances and complications. They end up with a piece of original research, unusual for undergraduates, that can be submitted for undergraduate research contests and contributes to their portfolio for when they apply to jobs or to graduate school.

STUDENT RESPONSE TO THE PROJECT
At the end of the 2009 and 2010 semesters, we asked students to give us feedback on the ethnography project. The survey was a mix of Likert-scale and open-ended questions. As this survey was in addition to the departmental course evaluation forms, students were given ½ point extra credit for participating. An online survey tool (surveymonkey) was used to collect responses from students. (Graduate student instructors collected the survey results only after grading student’s final projects in order to assure that student can respond to the year-end survey honestly.) We sent emails with links to the survey and the survey remained open until the day after the final report due date. Out of a total of 265 enrolled students in 2009 and 2010 combined, 200 students responded to the survey. (We combine the two years survey results to overcome possible effects of year-specific graduate student instructors).

We asked students to rate how the ethnography project helped them learn some aspects of the design process, such as understanding user’s perspective, listening to clients, developing a program, and evaluating an existing environment/space. On a 7-point Likert scale (7 being most helpful) students reported that ethnography assignment was highly helpful on these three aspects of design, with an averages consistently over 5 and the mode being 6 for all three questions (Table 1).

### Table 1. Influences of the ethnography assignment on the design process.

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<th>to take the user’s point of view</th>
<th>to listen to clients</th>
<th>to develop programming for a building or any other kind of space</th>
<th>to evaluate an existing environment</th>
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<td>How well ethnography</td>
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<td>project helped you learn</td>
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<td>5.21</td>
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<td>and 7 being most helpful)</td>
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In addition to these forced-response questions, we asked three open-ended questions of the students. First, we asked them to reflect on how they will incorporate what they learned into future practice either in school or beyond. Out of 181 responses to this question, seventy-six comments demonstrated a commitment to incorporate the user’s perspective in the future. These comments ranged from the mundane, “I will always record client meetings” to loftier ambitions, such as “I will consider the different user groups that will be using the space instead of focusing solely on my personal preferences.” Twenty-seven students remarked that they would incorporate
Evidence into their designs in the future, referring either to evidence in general, for instance “I really enjoy doing research and using that for design will help me in the future”, or specifically to the techniques we taught in class, for instance “…the skills to listen to people during interviews. I believe that these skills can be used even during normal conversations to further understand beyond the verbal level” or “I will incorporate what I learned by observing more of my surroundings and asking questions to people linked to those surroundings. I am no longer shy about asking simple questions and listening word for word from other people.”

Nine students’ comments compared architectural studio courses with the ethnography assignment. Students indicated that they want to, but cannot imagine finding opportunities to, incorporate social research into their studio courses, even though in their future practice they would like to use social research to develop the design program, including one student who said, “most of the school design projects I’ve worked on did not have a client to perform ethnographic research on…not sure what type of projects will be assigned in the future. I would love to do more research like this.”

Only five students gave negative feedback to this question, saying things like they fail to see the worth, it was not very helpful, or pointing out that the assignment did not apply to their field (we have students from other departments, not only architecture students). The other 64 comments not called out here were generically positive, ranging in topic from learning about programming to aesthetics, with two students specifically saying they will use a version of the taxonomy as a design tool in the future.

Second, we asked students to comment on how these techniques may have changed the way they understand buildings. Again, the majority of the students (46 of 179 who responded to this question) talked about the importance of the user or user perspective to understanding buildings, saying things like, “Buildings are for people not paper,” and, “I would say they did not change the way I understand buildings but instead changed the way I understand the people who use them.” Eighteen talked about the importance of function, sixteen addressed the importance of culture in understanding buildings, and fourteen students indicated that after the ethnography assignment that they had a deeper understanding of the complexity of buildings. The rest of the comments defy categorization, but indicate a breadth and depth of learning far too complex to summarize here. Three examples will have to suffice for indicating the types of comments received: “This has helped me to begin to feel confident about insisting that buildings cannot be seen to exist in isolation. They must be considered as interdependent parts of larger ecosystems,” and, “the interviewing process showed me the dynamic relationship between buildings and people, each adapting to each other. Buildings and their programming are not static and need to be continuously modified to meet the people’s changing needs,” and finally, “apart from my leisure readings I didn’t really know anything about architecture and design before this class, I feel these techniques gave me a good foundation to my understanding of buildings and spaces.”

Finally, we asked students what other feedback they had for us about the project. Out of 140 responses, 59 said the project was fun or interesting or otherwise indicated a positive reaction. Forty-six were specific suggestions about timing in the semester, grading, or other tweaks to improve the project. Eight comments indicated confusion on the part of the student at some point during the project and 13 were general criticisms. Ten students said the project was too much work. This is an important point. Only 5% of students thought that a project that required multiple 5-page papers throughout the semester, hours of on-site interaction and that resulted in a 20-30page final paper was too much work. Of all the responses indicated here, this might be the best indicator that the students found the time invested worthwhile.

Based on these survey results we conclude that semantic ethnographic project and its different research methods reshaped students understanding of design and building processes. At least 76 students stated that after this assignment aesthetic appearance is no longer their only design criteria. Student comments demonstrate that they acknowledge the importance of user needs and the interrelationship between people and the buildings more than before. Especially
the semantic interview and informal observations helped them understand and interpret user behavior. Comments indicate that learning by doing (i.e. applying each research method in an actual site) is an effective way of teaching how to do research, rather than talking about principles and techniques.

**CONCLUSION**

The survey indicates that students indeed learn to listen to clients and to take the user perspective. From the student perspective, this project is most effective at helping them learn to evaluate an existing environment and to take the user’s point of view. We emphasize again that the techniques used to gather the user's point of view work in cross-cultural settings—indeed, it is drawn from anthropology methods for understanding cultures other than that of the researcher. In this way, we are supporting design studios by giving future architects ways to understand the needs of clients from across the globe. We do not have long-term data about the percentage of students who truly go on to incorporate these habits into practice, but we do have some anecdotes of students inspired by this project, including one who informed us on the survey that he or she plans on majoring in Social Factors in Architecture, and some students who have pursued a PhD in the subject after taking the course. Some practicing professionals have reported decades later that they still use this technique of active listening that they learned as undergraduates.

The benefits of this pedagogy extend beyond the reaches of the academy. Over the course of the semester, students build long-term relationships with the people at their sites, becoming more fully engaged with the needs of the users of their designs, and more connected to the communities they serve. As the semester wears on, they become even more curious about the site and more gracious in accommodating the sited culture's world view. Students finish the assignment with an understanding of a few methods for learning about site-specific person-environment relations, as well as ideas for how these methods could be applied in their own design work. They also finish the semester with an original research project report, and an addition to their design portfolio. Especially as NAAB criteria now redistribute cultural and human into multiple contexts—and as evidence-based design becomes the norm in hospital and educational settings—experiences such as this one can help students differentiate their portfolio in a competitive market.

Design students' career opportunities will expand if their education gives them the time, impetus, and skills to incorporate such qualitative social science research methods into their design education. Moreover, the built environment and the field of architecture will benefit from having social concerns incorporated into design because these buildings will provide environments responsive to human needs. The pedagogy we propose offers one way, of many possible ways, to incorporate person-environment relations knowledge and research techniques into architectural education. Semantic ethnography is particularly suited to architectural design because it is qualitative, interactional, not restrictive, and generative.

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THE AGENCY OF MAKING AND ARCHITECTURE EDUCATION:  
Design-Build Curriculum in a New School of Architecture

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Abstract  
Developing a curriculum for Canada’s newest school of architecture in forty years created the opportunity for a commitment to new pedagogy that would address changes and needs in the profession, particularly in the Northern context. The tri-cultural mandate of the school (First Nations, Francophone, Anglophone), and the desire to create a complete design-build curriculum aligned with the community’s commitment for change and the location of the school in former historic buildings downtown. The design-build curriculum means that in each studio year the cohort will design and construct at full scale a project relevant to the context of the school such as the ice fishing huts completed this past year. Optional design/build workshops in the summer in Europe allowed for additional experimentation of construction methods in other specific northern contexts. This paper outlines the larger and specific contexts for the design of the design-build curriculum, the processes of the first year of implementation, the agency of making both for the student and instructors and concludes with a discussion of the trajectory of design-build in the school.

Keywords: Design-build; Architecture education; Curriculum; Pedagogy; Northern design

INTRODUCTION:  
DESIGN-BUILD AND ARCHITECTURE EDUCATION PEDAGOGY

The author of this paper is an active participant, observer, educator and critic of the design-build approach to architecture studio education. The focus of the paper is to describe and critique the experiences of design-build in the specific context of a new school of architecture – the cultural and geographical context of which clearly shapes the mandates of the school. An outline of the school’s pedagogical vision of ‘learning by making’ frames the design-build exercises undertaken in the past year with the founding cohort including the construction of ice fishing huts and participation in international design-build workshops. The author’s agency as an active participant is drawn upon to underscore perceived constraints and opportunities in design-build exercises.

CONTEXT OF THE NEW SCHOOL OF ARCHITECTURE

‘Place’ and the Canadian Context
The advance of architecture for northern Canadian climates has certainly gained momentum in the past decade with publications such as *Up North* (Rochon, 2005) and 41° to 66° *Regional Response to Sustainable Architecture in Canada* (McMinn & Polo, 2006) and the work of a few architects. However for the schools of architecture in Canada, building in the north has not been a priority. At best it may be a topic considered in an optional studio or isolated research. Designing for the cold is certainly paramount in the north, but this is far more nuanced with significant considerations for cultural, historical and specific needs of northern communities. This holistic strategy of what the north is foregrounds the entryway for the curriculum of the new school of architecture at Laurentian university, beginning in first year with the studio theme of ‘place’ which is the place of the school in the city of Sudbury.
For Sudbury, it all begins and centers around the unique geological configuration of the area that geologists agree resulted from a meteorite colliding with the surface at this location 1.85 billion years ago causing the restructuring of the geology and formation of a high density of ore bodies (Saaranin, 2013).

The oldest human presence in the area revolved around the settlement of the First Nations tribes with archeological evidences dating back to 9500 years ago (Saaranin, 2013). These tribes lived nomadically on the land, adapting to gradual and fierce changes in climate, fauna and resources including the abundant forests in the area.

The 17th century arrival of European explorers, missionaries and traders in the Sudbury region largely revolved around the growing fur trade and logging industry that exploited the abundant resources. The expansion of the railway through the logging camps resulted in the accidental discovery of unknown whitish metal locally called kupfernickel or ‘Old Nick’s copper’ because it was devilishly hard to smelt (Hayes, 2010). The discovery of the highest concentration of nickel ore in the world signaled the drastic shift not only in the identity of the place but of the landscape. The original open-bed roasting yards used to smelt the ore to extract nickel resulted in the denuding of the landscape by consuming lumber for the fires and releasing sulfur and other toxins that blackened the rock surfaces of the area. By the 1960s the landscape was largely blackened rock with little vegetation or life. The efforts of researchers at Laurentian University and the government’s support to reduce sulfur and re-green the landscape began over thirty years ago with significant visual change to the city, now replanted with ten million trees. There remain, however, significant areas not replanted and with the blackened rock exposed (Ross, 2008).

With over three hundred lakes, several industries including mining, health care and the university and colleges, the 160 000 people of the City of Greater Sudbury located at 46˚ latitude is still an important crossroads into northern Ontario. With a temperature range of -30˚ C to zero in the winter months (with wind chill factors reaching -50˚ C) and 5 to 25˚ C in the spring and summer months, climate is a serious matter for consideration for any kind of construction. For most residents, life in this northern town involves ample time spent outdoors in activities ranging from hunting and camping, swimming and canoeing in the warmer seasons to skiing, skating and ice fishing in colder seasons.

**Foundations and Location for the New School**

A community movement began just over seven years ago to establish a design school to infuse the city with much needed design culture and reactivate the dwindling population and businesses of the downtown core. The original steering committee imagined a school that would weave together the expertise and qualities latent in the city’s aboriginal history, Francophone culture, industries and natural resources.

Capital support to establish the school came from the community, industries, government and Laurentian University. The downtown location of the school revitalized two historic buildings (the former market and former CP telegraph buildings) and current construction of two new buildings will complete the facilities. The first cohort of seventy students was admitted in the fall of 2013.

The tri-cultural mandate of the school to actively include first nations and francophone culture is reflected in the curriculum and pedagogical structure of the school and framed in a larger design-build approach in the education of the students.

The growth and development of this nascent program witnessed in the first year are discussed in this paper. Although specific and particular in the conditions and aspirations, the relevance of creating a school that attempts to amalgamate real circumstances of context underscores the possibilities of design-build curriculum developed in several influential programs previously and continues to gain momentum as a crucible of pedagogy and community involvement.
DESIGN-BUILD AND ARCHITECTURE EDUCATION
A survey of design-build programs that were especially influential on the conception of the new curriculum is, for the most part, North American centered. Of note are design-build or ‘live’ projects carried out at schools of architecture in the United Kingdom for a number of decades (Brown, 2012). However, it is prominently the work of Steve Badanes from Jersey Devil and Neighborhood design-build, Samuel Mockbee and his work with Rural Studio, Richard Kroeker and Brian Makay-Lyons in Freelab and Ghostlab, respectively, at Dalhousie University among other works of hands-on exercises.

Steve Badanes and ‘Jersey Devil’
The design-build exercises led by Steve Badanes were pivotal in architectural education in the United States with an intended radical departure from established modes of studio education. Fueled by frustration of the commercialization of practice as a student in the late 1960’s Badanes and others began the ‘Peoples Workshop’ to tackle social justice issues in architecture by building small-scale projects. Later, Badanes formed ‘Jersey Devil’ with John Ringel in 1972 and was joined by Jim Adamson in 1975 (Piedmont-Palladino & Branch, 1997). The Jersey Devil collective reached out to impoverished communities with design-build projects often involving students in architecture programs. Badanes and Ringel teach design-build studios at Yestermorrow School in Warren, Vermont in the summer. Additionally, Badanes teaches ‘the Neighborhood’ design-build studios every spring at University of Washington in Seattle. As well, he co-founded a design-build program based in Mexico with University of Washington professor, Sergio Palleroni which ran in winter semesters (Palleroni, 2004) and has run numerous other international design-build workshops with architecture students. (Piedmont-Palladino & Branch, 1997). Badanes noted in a recent article the resurgence of architecture education demand of design-build exercises that are community service minded (Badanes, 2008). In these workshops Badanes has led architecture students to engage with the construction process with limited budget and time frames. His focus with students in these workshops has remained on the process with an emphasis on the development of construction skills, community involvement dialogue and group design abilities (Badanes, 2008).

Samuel Mockbee and ‘Rural Studio’
Another key figure initiating design-build in architecture schools in North America was Samuel Mockbee. Mockbee became a professor in 1992 at Auburn University School of architecture in Alabama and was inspired by his previous work renovating homes for the impoverished. He co-founded the ‘Rural Studio’ with D.K. Ruth, the Director of the School. Mockbee’s desire in founding this studio was ‘to express moral principles and ideas for fairness through the creation of buildings of profound beauty’ (Moos & Trechsel, 2003). Leading students into real-world design problems, two studios were run. Second year students had the option to spend part of their studio in groups of fifteen and in fifth year, thesis students spent the entire year in groups of three or four, taking on a project from inception to completion. Rural Studio began with creating houses in Hale country, Alabama, a place of extreme poverty and developed into construction of other types of community buildings. Projects were often built with a limited budget and employed the use of recycled materials such as worn-out tires for chapel walls, windshields for the roof of a community center, and other material reconstitution (Dean and Hursley, 2005) that inspired students to innovate construction processes and form. Although Mockbee passed away in 2001, Rural Studio has continued and more than eighty houses and civic buildings have been constructed in Hale country since Rural Studio’s formation (‘The Rural Studio’, n.d.).

‘Free lab’ at Dalhousie University
In Canada an important center for design-build education in architecture schools was formed with the ‘FreeLab’ at Dalhousie University in 1991. Freelab was initiated by Richard Kroeker and a number of like-minded Dalhousie professors to create ‘an integrated experience in a sparsely
staffed summer term’ (Macy, 2008) as design-build workshop for students. Since the program’s inception, over one hundred labs have been completed in the summer terms lead by Kroeker, Brian Makay-Lyons (who calls his labs ‘Ghost’) and other Dalhousie professors and guest lab leaders from across Canada and abroad. Each of the Freelabs pursue an idea that originates from research or practice or community need and takes students and their professors into various areas of the Maritime provinces in Canada, as well as to international locations including India, Botswana and Mexico. In Christine Macy’s text ‘Free Lab’, that traces the labs from 1991-2006, she cites the influences coming from Ball state University, the work of Steve Badanes, Samuel Mockbee and Sergio Pallerioni. Macy notes that the design-build ethos ‘reverberates’ throughout the school’s curriculum (2008), because the Freelabs are vertical studios with students from different years working together.

**Impact and Context for the new School of Architecture**

All of these proactive programs were outside the traditional academic curriculum and all empowered students with an experience of learning that involved physical construction as well as cooperation in some form with a local community. In some cases the design-build exercises were optional or carried out in the summer or part of a particular studio throughout the year, but all had a critical bearing in the local or international communities that were the location of the workshops. Terrance Galvin, the Founding Director for the new School of Architecture at Laurentian University in Sudbury, was charged with designing a curriculum that integrated the natural resources with industry potentials and local cultures together. This has been accomplished by using design-build for all of the studio courses, with each studio year highlighting a particular aspect of the region and reinforcing alliances with the community. Galvin himself, having studied at McGill University and University of Pennsylvania for his graduate work was familiar with the work of Badanes and Mockbee. As well, Galvin taught and directed the School of Architecture at Dalhousie University for four years where he was involved in many Freelabs directly and with the work of those who ran other Freelabs during his time there. Galvin’s field research in architecture for the past two decades in vernacular strategies led to work with NGOs and research institutes enabling numerous students and faculty to engage in community projects in Peru, India, Thailand and Mexico.

The influence of these labs and research in the creation of the new architecture curriculum is clear, however, as will be outlined, the design-build program envisions a step further, with a required design-build program to be carried out in each studio by every student, every year. The design-build projects increase in scale and in community involvement throughout the years and the curriculum allows for extra curricular design-build workshops in the summer in international locations as lead by particular professors.

**PEDAGOGY AND CURRICULUM WITH DESIGN-BUILD AT THE NEW SCHOOL**

The design-build approach is a fundamental aspect of the curriculum development for the new school. It is a compulsory component of every design studio, fully integrated into a radical studio culture. The design-build studio is supported by a first year course called ‘Design Thinking’ that exposes students to the notion of ‘design’ in broad terms.

The focus of the studios is the integration of local cultures (Francophone and Indigenous) connections to community, local industries and natural resources using design-build as a method of responding appropriately and providing hands on learning. As the first new school in the country in over four decades, development of a new curriculum is an opportunity with respect to content, however, the consideration of a new studio culture is integral to its success. The studio culture of the new School promotes an alternate approach, based on the American Institute of Architecture Students (AIAS) 2002 report, which summarized critique from over five thousand students in the United Sates in architecture schools regarding studio culture. The report concludes with a list of fourteen concerns and an appeal for proactive change by students and
professors to address underlying problems in studio culture that have not changed in a century. (Koch, et al., 2002).

To various degrees all of the concerns raised were carefully considered in the new curriculum with a focus on four points in particular regarding design studio: learning process, collaborative design, celebration of work and engagement of community.

**Teaching design process and collaborative design skills**
The design-build exercises are latent with pedagogical opportunities, and as an integral component of every design studio, the focus is on learning processes and teaching students collaborative design skills. The AIAS report noted that architecture schools in North America generally lack exercises that teach collaborative design skills, and in most schools, collaborative work is limited to pre-design exercises such as site or case studies.

Beginning architecture education with group design at the new School set the tone for the rest of the program but importantly prepares the students for the reality of architecture practice where design is rarely individual and more often collaborative. The focus on process of design connects well with this. As well the emphasis is to teach students design thinking skills to reconcile the requirements of the project program and environmental context with budget and materials available.

As an instructor it is important to guide creativity and to encourage students through iterations of design ideas. Using sketch models is the most effective method of idea development and round table discussion of work with students is integral. Rather than traditional professor-centered critique of the work, the instructor facilitates discussion of all ideas and the natural grouping of students pursuing similar ideas work together. Encouraging iterations of sketch models is vital in teaching students the skills to reflect (or respond to) comments and criticisms in developing their designs. The quality of space imagined is always at the forefront rather than the cobbling of individual ideas, and the groups are constantly directed to take ownership of every aspect of design. In 2013/2014 semesters the students designed ice-fishing huts with 1:10 scaled models. The units of locally sourced lumber and salvaged materials (such as doors, windows and hockey puck board) are scaled and represented in the model. In the following semester the students constructed the huts at full scale.

The concentration on the small project program and ultimately small construction allows for the expansion of skills related to hand-held and mechanized tools and on the quality of craftsmanship during model and full sized construction.

**Community Involvement and Celebration of Student Work**
The involvement of the community in the first design-build project is intended to allow for the free flow of ideas and the celebration of the work that was presented and sold to the community as detailed below. This emphasizes to the students the reality and the importance of the dialogue of design.

The design-build projects for all of the studios in the curriculum are intended to relate to the specificity of the context of the city and the community and to respond to local considerations of climate and culture. The first year design studio theme of ‘place’ brings students in contact with an important local winter activity, ice fishing (see Figure 1). Having researched qualities of the natural, historical and built environment of the city, students are asked to engage this ‘place’ with the construction of a specific and small type of portable space, an ice fishing hut, which is in local demand.

Regional experiences with the techniques of ice-fishing are outlined (see Little, 1975) and followed by visits to local ice fishing communities and discussions with locals who ice fish. Additionally, there is the regular participation of First Nations elders in studio who communicate their experiences and material knowledge of construction, motivating the groups of students to approach the small program in a direct manner. As well, the insights of acclaimed First Nations architects Douglas Cardinal and Étienne Gaboury who presented in the School’s inaugural
lecture series in 2013, inspired students with their varied and specific approaches to design in Canada.

Clients are an important part of design-build projects but as this was the first design studio that students ever participated in, pedagogically it was important for instructors to focus on the skills of collaborative design and representation in a neutral manner open to innovation and exploration that may not have been possible with predetermined notions of clients. That said, however, the intention and result of the projects was to auction them to community members, who were, for the most part, intrigued and excited about new approaches and purchased the huts.

The work was celebrated in several stages. At the completion of the first term the, 1:10 scaled models of the ice-fishing huts were displayed in the school exhibition open to the public (see Figure 2).

During construction of the huts, which took place within the school’s workshop and in the platform exterior to it (see Figure 3), the public nature and location of the school meant that the ongoing work was the subject of the local media and interest.
When the full-scale huts were completed in the first half of the second semester, an event was coordinated and was hosted by the local science center, Science North, an important landmark in the city located on Ramsey lake. All of the huts were displayed on the frozen lake and then around the science center for the public to explore.

Following this, the students presented their ideas in the main hall of the science center and the individual huts were auctioned. The base bid was the cost of materials and the proceeds were placed in the design-build fund of the school to sustain future exercises. The event brought members of the ice fishing, arts and education communities together and was successful in reinforcing connections with the School. At the conclusion of the academic year, student work
was exhibited to the public, including the large-scale photographs of the complete huts on Lake Ramsey.

**OPTIONAL SUMMER DESIGN-BUILD WORKSHOPS**

Within the curricular structure of the school the students spend summer semesters (May-August) on paid co-operative placements, first beginning with hands-on industry positions such as construction and by third year in architecture office placements. Pedagogically this parallels the educational model in studios with the first two years of studio focused on analogue representation, modeling and construction leading to the inclusion of digital fabrication and presentations. During the summer there are also optional short design-build workshops, as opportunities are available, led by particular members of the faculty. This past summer two design-build workshops were available including one in Germany and another in Norway. Along with co-op, the design-build workshops provide students with the chance to apply their recently developed skills in new specific contexts and gain further insight in the potentials of design through physical making.

**Heavy Timber Design-Build Workshop in Dinkelsbühl, Germany**

Eight students participated in a three-week design-build workshop in Dinkelsbühl, Germany led by one of the studio instructors, Randall Kober. Collaboratively the students constructed a heavy timber framed tool shed located next to the historic city wall. The focus of the design-build workshop was to read drawings to produce mortise and tension joints in heavy timber using hand held tools, this was an approach to timber design the students had not been exposed to as the ice fishing huts were completed in light frame timber construction. The students rotated jobs on the site, which prolonged the process but allowed each to participate in the different facets of construction.

Difficulties such as constructing in the rain, limitations of space and availability of hand held tools were overcome through this rotation of jobs (see Figure 5). Students were assigned to measure and complete as-built drawings of adjacent historical buildings to further their understanding of the unique context that emphasizes predominately locally sourced heavy timber construction.

![Figure 5: Construction of heavy timber framed shed in Dinkelsbühl, Germany](Source: Randall Kober).

**Design-build installation in the Bergen International Wood Festival, Norway**

The author led six other students to participate in the Bergen International Wood Festival in Norway. This biennial festival brings participants of different disciplines and expertise from over a dozen countries around the world to celebrate wood with large-scale installations constructed in a prominent location of the city. The festival often coincides with another local festival or celebration and affords a conversation in wood construction that pushes the limits of material and expression.
Participation is limited to accepted proposals and the first year students’ prepared designs before hand that established the quantity and types of wood required. With their accepted design, the students arrived in the city with their own hand held tools used in the academic year (chisels, pull saws etc.) and rented local power tools and spent five days (six to eight hours a day) in intense collaborative construction.

![Construction of Installation in the rain in Bergen, Norway](Source: Author).

![Complete Installation in Bergen, Norway](Source: Author).

The design was modified during construction: partially because of more potential for expressive design realized onsite and partially to respond to problems of the increased weight of the wood from the final two days of continuous rain (see Figure 6 and 7). The Laurentian University School of Architecture students were the youngest participants in the festival and their design-build experience developed from the ice fishing huts helped prepare them with design thinking skills to interchange roles in construction and importantly, to alter their design during the construction process. The international experience of new conditions and limited resources coupled with the public nature of construction enabled the students to communicate ideas to each other, to accept problems in construction and to move forward with solutions.
CONCLUSIONS
Teaching design-build is an education process for the professors themselves, who are continuously learning from previous experiences in order to modify curriculum to improve learning process. This would not have been possible without the candid and open conversations and debriefing between all of the professors and staff involved. This enabled the reflection on the successes and the areas of concern. For the second cohort of first year studio, which began fall 2014, introductory exercises were slighted shortened to allow for a staged submission of the 1:10 models of the huts in first semester. The first stage of the model will be submitted and reviewed earlier to allow for recalibration in design and full construction drawings completed detailing all of the required materials. This additional step is intended to streamline the collection of materials, minimize waste and remain within budget so that the construction process in the second semester is more efficient and allows students to interchange roles throughout.

The design-build curriculum at the new school of architecture envisions a continued study and experimentation of form related to context. The themes for the following studio years include ‘landscape’, ‘northern building’, ‘comprehensive construction’, ‘craft and community’, each with design-build projects that will relate to the conditions of the immediate Northern environment and with increased scale, such as: sauna construction, round room for indigenous ceremonies and gatherings, park pavilions and other projects as the opportunities and alliances with the community grows.

The enabling qualities of design-build in architecture education underscore student capacities to relate to their context and community. Design-build can be an empowering avenue of architecture education for students especially when situated in a context whereby the local community is also empowered. This approach to designing and making pushes the boundaries of what students can accomplish with limited means and time.

Rather than being result focused, as is often assumed in most design projects, the rough qualities, the difficulties, the failures are all important crucibles of process learning. In many ways, this is the true goal that educators cannot lose sight of – that design education is experimental, difficult and constant both for students and educators.

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WHERE IS THE ‘PROBLEM’ IN DESIGN STUDIO: Purpose and Significance of the Design Task

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Abstract  
Design studio is characterised by a teaching model that is distinctly suited for problem-solving. Correspondingly, literature, including information produced by Australian faculties of architecture about their courses asserts that design studio is modelled around problem-solving. However, my research into design studio handouts found a common omission in posing a ‘problem’—a problem that would justify a design solution and from which the ‘significance’ of the task would derive. I argue that a well-articulated design problem imbues the case with purpose and significance. It also provides a benchmark against which the results can be assessed and verified.

Keywords: Architectural education; Problem-solving; Design studio

INTRODUCTION AND RESEARCH BACKGROUND  
Most literature, including recent research and information produced by faculties of architecture in Australia, asserts that the design studio is modelled around problem-solving (Ostwald & Williams, 2008). However, an issue that permeates the findings in this paper is that of posing a ‘problem’—a problem that requires a design solution. The interest in reality in design studio (reality understood as the quotidian, or the commonplace) and consequently for a design problem, is associated with and confirmed by the aims of universities claiming to encourage a public-spirited education that can contribute to solve problems affecting the wider society and the world and that necessitates an approach founded on “evidence and reason” (Davis, 2009, p. 5). Similarly, architectural faculties also tend to demonstrate the value of their study program on their contribution to the ‘world’, as shown in the following excerpt,

[This] is a new and exciting program of study that reflects the changing demands and challenges of the world we live in. The degree replicates the interdisciplinary nature of real-world projects, ... (The University of Melbourne, 2008, p. 1).

What was observed through this research was a difficulty in articulating real and pragmatic architectural problems. I am not referring to a philosophical, theoretical or an abstract aesthetic problem, but problems that originate from actual architectural concerns; from costs, to technology, client’s needs, city’s needs, and regulations (Maturana, 2010). This observation resonates with Ashraf Salama’s claim indicating that among design studio tutors, “only 32.4% believe that identifying design problems is more important than developing concepts toward solutions” (A. Salama, 2008, p. 105). Hence, in this paper I contend that while design studio is generally perceived as focused on problem-solving, few studios aim to articulate or solve problems. This situation has important implications for architectural education, particularly when faced with environmental challenges—often cited as an important concern within the disciplinary curriculum—requiring us to deal with actual problems, with relevant questions, under real contextual conditions. The research did not intend to evaluate the professional or academic career of the studio leader, nor the aptitude of the students. The research, based on the design
studio handout, is not meant to give an answer as to why this situation is so, but rather raise a question in regards to what we say we do (problem-solving), and what we actually do, as described in the handout.

Using quantitative and qualitative methods, the original research examined 143 undergraduate design studio handouts from three Australian architectural faculties, against the reality of practice—practice representing a meaningful first stage of engagement with professional reality and reflected in the project brief. A part of the results has been already published (Maturana, 2010). These undergraduate design studio handouts consist of 1-2 pages summarising the studio topic for the semester and made available to students for the selection of their preferred studio. Therefore, these handouts represent critical data upon which students base their decision regarding the design studio for the semester. For this research each handout was given a unique code, for example SD.3B.05.Fb. This code signifies the type of document (SD), year and semester level (3B), calendar year (05) and faculty (Fb) (for more details see Table 1). It is not an objective of the study to evaluate the handouts of the three faculties against each other. These handouts belong to the five-year period aligning with a full undergraduate architectural degree before the 2008 Australian Universities Reform, after which postgraduate studies began from the 3rd year onwards.

Table 1: Cases are identified by using the following code.

<table>
<thead>
<tr>
<th>Typology of studio handouts</th>
<th>Year Level</th>
<th>Semester (when known)</th>
<th>Year</th>
<th>Project No. when more than one case</th>
<th>Faculties of architecture (code used to identify each faculty is known only to the researcher)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD. (studio description)</td>
<td>1</td>
<td>A. (first)</td>
<td>03.</td>
<td>-1.</td>
<td>Fa, Fb, Fc</td>
</tr>
<tr>
<td>OL. (subject outline)</td>
<td>2</td>
<td>B. (second)</td>
<td>04.</td>
<td>-2.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>C. (third)</td>
<td>05.</td>
<td>-3.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td>06.</td>
<td>-4.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td></td>
<td>07.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Purpose of the ‘Problem’ as a Learning Tool

Michael Benedikt (Benedikt, 2001, p. 2) argues that the four qualities essential to an “Architecture of Reality” are presence, significance, materiality and emptiness. Presence and emptiness can be judged by the resulting building forms. Materiality and significance are expressed in the processes that are grounded, empirical and that satisfy needs. Thus, it is within these qualities, noted by Benedikt, that the design problem could be found. Ruben Pesci goes further, claiming that resolving need (as a problem) is of such importance that an architecture that “is generated without need is a still-born” (Pesci, 2006, my translation from Spanish).

Advancing on these notions, John Biggs puts forward the notion of ‘constructive alignment’, where objectives, teaching methods and assessments are aligned and the learning objective defines the methods and style of assessment. In other words, this is a teaching/learning model whereby tangible objectives guide the learning. The objectives (firstly of solving the design problem) are pivotal and as such, they require to be clearly articulated. In fact, Biggs upholds that “Problem-based learning is alignment itself” (Biggs, 1999, p. 161). Therefore, based on those objectives, the criteria to assess the results are established. Similarly, objectives and acknowledgment of their contextual constrictions (or potential problems), form what John Dewey called a discipline of mind, acquired through experience, knowledge and respect for the role of rules—a discipline that endows a freedom in the true sense because,
...control of method in a given subject has been attained so that the mind is able to manage itself independently without external tutelage (Dewey, 1910, p. 63).

Discussing university education in general, Australian critic Philip Bell (2010) argues that emphasis on theory without experience simply rehashes philosophical ideas without the students having a knowledge of how or why the question was asked. In fact, he claims that “the answers seem to be looking for a question” (Bell & Saunders, 17 April 2010). It is in this environment that according to Bell, writing becomes ‘performative’, abstract and verbose. This situation, continues Bell, is characteristic of Anglophone universities since the 1950s (Bell, 2010, pp. 15-20). Humanities, cultural studies and social disciplines (among which I include architecture), misunderstand and misquote much of the philosophy, degrading in the process humanism, materialist philosophies and science. These observations resonate with David Sibley’s claims (2004) that education is “disengaged” from reality. This is a claim that is supported by Edgar Morin (1999), Habraken (2007), Bell (2010) and Argyris (2003). Thus, notions that for long have been associated with human development and education, such as judgement, critical and logical reasoning (science), experience and expanding the ‘field of care’ (Tuan, 1979), have taken a back seat.

In architectural education Boyer and Mitgang assert that a solid theoretical base should not represent a dilemma if at the same time they include ‘real life problems’ in the studio (Boyer & Mitgang, 1996). In this regard, active and experiential learning, can be viewed as a way to bridge the “real and the hypothetical, the process and the product, the objective and the subjective” (A. M. Salama & Crosbie, 2010, p. 293). However, critics point to a lack of rigour and a self-referentiality in design studio methods, where "knowledge comes not from an assimilation of external information, but wholly from an internal dialogue between the individual and his inner self (Ledewitz, 1985; Pérez Gómez & Pelletier, 1994; Stevens, 1998). As claimed by John Silber (2007), under the banner of creativity such an approach places many of the world’s prominent architectural works at the opposite end of what would exemplify rational though—an approach that to him amounts to the absurd. Ostwald and Williams (2008) observe that looking inwards for the answers occurs at the expense of other areas of knowledge while misleading students with respect to “wider societal concerns and the real world of practice.” While looking inwards may be perceived by some as freedom—the freedom of an artist—this is not what John Dewey considered genuine freedom, which he described as follows:

Genuine freedom, in short, is intellectual; it rests in the trained power of thought, in ability to “turn things over,” to look at matters deliberately, to judge whether the amount and kind of evidence requisite for decision is at hand, and if not, to tell where and how to seek such evidence. If a man's actions are not guided by thoughtful conclusions, then they are guided by inconsiderate impulse, unbalanced appetite, caprice, or the circumstances of the moment. (Dewey, 1910, pp. 66-67).

There is not an agreement regarding the source of creativity. However, with a few exceptions (Lewis, 2005, p. 42), those who have studied it tend to agree that the problem represents a “creative potential” (Akin, 1990, p. 108; Tezel & Casakin, 2010), whereby problem posing, problem re-structuring and knowledge are devices for the realization of creativity in design. Creativity, an intellectual process as described by Dewey, necessitates expertise as a prerequisite (Akin, 1990; Bell, 2010). Thus, it would be a mistake to think of Dewey’s discipline of mind (leading to creative freedom) as being in opposition to creativity, imagination, metaphors (Casakin, 2007), or aesthetic considerations. The issue is the disconnection between what is
imagined and the ‘real world’ of needs and purpose (Dewey, 1938)—in other words, of design problems.

As noted by Donald Schön, design studio presents a model that is distinctly adequate “for artistry and problem-solving,” a model that can be traced back to the apprenticeships of the medieval guilds and more recently to the École des Beaux Arts (Schön, 1985, p. 6). Important in this analysis is Schön’s contention that more urgent than problem-solving is problem finding. By this, and similarly to T. Lewis (2005) and O. Akin (2010), he highlights the need to ensure that the problem to be solved is the right problem. He illustrates the point with the following example:

is not only how to pour the concrete for the highway, but what highway to build? When it comes to designing a ship, the question we have to ask is, which ship makes sense in terms of problems of transportation? (Schön, 1985, p. 11).

Stressing the manner in which these problems are pre-structured, Bill Hillier claims that a systematisation of the procedures assists to analyse problems and synthesise solutions (Hillier, Musgrove, & O'Sullivan, 1972). Thus, finding the right problem requires contextualising it, understanding its peculiarities, its consequences and significance. In other words, a process from which meaning derives (Hall, 1970).

For this research, I have used the words ‘meaning’ or ‘significance’ to indicate the degree to which the project is needed, its urgency and justification or the reason for the project. Hence, I use the notion of a problem to encompass the essence of what motivates us to find a solution—the problem that gives meaning to the task. This approach is not in conflict with the notion of appreciative inquiry and encompasses the idea of aspiration and that of a ‘wicked problem’ (Holm, 2006), which as noted by T. Lewis, would involve problem re-structuring (Lewis, 2005, p. 42).

Seeking Problems

The research in this paper used discourse analysis to search for the existence of a problem. In line with the stated aims of most architectural faculties in Australia, the research utilised a wide definition of a ‘problem’. There was no assumption that all design studio handouts should convey the problem in the same manner. Yet, at its core, the study searched for a problem or an issue(s) that the hand-out aimed to define, even if ill-defined as noted by Tezel and Casakin (2010).

Identifying the design problem is not an easy task, seldom is the problem expressed neatly and completely in one paragraph. Instead, when the problem was present in the hand-out, it was often alluded to in tiny fragments and from several perspectives. For instance, note how the following example, from one of the handouts, presents many ideas leading to a sort of design problem.

Was he [Boyd] writing today, he would have added to his catalogue of ills ascribable to the individual house, the destructive effects of urban sprawl…

… and though social housing is no longer the dominant domain, surprisingly modest houses shoulder aside more public buildings, as the architecture of note …

The needs to which your design responds must be established by research, because they cannot be drawn from your own limited experience…
This problem of the architectural object and its setting is particularly poignant in housing. You are dealing primarily with the identity of the people who occupy those homes... Case: SD.3.05-2.Fb.

The issue(s) presented by the quoted case above, is technical; it is also regulatory, consultative, and theoretical and it is about the attitude of the designer who is expected to be mindful of the identity of the users. Whereas, making the design ‘problem’ difficult to pinpoint, the manner in which the issues are addressed adds dimensionality to the case.

While trying to identify the problem, it is too easy to be side-tracked by the narrative of the text and confuse the description of a problematic situation with a design problem. To illustrate what I mean by this I will use a rather blunt example from one of the cases studied:

It [the library] contained one million volumes in the languages of various cultures that have influenced Bosnia, and also housed Bosnia’s national archives and the University of Sarajevo collection. On 25 August 1992 the Library was shelled with incendiary grenades until its interior and almost [the] entire library collection was destroyed and the building structure significantly damaged. Case: SD.3B.05.Fb.

Undoubtedly, the above example conveys a tragedy at many levels—a problem. Yet, this is not a design problem, unless something like this was added: the aim is to house the existing rescued collection in the same footprint area, while maintaining as much as possible of the original structure. Then the problem would be contextualised by historical facts and resulting needs. Thus, the design problem would consist of how to accommodate what is left of the collection and the new copies in the same floor area.

**Typologies of Problems Found in Design Studio Handouts**

The study broadly identified five typologies of approximations to the design task in design studio handouts (see table.1 for their distribution), these are: the problem as reason and trigger for finding a ‘solution’; an investigation or exploration; a theme; the philosophical question; and the project instructions.

<table>
<thead>
<tr>
<th>Traditional problem</th>
<th>Other forms of spelling the task without articulating a design problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) The problem as reason and trigger of search for a ‘solution’</td>
<td>(2) An investigation or exploration</td>
</tr>
<tr>
<td>(3) A theme</td>
<td>(4) The philosophical question</td>
</tr>
<tr>
<td>(5) The project instructions</td>
<td></td>
</tr>
</tbody>
</table>

| | 21% | 22% | 22% | 12% | 22% |

The following examples show cases from some of the above categories. For this paper, I have not included examples from the categories An investigation or exploration (2), nor The project instructions (5), where the information is arranged around a series of instructions about what to do, rather than a question or problem. While some of these instructions may deal with a problem, these are secondary to the theme and offer no apparent reason or justification for an overall need to solve a design problem through undertaking the project. Thus, these types of handouts are those further away from the notion of problem-solving in design studio (see fig.1).
The Problem:
The following example manages to express the issues that the project will deal with, while also presenting the students with an aspiration grounded in need, which takes the form of a “circuit breaker to conflict.”

As an urban locale, Jerusalem is a site of resource scarcity, ecological degradation, deeply flawed urban design, and ungainly or dysfunctional/segmented areas of built space. (...) As our project is to develop patterns for new physical infrastructure, we will be looking for inventive solutions to the distribution of land and services that might be a ‘circuit breaker’ to conflict, rather than begin with a utopian view that architecture can create peace on its own. Case: SD.5B.07-1.Fc.

The aspiration is, in a sense, open. On one hand, it requires addressing the pragmatic infrastructural needs. On the other hand, in such a context, the approach demands an involvement of theoretical, political, tactical and/or philosophical considerations and understanding. Philosophy, theory, or ideology in this case assists students to contextualise the design task. These ideas help to understand the circumstances and enrich the possible solutions, yet, they do not take the place of the architectural problem. On the contrary, the text highlights the fact that architecture alone cannot be the vehicle that delivers conflict resolution. The context is well described, and so is the pre-emptive architectural solution suggested in the metaphorical form of a “circuit breaker.”

Occasionally, a design ‘problem’ emerges under the notion of an ‘opportunity’. Note for instance how the following case uses the opportunity created by disused land to justify and give the proposal a raison d’être. From this perspective, a design problem or opportunity has the same effect and the concept of a ‘problem’ cannot be taken literally.

The use of opportunities presented by railway land in central areas is a challenge faced by major cities the world over. In the 1990’s XXX took its first steps along the road to making better use of this resource and embarked on the civic and architectural ‘adventure’ which led to the creation of a new city block at what is now XXX. (…).

The Challenge of the Studio will be to first understand the site and its place within the city…how does the city work around. Case: SD.4B.05-8.Fc.

The following quote shows the closest example to a design problem in context that I have found—a case actually requiring problem-solving, in the form of a need for something new.

The increased level of activity together with significant infrastructure investment is expected to stimulate private sector investor confidence and opportunities in adjacent areas.

The need therefore to focus on and implement the development of a new terminal complex is pivotal to realising the success of the twin ferries and the potential economic benefits to the region. Case: SD.3B.03.Fa.

Most of the design studio handouts that define a problem (typology 1) include one or all of the other typologies. Accordingly, based on extensive discourse analysis of the handouts, I found that typology 1 handouts are more complex (see fig. 1), richer in content and context and offer more options from which to tackle the design task. On the other hand, those handouts that approach the task without a problem (typologies 2-5) tend to be single-minded.
**The Theme:**
While it may appear obvious, it is important to highlight that there is a difference between a theme (or topic) and a problem. Housing can be a **theme**, but it does not represent a **problem**, at least not until issues such as housing density, or affordability, or footprint reduction, et cetera, are added to the mix. The following example presents the proposition of a **theme**, followed by instructions as to what the design should include. However, it does not articulate a problem—unless the students find themselves an issue to resolve.

The building is a public transport research centre, similar in programme to a university department building. Space for ground floor tenancies is incorporated to add to street life and provide onsite services to research students. The design will incorporate the following major items… **Case: SD.5.03.Fc.**

On the other hand, the next example shows how students are presented with a theme (high-rise development) and a **challenge**, where comparable densities and an alternative building typology is required—an architectural problem:

On one side, we want to see if it is possible to devise an alternative to the high-rise development that is currently engulfing the city, (…) In contrast to this trend, we are asking students to develop housing of comparable density, but as platforms rather than towers. **Case: SD.4A.03.Fc.**

**The Philosophical Problem:**
Within the philosophical problem, it is possible to distinguish at least three approaches representing what I call **aesthetic ideas**, **pure theory** and **pragmatic theory**. The examples discussed below derive from handouts based almost entirely on theoretical, philosophical and abstract narratives, with little or no contextual information. In fact, several of these handouts included numerous pages comprising of the tutor’s own essays discussing his or her philosophical, aesthetical and/or theoretical interests. The following quotes aim to illustrate what I mean by these categories:

**Aesthetic ideas:**
But the non-referentiality of abstract art requires the viewer to plumb new emotional reservoirs in order to absorb and to be touched by it. Various explosive, serene, intense, or contemplative, abstraction offers kinds of beauty unimaginable in earlier art. **Case: SD.1A.03-2.Fa.**

The studio will work with spatial ways of making clocks and clouds through a project. It will stress architectural techniques of achieving “polyrhythmic…complexes (which) melt into diffuse liquid states and vice versa” through form, program, and construction. **Case: SD.4B.04-1.Fc.**

**Pure theory/philosophy:**
To explore the significant contributions and multiple dimensions of three critical theories: Deleuze and his philosophy of immanence; Casti and his explanation of Complexification as the science of surprise; and Lyotard and his perspectives on the post-modern aesthetics of the sublime. **Case: SD.5A.06-2.Fc.**
The intellectual discipline to develop an imaginative design proposal underpinned by thoughtful responses to broader philosophical and theoretical issues. *Case: OL.4B.05-1.Fa.*

**Pragmatic theory:**

As architects, we make decisions that have long-term consequences. Buildings which consume more than their fair share of resources, result in environmental degradation, contribute to the poor health of their users, and give no joy to their users, may well be the result of unethical, or at the very least, thoughtless and uncaring behaviour. *Case: SD.2A.03.Fa.*

Interest in the exploration of theory and/or philosophy, particularly those ideas expressing ‘pure theory’ and ‘pragmatic theory,’ might give evidence to a desire for a heightened intellectual understanding of architecture, or perhaps simply to understand, via an intellectual approach, what architecture does better. However, what this research has found is that these attempts often fail to connect the intellectual pursuit to the work of architecture. The focus on philosophy or theory is often expressed in the studio handouts devoid of tangible engagement with architecture, therefore, increasing the gap between ideas and the practice. Furthermore, most of these handouts do not offer an empirical way to proceed and/or, at least partially, *objectively* and rationally to assess the architectural response. It may be in this created void that a focus on aesthetics takes supremacy. Whatever commendable intentions these ideas may express, they succumb to formalistic and metaphorical solutions—in other words, often the exact opposite of what the ideas criticise and discuss. For example, see how the case quoted below deals with the topic of institutions and note the disconnection between the ideas presented and the design request:

…other institutions for this new century: the Let’s Alleviate the Causes of Terrorism (LAtCoT) Institute. Subjective Analysis Exercise

(…)

Ask yourself to at least five levels, why society has institutions? Don’t give 5 answers at the same depth, dig deep. For example: 1. Why have institutions? To gather like minds. 2. Why gather? For strength. 3. Why strength?

(…)

Submission and Presentation

Two 3-dimensional found objects (objects you would consider beautiful from an area of design outside architecture – industrial design or jewellery for example). The first a stretch-institution object, the second a squeeze-institution object. *Case: SD.4B.06-2.Fc.*

Thus, a paradoxical aspect of this focus on theory and philosophy and the gap between reality and ideas which they create, is that most of these cases are searching for a better understanding of human conditions, experiences and actions—but without engaging with it or experiencing it.
The ‘and?’ Question
While most handouts do not pose a problem as such, what was most puzzling was an empty space left between the description of a situation—which could potentially contextualise the design problem—and the design project task. I call this empty space the ‘and?’ question. See for instance the following two cases:

**Case 1:** Furthermore, libraries have become fundamental centres in the construction of community identities. As Lukez (1997:13) argues, ‘despite our transference from physical to virtual realities, we are social creatures who need to belong (and be seen to belong) to groups and communities. In an urban context, this presents both a challenge and an opportunity. Cities are concentrators of difference, where competing interests and beliefs converge and collide.

[And?]

The location of this studio project in Melbourne, a city with a violent ecological past, a vibrant social history and a prevalent cultural diversity will provide the opportunity to explore the multiplicity of identities and functions of the contemporary city library. *Case: SD.4A.06.Fa.*

The above case presents us with a theme, namely, the library theme. The context, historical, social and environmental could potentially add flavour to the design process and the design response, response that will not necessarily be a design solution.

**Case 2:** The hydrology and landform of the area – comprising the high ridgeline (…) – suggests the site was sheltered from westerly and south-westerly winds, provided plentiful water and food, and afforded good prospect over the surrounding region. The lowlands were originally crossed by watercourses and swamps, some of which still remain in Park. Traces and remains of traditional ceremonial activities around the site were uncovered during construction of the hospital buildings.

[And?]

XXX is the name given to a newly formed State centre, which was launched in August, providing a focus for research into Indigenous education and studies… *Case: SD.4A.05-1.Fb.*
In both cases above, the tensions (problem or opportunity) are somehow described in the first paragraph, yet they are not posed as a problem, or as a question. There may be a few reasons for this, of which I can only speculate. A contributing factor to this situation may be that few architects have been trained to teach or trained to write unambiguous exam papers. Also, it may be that the writer of the handout believes that just describing a situation may spark different responses from the students and that it is up to them to choose which one of those personal responses to follow. Or, this approach may reflect a cultural preference—the Anglophone culture in education as opposed to the Napoleonic or European culture. Edward Hall (1970) offers one way to describe this difference when he claims that “Western” culture is low-context, compared, for instance, to Japanese culture that is high-context (Argyris, 2003; Hall, 1970). These differences may, to some degree, determine the assumptions of what is known by the listener (in this case the students). Thus, the assumptions may have implications for the way that a project is defined. If this were the case, I would consider the above quoted cases as attempts by the authors to contextualise the design task—to give them meaning—however uneasy or timid this approach to posing the problem might be (without actually spelling it out).

However, my experience suggests that few students would have enough expertise, or the ‘discipline of mind’, as referred by John Dewy, to fill the ‘and?’ in a manner that is relevant to the task and more importantly, to the needs of the clients. That is, unless the clients are seen as an emulation of the student themself as illustrated by the following example, where the needs of the clients are those of the student.

The clients are an imaginary pair. It is up to you to give them attributes that are relevant to the questions you are exploring in your design. The only requirement is that the pair must somehow challenge conservative norms regarding the idea of a couple. Case: SD.2B.03-1.Fa. (Maturana, 2010)

The self-referential approach, a drawback in any other discipline, becomes apparent when seeking for criteria to assess the results. As Salingaros and Masden II (2010) would put it, “Without real criteria to guide design, endless subjective speculation is all you have.”

Coming from a different cultural background, I see how others and I would approach the same situation differently, most probably, by way of contextualising and revealing the problem loud and clear, as an intellectual challenge, whereby the speaker takes a stance that makes his/her view intentionally ‘vulnerable.’ By doing so, the author’s view is presented with the prospect of being progressively challenged, modified and refined. One possible argument to validate this approach is that some (and I include myself here), take the stance that most students do not have enough experience to fill in the ‘and?’ and that by clearly articulating the problem students are offered the opportunity to think it over, while challenging the premise—something that students are well equipped to do.

CONCLUSION

The lack of a ‘problem’ was a salient feature in the studio handouts. However, it may be helpful to understand the role of a problem (or opportunity as noted in the analysis) and its potential as a teaching device (Biggs, 1999). The presence or absence of a problem within the design studio handouts could be a deliberate intent and not simply the result of the unawareness of its importance. Familiarity with and skilfulness in proposing design problems are crucial factors in design studio teaching. The problem in itself is the generator of the criteria by which to assess the results and the direction of the learning. Without a clear design problem (need or purpose), there is no alternative but to base this assessment upon aesthetics and/or form alone.
It is not possible to say whether the lack of a clearly identified problem, rooted in the notion of design as problem-solving, is influenced by a neglect of empirical inquiry. This in spite of the use of terms such as research, experimental or laboratory. In fact, the experimental nature of design studio does not preclude the experimentation from having a question (problem and/or purpose). On the contrary, one could speculate that an empirical method of experimentation, promoting analysis and synthesis, would foster an approach whereby a problem and hypothesis (or question) is put forward. If this were the case, the findings of this research showing that only 21% of the studio handouts posed a problem (more or less articulated as such), could represent the other side of the same coin. Based on this study, it is possible to observe that a well-articulated design problem, or opportunity, has the capacity to imbue the design studio proposal with backbone, direction and coherence. Without this base, the design studio proposal is weak.

As mentioned earlier, handouts that focused on theory tend to address important aspects of our human condition. It is possible that these handouts are conceived as a way to bring about balance, not to the studio, but to an architectural education that is perceived by many as lacking such balance. This of course may apply to most of the handouts that are single-minded in their approach to the design studio project and which dismiss many crucial architectural facets. My concern in this regard should not be interpreted as a call for a simplification or for a disregard of the role of theory and philosophy. On the contrary, what is missing in this approach to theory is relevance, sophistication with a purpose and a reasonable balance that includes actual architectural considerations, focusing on the learning interests of the students and the wider implications and meaning of the design task.

Something not missing in the real world and the world of architectural practice are problems. In a time of climate change, with an increasingly urbanised and socially effervescent world, we do not need to look far to find vastly different problems posing significant challenges to our discipline. As noted in some of the examples, the more these problems are contextualised in reality, the more they offer a level of complexity that enriches the learning experience and that can prepare students for a complex (not to be confused with impenetrable) and richer understanding of design studio. Design problems offer the opportunity to respond in a creative and responsible manner that demonstrates our commitment to a public-spirited education, the wider society and the world.

REFERENCES


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PROSPERITY OF THOUGHT VERSUS RETREAT OF APPLICATION:
A Comprehensive Approach in Urban Design Teaching

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Abstract
This study focuses on a relevant question, practically in urban design studios; when will specialists discuss their educational visions around urban design in teaching plans? Currently, although Egyptian architecture and urban environments follow those of postwar European cities, numerous architectural schools teach the new urban design paradigm while ignoring the declining of cities. To reverse this trend, the author proposes that architectural educational institutions in Egypt need to alter their learning programs. Therefore, this study aims to create a new urban design module depends on outcomes based-learning consistent with the present Egyptian city scene on the basis of intended learning-outcomes.

Keywords: Urban design; Curriculum map; Learning outcomes; Learning method

INTRODUCTION: AN IDEA WITH CRITICAL QUESTIONS
Urban design has established a scientific discipline as its development has surged in recent decades. Current practitioners are committed to alleviating the situations that have escalated since the Second World War in Europe, such as traffic chaos, slums, poor districts, overlapping uses, high-population density, and proliferation of building construction. Egyptian cities have degraded by building obsolescence and overcrowding. Many of today’s tribulations are the downside of sophisticated technical and scientific applications. However, sustainability can nonetheless be improved by applying urban design principles developed at the academic level. Because of the widening cultural differences between the civilized world and developing Arab countries, urban design as a scientific art has not been implemented in some Arab universities.

This research was inspired by frequent observations made by the researcher while teaching undergraduate urban design courses in Egyptian government universities and several private universities. The urban design curriculum at these institutions focuses primarily on the following two main issues: the perceptual dimension and assignment of selected study projects, with no apparent attempt to interrelate the issues. By contrast, in some Western universities, the aim of urban design studios is to improve students’ ability to apply theory to assigned projects, drawing on recent literatures of urban design. Therefore, this research raises questions regarding urban design as a scientific art as argued in some literature reviews (Figure 1).

Accordingly, this study suggests a hypothesis that no real correlation exists between the theory discussed in the literature and what students are learning in undergraduate design studios. The research tests the hypothesis using the following two approaches: a deductive-analytical approach for understanding urban design concepts and principles reported in the literature and a questionnaire-based descriptive analysis of students’ perspectives in the urban design studio; the constructive approach. The research questions posed in this study were inspired from an analytical study of the syllabi in some of the most respected Egyptian educational institutions.

The research methodology follows the inductive- deductive approach. The manuscript starts by the content analysis of the Egyptian academic situation in urban design courses to address the research justification. The research method presents a review on the urban design as a scientific art and what the intended learning outcomes (ILO) are to fit the practical field in the Egyptian cities and towns. Finally, it gives a contemporary way to arrange and elect topics that
match the ILO. The research tools depend on the questionnaire launched to the students and graduates from Egyptian universities that passed through the urban design course. Based on the methodology and research justification, the paper concludes a way to teaching urban design to verify the research hypothesis.

**Research Questions:**

What are the common definitions and concepts of urban design?

What are students’ attributes gained from teaching urban design courses?

What are the interest of urban design in the present era?

What are the principles gained?

How does urban designer deal with the urban context?

**Questions in Literature Review:**

What does make a city a livable city?

What are the benefits of a well-structured city?

What does make a livable city? What are the urban design dimensions that create a livable city?

What are the concepts of the urban form?

What are the features available in the city that raise people’s feelings toward it?

What does give the city its own identity?

What are the features that are available in the city?

What does make the urban space in the city a livable place?

What is the value of the urban design as a professional practice of specialization?

What does make a city a sustainable city?

What are the terms of conditions for defining the spatial quality?

**THE EGYPTIAN SCENE: RESEARCH JUSTIFICATION**

This section reviews urban design course curricula in some respected Egyptian universities and higher institutions throughout the past decade namely some instructions. (I) The Department of Urban Planning and Design, author’s university, (II) the Department of Urban Design, College of Urban & Regional Planning, Cairo University, (III) the Faculty of Engineering, Cairo University, and (IV) the Faculty of Engineering, Helwan University. The selected institutions have broadcasted their curricula online and provided definitions of urban design thought in the College.
placement and course outline. The selection of cases depends on addressing urban design as an academic course in curricula plan of architectural or urban planning program as well as the viability of getting information online.

Egyptian universities typically plan urban design courses for undergraduate students in their third and fourth years, unless urban planning and urban design are taught in separate departments. Most Egyptian learning institutions base their teaching of urban design on two approaches. In the first approach, urban design is taught as an independent and elective fourth-year topic; this approach is adopted by Helwan University. This university focuses on the elements, regulations and standards for systems, and legislation on urban design. (Department of Architecture, Helwan University, 2010) The second approach is to establish separate urban planning and design departments, each one offering a three-year degree program. This approach, implemented by the College of Urban & Regional Planning at Cairo University, (UDD, 2012) has the following three levels of urban design teaching: introductory, learning of principles, and acquiring skills. The key topics in that college are visual perception, elements of composition, and empirical studies. For instance, in the Department of Architecture at Cairo University, urban design is taught in six semesters over three academic years. The course aims to link the perceptual dimension with applied projects (ARCHCAIRO, 2003). Other universities divide a three-year course into four semesters, following the functional dimension and urban design paradigm (UPL, 2009). Consequently, urban studios in most architectural and planning sectors adopt the same attitudes to teach the perceptual dimension, applications to local realities, and methods and techniques of professional practice (Table 1).

Life and Death of Great Egyptian Cities: Content Analysis of Academic Situations

Many urban design studios in Egypt have adopted European and American ideas, which follow various transformations in widely different contexts. Before the 1970s, most Egyptian architects and urban planners based their courses on the City Beautiful movement, incorporating the ideas of Howard and Geddes, the Townscape as a Philosophy concept, and Lynch’s idea of the image of the city. The perceptual dimensions have been enthusiastically adopted by next-generation urban designers in architecture and planning departments. In particular, Lynch and his colleagues continue to teach the theories proposed in Lynch’s seminal work, “The Image of the City,” at both undergraduate and postgraduate levels.

Several respected urban designers, particularly those based at Cairo University, have imported European and American “the art of the city” ideals to Egypt. However, Western perceptions of urban design differ from that ingrained in Egyptian institutions. Contextualism movements focus on theories of city form, language patterns, urban space development, and original ideas of urban space. These imported ideas have led to disputes between the traditionalists and their students. Indeed, the Department of Architecture at Cairo University was disciplined for initiating this change. Since the early 1980s, the new American and European paradigm of urban design has transformed MSc urban design courses and PhD programs in Egypt. Most Egyptian government universities have simultaneously introduced urban design as a core or elective course in their architectural programs. Other universities have created a new department for this discipline. As expected, planners of academic urban design courses do not omit colleges of engineering. However, urban design is taught in architectural departments, who adopt educational programs issued by government universities with no attempt to adapt the curriculum to change market values.
Table 1: The main topics of urban design discussed in the Egyptian universities

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<tr>
<th></th>
<th>Architecture Bachelor Degree</th>
<th>Architecture Bachelor Degree Specialized in Urban Planning &amp; Urban Design</th>
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<tr>
<td></td>
<td>Architecture Department,</td>
<td>Urban Planning Department, Faculty of Engineering (Ain Shams University)</td>
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<td></td>
<td>Faculty of Engineering,</td>
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<td></td>
<td>Cairo University</td>
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</tr>
<tr>
<td>Academic hours (total)</td>
<td>6h/week 90h/semester 180 h/year</td>
<td>10 h/week 150h/semester 150h/year 300 h/year 8 h/week</td>
</tr>
<tr>
<td>No Academic Years</td>
<td>1 (2 semester)</td>
<td>One year (one semester) 3 years (5 semester) 3 year three semesters</td>
</tr>
<tr>
<td>Type of Course</td>
<td>Main</td>
<td>Main</td>
</tr>
<tr>
<td>Year of curricula accreditation</td>
<td>2003</td>
<td>2003</td>
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<tr>
<td></td>
<td>2003</td>
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<td>Module overall aims: By the end of course module the students have must be able to...</td>
<td>Distinguish Objectives of urban design, Scope, Processes, related field, Products of U.D. Developing of urban design skills.</td>
<td>Study of elements and styles of urban design Distinguish the principles of design of urban spaces in cities. Discusses factors affecting the design decisions Practice visual treatments in the formation of urban spaces and elements. State regulations, standards for and legislation. Understand principles of urban design Relation and connection to socio-cultural issues Compare between different urban planning and design projects Design and construct alternative solutions to projects. Distinguish the city from the viewpoint of the visual dimension. Create the city/site form through new development. Manage the process of urban conservation and sustainability.</td>
</tr>
<tr>
<td>Concepts and Definitions</td>
<td>Not Achieved</td>
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<td>Achieved</td>
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<tr>
<td>Related Topics (i.e. Legislations, Regulations and standards, urban renewal, New urbanism...)</td>
<td>Not Achieved</td>
<td>Achieved</td>
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</table>

During the present era, the emerging sustainability movement has altered the course of thinking in some architectural departments. Urban design courses have embraced the new concept of Urbanization as Urbanism, New Urbanism, everyday Urbanism, and Post-Urbanism incorporating modern concerns such as the public realm, livable cities, people-friendly cities, branding the city, and creating a generic city. Although architectural planning and urbanization in Egypt continues to orient toward that in postwar European cities, numerous architectural departments are adopting new urban design movements, trends, theories, and approaches to alleviate potentially...
detrimental effects on the city. The author of this study argues that Egyptian architectural educational institutions need to alter their learning programs. He/she proposes a new urban design consistent with present Egyptian city conditions.

**The Egyptian Graduates’ Questionnaire**

The case study is formulated on the essence of an application in urban design studios. It interviews students (200 interviewees) enrolled in respected Egyptian universities within the past decade. In 2012, the questionnaire was launched equally in four universities that located in Cairo; Ain Shams University, Cairo University, Helwan University and Azhar University. From the students’ responses to a range of questions, the study links the course contents and educational level to assess the extent to which students supplied with theoretical knowledge will gain proficiency. The case study also offers essential course content to teachers and students.

The questionnaire assesses students’ thinking at the following two levels: knowledge and intended product. The results are excellent, medium, or fair on the basis of the scale from zero to 100%. The knowledge-based questions concern various categories of information: a) Urban design definitions, concepts, history, and philosophy, b) Urban design methods and techniques, and c) principles of urban design. Product questions focus on the implications of applying theoretical knowledge to final products, assessing the extent to which: a) the semester projects are appropriate to the literary scholar’s degree, b) theoretical lectures complement practical projects, c) requirements of the projects are adequate, and d) urban design theory can be applied in the design studio. The true extent of student’s learning topics is revealed (Table 2).

<table>
<thead>
<tr>
<th>(I) Knowledge &amp; Understanding Skills</th>
<th>%</th>
<th>(II) Intellectual Skills</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Inappropriateness the semester projects to the academic outcomes</td>
<td>100</td>
<td>Misinterpret the urban design methods and technique</td>
<td>90</td>
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<tr>
<td>Confusing between the urban design, urban planning and housing</td>
<td>60</td>
<td>Undistinguished the difference between the design process, the urban design process and rehabilitation</td>
<td>90</td>
</tr>
<tr>
<td>Ignoring the urban design theories (except the good city form for Lynch, K.)</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ignoring the essence &amp; substance, definition concept as well as the historical background &amp; theories</td>
<td>100</td>
<td>Compare the use of urban design theories</td>
<td>10</td>
</tr>
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</table>

In addition, the results for the selected sample of graduating students are listed. The results define the global knowledge acquired at both levels of thought and reveal how learned principles are applied in urban design studios. Mostly, urban design is an artwork and scientific science. It takes all pedagogy principles discussed in several literatures (Anthony, 1991; Cuff, 1991; Koch, 2002; Salama, 2005) Teaching urban design in school of architecture is effective contribution in building and constructing cities. Conversely, urban design should not focus on problematic issue of form and morphological dimension as well as the six common dimensions that urban design comes with intellectually and practically paradigm to solve the solve and beautify cities and town. As well as architecture, urban design can have its valuable remarks on the city, unless urbanist can follow the method of synthesizing of all city contexts. The challenge is to understand the links.
between the urban morphogenesis, efficiency and resilience (Salat, Bourdic, & Labbe, 2014, p. 77). This perfect framework affects the quality of urban space diversity. Salama and Wiedmann (2013) describe this process as a result of all factors within the production of urban environments.

**URBAN DESIGN REVIEW: DEFINITION AND CONCEPT VERSUS INTENDED LEARNING OUTCOMES**

A definition is universally accepted while a concept is an individual viewpoint. The present study aims for a better understanding of the definitions and concepts in urban design (Figure 2). It extends to the role of urban designer in shaping our cities and towns. This role gives the researcher an opportunity to deduce the intended learning outcome of urban design courses.

In 1980s, Bentley and others defined urban design as an art and science of building cities (Bentley, Alcock, Murrain, McGlynn, & Smith, 1985). In the second dimension, it links urban population and land use planning (Suthasupa, 2011, pp. 57-86). The third dimension is urban configuration, which considers the positive and negative impacts of urban spaces. The fourth dimension, time, incorporates the dynamics of the urban place, which underlie its character (Lynch, 1972). Urban design as a scientific art focuses on the societal, political, and economic aspects of the city, with emphasis on human behavior and consciousness (Ilewelyn, 2010). It focuses not only on traffic but also on the communications network in the metropolis; and a link to the context (Schumaker, 1971). An attention devoted to the relationship between individual urban dwellers and urban spaces. Urban design explores the site, details, and components as well as the structures, each of which integrate into an entire artificial environment.

**Urban Design in the Present Era**

Historically, urban design is the art of the city, but experts recognized it as such only since the mid-sixties of the last century, when it began to be taught as a scientific art in some American universities (Cullen, 1961). In the present era, urban design as a scientific art means to solve complex and accumulating problems. Designers organize and arrange activities on the basis of the performance of functions and appearance, paying special attention to the morphological relationships between different blocks and urban spaces. Urban design not only differs from the design of mass and landscape architectures, interiors, sites, and products but also intimately links all architectural specializations. Starting from a single piece of construction, urban design passes through consecutive specialized planning levels. City planning, townscape, urban planning, planning and design of sites, and ultimately their dynamics (Lynch regards the last as the time dimension) (Lynch, 1984) are all essential for creating towns and cities. The transition from the two-dimensional planning level to three-dimensional spatial formations at the design level requires higher skills.

The art and science of planning and designing city architectures can be conceptualized as a bottom-up construction of three main axes. First, spatial arrangement starts from a comprehension of urban tissue types and their components; uses, solid/void, and pedestrian and circulation paths. Second, blocks relate to urban spaces in terms of proportion, scale, colors, opening, texture, edges, outcropping, responses, skyline, ground-line, masses, and activity variation. Third, the temporal dimension creates a vibrant city from the constructed image even in areas of visual disturbance. From the visual experience viewpoint, developers build a city from sequential movements of various behavioral experiences. Conversely, in a serial (sequential) vision, it consists of societal scenarios formulated by events and performance, modified by the social behavior and reactions that determine its characteristics.

Hence, urban design extends the two-dimensional typology to a three-dimensional morphological urban system, including the role of lost spaces, at the levels of monuments, residences, and building blocks. It incorporates the semantic phase into the topological and morphological phases through a serial variable of conscious human experience. The relations between the individual urban dweller and urban spaces and those among the urban spaces themselves compile the meaning of the place.
The urban designer assists the urban planner in developing architectural guidelines. Namely, he/she constrains urbanization principles to instill urban character and desirable architectural features exclusive of the municipality. Special attention devoted to visual clarity, governed by factors and determinants of human perception, action, and consciousness. The urban designer also encourages private and public participation in the reclaiming process of “creation” and “rehabilitation”. Urban design uses the behavioral settings to understand the relationship between man and the urban environment, reflecting the daily personal life of individuals undertaking diverse activities (Christopher, 1977); (Puspitasari, Djunaedi, & Putra, 2012). Note that, although human behavior may be regarded as reactions toward certain actions, a single act cannot be called human behavior unless repeated regularly, at different times and places.
Today, urban design embraces several issues, including rehabilitation and reclamation of existing urban communities, preservation of historic sites, favorite places, and heritage areas, and developments in new urban growth areas, formulated under developmental guidelines (Watson, Plattus, & Shibley, 2003). Urban control must sustain the urban character and architectural aesthetics, in addition to creating a livable, city that complies with urban design principles. The modern urban design focuses on sustainability and environmental compatibility, with emphasis on environmental impact assessment and climate change, air quality, energy independence (renewable energy, uses, and transportation), water resources (water sanitation and management), and livable cities.

**Urban Designer as a Professional**

As highlighted by (Rossi, 1984, p. 34) urban designers prioritize the requirements of the community and society. He includes the technological innovations that support current perceptions of sustainable and livable cities. Rossi, also, considers a site as a) a building that reflects the truest expression of the implemented events and activities and b) the human events, activities, and their behaviors in the built environment (the context). The former is achieved through an interactive relationship between stakeholders, community, and place. From these interactions, the visual, displays of the site, shows in the building are configured; dealing with the urban environment (explore and develop) as events, activities, and their behaviors in the urban context (the place). By playing the roles of “community architect,” and “designer for the group,” (Lee & Stabin-Nesmith, 2001); (The Community Redevelopment Agency of The City of Los Angeles, 2012) the urban designer serves the needs of a diverse community by several roles illustrated in (Figure 3). For Sert the task of the urban designer “architect-planner” was to "build the frame or container within which community life could take place" (Mumford & Sarkis, 2008). This frame described by Sert can be summarized in eleven objectives. Several literatures mentioned these objectives such as (Gosling & Maitlan, 1984), (Wright, 1991), (Cuff, 1991), (Vernez-Modeon, 1992), (Lang, 1994, p. 255), (Alexander, Neis, Anninou, & King, 1987), (Duggan & Mitchell, 1997), (Ecclestone, 2001), (Gallaudet University, 2002), (Campbell, 2002, p. 9), (Creswell, 2003), (The Office of Academic Planning & Assessment, 2005), (Moustafa, 2009, p. 85), and (Larkham, 2012, p. 22). The following are the complied objectives:

- Reinforce Neighborhoods,
- Make It Sustainable
- Add Green Everywhere
- Secure The Edge
- Make Public Places
- Be Sure Rooms; indoor and outdoor; Have Views
- Finesse The Mix
- Elaborate Movement
- Localize Architecture towards city branding in metropolitan cities
- Defend Privacy
- Make It Beautiful
Figure 3: Urban designer's roles in the literature review versus the graduate's intended attributes, source: the quoted citation(s) compiled by the author based on (Ministry of The Environment, n.d.); (Lynch, 1981, p. 290); (Lynch, Urban Design, 1984); (Bentley, Alcock, Murrain, McGlynn, & Smith, 1985); (Royal Town Planning Institute, 1991); (Lang, 1994, p. 255); (Rowley, 1994, p. 331); (Billingham, 1994); (Department of the Environment, 1995, p. 2); (Hirst, 1995); (Gummer, 1997, pp. 7-8); (Campbell, 2002, p. 9); (Russell, 2002); (Madanipour, 2007); (Carmona, Tiesdell, & Oc, 2010); (Larkham, 2012, p. 22); (Tibbalds, 2012, p. 12).
Table 3: Intended learning outcomes (ILOs) gained from the literature review (Source: Author).

<table>
<thead>
<tr>
<th>Intended learning outcomes (ILOs)</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Understanding Skill</td>
<td>Terms; Visual Quality, Place Identity, Sense of Place, Serial Vision, Place Meaning, Genius Loci, Urban Aesthetics, Good Building, Visual Character, Typology of Urban Areas. Selected elective topics (e.g. Urban Design Guidelines, Urbanism, New Urbanism, Everyday Urbanism, Post-Urbanism, New Theories and Realities, …)</td>
</tr>
<tr>
<td>(ii) Comprehension Skill</td>
<td>How different the urban design is?! What is urban design today? What are the responsibilities of the urban designer? Urban design dimensions Definitions, concepts and historical background How much does man appreciate the urban context? History and theories in urban design.</td>
</tr>
<tr>
<td>(iii) Application Skill</td>
<td>Urban Design Principles. Preserve and protect of the priceless heritage cities. Reclamation of the design of the built environment. Design the new environment in the urban context.</td>
</tr>
<tr>
<td>(iv) Intellectual Skill</td>
<td>Urban Morphology Techniques determining the change transformation process of urban fabrics, making sense of the historical roots of spatial city structures and bringing them to the present day.</td>
</tr>
<tr>
<td>(v) Analysis Skill</td>
<td>Generate Urban Design Principles Application, Urban Design Ideas, Application of the following in the study area: a. Morphology versus Typology, b. Design in Context (Contextualism), c. Urban infill, Collage City, Cumulative Order, Pattern Language. Master Pan Outcomes Final outcomes presentation</td>
</tr>
<tr>
<td>(vi) Process (Synthesizes) Skill</td>
<td>The general urban design process (Data Collection, Data Analysis, Literature Review, Content Analysis), Urban Rehabilitation Process, New development Process, Urban Control</td>
</tr>
<tr>
<td>(vi) Criticism and Transferable Skills</td>
<td>Post-Occupancy Evaluation (POE) for selected projects, POE for the current study project Communication skills,</td>
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</table>

**Lessons Gained and Graduates’ Intended Learning Outcome**

This topic shows the intended learning outcomes (ILOs) of thought and application deduced from the above readings. The outcomes, divided into two levels (Table 3), will assist researchers to establish an academic module. The two levels lay on knowledge and understanding skills in one-side and intellectual skills on the other side. By the end of course and through the two levels, the student has to be able to have certain actions.

According to the second part of the questionnaire, this research assesses students’ applications of these principles to the projects assigned each semester. First, the undergraduate can receive the following four fundamental outcomes: general information, dimensions, principles, and a related elective topic. In the preface and introductory sessions, students are given a solid introduction to urban design practice, with emphasis on professional practice. In a wider framework, practice empowers students with skills, visions, and ideas. Second, four key
dimensions and six derivatives for controlling urban design principles are presented: 1. Cognitive (perceptual and temporal dimensions) 2. Formation (the functional and morphological dimensions) 3. Socio-cultural (the behavioral dimension, incorporating behavioral settings and city branding), and 4. Environmental (sustaining a livable city and public realm). The questionnaires are developed in terms of these dimensions. Third, although seven stages of rational thought learning are recognized, these are not explicitly built into the course description. Table 3 divides the course contents to each of seven actions as far as possible. By the end of any course or module, the student intended to have the knowledge, comprehension, application, analysis, process, intellectual, practical and transferable skills of the selected topics that represented in (Figure 4) and (Table 4) based on the four axes.

Figure 4: Learning process (Source: author derives it from California State University, 1998).

Generally speaking, the course of urban design comprises integrated information; it should aim to provide a complete student's consciousness toward the urban design as a scientific art. In addition, the list of the scientific literature ranked according to their relationship with the topics/project presented in the curriculum. By the end of course, the student must be able to interpret the introduction and historical background to specialized aspects of urban design and their relationships with other specialties. He/she also represent the good understanding of the role of the urban designer in building metropolitan areas. Training will be provided on the methods and techniques required for future development and rehabilitation projects. Questionnaire outcomes represent a hidden important issue related to the theoretical base related to urban design. Several contemporary trends/approaches/schools/methods techniques are missing in the academic scene. There is no indented core course of urban design paradigm.
Table 4: some of the constructive topics (Source: the Author).

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<tbody>
<tr>
<td>Create a distinctive identity for the city at certain times and places.</td>
<td>Make continuing documentation of population patterns that use urban places.</td>
<td>Embrace the urban structure (Spatial Typology).</td>
<td>Accustom people with the societal participation and the human behavior.</td>
<td>Apply Stewardship, resource efficiency, diversity and variety, Human need, Resilience, Pollution reduction, Concentration, Distinctiveness, Biotic support and Self-sufficiency.</td>
</tr>
<tr>
<td>Consider the city comes alive through the realm of juxtapositions (drama).</td>
<td>Design for spatial configuration as part of the Urban design process.</td>
<td>Define the physical aspects of the built environment effect on the human behavior.</td>
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<tr>
<td>Define the principles of human cognition of the built environment.</td>
<td>Consider buildings that respond positively to adjoining public spaces.</td>
<td>Foster the dynamics of change in built environment.</td>
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<tr>
<td>Select design themes and analyze the relationship between people and buildings.</td>
<td>Analysis transformatio n of urban form across time</td>
<td>Public space should be the bearer of an urban design.</td>
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<td>The city does not complete by preparing the pattern of streets, but also adding new styles.</td>
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<tr>
<td>Aspires to shape city form by focusing on the complex relationships between the built features and space.</td>
<td>Configure the spatial formation, arrangement, and consciousness of the context.</td>
<td>Accustom the people of enlightened with his community strategy</td>
<td>Create the built environments in a way to compassionate toward urban surrounding and people’s needs.</td>
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<tr>
<td>Provide for combination of mixed uses.</td>
<td>Urban structure helps to define your cultural identity.</td>
<td>Create preferred living spaces to meet the person with his culture</td>
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<tr>
<td>perception of the physical form of cities as the conceptual basis</td>
<td>Make the city structures carries the roots of a common language.</td>
<td>Consider the technological innovations that support the concepts of sustainable and livable cities</td>
<td></td>
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<tr>
<td>Support emotional and psychological of the human values of belonging.</td>
<td>Respect the basic hierarchy of the urban spaces.</td>
<td>Foster the dynamics of change in the urban environment and adapted to respond to the people’s ways of living.</td>
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<tr>
<td>Defines the urban spaces as a series of linked places.</td>
<td>Create different forms of the distinct urban spaces in the city building instead of the neglected land.</td>
<td>Realize that the important determinant of any culture is after all the spirit of place.</td>
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<tr>
<td>Promotes the buildings to scale and oriented towards the street.</td>
<td>Use the similar materials and appropriate architectural series (scale) develop a sense of place.</td>
<td>Support for the strategic arrangement of building forms.</td>
<td>Understand the physical aspects of the urban places to see ourselves in the public life.</td>
<td></td>
</tr>
<tr>
<td>Ensure the city not only ceases by preparing the form of blocks and streets, but also adding new styles.</td>
<td></td>
<td>Respect the planned urban structure of the vocabulary of the built environment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Make a sense of place towards livable places.</td>
<td>Identify the role of a place over time.</td>
<td>Create built environments that are sensitive to context and to people’s needs.</td>
<td>Understand how people interact with the spaces creates places for people.</td>
<td></td>
</tr>
<tr>
<td>Avoid the visual chaos imposed.</td>
<td></td>
<td>Employ the context of traditional city in the new city.</td>
<td>Foster a pleasant landscape environment to</td>
<td></td>
</tr>
<tr>
<td>Respect the integrity (character)</td>
<td>Make buildings have indicative</td>
<td>Ensure the interactions between</td>
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</tbody>
</table>

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By identifying urban design discipline, the student can understand the dialectical issue through the relationship between individuals and the urban spaces/built environment. He/she, as well as, develops an awareness of urban space performance against real needs. Graduates will be equipped to work in both traditional areas and new settlements using the principles, criteria, and knowledge of response environment through the curriculum. Emphasis is placed on the following societal variables such as culture, heritage, symbols, values, and meanings that determine the urban character and visual element distinctive the city/town.

**URBAN DESIGN OUTCOMES-BASED LEARNING: AN INTEGRATED PROPOSAL**

The proposed urban design module suggests analyzing the relationship between man–place on one side and philosophy–theory on the other; it aims to guide undergraduates’ thinking toward creating livable places in Egyptian cities. It is noteworthy that the history of thought, paradigms, and theories of urban design is required to not only underpin the theoretical approach but also provide students with the necessary expertise to enhance their professional practice skills. The urban design can formulate an outcome-based learning syllabus. This syllabus provides a realistic vision for urban design teaching and identifies solutions to problems by applying urban design principles and criteria. To implement this vision, institutions can empower their graduates with skills for creating livable, high-quality urban environments throughout their future professional practice.

**The Module Goals**

The module proposes an introduction and historical background to specialized aspects of urban design and their relationships with other specialties. It also emphasizes the role of the urban designer in building metropolitan areas. Course coordinator presents students with urban design theories and methods that relate to the urban form. Urban form terms are introduced, along with the axes of spatial formation: organization, composition, and consciousness. The fourth dimension, time, is incorporated into the design process through the concepts of serial vision, sequential movements, and the art of relationship. Besides the target design identifies urban space categories, students will understand the dialectical relationship between individuals and urban spaces and those among the urban spaces themselves as well as develop an awareness of urban space performance against real needs.

The training will provide on the methods and techniques required for further development and rehabilitation, data collection and documentation, medium-scale site analysis, creative ideas, concept formulation, optimal design, master plans and working areas, design guidelines, and implementation mechanisms. Graduates will be equipped to work in both traditional areas and new settlements using the principles, criteria, and knowledge of environmental response acquired through the curriculum. Emphasis is placed on the following societal variables: culture, heritage, symbols, values, and meanings that determine the urban character, architectural characteristics, and visual elements of a distinctive city.

**Module Structure: Proposed Teaching Method and the Module Contents**

Generally speaking, any teaching methodology depends on the scope of work achieved by a method, tool and techniques. In urban design, process can go through methods of rehabilitation, urban conservation, upgrading, urban renewal. The wide contribution of the urban design can present design principles as the design process and analysis for responsive environment and liveable cities. The technique based on (Moughtin, 1999) can appear through data collection and data analysis techniques as well as spatial configuration and urban control (Figure 5).

The integrated courses in the target module will be taught in five stages/courses with the following graduated intended learning outcomes: knowledge, process (syntheses), intellect, professional practice, and practical evaluation. Lectures will emphasize contemporary thought, process, and product of urban design. To better understand the theories of urban design and levels of professional practice, the following issues will be discussed: a) the urban context, b)
history and theories of urban design, illustrated with examples of the built environment of cities and towns, and c) methodology as a method, technique, and their combined implementation.

Urban design courses clarify the meaning of (I) the environmental context (historical or traditional), (II) scientifically accepted points of view: theories, movements, trends, and schools of urban design, and (III) professional practice. General approaches are accompanied by questions such as “why do most people not live in livable cities?” and “how does a designer create livable cities?” Sustainable towns and cities work efficiently with residents and visitors, identify the needs of the populace and individual stakeholders (users/beneficiaries), and also meet the requirements of the community for the benefit of society. These topics will be covered in the proposed five-part urban design course as shown in Table 5.

The proposed module aims to provide students with a deep understanding of the definitions and concepts of urban design, the role of the urban city designers, and urban design in practice; the latter being reinforced by real-time examples. During the first semester, in the design studio, students will select a traditional design project and develop it through project justification, aim, goals, geographical location, site, urban context, and accessibility. In the second semester, students will undertake a development project in a new settlement and further develop an established urban zone. As they become involved in project design, they will come to appreciate the urban context. If students are allocated projects covering a range of specialties, then they will be better equipped to finalize their first-semester project.

Figure 5: Urban design scope of work in its course curriculum  (Source: the Author).
Learned Lessons
Students of architecture should be familiarized urban design to appreciate the rapid growth of urban populations, understand historical and current policies imposed on cities, and realize how morphological changes in cities relate to theories of city form. Today, the urban design profession, needs to be clarified, and the gray area between urban planning and urban design needs to be resolved. The urban designer plays an essential role in determining the city environment. In addition, he/she can overcome the building segregation that accompanies the regulations imposed by urban planners and other designers. To the urban designer, the outdoor space is a leftover space.

Table 5: The outline of the pentagonal urban design module (Source: Author).

<table>
<thead>
<tr>
<th>Level</th>
<th>Topics</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Introduction:</td>
<td></td>
</tr>
<tr>
<td>How Different Urban Design is?!</td>
<td>Urban design as a professional scope of practice, Urban Design Definitions &amp; Concepts, Historical Background.</td>
</tr>
<tr>
<td>Urban Design Today</td>
<td>Levels of professional practice, urban designer as a community architect and the urban design dimensions.</td>
</tr>
<tr>
<td>How does a man appreciate the urban context?</td>
<td>The urban context, meaning, essence and substance: environmental factors human perception of place, exploring the urban context; making the site and the elements of the urban context. Method and techniques Methodology versus technology urban design process (rebuilt, rehabilitation &amp; reclaiming, creation &amp; formation) - rehabilitation techniques; urban design problem documentation and analysis, programs, philosophy, and development proposals; the master plan and working areas</td>
</tr>
<tr>
<td>(2) History and Theory:</td>
<td></td>
</tr>
<tr>
<td>The merging of urban design in the European and American history of thought, views of the urban cities of architecture, urban design theories; contextual architecture, urban infill, collage city, accumulative order, language pattern, analogy, Phenomenology, Semiology, urban design theories in a new era.</td>
<td></td>
</tr>
<tr>
<td>(3) Urban Form &amp; Formation:</td>
<td></td>
</tr>
<tr>
<td>The morphological appearance (dimension) and typology versus morphology Components and issues; spatial arrangement, configuration (composition) and consciousness. The human activities and types of the urban spaces, activities between static and dynamic, activities settings – hierarchy, urban spaces and circulation system, circulation patterns; vehicle- pedestrian, different between urban spaces, urban places &amp; open spaces, process of design &amp; evaluation. Urban spaces as units or in its relationship to surrounding buildings or with the elements of the natural environment, methods and ways (mechanism) to manage urban spaces (about defining, formation, design and analysis of the urban spaces, the impact performance factors of the urban spaces, design principles of urban spaces; socio-cultural, economics, politics, rules and climatic effects, valuable observation.</td>
<td></td>
</tr>
<tr>
<td>(4) Urban Design Principles:</td>
<td>Responsive urban environments, design Implications; legibility, permeability, variety, robustness and appropriateness.</td>
</tr>
<tr>
<td>(5) Urban Design Guidelines:</td>
<td>Mechanism, urban control, development guidelines in existing traditional areas and new settlements and development proposals.</td>
</tr>
</tbody>
</table>

As an academic course, good urban design should apply accepted principles in each urban design studio. It should also discuss urban design problems, the typo-morphology of urban
places, and the implementation of construction/development. Ideas, notions, and concepts of urban design are validated through the development process, and personal skills are utilized to their best advantage. In this way, students are taught how to implement these ideas on urban projects. Students will present an integrated, extensively researched project in a convincing and creative way. To achieve this outcome, lessons will focus on urban design as a scientific art for both students and practitioners. Personal hopes and beliefs will be promoted as the basis of livable cities and places. Subsequently, the scope of specialization is extended from building metropolitan cities to designing places for individuals within those cities. The main tasks in urban design should be applied by practitioners at all levels, from students to established practitioners, through scientists and specialized practitioners. Before students start their career, they will be equipped with the basics, methods, and techniques of urban design, and they will acquire practical skills by undertaking term projects in the design studio and real-time practice. Specialized scopes will be placed in a broader, more integrated scope that aims to realize sustainable livable environments.

The proposed module is divided into five main levels (semesters). Students are first introduced to the visual and cognitive perceptual dimension. The second year covers the theories of the perceptual dimension. The morphological dimension at the third-level concerns theories of spatial formation. At the fourth level, students are introduced to the social-cultural dimension, which investigates the complex relationships between behavioral settings and the physical context. The environmental dimension comprises sustainability, liveability, and a user-friendly urban environment. In the final level, students will gain extensive expertise in integrated projects. These goals will be developed from learning about sustainable urban cities in the design studio, where students are introduced to sustainability, the public realm, and livable metropolitan cities. This course is suitable either for students enrolled in compendium courses with an elective design component or for those taking elective courses shared with other department's teaching related disciplines, such as urban planning, landscape architecture, and other planning departments.

CONCLUSION:
PROSPERITY OF THOUGHT TOWARDS PROSPERITY OF APPLICATION
Cities are among the most complex structures erected by humans. Designers require not only expert knowledge of the philosophy and aesthetics of the city but also an appreciation of the ecology and waste disposal technology and a strong cultural awareness. Furthermore, urban designers cannot complete their work without the knowledge and understanding of the form of the built environment, particularly the cultural and environmental aspects of urban design solutions. Today, professional architectural practitioners are leading participants in shaping urban cities. In particular, they combine urban spaces, landscape architecture, town, city, and urban planning to the best serve the needs of the urban population. However, this ideal concentrates only on the physical dimensions of urban planning and its integration with tangential knowledge and skills, such as those of civil engineering.

In the present study, urban design is discussed as a specialized field of architecture, a society-based discipline focusing on communities, local group cares, and stakeholders. Modern design studios must extract the greatest possible visions and ideas from strategic plans. These visions and ideas must then be activated by the construction of architectural drawings that will lead to tangible results. These ideas could be attained by (a) continuous regard to the meaning, essence, and categories of urbanization, (b) awareness of the contemplative vision role of the urban designer at the urban morphology stage; visions obtained from systems analysis of the Metropolitan cities formulation, and (c) formulation of urban control guidelines that preserve the identity, personalization, and architectural characteristics of the cityscape.

Furthermore, the research argues that students need to have a clear and transparent learning goal, which in return allows them to understand the instructor's educational vision. This can provide them with a clear understanding of how to improve. Writing learning outcomes in urban
design, which is a mainly accumulative-based subject, is significantly different in comparison to many problems-based subjects. The Egyptian graduates should not be far away from that current context problem in addition to, the global contribution in urban design.

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TRADITIONALISM OR TRADITIONA-LIEISM
Authentication or Fabrication?

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Abstract
Muslim cities with their notable architecture and morphology have always attracted scholars, architects, and planners. Regionalism, Historicism, Neo-Traditionalism, and Revivalism are but a few postmodern approaches that emerged calling for reviving the spirit of the place and searching for an identity associated with history and context. Structuralism, Semiology and Critical Studies offered significant methodologies in this respect. This research argues that traditional Islamic built environment has its own structures stemmed from Shari’a (Islamic legal system), which gave it its authenticity. Similarly, contemporary built environment has its own structures based on capitalism and its mechanisms. Those two modes (Islam and capitalism) are substantially different, and hence their structures. Adopting linguistic methodologies, Revivalism of Islamic heritage, or Traditionalism, is in effect imposing solutions originated in one mode onto another. This led to internal contradictions in the structures of contemporary built environment and thus to a state of in-equilibrium that might be depicted as a crisis. Therefore, the process of “authentication” of contemporary built environment turned out to be a “fabrication” of contemporary Islamic architecture. It is thus “Traditiona-lieism.”

Keywords: Islamic built environment; Capitalism; Structures of the built environment; Traditionalism; Rights-based mechanisms.

INTRODUCTION
Given the implicit sense of imitation contained in the term “tradition,” a question arises here: does tradition change? If so, can we maintain continuity within a changing tradition? One of the questions Karl Popper put forward in his formulation of a theory of tradition is that: How does tradition arise and persist? Drawing an analogy with science, Popper considered tradition as bringing some order and regularity into our social structure, yet tradition is amenable to change (Anderson, 1965). In that respect, Pocock (1962) argues that societies are organized to ensure continuity with their own past. He stated that “awareness of the past is in fact society’s awareness of its continuity” (Al-Hathloul, 1998, p.18). Then, how the present with its rupture with tradition came to be what it is, especially in the contemporary Arab Muslim world? And how can we re-establish a sense of continuity with our tradition?

Looking at Islamic cities, one can discern a stable and dominant tradition which has gone through cycles of development, assessment, criticism and transformation, but a sense of continuity persisted throughout its history. However, since the beginning of the 20th century this tradition, derived from Islam, was challenged. A new mode based on modernity and capitalism was introduced. Today, the Muslim World lives a state of dualism between what is inherited from Islam and what is acquired from capitalism and the West. This dualism is clearly expressed in the built environment. As each of the two modes (Islam and capitalism) has its own mechanisms and roots that are different from the other, such a dualism created internal contradictions in the...
prevailing societal system and led to a state on in-equilibrium in its built environment, or what some refers to as a crisis. It is a crisis in identity, in the perception of the built environment production processes, of professionalism, and in the architectural style that should be developed, among others. To solve such crises and to eliminate the rupture with tradition and the sense of alienation caused by the new mode, many approaches emerged, acknowledging the authenticity and value of the past as a source for the present, called for referring to the past or the inherited traditional Islamic built environment for solutions to be applied in the acquired capitalist mode.

In view of the above, a few questions occur: how did the inherited tradition persist and maintain its continuity among the changing conditions (e.g. different dynasties) it encountered throughout the Islamic history? And why did different contemporary approaches of traditional revivalism fail to restore that continuity? To answer such questions the structures of the built environment have to be scrutinized first.

STRUCTURES OF THE BUILT ENVIRONMENT

As argued in this research, the urban built environment in general consists of three interrelated levels or structures: first, the “manifested structure” defined as the physical status quo. This structure is visible and tangible. For example, the prevalence of dead-end streets and courtyard houses in Islamic built environment belongs to this level. Second, the “operative structure,” which is invisible yet perceptible. It is defined here as the tools that relate the visible effects to its perceptible causes, such as the city’s institutions (political, administrative, economic, social, etc.). Such causes are not static but susceptible to change. Thirdly, the “imperceptible structure,” defined as the underlying relatively static causes that produce the perceptible effects (operative and manifested). This structure is invisible and latent. It embodies society’s values, principles and mechanisms (generated by ideologies, or derived from religion as in Islam), as well as the societal rights and power structure. Therefore, this structure influences the built environment’s two other structures. In a city, the manifested structure is the expression of the imperceptible structure implemented through the operative structure, also the manifested structure affects the imperceptible structure through its effect on the operative structure. It is an iterative, integrative process of interrelating the three structures together in any built environment. Each societal system, employing its own mechanisms, produces its distinct built environment according to the relationship and pattern of interaction between its three structures. Cities might have similar manifested structures (e.g. traditional Greek and Islamic towns); however, their operative and imperceptible structures are different. Similarly, some built environments might be similar at their operative and imperceptible levels but have different manifested structures, such as the case between the city of Tunis with its compact tissue and courtyard houses and the low-density fabric with free-standing dwellings in Safranbolu, Turkey. Thus, to comprehend a built environment it has to be studied comprehensively on its three structures; otherwise, its methodology will be deficient and will inevitably lead to misinterpretations, as transpired in many Orientalists’ investigations of Islamic cities.

ISLAMIC BUILT ENVIRONMENT: AUTHENTICITY UNINTERRUPTED

Islamic built environment, characterized by its stability and continuity, represented a clear materialization of the interaction between its three structures. The mechanisms implemented in the production process of Islamic built environment were rights-based mechanisms, where rights, as derived from *Shari’a*, regulated such a process. It was a decentralized process with bottom-up decisions taken by inhabitants in their sites, without any external intervention. Any party has
the right to act freely in his/her property, however, without harming others, socially and/or spatially. As such, the territorial structure of the Islamic built environment was a mere realization of the rights regulating its production. For example, the *Khitta*\(^2\) (from the manifested structure), as an autonomous territory of which control falls upon its inhabitants, does not denote a spatial territory *per se*, however, it reflects a set of rights from the imperceptible structure that bestow its inhabitants with power to decision making regarding the territory. It is thus a rights-based territory. The Islamic city was composed of interconnected types of territories or *Khitta*; the house is a small *khitta*, the dead end street is a *khitta*, the through street is a larger *khitta*, and so on. To clarify this, the following case (*nazila*) cited in an authoritative *fiqh* (Islamic jurisprudence) source will be demonstrated as an example.

In one case, a man whose house is at the end of a dead-end street extended a wooden box and a three hand-spans toilet to the street next to his neighbour’s house. The neighbour objected but without success. He raised the case to the judge who ruled that since the principle in dead-end streets is that its benefits are shared by all its residents, no one of them has the right to appropriate any of its benefits for his own without the consent of all residents. He added that if this is done then the extension should be eliminated (al-Wansharisi, n.d., v.8, p.499).

It can be inferred from the above case that the decision to carry on any physical change in the dead-end street lies in the hands of the dead-end street inhabitants themselves; their consent has to be sought before any physical change. That is, the dead-end street, as all Muslim jurists agree, is owned by the owners of abutting properties which doors open to it, collectively as a one party. They share the ownership of its substance as well as its usufruct, thus they have the right of control over their collective property. As such, the dead end street is a collectively-controlled property regulated by well-defined rights where no external party has the right of intervention. Ibn Qudamah (a well-known Muslim jurist) relates that building a shop or a projected cantilever or an overpass in a dead-end street is disallowed unless its people permit. As rights of the street pertain to them, actions are allowed if they all permit as a one owner-party (‘Ibn Qudamah, n.d., v.7, p.33). Likewise, ‘Ibn Ar-Rami (building expert) (d. 734 H/ 1335 AD) states, “if there were houses on a dead-end street, and some residents wanted to establish a gate at the mouth of the street, they are not allowed to do so without the consent of all inhabitants” (336). It is clear from these statements that inhabitants’ collective consent is a pre-requisite for any action to be allowed in the dead-end street. Hence, decision making was a consensus-based process carried out by inhabitants themselves without any external intervention from the state or its representatives. This grants these territories a great degree of autonomy in the production, development, and management of their built environment and internal affairs.

The dead end street constituted but a one type of territory (*khitta*) in the Islamic built environment, with its well-defined set of rights. Other territories such as through streets, *fina*\(^3\), and the market, each enjoyed a specific set of rights that regulated its production and reproduction. Thus, Islamic built environment encompassed a rights-based territorial structure. *Khittas* or territories enjoyed a state of autonomy. Gates at the mouth of dead end streets were a clear indication of that autonomy. However, such autonomy did not lead to a mosaic territorial

\(^2\) *Khitta* is a territory resulted from the act of claiming a property, often by establishing the boundary of the property by the inhabiting party itself (Akbar, 1988).

\(^3\) *Fina* is defined as the space on the street abutting a property, used exclusively by the residents of that abutting property (Akbar, 1988).
structure, but an overlapped and intermeshed structure due to rights that bonded the three structures of the built environment together, with inhabitants at its centre.

Distribution of rights in Islamic built environments (from the imperceptible structure) was the main determinant of its territorial structure. Two sets of right can be discerned here. First, there exists a clear set of “spatial rights” derived from Shari’a, related to physical properties (dead-end street in the case above), regulating their relationship with other properties and places (e.g. rights of ownership, control, usufruct, istitraq right, easement right, etc.). Spatial rights from the imperceptible structure interact with the manifested structure, regulating the formation of its territorial structure. Inhabitants stood at the centre of such relationship; spatial rights were self-implemented by inhabitants themselves. Second, a set of rights (imperceptible) that pertains to inhabitants themselves (operative), referred to here as “social rights,” exists in these territories (manifested), regulating the relationships between inhabitants as to their properties and restricting the domination of one party over the other, such as the rights derived from the Prophet (ppuH) tradition of damage “neither darar nor dirar,” meaning “there should be neither harming nor reciprocating harm.” The inhabitant has rights in his house, in his territory, and in the street, in addition, there are rights associated with the house, the dead-end street, the street, and so on. Those rights, as noted in the above case, were self-implemented except in cases of dispute between parties concerned (then the judge’s ruling is binding to all disputed parties). Through these rights, relationships between territories (khitat) and their inhabitants were regulated, spatially and socially. The Islamic built environment was a realization of the continuous interaction between its three structures, which is a vital criteria of its authenticity.

Self-implemented mechanisms of decision-making in Islamic built environment enabled its inhabitants and granted them the necessary power derived from their rights to make decisions (without harming others), thus freeing them to generate appropriate solutions from within their sites; they are enabling rights (Al-Lahham, 2005). These solutions were commensurate with inhabitants’ subjective needs, values, and specific circumstances of their khitta (territory). As rights were transparent and well known to all parties, each party was aware of its rights in its khitta as well as the rights of others. This produced a territorial structure with minimum hierarchical relationships between parties, if not eliminated altogether. The societal power and rights structure in Islamic built environments can thus be portrayed as non-hierarchical. Hence, mechanisms of the production of Islamic built environments were enabling mechanisms with consensus-based decision making process, implemented by the inhabitants themselves, without any external intervention.

Moreover, as collective control in the dead end street (in the case above) is based on agreement between residing parties (intraneous) and never on intervention by an outsider party, it led to intensive dialogue between members of the controlling party in cases of dispute. This principle, in turn, increases the communication and social interaction and thus cohesion between residents and eliminates any domination that might exist between parties in such a shared property. Likewise, the interconnectedness of adjacent territories through their properties and physical structures sustains and intensifies the interconnectedness and interaction between its inhabitants, creating networks of spatial and social relationships. Through repetition of such cases and other shared physical elements and properties (e.g. Sabat or overpass between territories, party wall, water spouts) territories turn in its totality into a one well-interweaved network, spatially and socially, which has its impact on the Islamic built environment as a whole, increasing its solidarity and connectedness. As such, due to rights-based mechanisms (imperceptible), besides being a spatial territory (manifested), the dead end street and all other

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4 Al-Muwatta’ of Imam Malik (Beirut, 1981) p.529. Darar means what an individual benefits from at the expense of damaging others. Dirar means the actions which damage others without benefiting the acting party (Akbar, 1988, p.256).

5 The translation is by Ibrahim and Johnson-Davis (1977), An-Nawawi’s forty Hadith (An-Nawawi, n.d., p.106).
**khittas** comprise social territories (operative); the three structures are welded together, forming a one harmonized entity.

Such integration is clearly evident in the production of many physical elements in the Islamic built environment. For example, *Ihya’* in Islam is the revivification of dead land without, according to most Muslim jurists, the ruler’s permission. Dead land can be revived and consequently owned by the reviver. *Iqta’* or allotment is the act by the ruler of granting a piece of land to individuals. It is another form of revivification, however, conditioned by the ruler's permission. *Ihtijar* is the demarcation of land prior to reviving it, without the ruler’s consent. It bestows its party the right of privatisation (taking precedence over others) but not ownership, unless the land is revived. It also differs from revivification in that the demarcator might keep the land as long as the local conventions allow, however, in revivification, the land has to be revived after its acquisition. These three spatial elements have the same manifested end-product; however, their processes of production are different according to the operating rights-based mechanisms and thus the interaction between the three structures. Aware of such differences, Muslims assigned different terms for each of the three elements, according to their operating mechanisms.

In brief, the three structures of Islamic built environment were in a continuous state of interaction. They were deeply intermeshed, thus constituting a net-form relationship. In view of that, the three structures in the Islamic built environment don’t symbolize levels with hierarchical relationships, but scopes of continuous interaction, with inhabitants forming their axis. Such integration gave the traditional built environment its authenticity and continuity. Traditional built environment witnessed several changes that led to transformations in its manifested structure, geographically and historically. For example, the Mamluki architectural style in Cairo is different than the Fatimid, and both are different from the Ottoman style in Constantinople. Nevertheless, maintaining its integration, the threes structures of Islamic built environment continued to interact in a net-form manner, using their rights-based mechanisms. As a result, tradition relatively changed, yet without ruptures; it maintained its continuity, thus stability and equilibrium.

**MODERNITY: BREAK WITH TRADITION**

Since the eighteenth century, the emergence of the modern project necessitated the presence of the modern state as an organizing body and regulator responsible of implementing the modern project. It was based on concepts of sovereignty, representation, and legitimacy (Badie, 1992, p.102). It is characterised by its legal authority and the idea that the state embodies and represents the will of its people (Pierson, 1996, p.23). This led to a distinction between who rules and who is ruled (citizens). Stemming from its legitimacy, the modern state was in essence based on the concepts of modern power and authority. Relationships between the ruler and the ruled are asymmetric power relationships. They are hierarchical relationships directed from top (supreme power) to bottom (subjects), where the state gives itself the right to decision-making in most institutions or to intervene in the decision-making processes of its subjects. Foucault conceives of the modern state as denoting certain rational exercises of power over others (subjects) (Hindess, 1996, p.97). It is thus a centralized “interventionist” state; it took responsibility for education, public health, introduction of material infrastructure, city planning, and the like. Gradually the state started to enact regulations and policies for most aspects of life. This conception of the modern state constitutes the roots of the state in the capitalist mode.

The emergence of the modern state led to substantial changes in the mechanisms of built environment production as well as in the party/ies responsible for implementing such mechanisms. This has affected the interaction pattern of the three built environment structures; instead of being rights-based mechanisms in the Islamic built environment where inhabitants constitute their axial party, it turned in the capitalist mode into power-based mechanisms where power is in the hands of the state. The inhabitant was withdrawn from the production process, and the state usurped its role as the central party responsible for the production process.
Responsibility of built environment production was transferred from pertinent “intraneous” parties (inhabitants) in the inherited mode into centralized “extraneous” party (the state) in the capitalist mode. This embodies a change in the party shouldering the responsibility and in its concentration; it changed from being dispersed among all inhabitants, each within his site, to being concentrated in one party, the state. Moreover, rights from Shari’a were replaced by laws and regulations enacted by the state in the imperceptible level, to be applied through, and in, the operative level (by professionals) in the manifested level. Physical and spatial elements in the manifested level are subject to building regulations such as zoning, land-use, and building heights which restricted inhabitants’ freedom in their own environments and shaped the territorial structure of contemporary built environment. Instead of being self-implemented rights, they became enacted, implemented, and supervised by the state. The inhabitant became a passive receiver, with no role in the decision making process, thus his knowledge and awareness of the built environment surrounding him diminished.

This change in mechanisms and responsible parties affected the three structures of the built environment and their interaction. They changed from being intermeshed scopes or circles of exerctitation in the inherited mode, into hierarchical levels that are related vertically, with the state as the central determinant party at the imperceptible level, holding the supreme power and controlling the societal power structure. Therefore, it is a one-way vertical relationship from the imperceptible level (state, power holder) to the operative level (professionals) to the manifested level (territorial structure). Such relationships open doors for domination from higher level parties (the state) over lower level parties and territories (on the manifested level). It is a domination-subordination structure. As a result of this transformation, contemporary built environment lives today a state of in-equilibrium and destabilization, characterized by inequality, injustice, subjugation, and conformity.

POSTMODERNITY: TRADITIONAL REVIVALISM

Since the late 1960s, in the light of the failure of modernity and its reformation project particularly in the built environment, evident in the sense of alienation between the built environment and its users, the lack of cohesion and interaction among users, and the nihilism of meaning embodied in the built environment as a result of modernity’s break with space (context) and time (tradition), postmodernity emerged as a means to re-establish the connection with time and space so as to reinstate the communication between the built environment and its users, and restore the spirit of place or the “Genius Loci” lost with modernity.

In that respect, several postmodern approaches emerged advocating the concepts of contextualism and historicism. Examples of such approaches are “Critical Regionalism,” “Historical Revivalism,” and “Traditionalism,” part of which are the widespread movements of Islamic architecture revivalism known as “Islamic traditionalism” or “authentication of Islamic architecture.” Seeking to re-establish continuity with traditional Islamic built environments and searching for a distinct identity that meets contemporary challenges within the spirit of Islam, most of these approaches focused on the manifested structure of the Islamic built environment, thus reducing the issue of identity to a stylistic, formalistic one.

Performing within the capitalist milieu, these approaches maintained the capitalist power-based centralized mechanisms of built environment production and the hierarchical relationships between its three structures. As power is the cornerstone of the capitalist state, postmodern approaches accepted the already established power relationships and the dominance of the state in the decision making processes and the production of the built environment. The imperceptible level constitutes a barred, impenetrable scope that the state protects and sustains. Therefore, revivalist postmodern approaches were restrained in their actions mainly in the manifested level and partially in the operative level (restrained by state regulations), however, within the framework of the centralized capitalist mechanisms and societal power distribution.
In view of that, it can be said that the contemporary rupture with Islamic tradition occurred since the emergence of modernity with its capitalist power-based mechanisms of built environment production, and not as a result of shifting paradigms of architectural styles such as modernity and postmodernity, or currently deconstruction, as many architects claim. This transformation of mechanisms led to disintegration in the three structures; they split into three distinct levels with hierarchical relationships which consequently led to divergence in the process of built environment production. As such, postmodern revivalist approaches maintained a continuation with their immediate predecessor, modernity, but not with their inherited tradition.

TRADITIONALISM: AUTHENTICATION OR FABRICATION?

Whereas modernity adopted science as its prime referent in fulfilling its reformist project, postmodernity referred to linguistic studies. Structuralism, semiology, and critical studies offered significant methodologies in that respect. Drawing an analogy with language, postmodern scholars and architects adopted such methodologies in their studies of the built environment. They considered the built environment as a text that can be deconstructed into its main elements, and then reconstructed by reforming these elements in a new spirit.

Some postmodern architects and planners (e.g. Aldo Rossi, Leon Krier) relied in their attempts to achieve communication between the user and his context and to restore the sense of place (Genius loci) on activating users’ “urban memory” through associating the built environment with some images from users’ mental background (spatial and/or temporal). History and context are perceived as sources for eclectic disjointed physical images to be used as signs related to user’s memory. This methodology was employed by many architects of Islamic architecture revivalism (architecture traditionalists) in representing the inherited built environment. They reduced the inherited tradition into a set of physical and spatial elements stored in the user’s memory as images that embody signs loaded with meanings from user’s past and context. Aiming at creating a contemporary built environment in the spirit of Islam, architects dragged up images from tradition so as to reconstruct them in a new architectural manner. Architecture in that sense tends to be no more than syntax of images and signs. History was perceived as a frozen and figurative, aesthetic entity that can be transferred into the present through its images; it was dealt with as a static entity, annulling its dynamic character, changeability, and continuity through time. In other words, revivalist architects concentrated merely on the tangible elements from the manifested structure of traditional built environments, ignoring the intangible processes and mechanisms embedded in the operative and imperceptible structures and their integrative relationship which produced the manifested elements. These approaches were quite superficial. They are, as Harvey argues, contradictory approaches; they “stabilize and control the processes that must be mobilized to build them” (Harvey, 2000, 173). Scott Lash termed this approach as one of “historicity” rather than “historicism” because, as he contends, “it is selective, elective, and lacks the coherence of a true historic revival” (cited in Gottdiener, 1995, p.129).

However, the process of dismantling the inherited built environment into its basic elements was accompanied by a process of dismantling its contents and meanings. Physical elements (signs) were dismantled into their “denotation,” or according to J. Stuart Mill, the immediate meaning of the physical element which belongs to the manifested structure, and “connotation,” which is the indirect or implicit meaning of the element. Connotation belongs to the imperceptible structure of the built environment. Traditional revivalist approaches maintained the first while disregarded the latter. This turned the physical and spatial elements extracted from the inherited Islamic built environment such as the arch, the dead end street, the vestibule, the winding street, the sabat, and alike into symbols and slogans promoting Islamic architecture.

Relying on linguistic methodologies in the design process, these elements were emptied of their non-architectural contents which essentially belong to the operative and imperceptible structures, and dealt with through their physical forms only, i.e. on the manifested level.
Consequently, these elements are not any more the end-product of the integration of the three structures and their rights-based mechanisms. They became used merely as an expression of formality that reflects nostalgic feelings. For example, the dead end street no longer reflects the decision-making process emanating from the system of rights operating in it (connotation), specifically its pattern of control and ownership, as explained above. Today, cleared from its connotative meaning, the dead street is simply considered as a notable traditional spatial element (denotative meaning) that prevailed in the Islamic city and reminds us of our past and meets our nostalgia; it is just a symbol of traditional Islamic architecture, in a postmodern perspective. Moreover, connotatively, it is today a property owned and controlled by the state; its inhabitants are only granted the right of use, however, within the framework of the state’s laws and regulations. Accordingly, mechanisms operating in the decision making process of the production of the dead end street today (imperceptible level) are completely different from those prevailed in the Islamic built environment. As such, the dead end street today does not relate whatsoever to its predecessor from the traditional built environment, except in its formal configuration.

The built environment production as such became dictated by the power-holder in the imperceptible level, which dominates the other two structures and their parties. Professionals from the operative level are subject to the state power (laws and regulations) and its mechanisms of operations. At the same, being the parties responsible of much of the decision making process in the built environment production, the state through professionals dominate the manifested level. Inhabitants in the manifested level became receptors, with no substantial role in the production process. Even in traditional revivalism approaches, the professional chose which images to reactivate in the inhabitant's memory and how to reconstruct them. Therefore, the built environment turned to be dominated by hierarchical power relationships, and is the outcome of a decision making process in which a few extraneous parties participate, but not the lots of pertinent, intraneous parties, i.e. the inhabitants.

One of the contemporary traditionalist approaches that is widely accepted and spread today is the movement of “New Urbanism.” Adopting a postmodern neo-traditionalist standpoint, the movement of “New Urbanism” (NU) emerged in the eighties of the last century to resolve the dilemma of social heterogeneity and alienation created by modernity and the decline of the notion of community. Enfolding a nostalgic traditionalist standpoint, NU aspires to retrieve the spirit of community as existed in pre-industrial societies. This, according to NU, can be achieved through restoring the sense of “place” as against the modern “space,” or what is known as “Genius Loci,” as well as reviving the concept of the public space. The distinction between space and place, according to NU, cannot be determined physically as much as socially through the pattern of social relationships that prevail among inhabitants and their association with place itself. To reinstate the sense of place, identity, belonging, and intimacy, NU linked the built environment with its spatio-temporal context. NU communities are thus place-based communities (Al-Lahham, 2012). Manifestly, this resembles to a certain extent the concept of khitta in the Islamic built environment, however, the divergence lies in the system of rights and mechanisms of production associated with place and its inhabitants, particularly the right of control.

In an attempt to create contemporary built environments in the spirit of Islam, NU was adopted by a few architects from the Muslim world. Quest for identity was their prime goal. However, that identity was re-established on the manifested, formal level only. It is a fake identity that does not constitute any continuation with traditional Islamic identity. This design method encountered vast criticism that denied dealing with history as a frozen and figurative entity and the commodification of its nostalgic feeling, claiming that this methodology resulted in the production of what is known as “Café society,” i.e. a consumerist society founded on fascinating

6 The term “Café society” emerged in the 1920s. It signifies the so-called “Beautiful People” who gather in fashionable cafés and restaurants (Wikipedia, August, 2008). Currently, the term is employed in many urban studies to denote a venue associated purely with the consumption of goods rather than a place for creative culture and democratic activities. It is a place where the
people through the industrialization of attractive architectural scenes rather than re-establishing deep-rooted continuity in tradition.

Continuity in tradition cannot be fulfilled unless it is established on restoring the production mechanisms of Islamic built environment and the integrative relationship between its structures. As the manifested structure is changeable and the operative structure is relatively dynamic; changes in tradition occur mainly on the manifested level and to some extent on the operative level, and not on the imperceptible level which is considered the essence of tradition's endurance and stability. The interaction between the three structures produces its varied built environments that comply with prevailing conditions. Islamic built environment experienced different manifested architectural styles that varied historically (e.g. Umayyad, Fatimid, Mamluki) and geographically (e.g. Umayyad in Damascus, Umayyad in Andalusia), yet retained its rights-based mechanisms. Today, through restoring the Islamic production mechanisms, a new style of contemporary Islamic architecture might be developed, different than the inherited ones, yet fulfils the continuity in tradition.

TRADITIONA-LIEISM, NOT TRADITIONALISM

Employing the same linguistic methodology of semiology and post-structuralism to read the so-called contemporary authentication of Islamic architecture, one can find that the “signifier” (image) has overshadowed its “signified connotation” (implicit meaning). That is, the original signifier became “emptied,” robbed of its original connotation that reflects the integration of the built environment's three structures and the mechanisms operating within them. The true meaning of the real sign is distorted by being emptied of its history. Subsequently, the signifier is reloaded with new connotation that communicates with user’s memory and meets its nostalgia; it is a commoditized meaning. Principally, the unity between the signifier (image) and the signified (meaning) is a cultural convention (Gottdiener, 1995), however, instead of being reproduced to maintain its continuity, the inherited meaning of objects (signified) that is produced by one culture (Islamic) has been decomposed and then re-used in the other (capitalist). In that sense, history is dealt with in a theatrical de-realized manner, where reality is turned into fantasia cultivated in the “hyperreality” or virtuality. It is, as depicted by Baudrillard, a “game of images” where the virtual overshadows the real (Proto, 2006). It is a game of architectural syntax in which meaning is brought about through “system of signs” (Baudrillard, 1994). Accordingly, the authentication of Islamic built environment turned out to be a fabrication process. It is a process of industrialization of contemporary Islamic architecture that operates at the manifested level only, within a capitalist milieu.

The continuity that Islamic built environment maintained regardless of the challenges it witnessed throughout its history is fundamentally due to the maintenance of the integration and intermeshed relationship between the three structures and its rights-based mechanisms, where inhabitants as pertinent intraneous parties represented the central axis of that integration. The territorial structure of the Islamic built environment and its physical elements, characterized by cohesion and homogeneity, were immediate reflections of these mechanisms. Today, adopting capitalist mechanisms and design methodologies, these places and physical elements produced by one system were imposed onto another, however without their connotations. They turned in the contemporary built environment to places for the exchange of symbols extracted from past images that belong to the manifested level of traditional built environment. It is a process of richness and meaning of public life and public space, promoted by postmodernity, is simply reduced to industrialization of leisure and entertainment by use of architectural metaphors to generate a manufactured spectacle (Walters & Brown, 2004).
identity fabrication that sustains the capitalist consumerist attitude and consumption of space. Hence, Islamic built environment is perceived today as a commodity; history and tradition are exploited, so as people’s nostalgia. Phrases like “commodification of nostalgia” became well-known in such approaches.

In conclusion, it can be said that contemporary attempts of “Traditionalism” are but “Traditiona-lieism,” a fib that we live and will continue to live, unless they are founded, instead of on capitalist mechanisms, on the Islamic rights-based mechanisms of built environment production and the interconnectivity and harmonious spirit of its structures, then authentication of contemporary Islamic architecture will take effect, and continuity with tradition will be realized.

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INTERROGATING THE PRACTICE OF IMAGE MAKING IN A BUDDING CONTEXT

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Abstract
Image making is a continuous worldwide practice of architects and designers whose concern is to create meaningful environments. Such a practice results in expressions that either reflect the regional context or mirror the wider global culture. This paper aims at interrogating image making practices in the city of Doha, which has experienced rapid urban transformations, associated with building large scale work and learning environments, mixed use developments, and cultural and sport facilities. Contextualizing current debate on Doha’s architecture and urbanism, a critical analysis of geo-cultural politics and on the notion of the ‘scapes of flows’ is undertaken. Based on contextual, critical, and perceptual approaches image-making practices in the city were discerned. Different types of efforts were categorized and critically analyzed underlying the contextual and critical approaches. The analysis reveals that efforts range from utilizing symbolism in contemporary imaging, to manifesting tradition-modernity in search for image identity, to addressing the global condition towards image making. The perceptual approach established empirical evidence by investigating users’ reactions to three notable office buildings that their design attempts to evoke a unique image. This was supported by statements made by CEOs of architectural firms and development companies that reflected a promise towards image making in the architecture of Doha. A concluding critique is introduced to elucidate that while there are incessant attempts at image making, the practice of ‘cutting and pasting’ dominates in the absence of critical consciousness. Such a critique calls for avoiding ‘case by case decision making’ the urban governance in the city still adopts while engaging effective place making strategies.

Keywords: Image making; Symbolism; Globalization; Scapes of flows; Architectural identity; Doha

INTRODUCTION
Within the professional and academic communities the interest in creating meaningful places\(^1\) always result in a wide spectrum of approaches to place and image making. Architects and urban designers with interest in creating those places typically exploit different elements to emphasize a locality or reflect an international trend. These elements are represented through environmental imagery and formal aesthetics, and by depicting history, craft and cultural traditions, or current global trends. The sustained discourse on image making and symbolism in architecture is generally derived from the need to search for an identity. Regions, countries, and cities that have cultural richness and multi-layers of history seem to be obsessed with that search. Architecture of capital and major cities in the Gulf region are no exception where architects find themselves dealing with the irony of needing to project a certain image of whom

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\(^1\) ‘Meaningful Places’ as a term is used in both urban and environmental psychology literature. It is commonly introduced to refer to the way in which the physical aspects of the environment support spatial practices while at the same time associating images of those environments to the people involved (Altman and Low, 1992; Carmona et al, 2003; Hull, 1994).
they are designing for while advocating the necessity of addressing the contemporary global culture.

While scholars in architecture may disparage the concern and curiosity to place emphasis on discussing building expressions and environmental imageries, the premise adopted by this paper is that since architecture is created for the public then examining its public face is essential to the interpretation of the juxtaposition of those expressions and images and the meanings they communicate and signify. In this respect, focusing on expressions and representations as reflected in the built environment does not mean reducing architecture to an appearance but recognizes that its public face is assimilated, comprehended and experienced by the public on a daily and routine basis.

Concomitantly, the objective of this paper is to endeavor to provide an insight into image making practices with a particular focus on the city of Doha, which has undergone significant transformation over the past two decades. In order to achieve this, a multi-layered critical discussion is employed to involve six components. The first is an attempt at contextualizing Doha within the regional cultural politics, with aim of demonstrating the impact of potential and actual regional forces on the image making interests and practices. The second is a mapping of the global condition on the profile of the city as reflected in the production of images and places. These two components offer a contextual background that places the subsequent investigation into focus.

The third component is identifying and conceptualizing theoretical underpinnings for understanding image making in terms of contextual, critical, and perceptual approaches; the fourth is reviewing design practices to identify the types of efforts that took place and that are currently taking place towards image making in the city; the fifth is mapping the contextual and critical approaches on actual examples from the city while employing key concepts to place such a mapping into focus, and finally utilizing the perceptual approach in a preliminary empirical study that examines users' reactions to image qualities of the environments they use. The relevance of the analysis presented lies in the fact that, while placing emphasis on the city of Doha, it contributes to the overall discourse in the Gulf region. Palpably, a number of capital and major cities, such Abu Dhabi, Dubai, and Manama, are undergoing transformations and witnessing image-making practices similar to those of Doha.

**CONTEXTUAL GEO-CULTURAL POLITICS OF AN EVOLOVING CAPITAL**

Historically, Doha—the capital of Qatar, was once a small fishing village whose main source of income was from pearl diving and the trade in natural saltwater pearls. Today, the capital is home to more than 90 per cent of the country’s 2.0 million people; over 80 per cent of its current population consists of a majority group of migrant laborers and blue-collar workers, and minority groups of white-collar workers and professional expatriates from a wide variety of countries. Up to the mid-1960s, most of the buildings were clustered individual traditional houses that presented functional and efficient local responses to the surrounding physical and socio-cultural conditions. During the 1970s, with increasing oil revenues, Doha was rapidly transformed into a modernized city. Later, however, throughout the 1980s and early 1990s, the development process was much slower compared to the preceding period; this was due to the socio-economic impact of the first Gulf war in Kuwait and the heavy reliance of the country on the resources and economies of neighboring countries (Salama and Wiedmann, 2013). More recently, over the past two decades,
the city has acquired a new significant geo-strategic importance (Taylor, 2003). Through the shift of global economic forces, Doha is now being developed as a central service hub between the old economies of Western Europe and the rising economies of Asia (Thierstein and Schein, 2008).

In the context of international competition between cities diverse new challenges are emerging as cities try to find ways to sustain their populace, expand their economy and extend their influence. With these aims in mind, architecture and the overall urban environment are tools being utilized by governments and decision-makers to help cities move forward in the intense global competition to establish themselves as key geographical and economic locations and destinations. Like its neighboring high-growth capitals, Doha has clearly defined ambitions and aspirations in this competitive global economy and in its attempt to distinguish itself on the world map; its new architecture is a dynamic tool to continuously manifest such aspirations (Salama and Wiedmann, 2013).

While Qatar is a small Arab and Muslim country, as part of the GCC-Gulf Cooperative Council it also has strong cultural and religious ties with a number of Levantine and Mediterranean countries. The threads of Mediterranean cultural and economic unity have been woven and intertwined through centuries of trade and cultural exchange and as such is actually a type of globalization, albeit on a much a smaller scale. These centuries-old cultural and economic connections have resulted in an amalgam of influences that can be clearly seen within models of cultural politics. Further, in the latter part of the last century, there was also the important influence of ‘Pan-Arabism,’ a secular Arab nationalist ideology designed to constitute one huge Arab-Islamic nation comprised of different societies, from the Atlantic Ocean to the Arabian Sea, linked together by common linguistic, cultural, religious, ties and a shared historical heritage. More recently, there has also been the less direct influence of ‘Islamism,’ a revivalist ideology that has displaced ‘Pan-Arabism.’ Across the Arabian Gulf, the influence of ‘Islamism’ may also be coming from the rigid ideologies of contemporary Iran or the conservatism flowing from Saudi Arabia, the heartland of the Arabian Peninsula. Although the Mediterranean and a consciousness of it existed long before the 20th century, in the world of cultural politics, however, it would appear that traditional ‘Mediterraneanism’ has taken a back seat in recent debates while other competing forces, such as the Arab League, the European Union and the so-called ‘Middle Easternism’ have emerged as being much more influential.

In the context of contemporary debate on Mediterranean influences, two contrasting attitudes can be identified: the first perceives ‘Mediterraneanism’ as a bridge in terms of history and culture, while the second sees it as a dividing line or barrier or even both. The first attitude refutes Huntington’s thesis of the ‘Clash of Civilizations’ (Huntington, 1998), while the second reflects the typical North-South conflict, as expressed in a growing fortress mentality that has only one interest, merely political, which is the closing of the frontiers against the ‘invasive’ culture of the south (Mazzoleni, 2005). In this respect, Middle-East analysts and scholars voice the opinion

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3 The ‘World City Network’ ranks Doha as a Qatari city with the highest global connectivity (Taylor, 2013). Doha’s man-made deep-water port serves as a regional container and trans-shipment point, which handles cargo across the Gulf. Doha has an inner-city international airport with one runway, which is currently running out of capacity given the recent rapid growth of the city. A new airport further outside the city with two runways, parts of which were finalized in 2012 and a new international seaport, planned for completion by 2015, are currently in their completion phases.

4 Pan-Arabism, a secular Arab nationalist ideology, was founded in the late 1920s by the Syrian modernizer, Michel Aflaq. Pan-Arabism was later championed aggressively by the former Egyptian president, Gamal Abdul Nasser who called for the rejuvenation and political union within the Arabo-Islamic world. The core ideology of Pan-Arab nationalism was the premise that the societies of the Arab World, from the Atlantic to the Gulf, constitute one nation bound together by common socio-cultural and economic interests. In an attempt to encourage and initiate a development program of modernization and secularization, Nasser exploited and capitalized on the anti-imperialist public feeling of the 1950s to become the leader and promulgator of an inclusive pan-Arab ideology. This scheme, however, met staunch opposition from Muslim traditionalists. Hence, by the late 1960s, ‘Pan-Arabism’ declined and eventually disappeared as an ideology after what is called ‘Arab defeat’ in 1967 (Salama and Wiedmann, 2013).
that an attempt to rebuild and reinforce the Euro-Arab partnership is critically needed. ‘Middle Easternism,’ on the other hand, was introduced to the world community in the 1950s, with the intention that the region become more culturally inclusive while making at the same time, but to a lesser degree, a concerted effort to respond to and accommodate the influences of other non-Arab countries.

Both ‘Mediterraneanism’ and ‘Middle Easternism’ have been described as ‘partnership’ and ‘conflicting’ models; even so however, they have several features in common. Both models involve polar partners and, in the context of current globalization, it is essential that none of the partners ignore the others; this discourse is primarily characterized by a so-called downfall or breaking-down of barriers between regions and societies. Nonetheless, some voices from poorer Arab nations are now arguing that the globalization paradigm is paused as local problems exemplified by economic hardship, poverty, and political instability are a much stronger influence than the idea of a global world and as such its potential has not been realized. In contrast, other voices from oil and gas-based economies recognize, interact and positively welcome the impact of globalization.

Cultural politics in recent years have had a tremendous impact on development, architecture, and urbanism as the result of mutual partnerships, transnational practices and the inflow and outflow of capital and people. Although ‘Mediterraneanism,’ ‘Middle Easternism,’ ‘Pan-Arabism,’ ‘Islamism,’ and ‘nationalist particularism’ are constructs that serve widely differing political ends, they are of important heuristic value: they bring into focus questions about identity and the sharing of deeper meanings at the cultural and human existence levels (Salama, 2005).

The unique cultural and advantageous geopolitical position of Qatar and its capital Doha, has created a rich professional environment for architectural experimentation where many interventions have emerged, thus originating representations in search for meaning (Sadria, 2012; Salama, 2011).

DOHA AND THE GLOBAL CONDITION

Urban theorists, historians, and geographers have been conjecturing globalization as a phenomenon and the consequential global flows since the early 1990s. The conception of the ‘space of flows’ was introduced by Manuel Castells. He argues that contemporary societies are structured around flows of capital, information, technology, images, sounds, and symbols (Castells, 1996). The revolution in communication technologies and transportation, which was prompted by the commercialization of the Internet, has contributed to the acceleration of experiencing time and the deceleration of the importance of distance. This is a characteristic of the global era and is referred to as ‘time-space compression’ (Harvey, 1990). It has expedited the integration of social, cultural, economic, and political processes and systems across the world, which has resulted in what is called ‘global flows.’ These flows represent movements of people, capital, information, and knowledge; have emerged in the last two decades (Salama, H. 2013). Nonetheless currently they are occurring at unprecedented rates and are contributing to an increased connectivity between places, cultural integration and economic interdependence while triggering new images and the restructuring of urban forms and cities.

While the notion of flows can be validated, Castells’ assumption that the global city is not necessarily a place but a process has not proven true. This is clearly evident in the rise of globalizing cities such as Abu-Dhabi, Doha, and Dubai that are witnessing continuous urban development and rapid growth processes as a result of these flows.

In essence, dramatic changes in the ways people communicate and interact have drastically impacted trends of urban development. While these changes posture severe confrontations with local cultures and identities, they offer opportunities to developing cities through access to global capital and knowledge. The emergence of new urban landscapes was instigated by the powerful exposure to ‘global flows.’ Arjun Appadurai names global cities ‘scapes of flows,’ and identifies five types of flows: Ethnoscapes, Mediascapes, Financscapes, Technoscapes, and Ideascapes (Appadurai, 1900, 1996).

Mapping these ‘scapes of flows’ on the current profile of Doha key features of globalization and ‘global flows’ become evident (Figure 1). The first ‘scape of flows’ is Ethnoscapes, which are created by the need for workforce and the interaction of various cultures where may expatriate professionals live, work, and visit those cities. Travelers and tourists, migrants and immigrants, refugees and exiles, are moving from one place to another, contribute to the shaping of urban landscapes. This is manifested both in the population profile of Doha and in the rising numbers of travellers and temporary visitors. Mediascapes, is the second ‘scape of flows,’ are generated by the expanding role of media and can be seen as a concomitant result of the revolution of information technology. Media cities, Internet, and TV news channels such as al-Jazeera are major sources of information and knowledge and a clear manifestation of the role of media (Figure 2).

Figure 1: Doha skyline and the new business district, a manifestation of the global condition (Source: Author).

Figure 2: An alternative concept design for a new Al Jazeera News Headquarters, by Digital Artist Mohannad Khamra, a reflection of the mediascapes (Source: www.behance.net).
The third ‘scape of flows’ is Financscapes, which are landscapes, created by the flow of capital and the establishment of transnational financial corporations, stock exchanges, and currency markets (Figure 3). Technoscapes is another type of ‘scape of flows,’ which reflects the impact of telecommunication technologies on contemporary urban life. Emerging high-tech industries and the establishment of FTZs—Free Trade Zones and science and technology parks in Doha are an evidence of the impact of technoscapes (Figure 4). The fifth ‘scape of flows’ is Ideascapes; landscapes that are resulting from the spread of cultural flows, ideologies and the counter ideologies. The Education City in Doha including its the international branch campuses and the surge in the construction of museums is a clear example of the impact of ideascapes (Figure 5).

By and large, these ‘scapes’ are important players in the shaping of social and professional practices and the resulting spatial environments that accommodate them. They accentuate the role ‘global flows’ play in shaping contemporary development processes and the resulting images. Architecture and urbanism in Doha continues to be viewed as a crucial catalyst for cities to sustain their position in the milieu of a ‘global flows.’
THEORETICAL UNDERPINNINGS ON IMAGE MAKING

While most architectural and urban design practices are oriented to functional, pragmatic, environmental, and economic concerns, a number of theorists and practitioners are in a continuous quest for a deeper design discourse that employs discussion of local expressions and contextually-based imagery toward creating place identities (Larice and Macdonald, 2007). The globalized city condition resulting from the ‘scapes of flows’ has created a sense of placelessness. As a reaction, evoking a sense of place through image making has become a primary concern in contemporary architectural and urban design practices. With this concern, the aspirations are to show history, to introduce new work and living environments, or to articulate how comfort, entertainment, and emerging interventions that accommodate new lifestyles are enjoyed by the public, or a combination of these. These aspirations are supported and sponsored by government agencies and key economic players in shaping the built environment such as real estate developers and city marketers. The pursuit for realizing these aspirations has—in many cases—culminated into a type of symbolism that is painful to comprehend (Salama, 2005). Larice and Macdonald (2007) argue, and rightly so, that “the results have been mixed, resulting both in places that authentically incorporate a sense of place, as well as places that utilize inauthentic and shallow forms of ‘theming’ to evoke past histories and otherness” (Larice and Macdonald, 2007:151).

The notion of image making and its contribution to the city image has been a subject of discussion by theorists and academics since Lynch’s Image of the City (1960). Contemporary literature, however, has expanded beyond the work of Lynch to include other parameters for understanding image making. Conceptually, three approaches can be identified to understand the scope of relevant interests and studies in the field of environmental imagery. These are contextual, critical, and perceptual. In this respect, image making is dealt with as integral aspect of place making and as a result of the various forces that contribute to the shaping of places.

The contextual approach fosters an understanding of place by focusing on the regional, historical, and natural aspects of the city or the region within which it exists. The principal theories and practices of this approach have emerged as a reaction to the dissatisfaction with the universal nature of modernism. Critical regionalism, coined by Frampton and elaborated upon by Tzonis and Lefaivre, is the primary theory of this approach (Frampton, 1985; Tzonis and Lefaivre, 2003). It adopts the principle that the reading of a region’s history to extract its essence and utilize it to suit the spirit of the time should be a primary design focus. The theory recognizes the interactional value of climate, culture, religion, and craft in making an image. The manifestations of critical regionalism are typically viewed as a way to show cultural, economic, and political independence. In essence, the approach has resulted in a growing interest in discussing the role of identity creation through visual qualities of buildings and the landscape. Directly and indirectly, architectural discourse in the Middle East and the Gulf region has profoundly related contemporary practices to the discourse on regionalism (Ozkan, 1989; Eben Saleh, 1998; Salama, 2005; Asfour, 2007; Mahgoub, 2007).

The critical approach involves descriptions that analytically discuss the practice of contemporary image making and the growing culture of fictionalizing and capitalist profit-seeking practice. The writings of Harvey (1989) and Huxtable (1981) and other critics have emphasized the value of authentic representation for contemporary societies. Yet, one underlying notion of

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7 Richard Sennett (1970, 1992) discussed the notion of dissolution of space and in particular the public space of the contemporary city.

8 The belief that a building represents something by referring to something, which is not present, oversimplifies the fact that buildings should be experienced. This is to say that what the building represents is part of our comprehension and understanding of the building. According to Dailbor Vesely (2004) such an experience and understanding of the building or the environment refers to what is called authentic representation or character.
this approach is the introduction of iconicity. Several theorists in various fields including sociology and architecture introduced the notion of ‘iconic’ either to refer to identity and symbolic representation (Strauss, 1969; 1991), or to refer to the use of ‘icons’ as part of the design process (Broadbent, 1977). Nevertheless, Jencks (2005) introduced ‘iconic’ at the urban scale, as a term to denote buildings that involve the incorporation of important and enduring symbols that stand out of the city. He argues that they must be powerful in the sense that they symbolize a memory or nostalgia of an unusual importance. Practices toward materializing iconicity can be witnessed in contemporary developments worldwide and in the growing interest in developing iconic buildings and urban settings throughout Middle Eastern cities.

The perceptual approach places emphasis on the relationship between the physical qualities of the urban environment and those who perceive and comprehend such qualities. The approach concerns itself with aspects that are likely to influence memory, orientation, and the public image of the environment. Advocates of this approach emphasize the importance of visual imagery in making cities legible, comprehensible, and memorable (Lynch, 1960). Others, emphasize the relationship between the physical qualities of architecture and urban space and memory, sensory experience, and emotional responses (Cullen’s, 1961, Pallasmaa, 2005). These two areas of interest were heavily adopted by the environment-behaviour research (EBR) community (Sanoff, 1974, 1991; Zube 1984; Nasar, 1988; Stamp, 2000). However, they have received little or no attention among both scholars and practitioners in the Gulf region.

EXAMINING IMAGE MAKING IN THE CITY OF DOHA

In order to explore aspects relevant to image making processes within the city of Doha, the contextual, critical, and perceptual approaches were employed to form a combined methodology for investigation (Figure 6). As such, based on reviewing design practices three types of efforts towards image making were identified. These are: a) utilizing symbolism in contemporary imaging, b) manifesting tradition and modernity discourse in search for image identity, and c) addressing the global condition towards image making. The contextual and critical approaches were utilized to develop a critical analysis while employing key concepts that are mapped on actual examples from the city. In this respect, the analysis is directed towards place character and regional history, which act as sources for image and identity creation.

Figure 6: An integrated approach for investigating image-making practices in the city of Doha (Source: Author).

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9 It is noted that the perceptual approach in the context of this paper is introduced as a form of Post Occupancy Evaluation—POE. Nonetheless, it focuses on reactions of building users to environmental images rather than assessing spatial dimensions as they relate to building users.
The perceptual approach is adopted through a preliminary empirical study of three notable office buildings that their design involves an image making effort. Buildings were identified based on their distinctive visual qualities, which attempt at blending traditional imagery\(^{10}\) into a contemporary office environment. Users of the three buildings were surveyed by asking them to react to whether the building does satisfy a number of qualities, namely: advanced outlook, modern technology, traditional local image and detailing, identity (uniqueness and distinction), and Islamic and cultural values. A total of 382 responses, with over hundred responses from users of each building, were received. The results reflect users’ reactions to the environment in which they work and the differences in their perception of the five qualities presented to them.

**CONTEXTUAL AND CRITICAL APPROACHES TO IMAGE MAKING**

Contextual and critical approaches are utilized towards a deeper understanding of evolving image-making practices in the city of Doha. Critical analysis of the identified types of efforts toward image making is outlined in the following three sections.

**Utilizing Symbolism in Contemporary Imaging.**

It is argued that the acts of symbolization and cultural and personal attachment to what is called ‘symbols’ are recognized modes of thinking, feeling, behaving, associating, and understanding (Grabar, 1980). Two origins of symbolism can be introduced in the context of this discussion; social and spontaneous creation of new places or buildings by the public, and planning or intentional actions of those who have the power and authority to introduce change in the urban environment (Salama, 2005). If an organism or a component of a social structure is able to intentionally introduce change in the environment one can argue that it is a wielding power. This purposive action aims at endowing space with shape, structure, elements, and name with an attempt to highlight some values, aesthetics, or facts to stand in the minds of the public. It is intended to create a symbolic space\(^{11}\) or building with preconceived meaning that can or cannot be comprehended and assimilated by the public as a point of reference, and that might or might not become a shared symbolic element. This corroborates the fact that most of the important urban and building actions and artistic interventions in the city of Doha are intended to evoke a memory, an event, a person, or to put a political, artistic, or social moment on record (Figures 7-a & b).

In many development efforts in the Arabian peninsula and the city of Doha is no exception, developers and decision-makers of projects are actively promoting, together with professionals, an increased use of traditional symbols in order to enhance building images and the urban context within which they exist. The ultimate goal is to establish an architectural and spatial language that speaks to the public and the context.

By and large, the search for historical and discernible symbols can foster a sense of identity while promoting a desired type of intimacy between a community and its surrounding physical environment. It is argued that the use of symbols derived from architectural heritage invigorates the preservation of traditions and the tangible elements of cultural heritage. In fact, the desire to instigate a sense of belonging by replicating, through built form, the visual attributes, signs, and symbols of historical or traditional architecture keeps encouraging professionals to increase the use of historic symbols in their contemporary practices toward creating iconic

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\(^{10}\) The term traditional imagery is introduced to refer to the utilization of images derived from historical or vernacular precedents in contemporary buildings.

\(^{11}\) In his writings on spatial quality Amos Rapoport discusses the notion of symbolic space and that a space can be symbolic. Arguing that in order to understand spatial symbolism we must recognize the underlying cultural imperatives of the people concerned (Rapoport, 1970).
buildings or urban settings that establish links with the past. Examples of efforts toward materializing these desires are evident in a considerable number of buildings and projects within the city of Doha. (Figure 8-a & b).

![Image](image1.png)  ![Image](image2.png)

**Figure 7:** Utilizing symbolism in Doha’s urban spaces (Source: Author).

![Image](image3.png)  ![Image](image4.png)

**Figure 8:** The use of distinct regional elements to cultivate a sense of identity (Source: Author).

**Manifesting Tradition-Modernity Dialogue in Search for Image Identity.**

Addressing the sensitive relationship between tradition and modernity is another approach that manifests continuous attempts to construct architectural or urban identity towards the making of an image or iconic building. Tradition in this respect can be seen as an internal action or as a reaction to external forces. In essence, the result of the interaction between internal influences and external forces creates an identity.

The narrative of expressing cultural identity through architecture and urban form keeps presenting itself on the map of architectural practices and urban discourse. While some theorists see identity as a human need that has transformed itself into a necessity (Correa, 1983 and Saliya 1986), others regard it as a process of constructing meaning on the basis of giving priority to a set of cultural attributes over other sources of meaning (Castells, 2004). Along the same line of thinking, Hall argues, "cultural identity is a matter of ‘becoming’ as well as of ‘being’ and that it
belongs to the future as much as to the past.” (Hall 1990:225). Two polar qualities appear in Hall’s position reflecting a more in depth understanding of identity. One relates to similarity and continuity, while the other recounts difference and rupture.

Consequently, identity appears to have three underlying qualities: a) the permanence over time of a subject unaffected by environmental changes below a certain threshold level, b) the notion of unity, which establishes the limits of a subject and enables us to distinguish it from the others, and c) a relationship between two elements, which enables us to recognize them as identical. This connotes that permanence, recognition, and distinction determine the presence of identity in a physical object, a work of architecture, or a portion of a built environment (Salama 2005). Identity can be understood as the collective aspect of the set of characteristics by which an object or a portion of the built environment is definitively recognizable.\(^{12}\)

Doha’s earlier attempts at image making can be seen in the buildings of Qatar University campus, where a visual dialogue was established between traditional design elements and the utilization of the contemporary technology (Figure 9). As the discourse continues on the dialectic relationships between tradition and modernity, the contemporary and the historic, and the global and the local, a number of important projects exemplify the presence of multiple resistant identities. Some architects have continuously attempted to address such a balance in their work (Figure 10-a & b), by developing syntheses of contemporary images based on revived traditions and by simulating traditional environments, in some cases using modern technologies while in other cases combined with traditional techniques. These endeavors aim at returning architecture to its former position of being an expression of society, and arising from within it (Salama, 2008; Hendrix, 2010).

Figure 9: Qatar university campus by the late Kamal Al-Kafrawy
(Source: Author-Photography by Raghda Salama).

\(^{12}\) While this comprehensive definition of identity reveals important factors—namely permanence, distinction, and recognition, they were not scrutinized as part of the study since their examination goes beyond the scope of the discussion.
Addressing the Global Condition Toward Image Making

Through the shift of global economic forces, some cities have acquired geo-strategic importance and have developed to central hubs between old economies of Western Europe and the rising economies of Asia. In the context of international competition between cities new challenges are emerging. Architecture and urbanism continue to be regarded as a crucial catalyst for cities to sustain their position in the milieu of a global knowledge intensive economy. Reactions to this global condition can be seen in infinite and hybrid urban forms and typologies.

The global condition and its impact on the city and the production of space have been heavily discussed in the literature (Lefebvre 1991, Stillerman 2006). City branding or urban branding is one of the reactions to such a condition. As a rising area of discourse, it has emerged as a response to growing global and fiscal competition (Ole 2005, Synnott, 2010). It is witnessed in the realization of local and regional aspirations to entice global investment or gain international attention. In this context, two phenomena toward image making can be identified.

The first phenomenon can be seen in the organization of large scale stage and hall mark events such as the case of ASIA-D 2006, where the city of Doha has branded itself as a sport based city through organizing the Asian Games in 2006, which is considered the second largest sporting event in the world, after the Olympic Games itself (Hasanin, 2007). Through the use of environmental graphics, distribution of billboards throughout the city, installing sculptures in public spaces, using pictograms in buildings and street wraps, key areas within the city acquired a new image (Figures 11-a & b). While such an image can be considered a temporary one, pursuing an event of this scale typically results in improving infrastructure, development of public spaces, and introducing new amenities. The successful result of such a branding strategy encouraged the government to host a series of regional and international events, and eventually led the city to prepare itself to host the World Cup in 2022, which will eventually have dramatic effects on the image making processes and practices.

The second phenomenon can be seen in the creation and promotion of urban districts or enclave developments for key segments of society. These types of projects stem from alliances between the government agencies and business interests. Through promoting new work and lifestyles, new urban images are generated in key areas within the city. Examples manifesting this phenomenon are evident in two major development projects. The first project is the water front West Bay development, considered to be the new Doha’s business district, introduced and promoted a new image for the city through a high-density development consisting of high cost-
high rise glass towers (Figure 12). The second project is the Pearl development, a man-made island conceived in an exclusive development of four million square meters and 32 Km coastline. Different eclectic and hybrid styles of regional and European architecture are used for introducing a distinctive image in the development (Figure 13-a &-b). While in the first type individual buildings compete in shaping the urban image, priority for image making in the second project is given to the overall urban setting and activities rather than to buildings individually.

Figure 11-a,-b: Branding Doha-ASIAD: 2006 Asian Games, the use of environmental graphics, pictograms, and building wraps (Source: Author-Photography by Abeer Hasanin, 2007).

Figure 12: Individual buildings compete to create an iconic urban image to meet the globalized city interest: Doha’s water front-West bay Development (Source: Author).
The previous analysis indicates that the three identified types of efforts towards image making contribute to the understanding of the overall environmental imagery of the city. It is noted, however, that the first two types are based on establishing visual references borrowed from the past. They delineate attempts to construct architectural and urban identity through the selection of historic features stemming from the Arabic heritage. The third type, however, results in ‘multiple modernities,’ which refers to socio-economic transformations characterized by a desire to position Doha as an aspiring global city. The presence of different trends towards image making signifies that there are forces of modernity that can be envisaged, received, reacted to, and developed in different ways and in different settings.

THE PERCEPTUAL APPROACH: ANALYSIS AND DISCUSSION OF EMPIRICAL EVIDENCE

Employing the perceptual approach in a preliminary empirical study of three notable office buildings identified based on their distinctive visual qualities where the design of their masses and facades attempt to evoke a unique image. Users of the three buildings were asked to react to five visual qualities that may be seen in the building images. These were: advanced outlook, modern technology, traditional local image and detailing, identity (uniqueness and distinction), and Islamic culture and values. Notably, over 85% of the users were either young Qataris or Arab expatriates, while others were Asians or South East Asians.

The first building is the Qatar Islamic Cultural Centre or Al-Fanar, located in the heart of the city of Doha within walking distance from the waterfront and facing Souq Waqif, one of the oldest market places in the city. The spiraling stairway leading up to the 80 m. high minaret is a distinguishing feature of the complex and lends it a unique singularity. Such an iconic image makes a visual reference to the minaret of the Grand Mosque of Samarra, Iraq; the ‘Malwya,’ which makes five circuits in its rise to fifty meters. A key operating principle in the design concept is an attempt at the reinterpretation of traditional regional elements such as the ‘mashrabiya’ or wooden lattice windows, stained glass windows and decorative perforated screens that tend also to create an impressive composition. Metaphorically, Al-Fanar, the official name of the building, is given to signify lighthouses used in guiding navigators so that it can be comprehended as a reference point in the city (Figure 14-a). A total of 108 users have responded to the survey. The qualities of advanced outlook and traditional local image and detailing each received 19% of the

13 The terms representing the five visual qualities were presented to the users with definitions in both Arabic and English languages. Advanced outlook was defined as a quality that represents the progress and aspiration of the country; modern technology was defined as a quality that manifests the use of advanced technology in construction, steel, glass in buildings; and traditional local image and detailing was defined as a quality that reflects vernacular elements found either locally or regionally. On the other hand, identity was presented to users as a quality that reflects the uniqueness of the building and whether the feel proud of being part of it; and Islamic culture and values was defined as a quality that provides impressions about proper use of entrances and aspects relevant to segregation of men and women.
Barzan Tower is the second building that was included in this study. While the building was originally designed as a government office for the Ministry of Housing, it is now used as a private office building. The design represents an attempt at combining the regular steel-cased high-rise with the traditional elements. The first nine floors are covered with an exterior traditional pattern eclectically extracted from different historical regional images. Records describing the building state that the architect's challenge is to achieve a balance between the requirements of a modern office building whilst preserving traditional Qatari architectural methods (Archnet, 2003) (Figure 14-b). A total of 158 users have responded to the survey. The qualities of advanced outlook and modern technology received 7.7% of the reactions, while traditional local image and detailing received 42.3%, identity received 23%, and Islamic culture and values received 13.7%.

The third building is that of the headquarters of the Supreme Education Council-SEC. The design idea toward image making is similar to that of Barzan Tower; an attempt to establish a visual milieu that strives to achieve a balance between contemporary office environment and traditional imaging (Figure 14-c). A total of 116 users have responded to the survey. The quality of advanced outlook has not received any of the reactions, while modern technology received 13.8%, traditional local image and detailing received 10.3%, identity received 3.4%, and Islamic culture and values received 62.5%.

Across the reactions of the users of the three buildings, as shown in Table (1), it is evident that the qualities of advanced outlook and modern technology received the lowest responses. This can be attributed to the fact the traditional elements were perceived as more impressive visual qualities despite the presence of the glass curtain walls as in the case of Barzan Tower and the Supreme Education Council-SEC headquarters. Strikingly, the quality of advanced outlook has not received any of the users reactions in the case of SEC headquarters. This can be attributed to the heavy traditional imaging in the building entrance, façade, and the overall composition. However, a considerable number of reactions went to the quality of Islamic culture and values (62.1%), with a few reactions to the qualities of traditional local image and detailing (10.3%), and identity (3.4%).

![Figure 14: Office buildings identified for conducting an empirical investigation (Source: Author). a Al-Fanar: Qatar Islamic Cultural Center by GHD Global. b. Barzan Tower by the Qatari architect, Ibrahim M. Jaidah. c. Supreme Education Council-SEC, by Ashghal: Public Works Authority.](image-url)

Apparently, there is homogeneity across the reactions to three qualities of Al-Fanar building. The qualities of identity and Islamic culture and values received 23% and 32% respectively. This can be attributed to the dominant presence of the spiral minaret, which became a landmark for the southern area of the waterfront, while having an impact on the overall city image. Additionally, the fact that it is a ‘minaret’ makes the building an allegorical representation of the Islamic faith. On
the other hand, in the case of Barzan Tower a considerable number of the reactions went to the quality of traditional local image and detailing (42.3%). This can be attributed to the fact that the eclectic style adopted in the design of the lower part of the building offered users an opportunity to grasp the detailing of local elements and fine details. Additionally, one could interpret that the qualities of identity and Islamic culture and values received a fewer reactions 23% and 13.7% respectively due to the presence of the glass curtain walls in the upper part of the building mass, an aspect that does not distinguish the building from other surrounding buildings, when seen from a distance.

Table 1. Users’ reactions to the image qualities of the three buildings examined.

<table>
<thead>
<tr>
<th>Image Qualities</th>
<th>Al-Fanar Building (108 responses)</th>
<th>Barzan Tower (158 responses)</th>
<th>Supreme Education Council HQ (116 responses)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced Outlook</td>
<td>19%</td>
<td>7.7%</td>
<td>00</td>
</tr>
<tr>
<td>Modern Technology</td>
<td>8%</td>
<td>7.7%</td>
<td>13.8</td>
</tr>
<tr>
<td>Traditional Local Image and Detailing</td>
<td>19%</td>
<td>42.3%</td>
<td>10.3</td>
</tr>
<tr>
<td>Identity (uniqueness and distinction)</td>
<td>23%</td>
<td>23%</td>
<td>3.4%</td>
</tr>
<tr>
<td>Islamic Culture and Values</td>
<td>32%</td>
<td>13.7%</td>
<td>62.5%</td>
</tr>
</tbody>
</table>

The previous results indicate that the three examined buildings encompass certain physical features that evoked users’ reactions. Examining the five qualities in the three buildings show that they are reacted to differently by different users, mainly due to the nature of these qualities and the physical and cultural contexts within which they exist. Supporting this preceding discussion, in the context of exploring image making in the city of Doha, reference is made to an interview with a number of executives and CEOs of architectural design firms and development companies (Nair, 2010; Salama, 2010). Selected statements extracted from the interviews are outlined in Table (2).

The statements reflect a sustained commitment towards image making. They convey that it is seen as an important and explicit concern for those interviewed. They also manifest a persistent interest in image making through various forms. Yet, blending the traditional with the modern appears to be a dominant quality as expressed by the interviewees and can be found in the three buildings examined. It is evident that the status of the city of Doha is perceived in terms of both having steel and glass towers and at the same time relating to the traditional context and the images of local and regional culture, an aspect of image making that can be found in the three buildings. By and large, the statements correspond to the identified types of efforts discussed earlier and match the qualities of the buildings examined.

CONCLUSION

Contextualizing Doha within the regional cultural politics and the mapping of the global condition on the profile of the city as reflected in the production of images and places offered a critical understanding demonstrating the impact of potential and actual regional forces on the image making interests and practices. The paper established a framework for exploring image making practices in the city of Doha by identifying three approaches: the contextual, the critical, and the perceptual. On the one hand, within the contextual and critical approaches, interests and types of efforts toward image making were discussed underlying three main directions. These were: utilizing symbolism in contemporary imaging, manifesting tradition-modernity in search for image identity, and addressing the global condition towards image making. On the other hand, the perceptual approach established empirical evidence by examining users’ reactions to the visual
qualities of three notable office buildings that their design attempts to evoke a unique image. This was supported by statements made by CEOs of architectural firms and development companies, which reflected a vow towards image making in the architecture of Doha. While the analysis provides a comprehensive review of image making efforts and reactions to them, it narrates a number of crucial issues that not only characterize image making practices but also the overall intellectual environment in the city of Doha. Despite the good intentions of these practices in translating client aspirations, two points of critique can be debated. The first is the practice of borrowing 'cutting and pasting,' and the second is the absence of critical consciousness.

Table 2. Interview statements of CEOs and development directors on image making in the city of Doha.

<table>
<thead>
<tr>
<th>Interviewees</th>
<th>Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEO of a Development Company</td>
<td>“We want our city to be recognized through our architecture. When someone visits our city, or even sees a picture of one of our buildings in a postcard, we want them to say, ‘Oh yes. That is Qatar’” I.M.</td>
</tr>
<tr>
<td>CEO of a Development Company</td>
<td>“The pattern of development and growth in recent decades has tended towards isolated (single) land uses with a modernistic urban sprawl and heavy reliance on car transport. Most aesthetic values in architecture were drawn from Western influences and are marked by the anonymity of modern architecture, with very few drawing inspiration from Qatari heritage.” I.M.</td>
</tr>
<tr>
<td>CEO of Research and Consulting Private Institute</td>
<td>“Impacts can be mitigated by encouraging designs to align with cultural identity and traditions, designing for a seamless integration into the existing cultural fabric and planning for the use of local materials and workforce.” Y.H.</td>
</tr>
<tr>
<td>CEO of Research and Consulting Private Institute</td>
<td>“While it is important for the status of Qatar to create steel and glass towers to symbolize its vibrant, modern Central Business District, elsewhere there is the need to merge local characteristics of the natural environment, culture, and lifestyle to create an architectural style that is uniquely our own.” Y.H.</td>
</tr>
<tr>
<td>Director of Architecture Design at Large Scale Consulting Firm</td>
<td>“Architectural ‘style’ will always be debated, however one cannot escape the collective responsibility to ensure that at the very least, buildings demonstrate a commitment to quality,” M.H.</td>
</tr>
<tr>
<td>Director of Architectural Design at a Large Scale Consulting Firm</td>
<td>“Architecture demonstrates an investment in quality and a respect for the environment and its citizens. It states that you are serious when it comes to culture and civic pride. My own view is that if Qatar can strike a balance between the occasional landmark or iconic building, with considered urban development that embodies quality in design and sensitivity to the needs of its citizens on a day-to-day level, it will achieve something where many cities have failed.” M.H.</td>
</tr>
<tr>
<td>Principal of a Medium Scale Design Firm</td>
<td>“We’re exploring how architecture can work to bridge the gap between twenty-first century design and lessons from the past. We do not want to mimic the past, but to reinterpret it” S.G.</td>
</tr>
</tbody>
</table>
The practice of literal borrowing or ‘cutting and pasting’ involves cutting ideas from their original cultural context, whether regional or European, and pasting them in the context of the city of Doha. Such a practice is based on the belief that the new context has similar cultural circumstances and would capitate similar results upon transfer of ideas. In this respect, one would second what Charles Correa called for “in order to build architecture, we must not copy a past, nor must we copy other people’s present.” (Correa, 2004:12). The practice of ‘cutting and pasting’ does not involve enough thinking, but entails an extra effort in imaging, including selecting, cloning, and recycling of images. While the city is growing rapidly, urban governance adopted by local authorities still relies on a ‘case by case decision making’ which is manifested in the treatment of the urban environment in terms of individual buildings or gated and enclave developments leading to series of images reflecting different inclinations either to reflect the real or imagined past or react to the global condition. In essence, the fact that urban design has not reached a mature level in current practices is leading to urban fragmentation and social segregation rather than adopting place-making strategies.

Using elements of or borrowing from other cultures is a global phenomenon. According to Asfour (2007), some critics believe that borrowing leads to a misreading of the original, which means disintegration and deterioration in the quality of the idea. However, other critics argue that the borrowed idea should not be seen as a permanent shadow of the original, but should be regarded as a representation of a historic transfer from one setting to another (Said, 1983). This interpretation is based on the premise that a borrowed idea upon its transfer does interact with its new context and generates new elucidations. The notion of ‘worldliness’ introduced by Said (1983) recognizes that the local world surrounding the borrowed idea is distinct from one setting to another, and which exerts different demands and constraints on the borrowed idea in every new setting. Such a notion can be conceived as liberating the borrowed idea from its origins.

While architecture in the city of Doha is produced in a manner that is in line with client aspirations through imaging, architectural debate is suffering from internal crisis that can be exemplified by the absence of critical consciousness which may contribute to the screening of ideas. In the city of Doha borrowed ideas are not, in many cases, screened or filtered as a result of the dearth of critical consciousness. This is evident in several examples discussed underlying the three approaches. The images of the Doha Diplomatic Club (Figure 8-a), Al-Fanar Qatar Islamic Cultural Centre (Figure 14-a), Barzan Tower (Figure 14-b), Supreme Education Council (Figure 14-c) all represent scholarly copying or cloning of traditional elements. The same is palpable in the image of Qatar University (Figure 4), but involves minor abstraction or editing of the elements used. In a different manner, the act of borrowing is also apparent in the Engineering College of Texas A & M University at the Education City by Ricardo Legoretta (Figure 10-a). The building image transmits a message related to the application of regional Mexican architecture to a wider global context. Notably, elements of Mexican architecture are an integral component of the image, including bright colors, plays of light and shadow, as well as solid volumes.

Critical consciousness represents feeling the urge to learn and criticize, and select and rationalize. Coupled with this consciousness is the appreciation that there is always an opportunity for changing or modifying the idea to sustain itself in the new setting. While there are varying degrees of success in some image making practices in Doha, many others do not involve critical consciousness; only image cloning. In essence, they are not the product of a screening apparatus generated by critical theories. Image making practices in Doha continue to subdue the profession to client aspirations through oversimplified imaging while ignoring the professional discourse that scrutinizes the quality of those images and the meanings they convey. Contemporary architecture of Doha at the beginning of the twenty-first century needs to be seen within a frame of reference that goes beyond image making to include response to environmental, socio-cultural, and socioeconomic realities. This requires a more thorough study and development of its capacity for symbolic representation in its fullest sense, if, indeed, it is to
sustain itself as a form of human expression. With this understanding, many of the examples presented, while undoubtedly succeed in utilizing symbolism or in responding to global flows of the present era, raise many questions relevant to its socio-cultural and environmental impacts on all segments of society rather than only the elite.

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RESPONSIVE ARCHITECTURE AND THE PROBLEM OF OBSOLESCENCE

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Abstract  
Responsive architecture, a design field that has arisen in recent decades at the intersection of architecture and computer science, invokes a material response to digital information and implies the capacity of the building to respond dynamically to changing stimuli. The question I will address in the paper is whether it is possible for the responsive components of architecture to become a poetically expressive part of the building, and if so why this result has so rarely been achieved in contemporary and recent built work. The history of attitudes towards obsolescence in buildings is investigated as one explanation for the rarity of examples like the one considered here that successfully overcomes the rapid obsolescence of responsive components and makes these elements an integral part of the work of architecture. In conclusion I identify strategies for the design of responsive components as poetically expressive elements of architecture.

Keywords: Responsive architecture; obsolescence; High Tech architecture; Archigram

INTRODUCTION

The question I would like to address in this article is: Why haven’t there been more examples like the Institut du Monde Arabe, buildings which propose a poetic purpose for responsive components in architecture (figure 1)? Part of the answer to this question, I believe, lies in the definition of ‘high’ and ‘low’ architecture in terms of rates of obsolescence and change, a distinction presented by Stuart Brand in terms of the capacity of the building to gracefully adapt to change in its surroundings over time. In Brand’s book ‘How Buildings Learn’, ‘low’ architecture is associated with flexible responsiveness to change over time, in part due to the use of construction methods and materials with a relatively rapid rate of obsolescence and decay. The ‘high’ road for architecture puts a premium on permanence in buildings, and tends to avoid components susceptible to obsolescence and material deterioration. Those mechanical and electronic devices most susceptible to obsolescence are, in this schema, unsuitable for employment in ‘permanent’ structures except as ‘peripherals' which claim a place outside the primary concerns of high architecture. This dissociation between technological innovation and culturally significant architecture has been challenged by occasional voices in the last century, notably Archigram in the 1960’s and 70’s, but persists in the strength of concepts and practices that exclude mechanical and electronic responsive devices from prominent inclusion in works of architectural significance.

In this paper I will first investigate obsolescence and the strict separation of high and low architecture as concepts that explain, in part, why the responsive components of architecture have seldom been granted an aesthetic purpose. I will then look at one example that tells a story of the architectural contribution of responsive building components, and suggests alternative ways of thinking about the elements of buildings that change over time in response to the environment. And finally, in conclusion I will extract strategies for future responsive buildings that aspire to the kind of expression found in these examples.
TYPES OF OBsolescence

The term obsolescence was first applied to buildings in early 20th century America to describe the rationale for razing solid, recently-erected structures to make way for new construction (Abramson, 2009, p. 157). In places like New York and Chicago land values exceeded the cost of new construction, necessitating frequent renovation and reconstruction in order to realize a sufficient return on investment. With changes in fashion and rapidly increasing requirements in terms of light, ventilation and other material comforts, frequent reconstruction was often a prerequisite for assuring a rental income commensurate with land values. In many urban areas of contemporary Japan the average building is valued at around 10% the cost of the land on which it's sited, resulting in an extraordinarily short cycles of demolition and reconstruction (Bognar, 1997).

The too close integration of ephemeral and relatively ‘permanent’ elements of the building was discussed as a factor contributing to obsolescence in Brand (1995), which proposed a model for understanding the various components of the building in terms of relative rates of change. Brand's model exists in multiple variations and continues to be widely applied as a way of understanding the role of dynamic elements in architecture. The concept of the building as a layering of elements, each with a different rate of change, was introduced by Frank Duffy (Duffy, 1990) as a way of explaining how the cost of accommodating change in buildings over their lifespan can amount to several times the original cost of construction. This concept was summarized and elaborated by Stuart Brand in his ‘shearing layers’ diagram, which describes the relation between the components of a building as a series of concentric layers, each defined in terms of its expected lifespan. In this schema, ‘stuff’, the furnishings and personal equipment that accumulate in buildings, has the highest level of obsolescence and a rate of change that varies from daily to monthly. ‘Site’ describes the most intransient of building elements, the ground of...
construction, which is assumed by Brand to be essentially permanent; `structure' is the most
durable aspect of the building itself, the part that persists over time. `Services', `space plan' and
`skin' occupy the more transient zones on either side of the structural layer.

Brand's diagram is useful as a concise description of two types of change in buildings: the
rate at which the physical materials of architecture wear out and the frequency with which
changes in fashion dictate the reconstruction of existing infrastructure. The recognition of
inexorable forces leading to obsolescence of entire buildings as well as building components has
inspired a range of architectural responses. Cedric Price famously claimed that embracing
obsolescence would bring a new kind of flexibility and social performance to architecture.

Speaking of the concept of a Fun Palace, Price wrote ``Its stated and designed limited life will in
itself enable the palace to be used in the particular mental behavior pitch reserved for immensely
important impermanent objects of cherished social immediacy.'' (Price, 1968, p. 129). Every
element of the Fun Palace was to have a limited lifespan, declared in advance: ``Nothing is to last
for more than ten years, some things not even ten days''. (Price, 1968, p. 130).

This act of designing for obsolescence was proposed as a way of radically transforming
the experience of architecture and was a strong influence on `High Tech' architecture such as the
Centre Georges Pompidou (1977) of Renzo Piano and Richard Rogers in Paris which follows the
spirit of the Fun Palace with its flexible environment consisting of temporary, re-arrangeable
enclosures, ramps, escalators and walkways suspended from a space frame superstructure. The
visible expression of independence between structure, services and skin was intended to
increase flexibility and adaptation to change over time; in reality it often resulted in the
appearance of flexibility.

**Machine Anxiety**

The concept of buildings as `machines for living in' is one of the potent legacies of modernism,
although the fact that machines require an unprecedented level of maintenance was only
belatedly recognized by advocates of the machine aesthetic in architecture. Automobiles, boats
and airplanes can be distinguished from most buildings by their adoption of technologically
advanced materials selected more for efficiency, weight and performance than for longevity and
cost-effectiveness. As objects designed for motion, they are also characterized by a
preponderance of moving over static parts, a quality that was sometimes translated into an
architectural context through the introduction of mechanical devices that provide a precise,
calibrated kind of flexibility designed to allow the building to adapt to everyday needs or
unanticipated events.

Asked about the excessive maintenance required for his geodesic structures, Buckminster
Fuller replied: ``If you build it like a machine, you must maintain it like a machine, not like a
building."

Brand (1995) is unapologetic in pointing out the failures of Fuller's geodesic domes:
``Domes leaked, always'' (p. 59). Le Corbusier's most ambitious attempts at integrating innovative

During the first summer after opening it became clear that the `mur neutralisant' as built was insufficient to
control interior temperatures in the south-facing rooms. Operable windows were added; even
these were ultimately insufficient and the original planar glass facade was replaced with another
that incorporated a concrete brise-soleil in 1952.

Technological failures can also result from innovative implementations of materials. The
premature failure of the original cladding panels of Norman Foster's Centre for the Visual Arts in
Norwich (1978) is thought to have been due to factors related to material incompatibility between
the phenolic core and the aluminum panel (Stacey, 2001, p. 109). The glazed membranes of Le
Corbusier's Swiss Pavilion and Salvation Army building offer another example of a then new technology, the glazed curtain wall, whose early implementation was frequently problematic: the facades of both buildings required replacement less than 20 years after construction (Ford, 1997).

The history of modernism's technical failures had a chilling influence on the next generation of architects. As Antoine Picon states, "In the years 1920-1930, from Le Corbusier to Perret, the perception of the modern environment is already oscillating between the intoxication provoked by its functional character -- source of an abstinence more authentic than the stylistic affectations of a system of beaux arts on the decline -- and the fear of breakdowns and obsolescence." (Picon, 2000, p. 78). The considerable interest among architects in the 1970's and 1980's with the topic of obsolescence and with designing for change was in part a reaction to the perceived failures of modernism, with its rigid vision for the integration of technology in buildings. Writing of Cedric Price's Fun Palace, Joan Littlewood states "The ephemeral nature of the architecture is a major element in the design, making possible the use of materials and techniques normally excluded from the building industry. Charged static-vapor zones, optical barriers, warm-air curtains and fog-dispersal plants are some of the methods employed, together with vertical and horizontal lightweight blinds" (Price, 1968, p. 132).

Significant in this last example is the assumption that components with a high rate of obsolescence are inappropriate for use in a building with pretensions to `permanence'. This is what Brand's diagram would have us believe, but this sharp line between the permanent and temporary elements of the building is more difficult to define in contemporary buildings that employ technology as a means of making the building more responsive to change in its environment.

High and low architecture

The relation between buildings that aspire to permanence and those that embrace the possibility of significant change over time is associated by Brand (1995) with a distinction between high and low architecture. 'High' architecture, what Brand terms 'magazine architecture', is disparaged as buildings that aspire to permanence and cultural significance while ignoring the needs of their users and the inevitability of change. 'Low' architecture is associated with the vernacular, everyday buildings that are open to transformation over time because no one is invested in their current configuration. Low architecture is epitomized by buildings that encourage reorganization and adaptation through their flexible approach to infrastructure and separation of systems.

This ability of low architecture to change over time is related to its separation of components with different rates of obsolescence. In Venturi (1972), part of what is admired about the Las Vegas strip is its separation of rapidly-changing iconographic elements from the structures behind them: "The most unique, most monumental parts of the strip, the signs and casino facades, are also the most changeable; it is the neutral, systems-motel structures behind that survive a succession of facelifts and a series of themes up front." (Venturi, 1972, p. 34). This architecture celebrates the practicality of the solution as well as its playful reversal of expectations: the most ephemeral part of the building is also the most monumental, the aspect that defines the building iconographically. Venturi, Scott Brown and Izenour observe "The rate of obsolescence of a sign seems to be closer to that of an automobile than that of a building" (Venturi, 1972, p. 34): in this sense Venturi's concept of the decorated shed is consistent with the implication of continual reconstruction and maintenance implicit in patterns of urbanization in rapidly-growing global urban centers. As John Thackera writes "[In Japan] buildings are designed in the expectation not that they will stand the test of time but that they will be torn down sooner rather than later and replaced by something more appropriate to the economic and technological demands of the future" (Thackara, 1991). In this account low architecture is cheap, utilitarian, and sufficiently forgettable that its eventual replacement by new construction is un lamented.
Till (2009) builds on Brand's definition of high and low architecture, presenting high design as the enemy of an architecture that embraces the everyday needs of people, contingency, and the inevitability of change over time. Among the enemies named in Till’s account are Le Corbusier, Norman Foster, Richard Rogers: ‘magazine’ architects who prefer the illusory and rigid image of perfection to the messy reality of constant change and reconfiguration over time. Architects whose decision to ignore the temporality of their buildings resulted in “leaky roofs, rusting pipes, and awkward inflexibility”, they are criticized for short-sighted approach to design that ignores the necessity of adaptation over time in response to external change. Technology, in the form of the latest building gadgets and the use of the most sophisticated materials, is either an attempt to keep up with the Joneses in a building culture focused on the building as commodity or an attempt to superficially apply the appearance of progressiveness: “Their commodity -- the design of buildings as objects -- has to signal its progressive tendencies so as to survive ... Progress is announced through the employment of ever-newer technologies (hence the conspicuous success of the high-tech movement in the external marketplace ...” (Till, 2009, p. 85).

Figure 2: Institut du Monde Arabe, Mechanical diaphragms. Image showing damage to the arm that transmits the force of the motor to the diaphragm actuation mechanism (Source: Author).

Till and Brand present a compelling vision for low architecture as an adaptable architecture that anticipates change over time. Both agree in associating low architecture with low-tech: the avoidance of expensive and maintenance-intensive details which employ new materials and technologies as an integral part of the building. Applied to much responsive architecture of the past three decades, their critique has considerable merit. Buildings like Jean Nouvel’s Institut du Monde Arabe, its south façade equipped with an array of mechanical diaphragms controlled by
light sensors, promised a poetic experience of movement and change in response to the variable environment. Their reality has been something quite different: in the case of Nouvel's building maintenance of the responsive elements proved too difficult or expensive and the responsive, performative aspect of the façade was abandoned a few years after the building opened (figure 2). The building stands now as a reminder of one kind of obsolescence, the rapid deterioration of components whose use as an integral part of a significant work of architecture implied participation in a different order of persistence over time.

Responsive components occupy an awkward position between high and low architecture as defined by Brand and Till. On one hand, as expensive and 'high-tech' components they fall into the category of high architecture as practiced by Nouvel, Foster or Rogers. On the other, their rapid obsolescence and requirement for regular maintenance implies the kind of flexibility in anticipation of change over time that Brand and Till associate with low architecture. There is an alternate vision, one which imagines a hybrid architecture that mixes high-tech with rapid obsolescence in certain instances as a means of making culturally significant buildings that respond to change. This is one aspect of Archigram's proposals, and as one of the few built projects to emerge from this line of thought the Graz Kunsthaus suggests an alternate picture: one in which high and low elements are mixed in the creation of a significant work of architecture premised in part on the integration of 'high-tech', responsive components.

THE FAÇADE AS COMMUNICATIVE DISPLAY
The Kunsthaus in Graz of Peter Cook and Colin Fournier (2003) is a building with a complex relation to the concept of obsolescence and to the use of the façade as a responsive surface. The array of circular fluorescent tubes embedded in the facade are controllable via a software interface developed by new media design firm realities: united, who were also responsible for the design of the display hardware. The building is an interesting exception to the type of the media facade, and offers insights into the poetic potential of responsive building components (figure 3).

The facade was part of the original concept for the building, although in a form that bears little resemblance to the final constructed version. In their competition entry Cook and Fournier described the building skin as a soft, semi-transparent surface animated at certain moments with hints of the activity within: ``Much of it is opaque, but from time to time there are revealing slivers of transparency or hints of the presence of action within. Strange things appear and disappear within the skin: signs, announcements, short sequences of film or images: glimpsed for moments, only to fade away'' (Ilsinger, 2003, cited in Edler, 2005). The skin is also described as a ``laminated fabric incorporating a mesh of tensile threads and compression ribs enabling it to span the width of the roof without intermediate supports ...''. (Ilsinger, 2003). This highly suggestive and poetic concept for the building skin was in the end too expensive and impractical to realize. As Peter Blundell Jones comments of the high-tech construction proposed in the competition entry, ""This Archigram rhetoric recalling the space race proved hopelessly optimistic, once again missing the point that buildings are large, so a cubic meter can only cost a fraction of a cubic meter of car, airplane, racing cycle, or computer.' (Jones, 2004, p. 52). The skin as realized represented a radical simplification of the original proposal, but one that retained a certain fidelity to the architects' vision despite its compromises. I will focus here on the aspects of the skin that relate to its performance as a surface for dynamic display.

The facade of the Kunsthaus does not employ the Brand's clear separation of elements based on rates of obsolescence: the skin is rather conceived as a layered assembly that tightly integrates multiple functions. Although realities: united were brought in as consultants on the media facade at a late stage in the design of the building as a whole, the concept for the animated display is remarkably well-integrated with the building skin. For the individual pixels of the display Jan and Tim Edler selected the low-tech solution of circular fluorescent tubes with individual ballasts which permit the brightness of each pixel to be varied at a rate of 18 frames per second. The low cost per pixel allowed the display surface to be extended across a significant portion of the facade. Such a large display would not have been possible with LED's given budget
limitations, so display resolution was sacrificed in favor of creating a surface at the scale of the building. The fluorescent tubes are sandwiched between transparent heat-formed acrylic panels that follow the building's curved form, and an underlying opaque weather barrier visible in the gaps between the panels. Because the fluorescent bulbs are not clearly visible behind the acrylic panels except when illuminated, and because the edges of the display surface are irregular and follow the contours of the building, there is an ambiguity about where the display surface stops which enhances the sense of integration and the perception that the entire building surface is animated by the BIX (big pixel) display.

In addition to designing the hardware of the BIX facade, realities: united were commissioned to build a software interface that facilitates the creation of content for display on the building. In a series of curated exhibits, designers have been invited to use this tool to create content for the facade, whose round pixels can be fluidly animated with patterns visible from many points within the city. The software allows the designer to view an animated sequence mapped to the building’s 930 fluorescent pixels from multiple vantage points within the city. In a published discussion of the facade, realities: united principal Jan Edler has written that it was important to distinguish this facade from the concept of the media facade as a form of advertising. This he describes in terms of the distinction between a billboard that displays messages that have nothing to do with the building and its function (i.e. advertising) and messages that are in some way closely related to the building and the activities taking place within: “… a majority of such
installations broadcast global advertising messages, thereby denying any form of relation between the specific building and its outer appearance. The surface of the building becomes separated and alienated from its inner programmatic structure ...'' (Edler, 2005, p. 152). It is precisely this expression of the interior on the facade that was imagined by the architects in their competition entry, with its glimpses of the building's inner world projected onto the outer surface. The realization of a partially transparent skin was eventually found to be impractical given budgetary constraints, and the fully opaque skin with an outer layer of animated lights across its surface does bear a family resemblance to Venturi's concept of the sign as a total separation of interior program and exterior display. The openness of the facade's control software leaves open, though, the possibility of a display that responds to sensor data capturing activity within the building, a use that would come closer to the poetic vision of the architects than animations with no relation to the building and its interior.

The building's relation to its own obsolescence is not straightforward. The facade was originally conceived by the architects as a multi-functional laminated fabric: ``The laminate consists of a mylar film incorporating anisotropic carbon threads and kevlar/Nomex aramid honeycomb struts for compressive strength... Fluids, fibreoptic cables and other infrastructure elements are channeled through the fabric by means of laminated bladders.'' (Ilsinger, 2003, cited in Jones, 2004). When this method proved prohibitively expensive a more conventional layered assembly was proposed: rather than an expensive, high-tech solution integrating multiple functions in a single fabric membrane a more pragmatic but still complicated solution was chosen that sandwiches the fluorescent bulbs between the acrylic panels and a waterproof plastic membrane consisting of sealed PVC panels. The advantages of such a layered assembly includes easier replacement of each element of the facade as required by material deterioration or changes in fashion. The fluorescent tubes were chosen over a more expensive solution such as LED's, with the trade-off of the necessity of more frequent replacement.

CONCLUSION
The Graz Kunsthaus presents an example of responsive building components conceived as an integral part of a culturally significant work of architecture. In this way, the building suggests an alternative paradigm for understanding the relation of such responsive components to the building as a whole. I have suggested several reasons why examples like this are as rare as they are including the perceived incompatibility of automated mechanical components, with their accompanying threat of early obsolescence, and the permanence associated with 'high architecture'. To this could be added numerous other obstacles including poor warranties on responsive components, high insurance costs, and the question of who is to blame when something goes seriously wrong (Kroner, 1997).

The Kunsthauillustrates the degree of care in design that has been applied to responsive, moveable components of buildings in the recent past. In the following, I will summarize several observations that suggest why responsive components are not often treated with this level of care in contemporary buildings. These observations can also serve as strategies for the design of future responsive components that aspire to become poetically expressive elements of culturally significant works of architecture, Brand's 'high road'.

Use simple, low-tech elements whenever possible: The fluorescent bulbs used in the Graz Kunsthau were cheap, long-lasting, and resistant to obsolescence because they represented a new use of a well-established and stable technology. As Jan Edler of realities:united writes of the facade: ``By using the fluorescent light rings, i.e. an 'outdated' technology, the BIX display meets the architectural demand of constancy'' (Edler, 2005, p. 158). The choice to employ large fluorescent bulbs resulted in a radically low resolution display, but also afforded the possibility of covering a significant area of the building's surface, achieving a greater level of integration between the dynamic display and the building. Had the display been created using contemporary, relatively high-resolution media wall display technology the size of display possible with the same budget would have been nearly 100 times smaller (Edler, 2005, p. 155).
Consider software design as an area for innovation: Responsive building components have a physical aspect consisting of the actual hardware with its motors or display elements and embedded computer circuitry; and a digital aspect consisting of the software that determines how the hardware will perform in response to sensor data. This software is generally less expensive to produce and more readily replaced when it fails than the responsive hardware, particularly when the latter is employed at the scale of the building (as in the Institut du Monde Arabe or the Graz Kunsthaus). The control software designed by realities: united allowed the public to design animated sequences for display on the Graz Kunsthaus, which is representative of a distinctly new type of building, one whose design involves the creation of digital content and/or an interface for creating that content. In this relationship between digital content and hardware it is the content that leads: the Kunsthaus display hardware is by comparison inexpensive, easily replaced, and incidental.

Anticipate the possibility of failure: One remarkable aspect of the Institut du Monde Arabe is the extent to which its responsive diaphragms continue to function despite the failure of their mechanical moving parts. It is most likely a happy accident that the diaphragms continue to act as effective daylight diffusers and potent symbols despite the fact that their responsive mechanism is no longer functional. Still, this example highlights the importance whenever employing new and relatively untested technology as an integral aspect of a building to consider the impact on the building in terms of performance and poetics if the technology were to fail.

Anticipate the necessity of maintenance: The decision to make responsive components an integral and permanent part of a building of cultural and civic importance involves a commitment to regular maintenance over a significant period of time. The ‘permanence’ of the such a building's responsive components lies in the persistent will to replace the building's physical and digital components as required by obsolescence or failure: as Stuart Brand pointed out, this is a kind of permanence that is facilitated by a layered and modular approach to construction. Edward Ford has argued that although the conception of the wall as a layered assembly requires greater maintenance than a masonry wall, it also offers increased performance and ultimately greater longevity (Ford, 1997, p. 6). In an analogous fashion, the responsive components of architecture have the potential to become ‘permanent’ elements of the building through the decision to design its components for regular replacement.

I have considered the extent to which the integration of responsive components in buildings requires a re-assessment of the significance of obsolescence as a model for understanding architecture. Each of the strategies listed above presents one method for achieving hybrid architecture with low and high elements. The introduction of mechanisms that anticipate movement and change implies a shift in the understanding that the most permanent elements that define the building. This is particularly the case when these dynamic components become central to the symbolic and aesthetic conception of architecture. As more buildings are defined by their integration of responsive components, it will become necessary to rethink the relation of the building itself to time and to accept as commonplace the idea that the most ephemeral and rapidly-obsolescent of building components can become an integral part of the work of architecture.

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1 For example, in the essay 'Techniques are the very basis of poetry' (Corbusier, 1991) he writes: "The Russian house, the Parisian, at Suez or in Buenos Aires, the luxury liner crossing the Equator will be hermetically sealed. In winter it is warm inside, in summer cool, which means that at all times there is clean air inside at exactly 18 degrees. The house is sealed fast! No dust can enter it. Neither flies nor mosquitos. No Noise."

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VITRUVIAN CHARACTER: THE CASE OF THE EGYPTIAN MUSEUM

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Abstract
In Vitruvius’ treatise, what makes good architecture is its ability to communicate to the public particular messages that reflects the program of the building with spaces and components arranged in an orderly way. According to Vitruvius these messages when acknowledged by the public the building posses strong character. This research discusses this idea by reflecting on the 1895 competition of the Egyptian Museum project. Marcel Dourgnon, the French architect of the winning scheme, showed profound understanding of character resulting in a building that had positive vibe with the local community. Today Vitruvius’ idea is still living with us. Norman Foster succeeded in upgrading the British Museum in a way that addressed all cultures of the world through his grand atrium design. Similarly, Emad Farid and Ramez Azmy revived the presence of the Egyptian Museum in public cognition. Spatial experience that evokes similar perceptions to all its visitors is a timeless piece that transcends cultural boundaries.

Keywords: Vitruvius’ character; Beaux-Arts; Egyptian museum; British museum; Darwin Center II; Vitruvian vibe.

INTRODUCTION
Is “character” an obsolete term in architecture? Does it have any effect on design quality? Today, some architects understand “character” as a treatment that can be found in the skin of the building but rarely beyond. They see it as a show of technology on the facades, a metaphoric form that should dazzle the eye. The design from inside the building more responds to standard circulation of spaces and basic functions than to engage users in any pleasing way. There are other architects who believe that character is more than just a skin, it is what a building communicates to people in order show its program.

The paper focuses on the later approach and proposes that the first theoretician to present the idea was Vitruvius who understood character-making through his observations on Greek Temples. He saw Greek temples communicating well with its audience. He praised the Greeks for adding rows of columns around their perimeters interpreting it as an instant message of “dignity” since the arrangement of columns in rows “gives the imposing effect” and sets to dominate the viewer with air of respect and reverence (15BC/1914, p. 82). This is because the column was not just a structural element it was the pride of artists who embodied the sublime notion of beauty through precise mathematical proportions in their craft, and were skilled in knowing when the rules of the "kanon" could be sacrificed for the sake of optical illusion resulting in a more pleasing perception of the work (Rykwert,1999, pp. 97-112). It is the product of refined technology that allowed masons to carve out the inner vision of an artist and to bring it into being. It was a physical manifestation of the philosophical debates between Plato and his disciple Aristotle; the former envisioned the notion of beauty as metaphysical substance existing in super-celestial order outside human intellect while the later saw it living in the consciousness of the artist ready to inspire his work (Panofsky, 1968, pp. 13-17).
If "dignity" was the message coming out of temples, columns on other buildings should convey a different message for "The columns will not be subject to the same rules ... which I prescribed in the case of sanctuaries; for the dignity which ought to be their quality in temples of the gods is one thing, but their elegance in colonnades and other public works is quite another." (Vitruvius, 15BC/1914, p. 154).

Vitruvius went further on the issue of character by assigning specific orders to specific gods. Upon using them in the temple they conveyed instant messages for the public, the Doric was “severe” and the Corinthian was “delicate”:

“The temples of ... Hercules, will be Doric, since the virile strength of these gods makes daintiness entirely inappropriate to their houses. In temples to Venus ..., the Corinthian order will be found to have peculiar significance, because these are delicate divinities and so its rather slender outlines, its flowers, leaves, and ornamental volutes will lend propriety where it is due. The construction of temples of the Ionic order to Juno, ... will be in keeping with the middle position which they hold; for the building of such will be an appropriate combination of the severity of the Doric and the delicacy of the Corinthian..., the effect will be spoilt by the transfer of the particularities of the one order of building to the other.

" (p.15)

Vitruvius' worry about the right "effect" did not only focus on certain vocabulary on the facades that convey specific meanings to the public. The right “effect” also meant spatial experience pertaining to building program. In fact most of Vitruvius’ form-meaning analysis focused on space rather than solid mass to convey the right message. For temples it was not just the column that gave dignity but "walking round the cella will be dignified" (p. 80). For "men of rank" houses should have "lofty entrance courts..., and most spacious atriums and peristyles, with plantations and walks of some extent in them, appropriate to their dignity" (p. 182). Absorbing the mood while walking through the space was perhaps the quintessential idea Vitruvius delivered on character-making. It became the dividing line between mundane architecture and another with quality. The paper discusses this issue by drawing on themes from 19th century architecture with a special emphasis on the Egyptian Museum.

BOFFRAND, BRUKE, BLONDEL AND BEAUX-ARTS TRADITIONS

Character-making as advocated by Vitruvius may not be so familiar to modern architects. Closer their practice would be 18th and 19th theoreticians. Germain Boffrand stated in 1745 that architecture should invoke emotions in people. Users should understand the character through a particular mood that is conveyed to them through orders and sequence of spaces. Such mood is universal and can be identified through abstract nouns. Edmund Burke in 1757 created a list of them such as lightness, pleasure, and the sublime. Jacques-François Blondel in 1771 suggested specific abstract nouns to verify building types: decency for temples, magnificence for palaces, elegance for promenades, and robustness for defense structures (Palma, 2002, pp. 48-50).

These nouns denoting the mood by which the building should be perceived were the starting point for any design. They were simple words that held the key to character-making in architecture. Such understanding was no longer just exclusive debate among theoreticians but became the formal education of architecture in the 19th century Beaux-Arts School of Paris. Thanks to Quatremére de Quincy, the staunch theoretician of the school, who developed the notion of character to surpass the mere identification of a building type. His keywords became more specific to each project in terms of culture, site influences, users, and precise program (p.51-52). Students of Beaux-Arts school by then had systematic learning on how to consider
this multi-layered version of character in design after reviewing the building program and the accompanying mood in the form of keywords.

In the Grand Prix de Rome competition of 1824 students were asked to design a supreme tribunal with associated mood: "noble" and "severe". The first mood denoted the presence of the king who sat in the primary courtroom, the second mood was to reflect the power of law in such a highly ranked courthouse. Students who designed the "parti" showing the king's courtroom on the main axis with two perpendicular side courtrooms scored high marks because keyword "noble" was well achieved after giving the king's courtroom a distinguished position. Those who placed the side courts parallel to the king's courtroom or had the entrance atrium more oriented towards the side courts meant that the hierarchy of the king's courtroom was toppled and hence keyword "noble" was no longer realized. Students who presented facades of modest decoration, particularly, using the Doric order with flat roof satisfied keyword "severe" more than those using the Corinthian order with a gabled ornamented portico and statues on top. The first prize went to the project that was well balanced in achieving the two keywords: Greek cross in plan with well proportionate atrium that lead to the king's courtroom and a facade that was least in details and more in solid mass (Levine, 1984, pp. 83-99). Based on this analysis it is clear that Beaux-Arts graduate had to go through a refined process of design in which he had to weigh out options in terms of space configuration, detailing of the order and intensity of decoration in order to convey the right mood of the building.

With this understanding of character graduates of Beaux-Arts worked seamlessly in Europe. The majority of them continued to follow Vitruvian ideas that took for granted Greco-Roman architecture as the source material for any character-making (Van Zanten, 1987, pp. 44-69). If an international competition located outside their Western hemisphere demanded their attention, they would not refer to local character. Could this be appropriate for a museum that housed the largest collection of ancient Egyptian artifacts? Such was the challenge for architects participating in the Egyptian Museum competition that was held in 1895.

EGYPTIAN MUSEUM COMPETITION

Over 80 architects mainly from Europe participated in the competition. More than half presented Ancient Egyptian character in their proposals, nevertheless, the jury, composed of Egyptians, English, French, Germans, Italians, and Russian, believed that none of them should win the first prize (Lenconte, 2010, pp. 66, 242). The curator of the museum at the time, Gaston Maspero, explained that the character on the facades was enormously enhanced in terms of scale and solid mass. This in turn had its toll on galleries that became functionally and environmentally unacceptable as museum spaces (pp. 242-243). These failing entries must have considered the associated mood to this museum as "grandness" and "power" since the artifacts exhibited originated in a great civilization. By copying the proportions of Egyptian temples their proposals ironically became out of proportions and hence precluded their use as viable museums.

The winning project was proposed by the French Marcel Dourgnon, a Beaux-Arts graduate (Lenconte, p. 90) who had a different understanding of character. After trimming down his proposal's footprint and simplifying its facades to fit in the designated budget (p. 211), the architect fulfilled the keyword "grandness" by creating a nave that cut longitudinally through the museum and took the full height of its volume. Upon stepping inside and walking down the nave visitors are greeted by flanking colonnades of double height until they reach the colossal statue, 7 meters high, of Amenhotep III and his wife Tiy (Trapani, 2001, p. 187). The Pharaoh's reign was considered the Golden Age of all Ancient Egypt stretching from Nubia to northern Syria. He was coined "the magnificent" who established prosperous diplomatic ties with most of the Mediterranean and Aegean worlds as well as Babylon, Assyria, Mittani and Hittites (Baker, 2008, pp. 44-49). His wife Tiy, known as the "Great Royal Bride", played an important political role beside her Pharaoh to the extent that she was the first Egyptian queen to be consecrated in a
temple (Trapani, p. 187). The distinguished biography of the twin statues inside the museum made them the favorable icon of Ancient Egypt. The royal couple were located towards the end of the central nave and coincided, along the same axis, with the main entrance portico (Figure 1).

Figure 1: Dourgnon, Egyptian Museum, Cairo, 1895, interior showing central nave leading to the twin statues (Source: Author)
The portico, punctuated by a semi-circular arched portal, was derived from Roman architecture that signified "power" as a legitimate mood for a prosperous empire. To accentuate the walking experience to the royal couple while capturing a stronger essence of "power" the nave was covered by a double skin clear glass roof to lighten up the space more than any other corridor in the museum. The two most distinct components of the museum, the portal and the statue, were sitting along the same axis and were echoing each other's "power" so much so that the building was in continuous positive vibe with the local community.

The final "effect" is as strong as that of a processional spine of an Egyptian temple that ends with a sanctuary. In the case of the museum the sanctuary was in the form of a special room located at the farthest end of the central nave. Similar to a temple's sanctuary, the room is very important for it contains the most valuable artifacts of the museum one of which is the Accadian Tablet, 13cm x 8cm. Upon discovery at the end of the 19th century it pointed scholars to the finding of a major archeological site in the Ancient world, namely the city of Akhetaten, locally known as Tell al-Amarna (Bongioanni, 2001, p. 171). Another valuable artifact is statue of the most controversial pharaoh in the history of Egypt and the most popular among modern Egyptians: Akhenaten, son of Amenhotep III (pp. 172). He earned his position in the room for he was labelled "philosopher-king" who revolutionized the religious beliefs of Egypt to be monotheistic solar religion. This unprecedented move followed the dramatic shut down of temples and the erasure of all names of gods, except for Aten, from all monuments across Egypt (Baker, 2008, pp. 14-15). The same room upstairs is equally valuable for it contains the world famous solid gold funerary mask of Tutankhamen along with his solid gold sarcophagus and jewelry belongings (Comand, 2001, pp. 310, 316, 334). The room at the ground level is behind Amenhotep III and Tiy, visitors only discover its presence after passing by the twin statues. That way, the arrangement adds an air of "intrigue" beside "greatness" and "power" to the processional spine of the museum. Outside the museum, the facade further accentuates "power" by the flanking semi-circular arcades that add more solid mass to the facade than void (Figure 2).

With this design Dourgnon succeeded, where no other architect could, evoking the right moods in the museum space, synchronized with its exhibits, without necessarily applying the formal language of Ancient Egyptian architecture.

Vitruvius would have been enchanted with the final setting of Dourgnon's museum because it came closer to the understanding of character as a product of spatial experience pertaining to building program and not just building skin, however a century later things have changes. The glass roof of the nave no longer admits bright atmosphere inside the central
promenade but is currently lit by insufficient artificial lighting, thus reducing the effect of "grandness". The twin statues are barely visible from the entrance portal, as a consequence. The arcades of the facades have been blocked by glass and converted into mainly service rooms thus reducing the solid mass and diminishing the effect of “power” (Figure 3).

The museum today is no longer communicating the intended messages to the public, reducing its role to a large warehouse displaying some valuable artifacts. The need for “grandness” and “power” is essential to Egyptians for the museum could offer historic reference that can inspire and motivate a nation pride towards a better future. Yet in order for the museum to revive its luster in the psyche of Egyptians additional moods must be instilled besides polishing the existing ones.

**REJUVINATING THE BRITISH MUSEUM**

Can the idea of Vitruvius on character become the cradle for rejuvenating architecture? Norman Foster, by the advent of the new millennium, tackled the issue upon suggesting improvements to the British Museum of London. It was no longer sufficient to rely on the aging “grandness” mood that was well represented by the Greek character of the building and the formal display of large collection of artifacts depicting many eras.

Foster awakened the sleeping giant (Barker, 2001) by adding "awesome" and "delight" to the list of moods. This was done through the conversion of the museum courtyard into an atrium covered with a dazzling steel mesh and glass panels of stunning geometric forms. The "wow"
effect is strengthened by the clearing up the space from additions accumulated over time leaving a white neat cylindrical library standing in the middle (Figure 4).

Walking up a newly added stairs around the cylinder visitors are overwhelmed by a 360 degrees view of the atrium that is packed by layers of activities: people eat and drink, some sit with their belongings spread casually on wide tables, others stroll and shop through a sequence of stores tucked in the library wall. The atrium became a hub for tourists and locals coming together performing the same amusing ritual of "to see and be seen" and experiencing the same moods of "awesome" and "delight" (Figure 5).

Figure 4: Foster, British Museum, London, 1999, Grand atrium showing awesome effect (Source: Author).

Figure 5: Foster, British Museum, London, 1999, Grand atrium of British museum acting as a public square (Source: Author).
AWAKENING THE EGYPTIAN MUSEUM
What will awaken the Egyptian giant is a questioned tackled by Emad Farid and Ramez Azmi, architects of EQI consulting office (2013). If "awesome" and "delight" are to be added to the list of moods, then nothing will do the job better than connecting the museum to the Nile. At present there is the party's headquarter of the former regime that stands in the way between the museum and the Nile. It was burnt down during the 2011 uprising and is still intact waiting for an action plan to be taken. EQI proposed to replace the building by two large gardens one botanical another Pharaonic, both overlooking the Nile. The Pharaonic garden would be surrounded by one story structure containing restoration labs and exhibit galleries for the public (pp. 49-56). This will ease the pressure on the museum space, and thus, restores the front arcades to their original status and hence polish its “power” effect (Figure 6).

Figure 6: Farid & Azmy, Egyptian Museum, Cairo, 2013, developing the Egyptian museum environ (Source: EQI).

The botanical garden is much larger and will include expanding the existing garden of the museum to the banks of the Nile. Docks for ferry boats and pedestrian links are proposed to connect the garden with the riverbank. Egyptians and tourists alike will experience the sense of "delight" upon cruising through the Nile with the museum as their final destination. "Grandness" will gradually sink in their senses upon walking from the ferry dock to the museum and passing...
through 3.7 acres of specialized gardens; for the museum, in essence, will have its first portal on the Nile while the second will be that of Dourgnon (Figure 7).

![Figure 7: Farid & Azmy, Egyptian Museum, Cairo, 2013, Pharaonic garden beside the museum and overlooking the Nile (Source: EQI),](image)

Having the site play a role in shaping the character of the building is Vitruvian to the core (15BC/1914, p.175). This is because the site becomes a sort of a "wifi" arena for enhancing the messages radiating from the building. As viewers walk through the site, approaching the building, messages get clearer and stronger.

**VITRUVIAN VIBE IN MODERN PRACTICE**

Very few architects today understand how to achieve character in architecture in a way that adds value to its program and spaces - I mean real value that is *sensed* by the users. The case of the Egyptian museum shows that character-making is not about style plugged on facades. In fact those who did just that failed in the museum competition. The winner architect created a spatial experience reminiscent of a temple without alluding to its forms or style. The curator understood the architect's intention and carefully positioned the exhibits to enhance this experience. It was a good synchrony between both men. One century later the developers designed an extension to the museum using the same mindset of the architect and the curator thus extending and revalidating the original design quality to reciprocate with modern perception.

What these men had proven, throughout a century of design, is that there is an underlying notion in character-making that essentially surpasses timely trends in architectural forms. Such notion has its roots in Vitruvius mindset that was no more than insightful observations on Greek temples. Slowly but surely Vitruvian observations, after centuries of discursive thinking, became a theory in the Beaux-Arts school of Paris; the later came to codify and institutionalize methods of using the theory in design practice. The notion of character was now ready for handling complex architectural programs of modern age but it was not well picked up by many architects of our times. After dismantling the classical vocabulary of the 19th century modern architect of the 20th and 21st centuries often adopted abstraction and symbolism to achieve character in design. In
the process many of them lost the valuable vibe of Vitruvius and its amplified resonance in the Beaux-Arts school. Consider the following case.

Darwin Center II designed by C.F. Møller impresses the visitor by its huge 8 storey curvilinear shape that archives millions of insects and botanical specimens (Figure 8).


It is an extension to the Natural History Museum of London and visitors can only view exhibits in its last 3 levels through closed winding corridors (Slessor, 2010, pp.16-31). Strolling through these intimate corridors visitors start to wonder what this has to do with the impressive egg-shaped-skin seen from the outside (Figure 9). Soon the awesome effect fades away, leaving the visitor with uneasy feeling that the design was overdone, because there is nothing more to the shape except for some metaphoric cocoon preserving endless species of natural history.

The architect justified the huge egg-shaped form as an exercise in "tangential geometry buildup" inspired from Bernini's colonnade at St. Peter of Rome (Dirckinck-Holmfeld, 2010, p.42)! How this connects with what the visitor actually experiences inside this form is a concern that is never addressed. This prompted the critic of New York Times, Edward Rothstein, to obliquely criticize the extension by comparing it with the 19th century original building saying,"but what the cocoon fully succeeds on doing is teaching us that the collection found in the museum's older halls are themselves reflection of curiosity, compulsion and analysis.." (2010) What in essence Rothstein hinted at was that the architect did not capture the notion of character evoking "curiosity, compulsion and analysis" found in the older building. Møller's design had nothing to offer on its own (except for a Bernini's geometry) and failed to include the qualities of the older building into its folds, contrary to British Museum's remodeling and the extension of Cairo Museum.

As there are architects who adopt Møller's "skin-deep" approach in character-making there are critics such as Rothstein who realize the importance of continuing the Vitruvius - Beaux-Arts line of thinking for any quality to prevail in modern design practice. The accompanying moods "curiosity, compulsion and research" mentioned by Rothstein are what every visitor experiences upon strolling through the 19th building of the Natural History Museum because of its immense transparency in displaying huge volume of specimens in spaces that vary in size, quality of light and abrupt transitions. Møller's design does not offer such experience. It
discontinues a precious vibe - Vitruvian vibe, and as a result visitors do not appreciate the exhibits in the extension the same way they do in the main building. Vitruvian vibe is important to museum design because it creates a strong cultural milieu between the viewer and the exhibit, anything less would make a boring sequence of spaces. But the vibe is not exclusive to museums. Some prominent architects in our modern times are able to promulgate the vibe in other space designs, public and private, thus successfully producing positive rapport between users and their living environment. Herzog and de Muron created the mood "feel at home" bringing the sense of coziness and intimacy in the furniture exhibition Vitra Haus located in Weil am Rhein; Rem Koolhaas produced the atmosphere of a "living room" inside Seattle Library to get people interested in reading books; Behnische merged casual with formal workspace thus evoking a "live and work" environment in Unileaver Haus located in Hamburg; Norman Foster infused a strong aroma of nature's delight in villa La Voile located in Cap Fêrrat; and Helmut Jahn fostered a "meet and share" sensation among scientists in Merck Serono headquarters located in Geneve. More research is needed to reveal a sizable genre of such projects that disseminate Vitruvian vibe through our modern lifestyle.

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SİLLE SETTLEMENT IN THE CONTEXT OF SUSTAINABLE HISTORICAL FABRIC AND FAÇADE ANALYSIS OF ITS TRADITIONAL HOUSES

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Abstract
Sille is located 8 km northwest of Konya city center in the Central Anatolia region. It is one of the most important and historically rooted residential units in Anatolia. Although it is located in close proximity to Konya, Sille draws attention as a unique site with its geographical structure, cultural life, beliefs and tradition. In this study, firstly, Sille’s historical significance, cultural and social characteristics are addressed with a particular focus on its distinct structure pertaining to its culture, belief, tradition and geography. Then, a typology study is carried out by explaining the city settlement constituting Sille’s historical fabric, façade characteristics and elements of Sille traditional houses. In this context, 16 traditional house façades are chosen in line with the infrastructures formed through the literature review on the subject. These house façades are examined and analyzed through the help of visual data. In the light of the data obtained from the results of this analysis, evaluations and suggestions on the preservation of Sille’s historical fabric are made.

Keywords: Historical fabric; traditional houses; façade analysis; Sille.

INTRODUCTION
K. Schwanzer (1918 - 1975), an Australian architect, defines an architectural structure as “Four walls and something more than a dome above our heads.” This “something more” refers to an artistic, sociological, anthropological, aesthetic, historical and cultural structure. For this reason, relationship between the human and the house should be analyzed within the context of cultural structure and social constituents of culture. Housing configuration, which comes to being as a result of this multi-layered interaction, is not an outcome of mere physical effects. It is the result of all socio-cultural factors. These factors are defined as cultural values and choices by Rapaport; as rules, norms and social relationships by Malzumdar and as symbolic meanings by Lawrence and Low.

Houses, as a part of culture-space interaction, constitute a historical document enabling an understanding of the life experience as well as material and technology of a particular period (Perker, 2012). Traditional house architecture and its traditional fabric constitute a live museum, which reflects history, culture, life-style and world views of a society. The house is a cultural phenomenon. Its form and organization are influenced by the cultural environment it belongs to. Social infrastructure of communities is in a state of constant transformation. Together with this process, people’s expectations from their environments and inhabited spaces were subjected to change. Existing dwellings were not able to meet the novel needs stemming from the diversified social structures. Expectations deriving from changing habits, rules, customs and relationships directly affected the formation of the house; thereby, transforming the house to meet the novel needs. According to Rapoport (1969), diverse forms of housings constitute a complicated phenomenon. Thus, constitutions of this formation are not easy to explain. All explanations have a single point of departure: people with different attitudes and their conducts towards the environment. These conducts differ according to the inhabited place, because changes in social, cultural, economic and physical factors have an important role in these conducts. These factors may as well show differences in the same place within the course of distinct time periods.
The construction of the houses, over large territories for hundred years, abided to the
general principles of the Turkish houses, despite the different conditions such as social, cultural
and economic factors and diverse physical environments such as climate, technology and
material. As Eldem (1968) argues, the Turkish house was formed in Rumelian and Anatolian
regions within the territories of the Ottoman State and it continued for 500 years. In this sense, it
is a type of house marked by its own characteristics. Turkish house went through significant
developments within the course of this period. It expanded, took root and formed various types in
distant and distinct lands in terms of climate, nature and folklore. These differences stemmed
from the adoption of regional materials and local traditions (Kücükerman, 1973).

Figure 1: Comparison of the tent and the room in terms of general layouts and usage forms.
1. Multipurpose central area 2. Peripheral area designed for sitting. 3. Closed spaces of usage. Raised
platforms (şeki), trunks, loads. 4. Heating. Fireplace has to be located at the center in the tent, while it is
moved closer to the walls in the room 5. Service area, which is necessary for convenience of the tent and
the room (Source: Küçükerman, 1973).

Schema formed within the framework of the Turkish house plan, which is based upon the
similarity between the tent and the room (Kücükerman, 1973, 1995; Kuban, 1995), has a single-
storey (Figure 1). Together with physical conditions and environment which began to change
through urbanization, the number of floors were increased to two or three and the plan
dimensions also changed (Table 1) (Eldem, 1968; Günay, 1998).

Figure 2: In the Turkish House, there are no windows at the eye-level facing the street (right)
In time, dynamism of the façade was ensured together with the increase in the number of windows (left)
(Source: Günay, 1989).

Particularly, after the adoption of Islam by Turks, the idea of privacy became an important factor
in both plan and façade arrangements. For this reason, while the lower floor is reserved for
spaces for daily tasks such as service and kitchen, the top floor, which constitutes the main floor,
is reserved for living areas. This functional difference within the plan is reflected upon the façade.
There are no windows at the eye-level facing the street due to the idea of privacy. Ventilation windows are opened in the service areas, when necessary. The only element on this lower floor is the entrance door. On the upper floor, since it is above eye level, ratio and number of windows are increased and dynamism is brought to the façade through different bay windows (Figure 2). Contrast between the lower and upper floors constitutes a harmony, and eases the perception of floors. In this way, the plan can be read from the façade (Table 1) (Yürekli, 2005; Kuban, 1995).

Table 1: Evolution Process of the Turkish House (Source: Yürekli, 2005).

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<tr>
<th>Reading the Section</th>
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<tbody>
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The most distinguishing features of urban identities are houses and façades. Houses are not simply constructed within the framework of certain architectural rules. Rather, they are designed in accordance with the user needs and they are indicators of customs and traditions narrating culture of life. In traditional houses, human size was used as the unit of measurement. Traditional houses were constructed by local masters and even by the participation of the house owner (Güney, 1989; Enginbaş, 1961). These buildings transformed into user-centered structures.

The Historic Sille Settlement

Sille is located 8 km northwest of Konya city center in the Central Anatolia region (Figure 3). It is one of the most important and historically rooted residential region in Anatolia (Figure 4). Archaeological studies show that Sille, which is marked by a unique structure pertaining to culture, belief, tradition and geography, has 6000 years old history. While there is no clear data relating to the period before Christianity, settlement ruins did not reach to our age. During the Christianity period, Sille draws attention as a significant settlement of the early Christians and as being on the Roman-Byzantine-Jerusalem route. Sille gained its well-deserved significance in the history, when Konya became the capital in the Seljuk period. Taken over by Karamanids Chiefdom, the region came to be known as ‘Karaman’ and the spoken language was called ‘Karamanca’. The non-Muslims living in the region were identified as ‘Gebran’. During the Ottoman period, Sille’s position on the Silk Road and the Spice Road increased the attributed importance of this place. Sille is the fourth municipality among the municipalities established within this period coming after Bursa, Edirne and Istanbul (Aklanoğlu, 2009). During both Seljuk and Ottoman periods, Sille was a settlement area where people from different ethnic (Turkish and Greek) and religious (Christian and Muslim) origins lived together. Throughout the history, Sille has always been a privileged settlement in Konya due to its social and cultural characteristics as well as its economic structure.
In the Turkish Republic period, the majority of the non-Muslim population was displaced to Greece due to the Treaty of Lausanne. Muslim Turkish population migrating from Greece was located in Sille which was vacant after the migration of non-Muslims. However, even before settling down in Sille, most of this Muslim Turkish population moved to other big cities of Anatolia to find jobs. Non-Muslims had an important place particularly in the spheres of trade and art; therefore, their displacement caused significant damage in the economic structure of Sille. At the beginning, favorable socio-economic condition disappeared. When problems such as unemployment arose, a large portion of Sille residents had to leave the settlement. There were significant waves of movement to other Anatolian cities, particularly to the center of Konya. Later, subculture group members from neighboring villages migrated to vacant houses left in Sille. Both insensibility of these subcultural group members towards the historical fabric and inhabitants’ indifference for these houses accelerated Sille’s destruction. In Sille, where around 18 thousand people used to live in the past, the population decreased to the level of a few thousands and many of the traditional houses, public buildings and street fabric disappeared. Furthermore, vineyard culture unique to Sille got its share from this destruction (Özönder, 1998; Sarıköse, 2008; Tapur, 2009).
Sille, was self-sustaining and even contributing to its neighbors. Churches, baths, mosques, fountains, bridges, historic mansions and traditional Sille houses are among cultural and historic assets of Sille. Considering these properties in Sille and with the decision given by Konya Council for the Conservation of Cultural and Natural Property (dated 19.06.1995 and numbered 2292), southern slopes, where the ancient settlement, Hagia Michael Church (Aya Elenia Church), monastery, and graveyards are located, were registered as a first degree archaeological site, while the main settlement area was registered as an urban site (Dülgerler, 2000).

Figure 5: Aya Elenia Church (Source: Personal archive of E. Erdogan, 2012).

Figure 6: Carved rock churches in Sille (Source: Personal archive of author, 2012).
Sille is similar to Konya with its continental climate; however, due its location in the valley, its dispersed settlement and its rural qualities, Sille exhibits the characteristics of plateau climate. Compared to Konya, its winter is softer and its summer is chillier. Plateau climate, valley settlement and sloping land had crucial effects in the formation of characteristics of the residential structure in Sille. Elements that influenced the formation of traditional architecture in Sille can be listed as follows: climatic conditions, geographical position, topography, Sille stone (heliotrope found in Sille), traditionalized construction technology due to the utilization of Sille stone, social, cultural and economic structure of the community and religious beliefs. Earlier there were two different architectural styles (Turkish and Greek) in Sille under the effect of socio-cultural and religious structure. However, only traditional Turkish architecture and the architectural style in churches are visible today (Aklanoğlu, 2009). Sille, which housed many buildings from the Middle-Ages to the Republican period, has been a cultural and touristic center containing still-standing civilian architectural examples such as carved rock churches, chapels, Aya Elenia Church, mosques, baths and fountains (Figure 5, 6, 7). Besides, Sille has been at the forefront with hand workmanship such as carpets, pottery, rosary, stonemasonry and chandlery carrying the socio-cultural and economic characteristics, which were formed by Turks and Greeks living together in the past.

Considering scholarly literature on Sille; Çaycı (1996) provides detailed knowledge on the public Turkish bath, Sille’s history, geography and etymological roots of its name, while Danik (1997) dwells upon Aya Elenia Church (Hagios Michael Church). Eyice (1962) and Özcan (1998) explain Christian architecture in Sille, history of its religious buildings, their plans as well as their architectural and ornamentation characteristics. Özönder addresses architecture of Sille and draws attention to Sille houses, which are marked by unique examples within Turkish civilian architecture (Özönder, 1998). Dülgerler (2000) concentrates on examples of civilian architecture in Sille and states that Sille will gain its rightful place by preparing and carrying out many restoration projects. Mimiroğlu’s (2006) article investigates Byzantine architecture in Konya, whereas Sanköse’s (2008) study touches upon historical and architectural characteristics of architectural works built in Sille during the Ottoman period. Although Sille has been the subject matter of many studies, it is seen that architectural studies in the scholarly literature are limited in number, while other studies (Berk, 1951; Sözen, 1979; Karpuz, 1999; Karpuz, 2002; Turgut, 2003; Mimiroğlu, 2006) are restricted at the urban level.

From past to present, Sille has welcomed different beliefs and cultures; and therefore, user needs have changed throughout time. This situation caused transformations in Sille’s architectural
elements as well as its historical fabric. Besides, plan characteristics, relations of the house with the street and with its environment, façade characteristics and mass installation constitute an important element in identifying characteristic features of the traditional fabric. In fact, façade characteristics make a more dominant influence on people in terms of first impression. In the last ten years, conservation and renovation projects and reconstruction activities have accelerated. This paper strives to aid such conservation projects. In due course, it investigates Sille’s unique characteristics and provides a typology study of house façades in Sille.

RESEARCH METHODOLOGY
The area of the study includes aforementioned houses which are within the urban site area. Within this urban site area, all streets and houses are examined one by one. In the end, 16 houses, which contain and was able to preserve the characteristic features of traditional Sille houses, were found to be worthy of further investigation (Figure 8, 9). In façade analysis of these houses, architectural façade elements are studied and prevalent characteristic features are identified. The method employed in this study was also used in other studies concerning traditional houses and streets (Özdemir et al., 2008; Öztank, 2013; Dalkılıç & Aksulu, 2004). The method employed in this study is as follows:

- Original designs of traditional houses within the historical urban fabric were specified.
- Two main parameters were designated in the preparation of façade typologies of 16 houses which still contain the Sille traditional house characteristics: General architectural features and finishing elements.
  - General architectural features; Number of floors, position of the parcel, entrance (from the garden, from the street, flat entrance, entrance with niche, under the bay window (çıkma), on flat façade, entrance level), symmetry.
  - Finishing elements; Roof, eave, bay window (style and place of bay window, angle brace (göğüşleme), door and window styles.
- Each characteristic of the house façades analyzed under this study was symbolized and tabulated.
- Findings of the analysis were interpreted and presented.

Findings of this study are expected to contribute to the recent construction and reconstruction activities in the region. The study aims to designate Sille’s traditional architectural characteristics; to provide data for new designs and to transmit them to the future.

FAÇADE ANALYSIS OF TRADITIONAL SİLLE HOUSES
**Streets**

Sille is among rare historic settlement centers with its examples of civil architecture, street, stairs and other architectural elements which are transmitted to the present. Historical fabric of Sille manifests itself not only at the residential scale, but also at the scales of street and districts. To ensure the accord between city settlement and land conditions, vineyards and orchards are constructed on flat fields of the valley, while houses are built on the sloping lands. It is noted that streets are placed vertical to Sille River. In this way, floods and rain water are directed to the river. Sille is established on a rather rough field due to its geographical position. Form of this field was influential in the formation of stepped terrace system of traditional houses in Sille. Vertical and rough form of the field obliged the settlement of buildings, streets and districts to be constructed in terrace forms (Aklanoğlu, 2011; Erdem et al., 2010).

Buildings are placed in accordance with the field, with a particular attention to avoid blocking each other’s sun and wind. In this way, a natural micro-climate was established. Houses are placed in a way to respect each other and respect the human. The most apparent characteristics of traditional city fabric are the streets in organic layout. In streets of Sille, where the effects of topography are great, there is no pre-arranged formation. Streets are generally paved with stone and their centers are arranged with grooves in order to channel the water coming from above.

![Figure 9: Sille houses selected for façade analysis (Source: Personal archive of E.Erdogan, 2012).](image-url)
In the twisting and intertwined narrow streets, stair-shaped solutions were produced and the consequent formation of different levels added dynamism to the historical fabric of the settlement. Streets, being in accord with the topography, are enriched with some dead-end streets. As Kuşçu (2006) claims, Sille streets in the valley settlement, just like the streets of Konya houses, recognize the pedestrian scale and they do not put pressure on the existing building structure (Figure 10).

As Özüdoğru (1989) mentions, the phenomenon of fountains, observed in structures starting from the period of Anatolian Seljuks, are also found on the house façades in Sille. Fountains constitute an important place in the history of Sille. Hearsays suggest that each fountain has a cure for a different sickness. In this historic settlement, fountains have been among the influential elements of squares where streets merge and meet. It is also observed that these fountains sometimes become a façade element of the building (Figure 11). Fountains as façade elements of buildings located at squares or in corner parcels, also express the hospitality presented to the by-passers of streets.

**Houses**

Material, construction technique and technology used in the traditional houses are important effects shaping the façade. Easy material, master recruitment and climate characteristics are considered in the building construction stage. Since raw material of mud-brick is soil, which is cheap and appropriate for the climate, it is the most preferred construction material used in Turkish houses in Anatolia. For this reason, mostly mud-brick, wood and Sille stone are used in Sille houses. Sille stone is preferred, because it is a regional material. Wooden material generally exhibits itself in carriers or supporting elements of bay windows, windows and doors.

In settlements with attached buildings, it is observed that outer form of the house is cubic, whereas the roof is flat. Sille houses display stylistic variances like two and three-storey houses and houses with and without bay window. Traditional houses in Sille generally have a plan schema with
inner sofa. On the ground floor, there are service bodies such as porch, cellar, barn, loft and stock roof. The open area in the middle of these spaces is called “stone paving” (taşlık). The first floor consists of organization of sofa and rooms (corbelled main room with façade facing the main street).

There are important extension spaces, which are particular to the region, in the old Sille houses. These places are small, but they are extremely functional and useful. These spaces, which still exist today, are extensions such as aşevi (soup kitchen), bi-evi (store room), yakacak evi (fuel house), öndamı (balcony), hanay (guest room), district rooms (mahalle odaları), heating rooms (Özönder, 1998). Bay windows on the façade open to the exterior space of the main room. In the region, houses with basements (kennels), which were built making use of the slope, are seen. Spaces on these floors are used as barns, lofts and storehouses. In houses with more than one floor built upon the ground floor, the inner floor is reserved for winter, while the upper floor is used in the summer. There are no windows on the façade of the inner floor and its floor height is less than the height of other floors. In this way, effects of external climate conditions are reduced as much as possible. On the summer floor, window ratio and the number of bay windows are increased, which make the space cool and spacious.

Figure 11: A fountain which got covered under the road level in time at the Sille square (on the right top); Integration of fountains, as façade elements, with the façade (Source: Personal archive of E.Erdogan, 2012).

1Aşevi is a small room which is situated in the middle of the wooden stairs leading the entrance level to the upper floor. It is reached through a few steps from the small landing in the entrance.
2Bi-evi is a cubby, which currently functions as a pantry. Its entrance is situated next to the small wooden door by the fireplace.
3Ön damı, is the extension of house’s hall that continues beyond the wall. Today it functions as a balcony.
4Hanay, which is among the special spaces of Sille houses, refers to the houses that have a road, crossover or a small atrium underneath. All such spaces are now destroyed. Hanay signifies the house belonging to the district, where foreign guests are hosted as an indication of social solidarity and cooperation.
Entrance Door

Building façades vary in line with effects such as the width and the form of the parcel. Although structure approaches of Sille houses exhibit differences, their entrances, despite their positioning in the valley, are generally flat, without stairs, plain and without niches. Spaces (kennel and garden) with functions such as barn, storehouse, etc. are constructed by making use of the position of Sille houses in the valley. While their doors have similar physical characteristics, they are designed for animals to pass. Today, these doors are not used, because they remain under the road level due to street work conducted throughout time.

Entrance doors of houses are the most important elements of façades. In some traditional houses, the entrance door may be the only façade element of the ground floor. Entrances can be analyzed in two headings: building and garden entrance doors. There are few doors which have remained the same until today and they are wooden, generally plain, modest and double doors (Figure 12). Entrance doors of houses reflect the financial situation of the house owner and they are usually wooden double doors with stable windows.

![Figure 12: Examples of wooden doors and knockers of traditional houses in Sille](Source: Personal archive of E. Erdogan, 2012).

Windows

Windows, which are among the most seminal elements on the façades of traditional Turkish houses, can be examined under two headings in Sille houses: hung window and casement window. While the number of windows is few in the entrance and winter floors, there are more windows on the summer floor or the first floor which is also called the main floor. Standard size windows in Sille houses, just like in the traditional Turkish house (Günay, 1998) create rhythm and wholeness not only for the single house, but also for the city and the street (Figure 13). On some of the windows, which are positioned according to the dominant wind direction and climate of the region, wooden and iron cages are seen as aesthetic elements (Figure 9, picture 1). In traditional Sille houses, windows are in long and narrow rectangular shape, whereas some circular form windows are also visible with the influence of Greek architecture.
Bay windows
Bay windows are important façade elements which differ according to locations and geometry. Bay windows in traditional houses are constructed in order to meet the following concerns: to enlarge the usage area on the main living floor; to be open towards the scenery, garden and the street as much as possible; to make places, which are given importance in the planning, such as the sofa, room, summer room more visible. Bay windows influence city settlements by adorning, enlivening and reviving streets. In this way, they increase their own as well as the settlement’s value, in terms of their position (Evren, 1959).

Figure 13: Window examples of Sille traditional houses
(Source: Personal archive of E.Erdogan, 2012).

Figure 14: Examples of Bay windows in traditional Sille houses
(Source: Personal archive of E.Erdogan, 2012).
As one of the most crucial elements of Turkish house façade characteristics, bay windows are found in the vast majority of Sille houses. However, in this settlement, it is evident that some bay windows do not need any support because they are less in depth. Considering particularly the plan size of square bay windows, it is seen that they are used to give the inner space a more shapely geometric form rather than to enlarge rooms or to make use of natural light and ventilation. Together with this purpose, harmony with the street, respect for neighborhood, and human sizes are paid particular attention (Figure 14). There are no eaves in Sille houses, where examples of both closed and open bay windows are visible. Therefore, there are examples where bay windows are used as entrance eaves (Figure 9, picture 1-2-4-10-13-16).

**Roof**

Flat roofs and cubical chimneys, which are in accord with Sille’s climate, are the characteristic features of Sille houses (Figure 16). Flat roofs are massively used due to climatic characteristics of the region and economic reasons such as material and workmanship. In Sille, the roof, as a concluding element on the façade, constitutes a unity with eaves and chimneys; and thus, it has an important place in the cubical characteristic of the house (Figure 9, picture 3-6-8-13-14). Contrary to the ordinary, manifest cubical chimneys are situated on the façade adjacent to the outer wall. Examples of hipped roof with eaves, which are seen in traditional Turkish houses, are not found so much in Sille. Instead, hipped roofs are visible as add-ons to the currently used houses in the Sille settlement. It is seen that since there are usually no eaves in the houses, bay windows situated above entrances of some buildings carry out this function and they even provide shade for the streets.

The inner spaces of Turkish houses are better developed than their façades due to privacy and security concerns. Yürekli (2005) states that absence of ornaments, which do not have any function, on the façades of Turkish houses leads to a very clear perception of the house mass with its bay window as a complete engineering structure. While earlier façade examples were mostly marked by simplicity, the idea of ornamental façade became prevalent together with changes and developments in the physical conditions throughout history. Ornaments on façade give hints about the construction date of the house and its owner (Figure 15). While a general simplicity is prevalent on the façades of Sille houses, ornaments are rarely visible on the façades of the houses owned by certain people and these ornaments exhibit the period of building’s construction. Window, door, and wood paintings and even metal accessories are found on façades of these houses (Figure 9, picture 8).

![Figure 15: Animal motives on a house, which was influenced by Greek architecture. After restoration, it is currently in use (Source: Personal archive of author, 2012).](image1)

![Figure 16: A traditional cubic house with a flat roof in Sille (Source: Personal archive of author, 2012).](image2)
EVALUATION

Sille has a rooted history and its traditional houses, which have come to this day, are generally historicized between the end of the 19th century and the first quarter of the 20th century. Since most of the houses are either in bad condition or abandoned, a deteriorated settlement fabric is seen. It is observed that some of the used houses had renovations and that some changes were made on their façade systems after 1950 (Erdem et al., 2010). Due to these renovations, façade analysis of the current situation was made in the light of the survey-restitution report.

Following steps were taken in the identification of the façade typology characteristics of traditional Sille houses and each step was analyzed through sub branches within itself:

- Identifying the parcel position of the structure
- Identifying number of floors
- Choosing the type of building entrance and its level
- Identifying the type of bay window and its position
- Choosing the type of entrance door and its material
- Choosing the window type and its material
- Identifying whether jamb-lining and/or supporting elements as façade elements are used or not.

Façade analysis was conducted on 16 houses, which preserved their originality. Data of this analysis are observed as follows;

- It is observed that only one of the houses is single-storey, while other eleven are two-storey houses.
- Houses are selected from 3 different streets. 6 of these houses are at the corner parcel, while 10 of them are located in the middle parcel. Attached building structure is visible in the overall settlement.
- The place of the selected houses, either in the valley or by the river, reflects upon façade details. Houses by the river generally have flat, street level entrances without niches and there are no basements. As for the houses situated on the hillsides, there are multiple entrance doors created by making use of the slope.
- There are no façade movements besides bay windows on the outer forms of the houses. Only in the valley settlement, in three houses with high entrance levels, entrances are constructed with niches in order to prevent extension of stairs to the street. One of the houses has an entrance from the garden, while the other 15 houses have entrances from the street.
- Eight of the houses chosen in Sille, which display housing in accord with the land slope, have leveled entrances. Entrances of these 8 houses were made above street level in order to create door height for the basement level or to detach floor entrances by making use of the land slope.
- Two of the houses have entrances in the middle of the flat façade, while 4 of them have entrances in the middle of the area below the bay window and 5 of the houses have entrances in the corner of the area below the bay window. Entrances below the bay window are the dominant characteristic of entrances.
- Symmetry on the façade was observed only in one house for the entrance floor and in three houses for the first floor.
- Not all of the chosen houses have eaves and they display cubic façade characteristics with flat soil roofs.
- There are no bay windows in 5 of the chosen houses and they are in plain cubic shape. Flat bay windows supported by angle braces (göğüsleme) are dominant in 8 houses, while there are square edged (gönyeli) bay windows in the other 3 houses. Some of the flat bay windows are used as open spaces and they function as today’s balcony.
- As seen in the house numbered 7, there can be multiple square edged bay windows along the façade in different sizes. The aim of this bay window is beyond enlarging the space;
rather it stems from the attempt to give the space a shapely geometric form. The depth of these bay windows does not necessitate support.

- There are no bay windows with corners in Sille houses. There are a total of 11 chosen houses with bay windows. Four of these houses have bay windows along the façade, while 3 of them have bay windows in the middle and 4 of them have edge bay windows. Bay windows in houses express the place of the main room on the façade. They are placed above the entrance as much as possible; and in this way, they are also used as entrance eaves. In 9 of these houses with bay windows, angle braces are visible as the dominant characteristic. Wood was heavily used in windows and doors of Sille houses. It is seen that only 3 of the houses have iron doors. Five of the doors have single wings, while 8 of them have double wings. Half of the windows have wings, while the other half consists of hung windows. Most of the houses’ gardens disappeared within the course of history; therefore, their gardens are not evaluated within the façade analysis.

- Seven of the chosen houses have window and door frames, which are among façade ornaments of traditional houses.
Table 2: Façade Analysis of Traditional Sille Houses Table-1 (Source: Authors).

| Figure Number | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | Dominant |
|---------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|-------|
| **Window**    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Window Frame  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Wood          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Hung Window   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Winged        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| **Door**      |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Iron          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Double Wing   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Single Wing   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Wood          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Double Wing   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Single Wing   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| **Finishing Elements** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Angle Brace   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| on the Corner |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| on the Side   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| on the Middle |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| along the Façade |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| with Square Edged |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Flat          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| **Bay Window** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| on the Corner |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| on the Side   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| on the Middle |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| along the Façade |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| with Square Edged |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Flat          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| **Eave**      |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Flat Roof     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Pitched Roof  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| **Symmetry**  |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| First Floor   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Ground        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| **Entrance Level** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| High Level    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Street with Level |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| **On the Flat Façade** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| on the Middle |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| on the Side   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| **Under the Bay Window** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| on the Middle |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| on the Side   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Flat Entrance |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Entrance with Niche |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| From the Street |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| From the Garden |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| **General Architectural Features** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Mid Parcel    |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Corner Parcel |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| **Floor Number** |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Ground +2     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Ground +1     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
| Ground        |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |       |
Considering all of these findings, dominant façade characteristics observed in Sille houses are identified. It is seen that there is an attached building structure in Sille settlement. Sille houses, which consist of an entrance level and the first floor, have flat roofs with no eaves and they are in cubic shape. Asymmetry on façades is observed both on the entrance and upper floors. Entrances from different levels are among the characteristics of traditional Sille houses and it is found that they are flat and without niches. Entrances are generally below and at the corner of the bay window. It is observed that a supporting element is dominantly used. The positions of bay windows, which are widely used as façade elements, differ in accordance with the position of the parcel. Entrance doors have double wings, while windows with wings or hung windows are preferred. Wood is used as the material.

CONCLUSION
Traditional Sille’s urban fabric consists of a settlement on the sides of two mountains facing each other. It mirrors unique values of the traditional settlement organization with its castle, streets formed in line with topography, fountains, bridges, churches, mosques, chapel, baths, mansions and houses. Although it is located in close proximity to Konya, Sille draws attention as a unique site with its geographical structure, cultural life, beliefs and tradition. Hittites, Phrygians, Byzantines, Seljuks, Karamanids, and Ottomans maintained rule around Sille. Sille was a sub district for a long time during the Turkish Republic period and today it carries the characteristic of neighborhood settlement. Throughout history, Sille has been a remarkable settlement, which has significant socio-economic past within a climate of inter-religious tolerance and indulgence with its sanctuaries representing Christianity and Islamic identity. However, due to the current socio-economic changes, Sille has lost this importance to a great extent. Elements which influenced the formation of traditional architecture in Sille can be listed as follows: climatic conditions, geographical position, topography, Sille stone (heliotrope as a construction material found in Sille), traditionalized construction technology due to the utilization of Sille stone, as well as social, cultural and economic structure of the community.

The result of façade analysis conducted within the scope of this study indicates that Sille houses, which generally have the inner-sofa plan, constitute integrity with the general characteristics of the Turkish house in terms of main construction and usage principles. It is seen that the settlement carries the characteristics of its unique and typical traditional architecture both with its parcel locations, types of roofs and bay windows and types of doors and windows and their details (Table 1, Table 2). Technological developments and the wide-spread use of concrete were influential in the shaping of architectural structures in Sille, just like in any other Anatolian cities. Conservation of natural and cultural assets in regional planning is an imperative for sustainability. In terms of tourism, Sille still preserves its historical urban fabric.

Cultural and natural values of the city shape its identity. Conservation of these values will ensure the transmission of material and moral messages coming from the past to the future. In this way, it will ensure the sustainability of urban identity. In order to revive Sille’s importance in the past, it should be transformed into a tourism center. Sille is a settlement where diverse cultures lived together for a long time. With the cultural assets inherited from these cultures, Sille has the elements of culture and faith tourism, which are sought by both domestic and foreign tourists. However, since these assets are not adequately assessed today, they cannot be used in tourism. Local administrations have initiated infrastructural works, required for the conservation and restoration of cultural properties in Sille and for making use of this historic settlement in tourism. Transmission of Sille’s fabric, which was able to come to the present through a historical process, is very important in terms of preserving its artistic and cultural identity. Informing local people and raising awareness on the historic environment are seen to be the most significant tool for implementation. Research and analysis show that user needs and comfort are very influential in the unique formation of the traditional Sille house. This situation reflects upon the façades of traditional Sille houses. On one hand, change and deterioration on façades of traditional houses point out the need to put effort towards the conservation of traditional houses, which are among
our important cultural values. On the other hand, it recounts the impossibility of conserving traditional houses without meeting current needs and requests of users. Change and deterioration observed on façades are also indicators of the necessity to consider user demands in the process of conserving traditional houses. In this sense, traditional houses, which are significant elements of urban identity, and their façades, which can be considered as urban interface, are very essential. In this context, in order to ensure the maintenance of urban identity, the following steps should be undertaken: elements constituting urban identity should be studied; changes and deterioration throughout history should be identified; and existing original values should be investigated together with the current conditions and necessities. The main goal of conserving historical fabric and identity is to preserve and reclaim cultural heritage and to transmit them to future generations.

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THE EFFECT of PHYSICAL and ENVIRONMENTAL FACTORS OF A “CHILD DEVELOPMENT CENTER” ON A CENTER’S SELECTION

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Abstract
The role of education is a key factor for an individual’s development. After the 1980s the findings of educational research has shown that preschool age is a very important period in one’s development. The single parent family structure and an increase in the number of working mothers have required children to attend schools in “child development centers” (CDC). Preschool education is becoming important in the new millennium because a child’s personality, emotions, cognitive and social abilities develop during the first five years. The purpose of this study is to investigate the reasons for selecting CDCs by parents and children by focusing on physical and environmental factors. The sample was a diverse group of 95 parents and instructors who use CDCs at two different locations in Turkey. The instrument used in the study was a self-designed standardized questionnaire. The results should enlighten later CDC design studies, and give support for architects who design preschool education centers. The study may be used for educational, governmental and advertising purposes to contribute to changing the negative situation of poorly designed centers.

Keywords: child development centers; preschool education; physical environment; environmental quality; child development center selection

INTRODUCTION
Education plays an important role on an individual’s personal development and the future of society. It is an open and dynamic system that interacts with its environment and is only successful if it goes with the changes. Until the 1980s preliminary school education was described as formal and has been a subject considered in a systematic education system. Till today, there has been intensive study on education beginning from elementary to high school as a formal education period. Preschool childhood education is an important phase in the education process. Beginning with the industrialization period, preschool childhood education centers have become important, because there is a rapid increase in the number of working mothers and the problems of a single parent’s child. In the beginning, the “Child Development Centers” (CDCs) had the aim of taking care of children during the parent’s working hours. But now they have begun to be a part of basic education (Gur Sener, 2001).

In the CDCs of the 1920s, a well body health was targeted. In the 1940s, instructors focused on social and emotional development. In the 1960s, the studies concentrated on cognitive successes (Kamii, 1971). Research after the 1980s showed that the individual’s basic personal characteristics mostly developed between the ages 2 and 5. Many early childhood educators have defined the importance of children’s physical, cognitive and emotional development and the goals of CDCs. The importance of early childhood care and education has been a source of discussion for years. Opinions differ about the advisability of placing a young child in some type of care and educational setting outside of the home. Some parents and educators believe that children benefit socially and intellectually from such experiences, but there are some psychologists, psychiatrists and pediatricians who believe that a young child can be psychologically harmed by being taken care of out of the home during these early years. Of particular concern of many parents and educators is that the young child gets off to a good start.
intellectually. So the preschooler gets some basic knowledge and skills that he or she can use in the playground (Lawton, 1988).

Play enhances the usage of the child’s internal motivation, ability to make unique decisions and the usage of verbal and nonverbal communication. During play children develop their internal worlds by creating various fantasies with their imagination (Engdahl, 2011). Early childhood education is important for two reasons. First, at an early age a child’s intelligence can be dramatically affected by the experiences in the environment during play and while learning and discovering. Secondly, the growing awareness of the influence of poverty and environmental deprivation on a child's intellectual development has made these findings an urgent practical application. With these factors added to the need for providing child care services for working mothers, a major responsibility is loaded upon local communities to integrate early education with daycare (Sanoff and Sanoff, 1981). According to Bronfenbrenner (1979), our knowledge of the environment is much more than children who live in it. In the last few years, social scientists and parents have become aware of their lack of knowledge about CDCs. The aim of early childhood programs is “to provide a safe, caring environment with opportunities for each child’s ultimate social, emotional, physical, and cognitive growth” (Lawton, 1988). Early childhood centers vary in their beliefs about the growth, development, needs and abilities of children, the appropriate roles of staff and parents and the type of physical environment needed. Research about CDCs have discussed the role of the centers on a child’s development and showed the importance of the physical environment in preschool education. The physical environment around children is as important as toys and lesson plans, because children immediately respond to the sources of stimulation around them (Sanoff, 1995). For this reason, architects need to design and create places as much as educators in CDC design (Dudek, 2008). The aim of enrichment of a CDC physical environment is an important subject to be discussed.

THE IMPORTANCE AND THE QUALITY OF PHYSICAL ENVIRONMENT FOR THE DEVELOPMENTAL NEEDS OF A PRESCHOOL CHILD

During the preschool period, the child’s socio-emotional, cognitive and physical developments are affected by his/her experiences, and interaction with the environment is a basic factor in his/her personality. It is also understood from recent studies that a physical milieu that a child can explore, examine and learn with has a positive effect on both a child’s behavior and his/her learning capacities and talents. As a branch of environment-behavior studies, there is a great deal of research made on child-environment relations, particularly on the role of space in early childhood education (Coates, 1974; Gump, 1975; Prescott, Jones et al., 1967, 1972; Prescott and David, 1976; Moore, 1983, 1986; Weinstein and David, 1987; Cohen, McGinty et al., 1982; Moore, Lane et al., 1994; Moore, Sugiyama et al., 2003; Burger, K. (2010); Abbas and Othman, 2011, Dalli, White et al., 2011;Pairman 2011-2012; Rentzou, 2014).

All children are motivated to interact with the environment (Piaget, 1966). Development of the child is a process whereby the child changes the environment and in turn adapts to changes in the environment. Children learn via interaction with their physical and social environment, the staff, curriculum and space. The active agents in a child’s development are exploring, discovering, testing, and experimenting, imitating, fantasizing and developing. With these agents, he or she not only interacts with the social environment of people, staff, and other children, but also with the physical environment such as architecture, furniture, and materials available. Development occurs when a child observes the consequences of his or her personal actions upon materials and events. The overall quality of this interaction depends on engagement possibilities with the environment (Moore, Lane et al., 1994).

Children begin to understand themselves by their contact with the physical and social world. Unlike the world of adults, the physical world reflects his or her manipulations and it offers a particularly valuable domain for developing a sense of self (Hart, 1987). The CDC’s physical environment quality and the organization of its interior and exterior spaces are important issues to be thought about for the child’s development as a result of his or her spatial experience and learning. The result of research shows that children growing in qualified CDCs have a high level
of communication skills, lingual intelligence and positive social behavior (Philips, Scarr et al., 1989). The design process for a qualified childcare and development environment necessitates a CDC program that answers developmental needs of children spatially (Sanoff, 1995).

Limited research has been made on the physical environment quality of a CDC. Prescott and her colleagues (1967) realized that the physical environment is the variable that appears to be implicated, and devised a scheme for evaluating the quality of the environment. She proceeded to rate the indoor and outdoor space in all of the centers in their samples. Prescott Jones et al. (1967, 1972) pointed out that there is a link between spatial quality and behavior. In CDCs with high spatial quality, children are found to be more involved and the instructor spends less time on management and enforcement of rules and more time in responding to children and fostering social interaction. In another research, Prescott (1987) explains a number of increasingly complex observational measures of environment quality and discusses the implications of particular spatial features for program content and for child behavior.

Buildings with certain qualities constitute a strong image on any observer. CDCs give silent messages reflecting inner activities and life. The first impression of parents and children on a CDC is formed long before entering the building. So for children and parents, these messages can be inviting or not. Also, it is thought that there is a strong relationship between the preference of the centers by the parents and their children, and the center’s image. Thus, the aim of this study is to investigate the physical and environmental properties which effect CDC selection and its image by parents and preschoolers.

THE PHYSICAL AND ENVIRONMENTAL FACTORS THAT AFFECT CDC’S SELECTION

Selection of a CDC is related to the image of the center in a preschooler and his/her parents’ minds. At the same time, this image is affected by both physical and environmental factors. To design a warm and attractive atmosphere, it is necessary to investigate both of these. The physical factors are the properties of sub-spaces such as: the front yard and front porch, entrance space and paths, outdoor play and learning spaces. Environmental factors are related to the relationship with parents, child and community such as: high visibility in the community, user-friendly and child centered aesthetics, and scale and location of the CDC. It is important to design a CDC with interior and exterior spaces on a child-scale, to increase the aesthetic quality for drawing preschooler’s attention and to have different image than institutional buildings. Also, to be aware of CDC’s existence and place, it is important to build a CDC to be visible.

Figure 1: Home as a Model for Child Development Center
(Source: Moore and Lackney, 1994; Moore, Lane et al., 1994).

Some researchers support the idea of home-like front yards and front porches that decrease anxiety about school. This situation reassures both child and parent that the CDC is home-like in its overall functioning (Moore, Lane et al., 1994). The use of pitched and visible roofs is another
design response (Figure 1). It is important to minimize the rapid transitions between home and institutionalized educational facilities for young children (Wapner, 1995).

There are many examples in architectural literature of centers that use home-like elements in their design such as pitched and visible roofs, residential scaled, colorful and aesthetically pleasing entrances, shutters on windows reflecting neighborhood homes, and many good examples of residential looking design, with one-story sloped roofs, playrooms engaging the surrounding landscape, and enclosed “backyard” space for outdoor learning activities (Moore and Lackney, 1994). The home, rather than office or other institutional buildings, is a model or image for the child development center. In CDC designs rather than designing institutional environments, home-like atmospheres should be created (Kotnik, 2011). For children, an old house has a positive image because it has a “homey” atmosphere. For parents however, new construction has a positive image because of the relative ease in creating functional space.

**Physical Factors**

The first group of factors that affects the selection of a CDC for parents and children is physical. The physical factors of CDC selection handled in this study are properties of front yard and front porch, entrance space, paths and outdoor learning spaces.

**Front yard and front porch properties:** Pollowy (1977) indicates that young children have more tendencies to part from their parents if they are in a familiar setting. This yard leads directly into a front porch as the next degree of enclosure in the overall entry-transition sequence. The front porch is a covered space which provides weather protection. Here parent and child may linger for a few minutes before entering the center. The outdoor area leading to the entry is partially enclosed by shrubbery, fence, wall, etc., and scaled like a small, enclosed yard or court (Figure 2).

The covered entrance can be large enough to provide outdoor waiting space and protected enough to provide transition space for people using the building. An outdoor covered space at the entry includes a minimal amount of seating on both adult and child scale. This could be under an overhang, on a porch, or on a deck, etc. Parents are encouraged to go inside and interact with their children (Moore, Lane et al., 1994).
**Entrance space and paths properties:** The very first impression of parents and children of a CDC is formed long before entering the building. This impression is related to the degree of clarity or confusion in finding the entry (Moore, Lane et al., 1994). If the path from community to center is unclear and the entry is difficult to find, both child and parent will enter the center with a residue of frustration. If children are unfamiliar with identifying building types by subtle architectural cues, then they may identify buildings by the activities that they see happening inside (Appleyard, 1969). If children can see activities through windows while they are approaching the entry, this may relieve anxieties and apprehensions (Figure 3).

![Figure 3: Entrance Space and Paths Arrangements](Source: Moore, Lane et al., 1994).

Methods of making the pathway obvious include a gateway, possibly even with a sign over it, landscaping and pavement cues, level changes, rhythmically spaced color, lights, or reflectors. Making the entry obvious may be an extension of the pathway cues (e.g. carrying the same pavement indoors), or can be an emphasis point in the building form (Cohen, Moore et al., 1978).

**Outdoor learning spaces:** Outdoor learning spaces are among the most memorable places of childhood. Playgrounds are for exercise and physical coordination. Indispensably, they are places to test imaginations and social skills of children (Caples, 1996; Themes, 1999; Greenfield, C.F., 2012). Outdoor playgrounds are not simply for releasing stored-up energy. Learning and playing spaces should contain sites for children to develop their imagination and creativity, to use for an area of activity and to satisfy their need for play (Sener, 2001). As a result of research, it has been widely recognized that almost anything that can be done indoors also can be done outdoors. For this reason playgrounds should be designed in much the same way as playrooms (Frost and Wortham, 1988; Vaughn, 1990; Guddemi and Eriksen, 1992). The only difference between indoor and outdoor spaces is that indoor spaces have a roof over them. Both of them need architectural expression and they are thought to be an obligation to meet the child’s developmental needs.

In contemporary playground design, the aesthetic values such as sculptural play elements, novel forms, colors and textures become important features (Hayward, Rothenberg et al., 1974; Rohane, 1981). The diversity of ground covers on horizontal, vertical and inclined surfaces enriches the preschool child’s experience (Shaw, 1987).
Environmental Factors
The second group of factors that affects the selection of a CDC for parents and children is environmental. The environmental factors of a CDC selection are visibility in the community, user friendly and child centered aesthetics and scale and location.

Visibility in the community: According to Appleyard (1969), people remember buildings firstly by their function, secondly by visibility to the cone of vision walking and driving, and thirdly by its architectural character and detail. Moore and his friends (1994) in their research pointed out the importance of the high visibility of a new child development center: so that parents know about its existence and location, and a measure of protection for children, buildings and grounds (Figure 4).

User-friendly and child centered aesthetics & scale: The utilization, the experience and the visual perception of the space according to children should be imagined and the design should be adapted to the scale of children (Kotnik, 2011). Child-scaled and user friendly spaces are more pleasant for children. In the past few years some researches have been made to minimize the institutional character, and in general, the exploration of friendly, less institutional, and distinctive personalities for buildings. Other examples to this user-friendly aesthetic demand include the creation and use of natural materials and colors (e.g. cedar channel sliding), extensive landscaping coming right up to the school, interesting, and engaging spaces, forms, textures, etc., child scaled spaces, and the use of friendly symbols (Moore, Lane et al., 1994). There is limited evidence that soft playrooms are related to higher levels of voluntary participation, and that overall aesthetic quality in educational facilities is related to students’ task persistence.

Location of child development center: An environmental psychologist, Terrance Lee (1964), found out that preschool children walking to child-care centers, interacting with people and the environment along the way have a better understanding of their physical environment than those having to be driven in cars, buses or services. He suggested the possible appropriateness of child-care centers being within the child’s immediate neighborhood. Such a finding is not surprising, given Piaget’s general theory of child development which stresses that for the young child, knowledge is concrete and active, that it arises from actions and objects, not abstract considerations of them. Thus, child development facilities are preferred to be located in the child’s own neighborhood whenever possible and most children are able to walk between home and their child development facilities (Lee, 1964; Moore, Lane et al., 1994; Cohen, 1974; Prescott and David, 1976).
Child development centers are preferred to be located near community learning resources which we could call places of natural interest to children, like libraries, interesting places of work, shops, museums, galleries, nature areas such as zoos and botanical gardens. This will provide opportunities for field trips, use of nature as a learning environment and the possibility of sharing certain facilities (Moore, Lane et al., 1994).

RESEARCH OBJECTIVES, METHOD AND ANALYSES

The overall physical properties of a CDC are important variables for child care. Well-designed centers help children to develop their cognitive and behavioral talents easily. If a center can help children to develop, it would be a preferred one by parents from among the other centers. Being enrolled at a child development center is often a child’s first separation from his or her parents, home and familiar surroundings. Generally, all children can find this experience difficult and anxiety provoking. Initial impressions of the center of both the building and its occupants can effect adjustment to the new environment for both child and parent. Properties of a building make it seem warm and inviting in appearance, or cold and formal. A CDC has the real possibility of being overwhelming to a child by its formality, size and lack of friendliness. Both the site and the center should look like it belongs to children and should fit pleasantly into the physical context.

Within this study, in terms of the above-mentioned necessities and spatial preferences of the preschoolers’ parents and instructors, a survey design has been conducted. The objectives of the research are to investigate the following issues and properties related to the center’s image and environmental properties that affect the CDC selection by parents and preschoolers as addressed in the questionnaire:

- visual properties that affect this selection,
- important physical properties which constitute the image of a CDC in a parent’s mind;
- the factors that enhance the general positive influence of a CDC;
- location properties.
- the visibility of a CDC as observed by pedestrians and drivers,
- user-friendly and child centered aesthetics and scale.

The sample is a diverse group of the preschooler’s parents and instructors who use CDCs in two different locations in Turkey, Antalya and Istanbul. In order to ensure the quality of the study, the research team communicated the survey with instructors in the target CDCs first, and then organized similar schedules. The sample group was selected randomly to ensure that recruited preschooler’s parents were demographically diverse in education and from middle and high socio-economic status. The survey instrument used in the study was a self-designed standardized questionnaire. The questions which were asked in the questionnaire were closed and open-ended. The questionnaire was distributed and tested on the sample group of 95 persons: 79 preschooler’s parents and 16 preschool instructors. Within these 79 parents, 55 were female, and 24 were male. Information, which can be data for the design of CDCs and about the experiences and preferences of the preschoolers’ parents and instructors, has been analyzed.

RESULTS

All 95 respondents were interviewed using a questionnaire to examine the CDC selection under the following topics:

1. Visual, Institutional Image and Positive Influence Properties of CDC: Institutional image type, visual properties, and other properties that enhance positive influence of a CDC that affects selection by parents and preschoolers have been investigated under this topic:

   Visual properties: Parents and instructors were asked to select visual properties that affect CDC selection. Percentages for answers given for “Visual properties” are respectively: 37% for “playground contents”, 17% for “symbols”, 15% for “aesthetic quality”, and 12% for “landscape”,...
10% for “colors”, 8% for “façade materials”. For instructors the “playground contents” factor increases to 56% while “symbols” decrease to 12% and “landscape” and “aesthetic quality” to 8% (Figure 5). Other visual properties for selection added as answers to open-ended questions by parents are: sufficient greenery, secure entrance, healthy material usage in ground cover, clean toilets, lighting, cleanliness and volume properties of sleeping spaces, interest of instructors, toys, discipline, homely atmosphere, comfort, qualified education and hygiene. Instructors added: education quality and reliability, reliable environment, quantity of education materials, homely atmosphere and clean physical space, individual interest, references to institutional image factors for CDC.

![Figure 5: Visual Properties that Effect CDC Selection.](image)

- **Institutional image**: Percentages for answers given for “institutional image of CDC” are respectively: 45% for “homey”, 38% for “school”, 18% for “institutional-homey”, and 8% for “homey-school”. For instructors the “homey” factor decreases to 32%, “homey-school” to 0% while “institutional-homey” factor increases to 32% (Figure 6).

![Figure 6: Institutional Image Properties that Effect CDC Selection.](image)

Also, parents and instructors gave extra definitions to an open-ended question for image factors. For image of a CDC parents added; disciplinary homey atmosphere, environment that join children together and provide safety playing, possibility for activities that enhance child's bodily and mental development, disciplined with amity, not a boring environment, family environment and discipline, warm and understanding, a garden fulfilled with adventure elements, friendly, clean and well cared atmosphere. Instructors mentioned; environment that provide free motion for
child, a place that child can feel at home in between CDC rules, a CDC that can make child feel as researcher, free and happy.

**Positive influence:** Parents and instructors were asked to sort CDC properties that enhance its positive influence on them from most important to least. The scores changed from one for the least to eleven for the most important. The average score per respondent is 9.4 for “homy” atmosphere, 7.1. interior-exterior spaces in child-scale, 6.9 direct playroom-outdoor learning space relation, 6.7 visibility of interior child activities from the entry, 6.1 visible entry, 6.0 high quality front yard ground cover, 5.6 location of CDC, 4.9 exterior view of CDC, 4.8 in a residential scale, 3.9 use of pitched and visible roof, 3.8 quality of surrounding buildings (Figure 7).

![Figure 7: Properties of CDC that Enhance its Positive Influence.](image)

**2. Environmental Properties of CDC:** Visibility in the community, user-friendly and child centered aesthetics and scale, location of a CDC that affects selection by parents and preschoolers have been investigated under this topic:

- **Visibility in the community:** Percentages for answers given for “the visibility of a CDC to passing motorists, riders of public transportation and people walking around” are respectively: 77% for “yes” and 23% for “no”. The reasons for the negative answers are: (1) drivers will drive carefully if they see CDCs, (2) everyone will be aware of the existence of a CDC. The answers of parents and instructors are similar to each other.

- **User-friendly and child centered aesthetics and scale:** When asked to the sample group if the equipment in the preschooler’s learning environment are child-scaled, percentages for answers given are respectively 100%. Percentages for answers given for “the relationship between child-scaled equipment and participation of child to the activities” are respectively; 96% for “yes” and 4% for “no”. The answers of parents and instructors are similar to each other.

- **Location:** Percentages for answers given for “location properties” are respectively: 44% for “near home”, 19% for “not crowded street”, 19% for “near to residential area”, 11% for “isolated”, and 7% for “presence of childhood population”. For instructors, “isolated” factor decrease to 0% while “not crowded street” increased to 37% and “near to residential area” to 24% (Figure 8).
DISCUSSION AND CONCLUSION

As a result of industrialization, a rapid increase in the number of working mothers and problems of a single parent child, the existence and design of preschool child education centers have become important. The quality of interaction of a preschooler with his or her physical environment is related to the possibilities of the physical environment and the richness of the environment in which a learning experience will be realized. For this reason, there are too many alternatives of CDCs with different space qualities. So the selection for the right CDC becomes an important subject. In this study, physical and environmental factors that affect the CDC selection of parents and preschoolers have been reviewed. With case study visual, institutional image, positive influence properties and environmental properties of CDC has been investigated. According to the above results, the following findings and recommendations are thought to enlighten later CDC design studies.

CDC design criteria for a building must not be "institutional". Design should be away from formality, and be warm, inviting and comfortable for children, parents and staff. CDC design should look “homey”. The general image of a CDC should be on that gives a disciplinary homey atmosphere, an environment that joins the children together and provides safe playing, possibility for activities that enhance a child’s bodily and mental development, disciplined with amity, not boring, a family environment with discipline, warm and understanding, friendly, a clean and well cared atmosphere, a place that can make a child feel like an explorer, free and happy. The appearance of the building’s exterior, its location, and the quality of surrounding buildings and other facilities are other important variables in this image.

Playgrounds which can also be thought of as outdoor learning space, their contents, aesthetic quality and symbols are the most important visual properties that affect CDC selection. It is as important as indoor space for qualified childcare. Other important visual factors for center selection are sufficient greenery, secure entrance, healthy ground cover material, lighting, homey atmosphere, reliable environment, clean physical space.

The properties of CDC that enhance its positive influence are “homey” atmosphere, interior- exterior spaces on a child-scale, direct playroom-outdoor learning space relation, visibility of interior child activities from the entry, visible entry and front yard ground cover with high quality. Children’s image for the child development center will be positive when it helps children to see from nearby paths, projects, activities, and spaces in the building (Osmon 1971).
Child development centers should be visible to passing motorists, riders of public transportation, and people walking in the area. The reason for ease of sighting is that everyone will be aware of the existence of a CDC.

Location properties of CDC are to be near home, not on a crowded street and near to a residential area. The child development centers located within walking distance of the majority of users’ homes and on a line between neighborhoods will maximize community involvement, provide for integrated settings, engage children more in their immediate physical environment, and contribute to the development of environmental cognition (Rahaim and Moore, 1982; Moore, 1987). For the practical image of the child development center, it should not be located in an area where there is a noticeable outflow of population. Instead, they should be located in areas of stable or increasing child population (Moore, Lane et al., 1994).

It is important that a CDC design be built giving importance to:

- increase the aesthetic quality to draw attention of children,
- form a different image than institutional buildings,
- design interior and exterior spaces in child scale,
- form a homey atmosphere at approaching to the center
- have visibility easiness for parents to inform about the existence and location of the center.
- select the location of CDC near to the residential area,
- increase the outdoor learning space content quality,
- provide visibility of interior child activities from the entrance.

This article points out design properties that affect child development center selection by parents and preschoolers and adds to the existing literature on child development center selection by examining physical and environmental factors. Further studies may be carried out for physical and environmental properties of a child development center that have been mentioned in this study. These efforts may contribute to changing the negative situation of poor design centers. This study may be used for educational, governmental and advertising purposes.

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EVIDENCE FOR DESIGNING HEALTH PROMOTING POCKET PARKS

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Abstract
The use of urban green environments has repeatedly been associated with improved health and well-being for people living in cities. This study focuses on the health promoting potential of pocket parks in the dense city area of Copenhagen. A natural experiment was conducted, which evaluated one pocket park, Dantes Plads, before and after a redesign. Six people were interviewed about their perception of the change. First of all, the results show that Dantes Plads is primarily used for ‘rest and restitution’. Furthermore, the interviewees prefer to have the presence of sun, shade and planting in relation to rest and restitution, while varied ‘terrain’ may create fascination thereby providing the opportunity for restoration. ‘Noise level’ is perceived differently from subject to subject, while ‘benches’ as well as ‘visual angels’ should not be oriented directly towards disturbing surroundings. The findings add to existing knowledge on the design of health promoting pocket parks for ‘rest and restitution’ in dense city areas.

Keywords: Pocket park; Redesign; Evaluation; Perception; Design

INTRODUCTION
Increased urbanization and densification is a wide spread tendency in cities and the people who live in such areas often have stressful working lives, which may lead to a number of stress related lifestyle diseases (Mitchell & Popham, 2008). Frequent exposure to green environments has been found to be of crucial importance in relation to the prevention of such lifestyle diseases, as they support psychological restoration (e.g. Kaplan, 1995; Hartig, Evans, Jamner, Davis, & Gärling, 2003). However, the densification tendency in cities has resulted in a decrease in the amount of green outdoor environments (James et al., 2009). In order to ensure that the urban green environments that do exist in the densest part of the cities support health promoting use, it is important to understand the specific functions they fulfil in relation to people’s daily needs, wishes and expectations regarding exposure to outdoor environments. According to Attention Restoration Theory (ART), the relationship between human beings, nature and urban areas has been described from a cognitive perspective (Kaplan, 1995). The theory suggests that humans have two types of attention; directed attention and soft fascination. Directed attention is used when we have to concentrate on important things. In this process, we have to sort out distracting things, which demand much effort and which over time can cause mental fatigue. To recover our directed attention, we need to stimulate our soft fascination. According to ART theory, humans have adapted to nature as a species and therefore perceive nature as potential areas to achieve soft fascination, which thereby prevents mental fatigue (Kaplan, 1995). According to the WHO
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In 2009, the City of Copenhagen introduced their ‘Pocket Park Program’ (City of Copenhagen, 2009), the purpose of which was to increase the provision of pocket parks with 14 new areas before 2015. At the time of writing, five had been established, one of which is Dantes Plads which was redesigned in 2010/2011. Dantes Plads therefore provided the unique opportunity to investigate the design and use of a pocket park in the densest part of Copenhagen before and after a redesign. We hypothesize that local users of Dantes Plads may contribute
valuable information on how the design of pocket parks best meets user needs. We therefore pose the following research questions:

- Who used Dantes Plads before and after the redesign and how?
- How did the users perceive the design before and after the redesign?

**METHODS**

*Analysis Of Dantes Plads Before The Redesign*

Before the redesign of Dantes Plads, the area was split into two zones; one for parking, and one for recreational use. The part of Dantes Plads that could be used for recreational purposes was a rectangular area of 932 m² facing H. C. Andersen's Boulevard, which is heavy trafficked and has a significant influence on the area. In the rather small rectangular area, there was no variation in the terrain. The paved area constituted the primary place where people could use the benches or could stop and look at the historical building ‘Glyptoteket’ (art museum) on the other side of the road. The lawn, which the users could walk on and use (lying, sitting), functioned as a secondary area. The path towards the road was the primary passage along which people walked. Minor paths which crossed the area on each side functioned as transit paths. The area was defined by edges created by the buildings which faced the area. A smaller edge seperated the green area from the parking area. The paved area was furnished with flowerpots and benches which functioned as places where people could take a break when passing the area. The benches were placed facing the hardscape surface of the area meaning that users had the green features behind them. There was nowhere to sit in the shade. The green area consisted of a lawn, flowerbeds and bushes. There was no distinct lighting in the area.

Figure 1: Dates Plads before the redesign (Source: Authors).
Intentions With The New Design Of Dantes Plads

Dantes Plads was redesigned by GHB Landscape architects in cooperation with COBE architects and the consultancy company Grontmij. One of the core issues in the program for the future design of Dantes Plads was to maintain the number of parking spaces. Furthermore, it was a great wish to maintain the culture-axis which goes from the parliament building ‘Christiansborg’ to the ‘Meat Packing District’ (see figure 4). As far as possible, the architects wanted to save the existing trees while the geometry, colors and materials used had to relate to Glyptoteket (a museum with a collection of sculptures, see figure 3), which is the primary relation to Dantes Plads (Weeke Borup, 2014). The intention was to create a green space with a large variety of planting for the whole year. It had to be possible to sit in the sun and shade on traditional benches placed in the area. Natural walking lines had to ensure that the whole area would be used. The variation in the terrain had to provide secondary places to sit, lie, play or run. The waving terrain had to direct focus away from the parking spaces without making a dominant border between the two functions (Weeke Borup, 2014).

Figure 4: The green line indicating the ‘Culture axis’ from ‘Christiansborg’ to the ‘Meat Packing District’ (Source: Authors).
Analysis Of Dantes Plads After The Redesign

After the redesign, the parking spaces have been integrated in the area. Dantes Plads is still influenced by ‘Glyptoteket’ and H.C. Andersen’s Boulevard. The area furthest away from the road constitutes the primary area where there are several opportunities to sit. The area closest to the road includes the parking spaces and is a secondary space. The major paths pass the area on each side beside the roads, while minor paths run along-side the buildings and across the area. The buildings constitute the edges and influence the experience of Dantes Plads. The benches in the middle of the area face the area itself. The surface create connections between the area and ‘Glyptoteket’ and is raised-up in certain places to form wave shapes which create sloping surfaces at various angles. The edges of the ‘waves’ create spaces for sitting, lying and playing. Towards H. C. Andersen’s boulevard, long narrow flowerbeds create an edge between the parked cars and the sidewalk. There are planting beds with trees and flowers which provide opportunities for sitting in the shade. Paving stone lights have been added in the surface which accentuate the variation in terrain.

Figure 5: Dantes Plads after the redesign (illustration modified (Source: Weeke Borup, 2014).
Data Collection
This study investigated Dantes Plads pre and post a redesign. The time periods for the data collection were April till October 2010 and summer 2012. The summer months were chosen as the weather is best during those months which moreover most likely would increase the number of visitors in the pocket park. Questionnaires were handed out at both time periods to people using the area for a longer or shorter stay, which means that people who were just walking past the area were not included. In 2010, data were collected in the mornings, middays, evenings and in weekends in order to reach as many different users as possible. Due to time constraints, we calculated the peak periods for responses for the data collection in 2010 and decided to focus on these periods for the data collection in 2012. The questions included in this study concerned reasons for use, and the questions were: ‘Why did you come here?’ for which the possible answers were, ‘to socialise’, ‘Passage’, ‘to walk the dog’ and ‘Rest and restitution’. Additionally, ‘Other’ was included whereby respondents could state another reason for visiting the area. Questions regarding demographic background (age, gender, education, nationality) were also posed. The questionnaires used in 2010 and 2012 were identical apart from the following two questions which were added to the 2012 version: ‘Did you use this area before the redesign?’ and ‘If yes, what did you use it for?’

Interviews
In addition to the questionnaire survey, in 2012, 6 interviews were conducted with respondents who answered that they had known Dantes Plads before the redesign. Based on experience from data collection in 2010 it was decided not to conduct interviews on rainy days as hardly any visitors would be present. The interview was semi-structured allowing the questions posed by the interviewer to differ slightly from the interview guide. However, the same themes were discussed with all interviewees (Bryman Alan, 2008). In general, not many approached respondents wished to participate in the interviews and those who did, did not have much time so each interview lasted for approx. 5-7 minutes. The questions asked are presented in Table 1.

The interviews were transcribed and analyzed. The analysis focused on the themes addressed in the interviews about use, as well as perception of the design and the proximity to the road before and after the redesign. SPSS version 20 was used to analyze the general use and the demographic background of the users.
Table 1: The questions included in the semi-structured interviews.

<table>
<thead>
<tr>
<th>Number</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>‘Do you use Dantes Plads differently today than before the re-design?’</td>
</tr>
<tr>
<td>Q2</td>
<td>‘Can you see that changes have been made to the area?’</td>
</tr>
<tr>
<td>Q3</td>
<td>‘Are there any specific features in the new design of Dantes Plads that you notice?’</td>
</tr>
<tr>
<td>Q4</td>
<td>‘How do these changes influence your experience of Dantes Plads?’</td>
</tr>
<tr>
<td>Q5</td>
<td>‘In this relation, which parts of Dantes Plads meet your needs the best?’</td>
</tr>
<tr>
<td>Q6</td>
<td>‘Are there any special reasons why you visit Dantes Plads?’</td>
</tr>
<tr>
<td>Q7</td>
<td>‘Does the big road next to the pocket park have an influence on your experience of Dantes Plads?’</td>
</tr>
<tr>
<td>Q8</td>
<td>‘What influence did the road have on your experience before the redesign?’</td>
</tr>
</tbody>
</table>

RESULTS

The Demographic Background And The Reasons For Use

Initially, the users of Dantes Plads and how they used the area were investigated before and after the redesign. As presented in table 2, slightly more men were among the users after the redesign. Furthermore, the distribution of the users in relation to education has changed. After the redesign, the majority of users were highly educated (more than 15 years), while before the redesign users with 10 to 15 years of education were observed using it the most. With regards to reasons for visiting Dantes Plads, the majority stated that the main reason was ‘rest and restitution’ both before (35 %) and after (40%) the redesign. ‘Other’ (40%) is equal both before and after the redesign. The majority of people visited Dantes Plads ‘less than once a month’ or for the ‘first time’ both before (65%) and after (56%) the redesign. However, quite a few people also visited Dantes Plads several times a week before (19%) and after (22%).

Table 2: Demographic background of respondents and use before and after the redesign of Dantes Plads.

The figures highlighted in bold are those that differ noticeably from before and after.

<table>
<thead>
<tr>
<th>Total population (15-100 years)</th>
<th>Before (%)</th>
<th>After (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (15-100)</td>
<td>52</td>
<td>60</td>
</tr>
<tr>
<td>Nationality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Danish</td>
<td>88</td>
<td>96</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 10 years</td>
<td>21</td>
<td>9</td>
</tr>
<tr>
<td>10 - 15 years</td>
<td>48</td>
<td>29</td>
</tr>
<tr>
<td>&gt; 15 years</td>
<td>35</td>
<td>53</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 – 29</td>
<td>13</td>
<td>24</td>
</tr>
<tr>
<td>30 – 49</td>
<td>40</td>
<td>36</td>
</tr>
<tr>
<td>50 – 65</td>
<td>35</td>
<td>27</td>
</tr>
<tr>
<td>66 – 100</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Reasons for visit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socialising</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>
The Six Interviewees
In total, six people agreed to be interviewed, henceforth referred to as R1-R6. All answered that they knew the area before the redesign. In the following table 3, the six interviewees are presented.

Table 3: The six interviewees.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Code</th>
<th>Age</th>
<th>Education</th>
<th>Reason for visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man</td>
<td>R1</td>
<td>42</td>
<td>&gt; 15 years</td>
<td>Passage</td>
</tr>
<tr>
<td>Man</td>
<td>R2</td>
<td>48</td>
<td>&gt; 15 years</td>
<td>Rest and restitution</td>
</tr>
<tr>
<td>Man</td>
<td>R3</td>
<td>65</td>
<td>&lt; 10 years</td>
<td>Work</td>
</tr>
<tr>
<td>Man</td>
<td>R4</td>
<td>28</td>
<td>10 – 15 years</td>
<td>Study</td>
</tr>
<tr>
<td>Woman</td>
<td>R5</td>
<td>57</td>
<td>10 – 15 years</td>
<td>Smoking break</td>
</tr>
<tr>
<td>Man</td>
<td>R6</td>
<td>51</td>
<td>&gt; 15 years</td>
<td>Passage</td>
</tr>
</tbody>
</table>

In the following tables 4 – 8 the responses to the questions (Q1 – Q8) are presented in five categories.
**Category 1: Reason for using Dantes Plads (Q6)**

Table 4: Responses to the question constituting category 1: Reason for using Dantes Plads.

Even though only one respondent said that he used the area for ‘rest and restitution’, the activities performed by those who answered ‘passage’ or ‘other’ are still quiet activities which may be in line with ‘rest and restitution’.

**Category 2 (Q1): Experience of design before the redesign**

Table 5: Responses to the question constituting category 2: Experience of design before the redesign.

**Category 3 (Q2-Q5): Experience of Dantes Plads after the redesign**

Table 6: Responses to the questions constituting category 3: Experience of Dantes Plads after the redesign.

<table>
<thead>
<tr>
<th>Category 3 (Q2-Q5): Experience of Dantes Plads after the redesign</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A number of the respondents especially noticed the sun, light and shelter</strong></td>
</tr>
<tr>
<td>(R1): ‘...and the sun, it’s usually here in the morning’</td>
</tr>
<tr>
<td>(R6): ‘...the light is a bonus, that’s what I notice’ and ‘... I sit where the sun is’ and ‘I think it was nice before but judged on the light I think this is better’</td>
</tr>
<tr>
<td>(R4): ‘...you can sit where the trees create shadow and shelter but also if you want sun you can sit where the sun is shining upon you’ and ‘...You could also do that before, but I wouldn’t say that you could where there was good shelter and shade before...it was kind of moved towards Tivoli (amusement park) and the road and you would sit and look at the traffic most of the time’</td>
</tr>
<tr>
<td><strong>More specific comments about the terrain, planting (trees/life, fauna) and furniture:</strong></td>
</tr>
<tr>
<td>(R1): ‘No I didn’t’... (use the benches before the redesign) now there is this bench and you can sit a little more undisturbed in peace and quiet. But you still have H.C. Andersen’s boulevard rumbing by’ and ‘What I notice now is those ‘mountains’ in the middle and the flowerbed’....</td>
</tr>
<tr>
<td>(R4): ‘The raised terrain...that’s very characteristic for this little pocket park. The tile surface is also new and the planting...the planting is definitely defining the space and you can sit different places and see different things’ and ‘It means a lot to me that the landscape has been used as a theme and that the area changes over the day in relation to the sun and in the evening when the lights are turned on in this varying plateau’</td>
</tr>
<tr>
<td>(R5): ‘... It (the planting) creates life for insects and birds, it creates shadow if one wants that, and it creates shelter when they grow a bit bigger right. In total it gives a lighter character to the place’</td>
</tr>
<tr>
<td>(R6): ‘It has become well-arranged, it is more tidied up without being too much and completely stringent. I like the variations here. Compared to earlier I think it has been opened up and become lighter’</td>
</tr>
</tbody>
</table>
Category 4 (Q4): Proximity to workplace as a positive thing for both companies and for employees

Table 7: Responses to the question constituting category 4: Proximity to workplace as a positive thing for both companies and for employees.

| Category 4 (Q4): Proximity to workplace as a positive thing for both companies and for employees |
| One respondent who worked for a travel agency with a view to Dantes Plads mentioned |
| Another respondent also working close to Dantes Plads answered to the question: Do you use it in breaks to go out and sit? |
| Another two mentioned: breaks to go out and sit? |

(R2) ‘...now it has become an urban space and that has been an argument for placing our company here'. Another respondent also working close to Dantes Plads answered to the question: Do you use it in breaks to go out and sit? ‘...Yes we do that's definite...’ (R4).

‘...a small break in order to prepare for a meeting, Charge the batteries' (R6), ‘Now I can sit out here quiet and peaceful and just get five minutes break before I have to go up again, right' (R5).
Category 5 (Q7-Q8): Proximity to road

Table 8: Responses to the questions constituting category 5: Proximity to road.

(R1): ‘I did not think it was interesting before, it was the road. Now you can be here and sit in the middle. And that means that you can get a little away from the road’…‘there is still a lot of noise though, but I guess you cannot avoid that in the middle of Copenhagen’

(R2): ‘…to us (the company) it has had a positive influence in that we chose a situation where we get more exposed to passing traffic, so in that relation it has been positive. Otherwise there is not much positive to say about traffic’.

(R3): ‘…it’s very interesting to see all the passing cars. ‘on the contrary ‘you can see the cars better now, it seems more negative now than before’.

(R4): ‘…Sometimes it can have an almost calming effect that there is traffic with a monotonous noise level repeating itself. Then I know it is there and then I can more easily exclude it, whereas if I hear only a few cars then it would be more difficult to exclude them’ and I am prepared for it, I know I am not entering a forest or a park for instance…’.

(R5): ‘…we need some cars’ and ‘I can easily distance myself from that noise’.

(R6): ‘…The road is disturbing, that’s the only thing that’s a shame, I would have taken all the cars away’.

DISCUSSION
The Users And Their Use Of Dantes Plads Before And After The Redesign
The demographic background of the users of Dantes Plads changed slightly after the redesign compared to before. The increase in the number of men, people aged (15-29) and highly educated could be a chance finding due to the low number of respondents. However, previous studies have also found that highly educated people seem to use UGS frequently (Yilmaz, Zengin, & Yildiz, 2007; Peschardt et al., 2012; Schipperijn, Stigsdotter, Randrup, & Troelsen, 2010). It may also be that the new design has attracted new companies to the area as explained...
by \((R2)\) so that the employees use the area, thereby resulting in a change in the user composition. A number of the interviewees were using Dantes Plads because the area was close to their work or as a break from travelling from one place to another. This also emphasizes the high need for a restorative experience in relation to a busy working life (Peschardt et al., 2012). This finding is also in line with previous research on the importance of green environments in relation to workplaces (Lottrup, Stigsdotter, Meilby, & Corazon, 2012). ‘Rest and restitution’ is the primary use both before and after the redesign. And the number of users using Dantes Plads for ‘socializing’ seems to be quite low compared to previous findings on the primary types of use of pocket parks (Peschardt et al., 2012). The fact that Dantes Plads does not include many opportunities for gathering may explain this finding.

**The Perception Of The Design Before And After The Redesign**

Generally, the new design seems to be perceived more positively than the old design. In fact some of the interviewees did not really recognize the area as a small urban park before the redesign. A reason for this could be due to the very limited area that was suitable for recreational use, which moreover faced the heavy trafficked road. The remaining part was a parking lot which did not invite people to sit or use it for other reasons. Those positive about the old design may have perceived Dantes Plads as a nice green space where they could take a break. For the interviewees for whom ‘rest and restitution’ was the main reason for use, the results show that the experience and the variation in the new design in terms of ‘terrain’, ‘planting’, ‘sun/shade’ and ‘surface cover’ were positively received.

Originally, the architects’ intention was that Dantes Plads should have a green appearance (Weeke Borup, 2014) and the fact that a number of the interviewees specifically mentioned the planting as being something special could indicate that the architects’ original intentions have been realized. Furthermore, findings from previous studies indicate that the presence of greenery is positively related to the use; ‘rest and restitution’ in pocket parks (Nordh & Østby, 2013; Peschardt et al., 2014). This relation furthermore support the attention restoration theory suggesting how natural surroundings can support soft fascination (Kaplan 1995). As the planting and the variation in the terrain was specifically mentioned several times, one may argue that such features create ‘fascination’ which according to Kaplan (1995) is one of the four characteristics that should be present in a restorative environment. Though it was not a deliberate intention, it seems that the architects have managed to create a design that provides fascinating stimuli and thereby an area that has restorative potential.

The positive comments on the experience of sun and shade firstly confirm that the intention to provide such experiences from the architect has been realized. However, it is important to mention that one could also sit in the sun before the redesign, although the respondents that did so said that it was a completely different experience. The positive feeling related to sun and shade seems to be a general basic need for people using outdoor spaces (Gehl, 2010; Whyte, 1980). According to Whyte (1980 p. 42) ‘the best time to sit beneath a tree is when there is sunlight to be shaded from’.

The perception of the ‘noise level’ differed between the interviewees. Two respondents indicated that they accepted the cars and found the ‘noise level’ even calming, whereas some of the respondents perceived the ‘noise level’ negatively or seemed to be very split about the proximity of the road. The interviewees most disturbed by the road was also those with the highest education, which is supported by earlier research by Yu & Kang (2010) who investigated sound preference compared to education level. In their study, they found that a preference for natural sounds increases with higher education level (Yu & Kang, 2010). The change of orientation away from the road allows people to sit more undisturbed and distanced from the traffic, a finding that is also supported by previous studies which suggest that disturbing surroundings should be avoided (Nordh & Østby, 2013; Peschardt et al., 2014).
Furthermore, ART suggests that people need to distance themselves from disturbance in order to restore from mental fatigue (Kaplan, 1995), which is supported by this finding. The fact that some interviewees were positive towards the 'noise level' at Dantes Plads could be explained by another study by Yang & Kang (2005) who found that the preference for a certain soundscape influenced the choice of which urban square to use. In this respect, some might simply avoid using Dantes Plads, whereas others are prepared for the noise level and find it even 'calming' or 'interesting'. Others again might be disturbed by the noise, but may still use the area as they accept the fact that the area is dominated by traffic.

Some people may also feel some kind of bonding to Dantes Plads which might be another explanation as to why they can abstract from disturbing features. A number of the respondents indicate that they like the area and that they can get an experience which is compatible with what they expect. ‘Compatibility’ is also one of the four characteristics of a restorative environment (Kaplan, 1995), and if Dantes Plads supports users' expectations, their general perception of the area may be more positive, thereby providing a feeling of place attachment (Madden, 2008; Proshansky, 1978).

Generally, the intentions of the architect have been fulfilled and seem to be noticed by the users of Dantes Plads. A green appearance, opportunities to sit in the sun and shade and variation in the terrain that created secondary seating where among the intentions, all of which were positively mentioned by the interviewees. Furthermore, the high preference for greenery also supports previous findings of features supporting ‘rest and restitution’ (Peschardt et al., 2014).

**Implications for practice**

This present study, adds to the research on design in relation to ‘rest and restitution’ one of the health promoting uses of pocket parks. A variation in design (terrain, planting, surface cover), as well as opportunities for sitting in the sun or shade are important subjective evaluations to consider when designing a pocket park. Furthermore, the design, as well as the design features, should, as far as possible, be orientated away from noise sources. For a landscape architect, it is a challenge to design a pocket park that meets people's expectations, although in an urban context, users seem to be aware that they are not going to have a forest-like experience due to the restricted space available. And in this regard, the value of the feeling of belonging to a certain environment should not be underestimated. The findings from this case study can contribute with increased knowledge to future EBHD processes for health promoting pocket parks, however further research is needed in order to reach at more concrete conclusions useful for practitioners.

**Discussion of Methodology**

This case study is based on data collected over two periods of time. This is a strength, as on-site evaluations capture contextual influence when users evaluate an area. The study was a unique chance to investigate a design before and after a redesign, and the design of the study was therefore conducted with the limitations it provided. The interviews were designed based on previous experiences of onsite data collection in pocket parks. First of all the questions were prepared and second they should not take too long. A greater number of respondents and interviewees would have improved the validity of the conclusions reached based on the findings, although the qualitative approach does add valuable information that would not have been possible to obtain from a questionnaire survey. Furthermore, the inclusion of the intentions of the old design could have contributed to a better understanding of Dantes Plads before the redesign. This qualitative approach contributes to the existing research on the features which support the health promoting use of pocket parks.
CONCLUSION
The results from this study show that the subjective perception of the design of a pocket park may also add valuable knowledge when trying to define a design which supports the most preferred activities in pocket parks. In this case, ‘rest and restitution’ was the primary reason for using Dantes Plads, and thus the findings are related to this purpose of use. With this study, landscape architects can improve their knowledge on how to design pocket parks to improve health in dense cities. The study should be seen as a contribution to the field of landscape architecture with further research that can be used to improve future evidence based health design processes for health promoting pocket parks.

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IMPLEMENTATION OF EVIDENCE-BASED DESIGN (EBD) BY NON-HEALTHCARE DESIGN PRACTITIONERS

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Abstract  
Evidence-based design (EBD) is an innovation to the normative design process for practitioners who strive to base design solutions on measurable outcomes. Published information about EBD—its purpose, process, and outcomes springs primarily from healthcare design sources. Little is known about the adoption of an EBD-approach by practitioners of other building types (offices, schools) or their degree of engagement with EBD. This study examined non-healthcare focused design practitioners' current 1) understanding of EBD, 2) degree of implementation of EBD, and 3) interest in learning more about EBD as determined from an exploratory study via interviews of 10 multidisciplinary firms’ leaders. Findings indicated that these firms practiced normative design, having little knowledge of or engagement with EBD. To help identify reasons for this delay towards EBD, a comparative analysis of EBD-approaches in books published for design practitioners was conducted. It revealed a broad range of approaches, limited timelines for implementation, and promotion of practitioner/researcher collaborations. Additional resources/tools are needed by the non-healthcare focused design practitioners to support implementation of an EBD-approach into their normative design process.

Keywords: Evidence-based design (EBD); Non-healthcare design; Design practitioner; Normative design; Measurable outcomes.

INTRODUCTION
An evidence-based design (EBD)-approach to the design process enables practitioners to fully meet human and environmental challenges (Cama, 2009; Hamilton & Watkins, 2009). The holistic design process is structured by phases (i.e., pre-design, schematic design, design development), requiring collaboration across the design team and contributions by stakeholders (Jones, 2010; Johnston, 2010; Mourshed & Zhao, 2012). How design decisions are determined has generally remained stagnant (Brandt, Chong, & Martin, 2010). Practitioners rely on normative design, principally comprised of what has been done before, commonly referred to as “best practices” and manifested in decision-making characterized by statements such as “I have seen it done before,” “I think it will work,” “I have always wanted to try it,” or “my colleague told me about it.” Normative design is grounded in knowledge from the practitioner’s personal education and experience and that of colleagues, but is that enough? Design solutions (i.e., outcomes) yielded via a normative approach are increasingly questioned by clients (Asfour, 2007; Barnes, 2010; Cama, 2010; Martin, 2009). Growing is a shift from blind trust in the design professional to a demand for ‘proof’ that a design solution will fulfill the practitioner’s promises (Andersson, Svennerlind, Malmqvist, & Anckarsäter, 2013; Brandt et al., 2010; Whitemyer, 2010).

In response to this challenge, EBD has emerged. The Center for Health Design (CHD) defines EBD as “the process of basing decisions about the built environment on credible research to achieve the best possible outcomes” (2012). Many authors note that EBD incorporates evidence and creativity (Brandt et al., 2010; Pable, 2009); though others are concerned that EBD is characterized by a prescriptive approach of knowledge integration (van Aken, 2005). An EBD-
approach requires that design solutions are evaluated relative to measurable outcomes (Hamilton & Watkins, 2009).

This challenge has been embraced by a growing number of healthcare designers (Hignett & Lu, 2009; Whitemyer, 2010). However, adoption of EBD by non-healthcare (e.g., office, hospitality, institutional, residential) designers is not seemingly evident, even though their clients could benefit. However, researchers have pushed forward with evidence-based design tools for use by practitioners and educators in the classroom. For instance, an evidence-based model grounded in the Sensory Design Theory has been used by Mostafa (2014) to identify design criteria for use with school children with autism via the Autism ASPECTSS Design Index. Also, Ryan et al. (2014) have identified 14 patterns of biophilic design relative to the design profession's need to develop empirical evidence that quantifies positive outcomes (cognition, physiology, and psychology effects) for occupants from the integration of natural elements in the built environment.

Adoption of EBD as an innovation to design practice is slow due to the lack of opinion leaders in the broader design community (Martin, 2009; Rogers, 1995), as is D. Kirk Hamilton in the healthcare design community (Andrade, Lima, Fornara, & Bonaiuto, 2012; Hignett & Lu, 2009). Also, the EBD-approach nurtured by the CHD's infrastructure has not been replicated by design typologies outside healthcare (Brandt et al., 2010; Lippman, 2009).

This exploratory study was conducted in two phases. The first phase consisted of a survey of leadership from 10 multidisciplinary, non-healthcare focused firms to identify their current 1) understanding of EBD, 2) degree of implementation of EBD, and 3) interest in learning more about EBD. The second phase consisted of a comparative analysis of published approaches to integrating an EBD-approach into the design process to explore the knowledge sources available to all design practitioners. Better engagement of this community about integration of an EBD-approach, dissemination of their EBD-solutions, and subsequent growth of the body of knowledge would elevate their work and their professional currency to their clients, inhabitants of the spaces they design, and society (Martin, 2009; Salama, 2007). Salama emphasizes this challenge to the architectural profession in stating, “without research, scholarship and a rigorous knowledge base, the profession cannot take stands on significant health, economic, social, political or ethical issues (2007, p. 64).

Background

Insights regarding non-healthcare design focused practitioners’ understanding and implementation of EBD can be gained from comprehension of 1) the factors that are defining the design process as it is applied today, 2) the characteristics of an EBD-approach, and 3) the benefits and challenges an EBD-approach could have for design practitioners, their clients, and society as a whole.

Normative, i.e., traditional design is the basis of design practice across disciplines, such as architecture, interior design, and landscape architecture (Cama, 2009; Fisher, 2004/2005; Martin, 2009). It is informed by education, experience, and continuing education, and is manifest as “best practices.” Groat and Wang (2002) tie characteristics of normative design to “the realm of convention, or ‘rules of thumb’” (p. 78), in contrast with a positivistic or scientific approach. It incorporates aesthetic judgment, intuition, creativity, and personal preferences in decision-making as well as historical and vernacular precedent. It is grounded in the gathering of “information” relative to the client; context of the client, project, and building site; trends; and products and materials. However, the gathering of information is not the creation of knowledge, the outcome of research (Dickinson & Marsden, 2009).

“Best practice” is the accumulation of lessons learned within or beyond the design firm that have been documented and reported to members of the design team for replication within subsequent projects (Coleman, 2002; McCullough, 2010). Hasell and King in Marsden (2005) describe a continuum of four types of knowledge “of increasing validity and rigor” to guide design
decision-making. They range from hunches and speculation to propositions via application of literature, persuasion from empirical research findings, and research findings that are “causal, measurable, and repeatable” (p. 18). The latter two are essential in the creation of EBD-criteria through they are the least often used by practitioners (Guerin & Thompson, 2004; Hamilton & Watkins, 2009). Subsequently, design solutions are applied (i.e., generalized) beyond the initial application possibly without evidence that the solution is applicable (i.e., project, interior, building) but rather on what has been done traditionally (Asfour, 2007; Lippman, 2010).

The design process has become more complex in response to the escalation of the breadth and complication of problems designers are being required to address in their design solutions (Salama, 2007; 2008). As a result, collaborative and multidisciplinary design teams are increasingly becoming the norm (Hamilton & Watkins, 2009; Wheeler, 2010); subsequently, there is a call for multidisciplinarity (Ryan et al., 2014) and trans-disciplinarity in regard to research generation (Salama, 2007) for application in practice. Real and perceived ‘successful’ outcomes of the design team’s work are influenced by the media, socioeconomic conditions, and knowledgeable clients.

Regarding the media, a 2012 *Interior Design* magazine survey examining over 2,300 practitioners’ views about the business challenges of design, cited a false public perception of interior design and the negative influence created by HGTV, among other factors (Zimmerman, 2012). Concurrently, “design” and “design thinking” are increasingly part of public discourse about addressing business problems (Fisher, 2010; Safian, 2011).

In terms of socioeconomic conditions, the public minimally understands that the schools their children attend and the offices where they work result from the practitioner’s design process (Linster, 2010). Since the global economic downturn beginning around 2007, the number and scope of design projects has substantially diminished. Both architectural firm revenues and the number of practicing architects decreased, 40% and 28% respectively, 2008-2011 (*2012 AIA firm*, 2013). At the same time, clients are increasingly knowledgeable (Hamilton & Watkins, 2009). A practitioner’s design solution is decreasingly accepted at face value, i.e., “trust me.” Instead, measurable outcomes that meet corporate, agency, or governmental needs in a cost effective manner are required (Andersson et al., 2013; Brandt et al., 2010; Cama, 2009).

**Evidence-Based Design (EBD)**

These pressures on design practitioners have precipitated the emergence of EBD for healthcare facilities; a client base that increasingly relies on research via evidence-based medicine (EBM) (Cohen & Hersh, 2004; Doherty, 2005). EBD employs a “researched and documented knowledge base that includes the analysis and interpretation of research” (Stewart-Pollack & Menconi, 2005, p. 236) and the degree to which measurable outcomes are achieved determine the design’s degree of success (Hamilton & Watkins, 2009).

For these healthcare designers, an EBD infrastructure is anchored by the CHD. Its notable Pebble Projects® demonstrate an incremental approach to integration of an EBD-approach (Glenister, 2012). Publication of *Health Environments Research and Design Journal (HERD)* and CHD’s Evidence-Based Design Accreditation and Certification (EDAC) program (*About EDAC, 2012*) support adoption of EBD as do specialization credentials offered via the American Academy of Healthcare Interior Designers (AAHID) and the American College of Healthcare Architects (ACHA).

Healthcare design researchers and practitioners publish much about EBD (Cama, 2009; Hamilton & Watkins, 2009; van de Glind, de Roode, & Goossens, 2007). Using an index of hundreds of databases limited to the last five years, the search term “evidence-base design” yielded 403 articles from a total of 15 refereed journals; of them, 390 articles from 12 journals were healthcare related. *HERD* published four times more articles (87) than any other journal. However, the extent to which non-healthcare practitioners access this information or are interested in engaging in EBD is largely unknown.
PHASE 1: NON-HEALTHCARE DESIGN PRACTITIONER SURVEY
Published information about EBD—its purpose, process, and outcomes springs primarily from healthcare design(ers). However, to a much greater extent it was not clear what was known by practitioners of other building types (e.g., offices, schools), nor their degree of engagement with EBD beyond the normative design process (Hamilton & Watkins, 2009; Lippman, 2010).

Method
A survey instrument was implemented as in-person interviews. Questions were open-ended and addressed firm background, information and research utilized by the firm, and the firm’s understanding of EBD. Multidisciplinary firms selected for study were architectural firms or did employ architects and likely represent the majority of all US design firms in terms of business volume. According to the American Institute of Architects (AIA), even though firms of 10-99 staff comprise between 18-19% of the total number of firms, they contribute between 50-52% of the profession’s billings (2012 AIA firm, 2013; Overview of the, 2009). Therefore, raising this cohort’s awareness about EBD could generate its growth in non-healthcare focused design practice.

Therefore, the purposive sampling frame recruited subjects from 12 metropolitan-area, multidisciplinary firms ranging in size from small to large (7-100+ professional staff); the firm was the unit of analysis. Firm size categories (i.e., small ≤ 20; medium ≤ 50; large > 51) were determined prior to identification of subjects. The goal was to have an equal distribution of firms across the three size categories. As the literature indicated that EBD must be promoted ‘at the top’ for it to be successfully adopted (Hamilton & Watkins, 2009), subjects represented firm leadership (i.e., principals or partners with financial investment/oversight).

Findings and Discussion
Responses to 10 questions (Q1, Q6, Q8, Q8a, Q9, Q9a, Q13, Q14, Q15, Q15a) addressed background and demographic information about the firm; understanding of the terms “information” and “research” (as underpinnings of decision-making) and if/how they were used by the firm; understanding of EBD; degree of engagement/or not with EBD; and interest in learning more about EBD, as listed in Figure 1.

| Firm Background Information and Demographics |
| Q1: What is your firm’s greatest expertise in terms of building type (name top 3)? |

| Information and Research Utilized by the Firm |
| Q6: What is research? |
| Q8: Can you describe the difference between “information” and “research?” |
| Q8a: Please provide an example of each. |
| Q9: Does your firm consider research findings when creating design solutions? |
| Q9a: Which type(s) of research findings are considered? |

| Firm’s Understanding of Evidence-Based Design |
| Q13: What is “evidence-based design (EBD)”? |
| Q14: Does your firm engage in evidence-based design? |
| Q15: Would it be beneficial for your firm to learn more about evidence-based design? |
| Q15a: Why/why not? |

Figure 1: Survey of non-healthcare design practice firm leadership (Source: Author).

The 10 subjects were comprised of six females and four males; two large firm subjects recruited did not participate. Four were interior designers by education and were certified by the state. Four were educated as architects and licensed by the state. Of the remaining two design practitioners, one was educated in interior design and architecture and the other practitioner had a multidisciplinary design background; neither subject’s practice was regulated by the state. All 10 subjects had a minimum of a bachelor’s degree and had between 18 and 35 years of professional...
practice experience. Further descriptive details were omitted to maintain anonymity of both the subjects and the firms.

Of the 10 firms, three were small-sized (1-20) with an average of 7.3 full time design practitioners per firm; six were medium-sized (21-50) with an average of 34.2 full time design practitioners per firm; and one was large-sized (51+) with 111 full time design practitioners (see Table 1). All firms had interior design and architecture; three medium-sized firms had engineering or planning. The majority of firms were founded between 1971 and 2004; the large sized firm was founded early in the 20th-century. For purposes of anonymity, firm disciplines, size, and year of founding were not correlated.

Table 1: Design firm demographics by practice typology.

<table>
<thead>
<tr>
<th>Practice Typology (<em>x</em> denotes area of firm practice)</th>
<th>Firm Size (number of practitioner staff)</th>
<th>Large</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Small (x=7.26)</td>
<td>Medium (x=34.16)</td>
</tr>
<tr>
<td></td>
<td>S1</td>
<td>S2</td>
</tr>
<tr>
<td>7</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>Banks/Financial Inst.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Corporate/Workplace</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Criminal Justice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education/Academic</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Housing/Sr. Housing</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Industrial/Manufacturing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Libraries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medical/Healthcare</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Municipal/Civic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Museum/Cultural Center</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Residential</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Retail/Restaurant</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>Worship Facilities</td>
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</tr>
</tbody>
</table>

Responses

Firms’ Top Three Greatest Expertise in Building Types (Q1). Though firms were asked for their “top three” building typologies, many had several types that were equivalent in terms of fees. In those instances, more than three typologies have been noted (see Table 1). Firms have been identified by size, small (S), medium (M), and large (L), and the number of design practitioners on staff were noted. There were 13 practice typologies with over half of them practiced by more than one firm. Six of the 10 firms practiced in four or more typologies. Data indicated that there was a relationship between firm size and diversity of typology (see Figure 2).

![Figure 2: Practice typologies by firm size (Source: Author).](image-url)
How Practitioners Defined “Research” (Q2). The majority of subjects was uncomfortable with this question and admitted lacking knowledge about “research.” Most responses could be characterized as defining research as “gathering information” and generally research was addressed as a verb, not a noun. In Table 2, subjects responses were compared to academic definitions of research and information, discussed earlier.

Table 2: Subjects’ definitions of “research” (Q6) compared with academic definitions of “research” and “information.”

<table>
<thead>
<tr>
<th>Subject’s Definition of “Research” (direct quotes)</th>
<th>Academic Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>“It starts with a question or challenge…finding legitimate sources; gleaning what make sense…interpreting in the best interest of the client.”</td>
<td>✔️</td>
</tr>
<tr>
<td>“Gathering information that helps inform and inspire our design…could be technical or conceptual…backup, food for thought.”</td>
<td>✔️</td>
</tr>
<tr>
<td>“Highly variable by person…collecting information/ things for future use in a purposeful manner.”</td>
<td>✔️</td>
</tr>
<tr>
<td>“Paying attention to repeated conditions/ issues; end up with breadth and depth with all used by the team.”</td>
<td>✔️</td>
</tr>
<tr>
<td>“In-depth knowledge…go to books, information from the Internet, articles.”</td>
<td>✔️</td>
</tr>
<tr>
<td>“Any gathering of data or imagery or information that is going to inform an outcome, like journals and white papers…things that are published by reputable companies or organizations; does not always have to be analytical but can be gathered through conversation, experience, observation.”</td>
<td>✔️</td>
</tr>
<tr>
<td>“Not diving into one specific subject but gleaning information from everything around us…asking a lot of questions [from] the right people…understanding the entire industry versus just focusing on information from one group or client.”</td>
<td>✔️</td>
</tr>
<tr>
<td>“Can be related to something specific…as simple as fact finding, part of the inventive process.”</td>
<td>✔️</td>
</tr>
<tr>
<td>“Using out past experience to develop a program and direction…white paper research gathered by folks in-house…interiors folks [interior designers] do more research than anybody else [about materials]…the architects probably not so much.”</td>
<td>✔️</td>
</tr>
</tbody>
</table>

Some interesting points emerged as the subjects defined “research,” especially in context with their understanding of EBD (see Q13), discussed later. Several highlighted the difficulty of conducting research. They felt that it involved going beyond what they typically do, “it is more formal than it needs to be” and was a financial burden for the firm. Subjects doubted if it would be appreciated by the clients, “we don’t have folks here to do research, or enough of it,” and “full time [firm] research capabilities cannot be financially supported.” About a third of the subjects believed that they understand research and were already engaged in it, “I can create my own evidence…an exciting part of design,” and “some of these [research] principles are basic and intuitive to designers.”

Most responses focused on the correlation between research and a purposeful, planned and/or empirical process. Considered in context with the academic definition of research, most subjects were speaking of information gathering that defined programming (Brandt et al., 2010; Dickinson & Marsden, 2009; Hamilton & Watkins, 2009). Responses did not correlate with firm size or building typology experience.
How Practitioners Described “Information” and “Research” using examples (Q8/Q8a).

When asked to define the difference between information and research (Q8), subjects were visibly more comfortable than with the preceding question (Q6) that asked them to define research. Responses represented a broad range from uninformed to knowledgeable, as defined by academia (see Table 3).

Table 3: Comparison of “information” and “research” (Q8) with examples of each (Q8a).

<table>
<thead>
<tr>
<th>“Information” Described (Q8)</th>
<th>“Research” Described (Q8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“facts that are out there”</td>
<td>“a directed approach into something specific”</td>
</tr>
<tr>
<td>it comes to you, sometimes from clients</td>
<td>“collection and trying to gather/find all aspects of your challenge”</td>
</tr>
<tr>
<td>“we gather [it]...examining something from many viewpoints”</td>
<td>“a focused investigation about a specific subject based on a hypothesis, maybe”</td>
</tr>
<tr>
<td>“a product”</td>
<td>“a process, more statistical, grounded...follows a legitimate process...research is the act and information is the result”</td>
</tr>
<tr>
<td>“can be an option, statements without backup”</td>
<td>“empirical data that substantiates facts”</td>
</tr>
<tr>
<td>“sometimes not quantified...you have to decide if it is authentic”</td>
<td>“has been quantified, presents measurable outcomes; knowledge that results from a study”</td>
</tr>
<tr>
<td>“anything you could gather, but may not be tested/vetted, like Wikipedia”</td>
<td>“vetted, acknowledged by experts to be true, reliable”</td>
</tr>
</tbody>
</table>

Examples of “Information” (Q8a)
- “stuff from vendors, sales people, product facts, magazine articles, client information” (S1, S2, S3, M5, M6, L1)
- “found in blogs” (S2)
- “opinion-based articles or books” (M2)
- “anything gathered” (M4)

Examples of “Research” (Q8a)
- “case studies or anything measurable” (S1)
- “white papers or research studies” (S2, M3, M4)
- “more structured studies, often from furniture manufacturers” (S2)
- “continuing education presentations” (M1)
- “benchmarking studies as produced by organizations [e.g. ASID, IIDA, AIA]” (M2, L1)

Note: All definitions/descriptions (responses to Q8) are direct quotes and attributable to the same subject when compared across the row. Refer to Table 1 for more information about specific firm typology.

Several subjects also cautioned about taking information or research on “face value,” verifying its accuracy, and using findings accurately (M3, M4, and L1). Subjects’ examples of “research” highlight their varying depth of understanding about that term and how it differs from “information.” Once again accuracy of response did not correlate with firm size or typology experience.

Practitioners’ Consideration of Types of Research Findings When Creating Design Solutions (Q9/Q9a). All subjects claimed that their firms used research findings, except one of the medium-sized firms (M2) that only used them to respond to a client’s request for proposal (RFP). Research used focused on the following areas:
- Furnishings, fixtures, and equipment (FF&E), green building products, structural systems manufacturers’ information (S2, M1, M5);
- Sustainability, life-cycle costing (S1, S2, M6);
- Impact of design on human behavior; human factors; safety (M4);
- Impact of light on stress reduction (M3);
- Productivity (L1); and
- Wayfinding and landmarks (M3).
These research areas correlated with anticipated increases in engagement by practitioners across building typologies (Whitemyer, 2010).

**How Practitioners Define EBD (Q13).** Subjects demonstrated a broad range of understanding about EBD. Among the small- and medium-sized firms \((n=9)\), five of them had no or little knowledge of EBD. Firm size did not correlate to knowledge of EBD. A sampling of responses is shown in Table 4.

### Table 4: Subjects' understanding of EBD (Q13).

<table>
<thead>
<tr>
<th>Firms with Little or No Understanding ((n=5))</th>
<th>Firms with Some or Greater Understanding ((n=5))</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Size</strong></td>
<td><strong>Responses</strong></td>
</tr>
<tr>
<td>Small ((n=2))</td>
<td>• “I have very little understanding of it”</td>
</tr>
</tbody>
</table>
| Medium \((n=3)\) | • “oh dear...taking certain solutions and evaluating [them] to track outcomes so I could recommend that to another client”  
• “Provide solutions based on other precedent setting projects or systems that have been in place and are providing data that supports a certain solution.” | Medium \((n=3)\) | • “using research and data; using other projects to inform how we design”  
• “taking knowledge (some of it research) and experience...combined together and applying it to your situation” |
| Large \((n=1)\) | | Large \((n=1)\) | • “[EBD produces] design solutions that are justified by numbers, and right now we don’t necessarily believe [what] all those numbers are saying because they’re so subjective.” |

Note: All text in the table was directly quoted from subjects.

Subjects’ definitions of EBD reflected a level of confusion and frustration with EBD, echoed in the literature (Hamilton & Watkins, 2009; Martin, 2009). The response from the large-sized firm (L1) subject illustrated this concern, noting the firm’s uneasiness with the quantity and variety of factors influencing the outcome. Being unable to definitively state if the occupant’s behavior was caused by a design intervention factor versus other factors (e.g., staff behaviors) undermined this firm’s commitment to EBD.

**Practitioners’ Degree of Engagement in EBD (Q14).** Of the firms that participated in the survey, three (S1, M2, and L1) did not engage in EBD. Of these firms, neither subject from the S1 or M2 firms defined EBD clearly, if at all; whereas, the subject from the large firm (L1) was able to clearly define EBD, but the firm did not engage in EBD (see Table 5). Reasons included: 1) perceived difficulty in adapting EBD to individual projects, 2) reliance on the depth of knowledge held by firm principals who led projects, 3) concerns with the reliability of depending on “numbers” as the basis of a design solution, or 4) the subject’s personal lack of understanding about EBD. A sampling of responses illustrated that firms are generally practicing normative design and/or lack information about EBD, challenges commonly discussed by authors advocating for an EBD-approach (Martin, 2009):
“No, not really. Every project has a firm principal on it, so lots of experience…this is empirical knowledge that we have because we’ve done all this work that says ‘that solution is going to be appropriate,’ work or not” (M2).

“It’s hard to quantify EBD…when you’re talking about people’s feelings and/or attitudes that are influenced by your design it’s hard to actually put numbers to those” (L1).

There was no correlation between firm size and implementation of an EBD-approach. Regarding the firms that did engage, the majority (S2, S3, M1, and M3) of their responses were weak in conviction and clarity, such as “Boy, kinda-sorta. Does that make sense? I think we do root most of what we do in not just a whim and whimsy…[we] try to use the research that we’ve been able to find to support what we’re doing” (S2). However, one subject (M5) enthusiastically offered that the firm was engaged with expanding its implementation of EBD as a way to better address the increasingly complex projects that came to their practice, “…we can kill ourselves on design trying to save a thousand square feet here and there…but human costs are the largest expense.”

**Practitioners’ Perceptions About Possible Benefits From Learning More About EBD (Q15/Q15a).** Nine subjects noted that they would like to learn more about EBD. Reasons varied, but focused primarily on the increase in publicized information about EBD and the firm’s need to stay competitive (see Figure 3).

<table>
<thead>
<tr>
<th>Subjects’ Responses About Why They Want to Learn More About EBD (direct quotes; n=9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The more we learn it better informs what we do and the value we bring to our clients—the environments we create (S2)</td>
</tr>
<tr>
<td>[EBD] that’s the research piece that should always be informing us…could bring it in as an added service (S3)</td>
</tr>
<tr>
<td>[Learning more about EBD] would create a more consistent level of awareness and organization in doing it [EBD].…it is a quality control issue…due diligence…it needs to be consistent (M1)</td>
</tr>
<tr>
<td>Yes, definitely. [Due to] complexity of project types…we want to differentiate ourselves in the marketplace…it comes down to client satisfaction, repeat business and the only way to demonstrate that our designs are innovative (M5)</td>
</tr>
</tbody>
</table>

Figure 3: Subjects interested in learning more about EBD (Q15 & Q15a) (Source: Authors).

Only the large-sized firm (L1) stated “no” in response to the question about learning more about EBD (Q15), citing some challenges:

[EBD] is kind of similar to sustainability…the client expects [it]. We do have clients that don’t believe it, partly because they think it’s going to cost them more money…If you have an assembly line and you can point to a point in that assembly line that increases productivity that’s quantifiable, but in our work we don’t have those obvious points that we can measure. (L1)

**Summary of the Findings**

Overall, the findings indicated that firms are generally aware of the term “EBD,” though the accuracy of their descriptions varied. The majority of firms did not engage in EBD; though for those that did, “research” was actually the gathering of information for programming or was undertaken ‘after the fact’ to justify design decisions previously determined via their normative design process. They indicated that they/their firms would like to learn more about EBD. This confusion was consistent with findings from the literature (Poldma & Thompson, 2009), though practitioners declare that they valued research and that EBD “is of mounting importance” to practitioners (Dickinson, Anthony, & Marsden, 2012, p. 18).
PHASE 2: COMPARATIVE ANALYSIS OF PUBLISHED APPROACHES

Based on the findings from the practitioner survey, the researcher considered factors possibly contributing to the non-healthcare design practitioners’ lack of knowledge about EBD, i.e., do the current resources present information that is understandable, appropriate, and applicable? A search for published approaches to integrating an EBD-approach into the design process indicated a growing interest in this approach, originating substantially for and/or by healthcare practitioners. This interest paralleled the publication of peer reviewed articles/journals discussed earlier (see Figure 4).

2008:
- *A Practitioner’s Guide to Evidence-Based Design*

2009:
- *Evidence-Based Healthcare Design*
  Cama, R. Hoboken, NJ: Wiley.
- *Informing Design*
- *Evidence-Based Design for Multiple Building Types*
- *Evidence-Based Design for Interior Designers*

2010:
- *Design Informed: Driving Innovation with Evidence-Based Design*
- *Evidence-Based Design of Elementary and Secondary Schools: A Responsive Approach to Creating Learning Environments*
  Lippman, P. Hoboken, NJ: Wiley.
- *Evidence-Based Design for Healthcare Facilities*

2011:
- *Evidence Based Design: A Process for Research and Writing*

Figure 4: Books reviewed for comparative analysis of EBD-approaches (Source: Author).

Books were examined relative to 1) focus, how and when EBD is implemented into the design process (i.e., pre-design, etc.); 2) author(s’) type, design academicians/researchers, others; 3) EBD definition(s) and rationale, 4) EBD strategies, activities, and methods, and 5) timeline for implementation. First, a comparison of essential characteristics was conducted to identify author’s/editor’s background, intended audience, and if implementation of a 1) hypothesis, 2) theory, 3) collaborative/interdisciplinary approach, or 4) if having a researcher on the team or hired as a consultant were proposed (see Figure 5). [Note: books are referenced by first author in Figure 5.]

Intended audience was principally design practitioners and/or students (7:9), healthcare professionals (McCullough, 2010), and graduate students (Kopec, Sinclair, & Matthes, 2011). Audience by building typology was for multiple building types (including healthcare) (5:9), healthcare (3), and education (1). All authors defined EBD and described its purpose and rationale and raised concerns over the possibility of a prescriptive approach. The use of a hypothesis as the basis of determining measurable outcomes was prescribed by the majority of books noting its implementation as 1) a means by which to create a clear project vision, in schematic design (SD) (Cama, 2009); 2) as evidence to determine project goals (Brandt et al., 2010) or developed relative to potential outcomes (Lippman, 2010), both pre-design through
design development (DD), but unspecified in terms of identification; and 3) predicted outcomes linked to evidence-based concepts, SD through DD (Hamilton & Watkins, 2009).

Application of theory was proposed by three books, two for practitioners (Lippman, 2010; Nussbaumer, 2009) and one for graduate students (Kopec et al., 2011). Lippman (2010) noted theory’s use in development of “macro questions.” Nearly all books recommended and described a collaborative/interdisciplinary approach including primary stakeholders from the client’s leadership/administration and the community to end users and visitors of the space, members of the design team, contractors, cost consultants, and researcher. Moreover, many advocated for practitioners to engage an expert research partner with the researcher’s role varying by project, but focused on hypothesis generation and evaluating outcomes (Harris, Joseph, Becker, Hamilton, Shepley, & Zimring, 2008).

Books varied widely relative to identifying a timeline for integration of an EBD-approach. Three provided specific timelines, fully described (Cama 2009; Hamilton & Watkins, 2009; Nussbaumer, 2009) and three other books partially described or ‘implied’ a timeline (Dickinson & Marsden, 2009; Harris et al., 2008; Lippman, 2010). The remaining two books did not provide a timeline or what was proposed was unclear (Brandt et al., 2010; McCullough, 2010). Of those that prescribed when implementation should occur, four stated in pre-design (Dickinson & Marsden, 2009; Harris et al., 2008; Lippman, 2010; Nussbaumer, 2009); Cama (2009) noted integration as during SD and Hamilton and Watkins (2009) noted integration during SD and DD. In summary,
though essential characteristics were evident (see Figure 5), inclusion of an EBD-approach was inconsistent relative to omission of details for implementation, assumptions of practitioners’ understanding, and conflicts occurring due to incompatibility of timelines (normative versus EBD-approach).

**Limitations**

Four of the firms (M2, M3, M5, and L1) do engage in healthcare design as one of a minimum of three areas of practice (see Table 2), though healthcare design was not the focus within their personal practice. Also, this purposive sample was drawn from an Internet search of organizational (e.g., AIA, American Society of Interior Designers) and firm Web sites, refined by the researcher based on 17 years of design practice. This approach might have interjected bias, though firms studied were ones where the researcher had not worked. Also, findings might be skewed by response bias due to the subjects’ knowledge of the advanced degree of the researcher. And finally, books about EBD published outside of the United States were not evaluated.

**CONCLUSION**

This study's first phase implemented an exploratory survey of non-healthcare practitioners to identify current 1) understanding of EBD, 2) degree of implementation of EBD, and 3) interest in learning more about EBD. Findings indicated that beyond information gathered about a specific client (i.e., programming), design decisions were generally grounded in practitioners’ knowledge from education and experience, intuition, creativity, “best practices,” precedent, and information gathered from “soft sources” (i.e., trade publications, manufacturers’ reports) (Dickinson & Marsden, 2009), i.e., normative design.

The subjects' unfamiliarity with research indicated that they were uncertain if they had the requisite knowledge to engage in EBD, and moreover, were unclear as how to distinguish it from the gathering of information. It behooves the academy to partner with the practitioner community to bridge this knowledge gap (Dickinson, Anthony, & Marsden, 2012). Clearly, this knowledge can be attained, as demonstrated by the community of healthcare designers.

Furthermore, the subjects demonstrated a casual application of knowledge, whether tacit or codified (Poldma & Thompson, 2009), generalizing findings from one design solution and/or client to another, commonly using intuition to determine applicability, a normative design approach (Groat & Wang, 2002). An understanding of basic research vocabulary and methods would enable design practitioners to be responsible consumers of research, allowing for consideration of hypothesis generation and inclusion of theory, as advocated by EBD books reviewed.

Though subjects noted that their firms integrated “research” findings into the design process, it was unclear if the information gathered was truly research (i.e., empirical) or if it was anecdotal in nature and none relied on hypothesis generation/testing or theoretical underpinning, as advocated by most books reviewed. Applying findings indiscriminately could subsequently give EBD a ‘bad name’—similar to the trajectory of “green design” as ‘green wash’ a decade ago.

Also, subjects’ reliance on firm leadership to “know enough” (i.e., to be subject matter/building type experts) continues to promote normative design. Firms relying on “best practices” may be reluctant to make the necessary fiscal investments in EBD (i.e., learning curve and extended time spent on projects), though incremental implementation lessens the initial negative fiscal impact of a longer design phase (Martin, 2009). Brandt et al. (2010) warn that delayed implementation of EBD will leave firms at a disadvantage among their peers.

Responses supported factors found in the literature, including the lack of knowledge about research and confusion about information versus research implicit in current non-healthcare focused design practice. Also, historical context (normative design/best practices) and external
Factors (the media, socioeconomic conditions, and knowledgeable clients) seemed to suppress adoption of an EBD-approach to decision-making (see Figure 6).

Findings from the practitioner survey instigated the second phase of the study, a comparative analysis of EBD-approaches to the design process, published since 2008. Books advocated for the ‘practitioner as researcher’ (Harris et al., 2008; Kopec, Sinclair, & Matthes, 2011), advocated earlier by van Aken (2005), citing the growing complication of design process knowledge and resultant project. Though these books varied in their degree of prescription, exposure to their content could raise non-healthcare focused practitioners’ awareness about EBD, accentuating the “science” aspect of design disciplines’ “applied arts,” which has significant currency for the design disciplines (Pable, 2009).

Many authors identified challenges relative to EBD as an innovation to the normative design process and questioned if what evidence is available is enough to substantiate an EBD-approach (Hignett & Lu, 2009; Ullán, Belver, Fernández, Serrano, Delgado, & Herrero, 2012; van de Glind et al., 2007). Others warned of the prescriptive nature of an EBD-approach (van Aken, 2005). Meanwhile, many others acknowledged the benefits that an EBD-approach can bring to the normative design process in terms of measurable outcomes. Namely, the evaluation of the human behavior and needs factors in context with the built environment design parameters; as systematically identified, evaluated, documented and then applied via the design solution (Andersson et al., 2013; Andrade et al., 2012; Glenister, 2012; Olausson, Lindahl, & Ekebergh, 2013).

![Figure 6: Current non-healthcare design practitioners’ design process](image-url)
Due to this expanding dialogue, though largely healthcare facility related, much more is known about how to engage in an EBD-approach than when those first adopters embarked on this path. As stated by Cama (2009),

...a design team must think futuristically, for at the risk of building a better old building they must innovate. It is in the evidence-based process that innovation can be grounded in the security of an informed process where a certain amount of rigor replaces an educated sense. (p. 130).

Findings highlight non-healthcare designers' lack of clarity regarding EBD components and concerns about the challenges that accompany engagement in an EBD-approach (see Figure 2). Furthermore, the literature may not be going far enough with information about how to integrate EBD into the timeline of the phases of the design process. Researchers need to identify elements of an operational model for an EBD-approach to practice (Mostafa, 2014) as well as educational protocols (Plowright & Cole, 2012; Salama, 2008), and supporting materials and/or tools for multidisciplinary design firms’ implementation (Ryan et al., 2014; Salama, 2007). Together, these deliverables could transform non-healthcare designers' normative design process and advance non-healthcare design practice as it is doing for healthcare design practitioners. This possibility incentivizes the academy to embark on a substantial educational effort within the classroom and through collaborative scholarship with non-healthcare design practitioners to encourage adoption of this innovation. Implementation of an EBD-approach will inform the design team’s future work, improve the design outcomes for the client and inhabitants of the built environment, and enable dissemination of EBD outcomes to the design community, thereby adding to the body of knowledge. The design process must evolve beyond normative design to better integrate evidence to meet the challenges of the triple bottom line: people, planet, and profit (Savitz, 2006).

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TOURISTS’ AND RESIDENTS’ IMPRESSIONS OF A HERITAGE TOURISM SITE:
The Case of Kampong Taman Sari, Indonesia

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Abstract
The interface between tourism and built heritage is complicated because much built heritage is located in the middle of living communities. Questions arise about how to achieve a balance between the expectations of tourists and the community. To study this question, this paper reports on tourists’ and residents’ impressions of an international heritage tourism site, the Kampong Taman Sari in Indonesia. Using a linear-numeric semantic differential as the measuring instrument and nine consensus photographs of the site as stimuli, the study investigated similarities and differences in impressions between three groups: tourists (international and domestic) and residents. Three principal dimensions were found to underlie impressions of the site: Attractiveness, Organisation, and Novelty. Significant differences were found among all three groups in their impressions of Attractiveness. In terms of impressions of the Organisation of the site, international and domestic tourists have similar impressions but these differ significantly from the impressions of residents. On the other hand, domestic tourists and residents have similar impressions of the Novelty of the site, which is evaluated differently by international tourists.

Keywords: Impressions; Attractiveness; Organization; Novelty; Heritage tourism; Local residents; Taman Sari; Yogyakarta Indonesia.

INTRODUCTION
Many cities have districts with a sense of place and identity built around historic and cultural associations. Such districts have historical value and meaning that may be able to communicate to people something about the history of the city. No living environment is the product of a single historic period. Heritage areas are often an integral part of a city’s charm and appeal, and their functional and visual qualities are important elements of the city’s image and identity (Tiesdell, Oc, & Heath, 1996).

For areas of cities rich in history that have also become touristic sites, there is a complex relationship between tourism and cultural heritage. Tourism has played a critical role in the development of heritage tourism resources, while conversely, historical resources form a critical part of a growing tourism industry (Ashworth & Tunbridge, 1990). The symbiosis of tourism and heritage resources has become a major part of the fabric of many cities.

The combination of tourism and historic resources, what is known as heritage tourism, offers opportunities to highlight the past in the present. The past, which provides a sense of identity for the present, has made contemporary societies aware of the necessity for conservation (Lynch, 1972). The conservation of historic environment plays an important role in maintaining urban continuity. Unfortunately, a review of the literature reveals that built heritage conservation may become a stressor on the local community, especially if the heritage site is treated as a source of tourism (Ernawati, 2012).

The combination of the tourism industry and built heritage, especially in developing countries, becomes further complicated because historic places usually exist in the middle of urban living communities (Nuryanti, 1996). Therefore, questions about how to achieve a balance between the expectations of tourists and those of the community now arise in the tourism literatures (Trotter, 2001). A quality tourism product from the tourist’s point of view is only one
side of the picture. One of the major ingredients for achieving sustainable tourism is taking into account the host population’s point of view.

Local people as well as tourists play significant roles in the development and maintenance of historic sites. Urban management of the historic environment involves a thorough understanding of the place and the aspirations of the people who live in it (Orbasli, 2000), not only of the tourists. The conservation of historic precinct as a tourism object should direct to enhance local people’s quality of life and environment (Megahed, 2014). In this sense, urban built heritage as a tourist destination and as the local people’s settlement should evoke a sense of delight and pleasure for the stakeholders. The perceived quality of historic tourism areas within cities depends on the evaluation of the tourists and inhabitants of the place. However, this has not been a focus of previous studies. The importance of local people’s points of view as a valuable resource in the process of planning and management of urban heritage tourism sites has been neglected.

The aim of this research was to examine the similarities and differences in people’s impressions of heritage tourism sites that may exist between three principle groups: tourists (international and domestic) and residents. The study examines visitor as well as resident impressions for both theoretical and practical reasons. Because these two groups experience different parts of the heritage tourism site, interact with the environment differently and have different needs and expectations, they may have developed distinctly different impressions of the historic precinct. Visitors tend to experience a heritage tourism area as observers responding to first impressions, whereas residents tend to respond as participants (Brower, 1988). It is assumed that knowledge gained from visitor impressions can assist local bodies involved in management of these sites to convey a favorable impression to visitors. Meanwhile an understanding of resident impressions is important to maintain a quality living environment for the local community that is also conducive to tourism.

**Kampong Taman Sari, Yogyakarta, Indonesia**

One of prime examples of a heritage tourism site that faces those conflicting situation of development is Kampong Taman Sari, Yogyakarta, Indonesia. Yogyakarta is a well-known tourist destination city and the heart of ancient Javanese culture in the center of Java, and is the second most popular tourist destination after Bali (Adisakti, 1997). It was the center of the Mataram Kingdom, with many historic artifacts and buildings. Yogyakarta is one of the most densely populated cities in the world with an average of 1,000 people per square kilometer (Dahles, 2001). The majority of its buildings are single-story structures. Many people live in what are called “kampong” – high density, unplanned housing areas that form a large part of most Indonesian cities (World Bank Group, 1999-2001).

Taman Sari is a group of buildings that occupy 12.66 hectares of land in the inner southwest part of the old walled city in the heart of Yogyakarta. It was built in 1758 to be the pleasure gardens and rest houses of the Sultan of Yogyakarta’s family. It originally consisted of 57 buildings and 18 fruit and flower gardens. Water was the dominant feature of Taman Sari with a large artificial lake, a series of sunken bathing pools and a network of underground and underwater passageways, so people refer to it as a water kasteel or castle on the water. Taman Sari functioned as The Royal Pleasure Garden until 1867, when an earthquake damaged its buildings and infrastructure resulting in the draining of the artificial lake.

Twenty major buildings or portions of buildings of architectural and archaeological artifacts are still remaining today. However, the complex is now occupied by a very dense settlement, which is called kampong. One of the significant factors in the rapid increase in the residential density of Taman Sari has been the presence of tourism. Taman Sari has been open for tourism since 1974 after it was renovated in 1938, 1943, and 1972.
Literature on Human Impressions of The Built Environment

Cities and parts of cities have a character that can be detected easily (Rapoport, 1993). People consciously or unconsciously make evaluative judgments of that character when they visit or live in that environment (Kaplan & Kaplan, 1982). The study of environmental impressions is part of the broader domain of environmental cognition, the study of the subjective information, images, impressions, beliefs and evaluations that people have of the environment, the ways in which these conceptions arise from experience, and the ways in which they affect subsequent behavior with respect to the environment (Moore & Golledge, 1976). What people know and understand about their surroundings influences their impressions and behavior (Garling and Evans, 1991).

The physical environment provides information to observers through the various sensory modalities, especially vision (Altman & Chemers, 1980). Although the non-visual senses play a secondary role in the experience of the environment, they may account for no more than 10% of people’s sensory input (Porteous, 1996). The dominant human sense – vision – accounts for more than 80% of sensory input (Porteous, 1996). These visual inputs lead to impressions and ultimately to evaluations of that environment. The visual aspect of heritage tourism sites is, therefore, of prime importance in their planning and management.

Impressions may also be influenced by the experiences and backgrounds of the respondents (Altman & Chemers, 1980; Nasar, 1988, 1994). In the study of environmental impressions of heritage tourism sites, a given built environment may mean different things to different people who view it, experience it, or use it (Golledge, 1991). One cannot assume that the same environment means the same to all people. It can be argued that because impressions of historic environments are conditioned by cognition, which depends on experience (Zube & Pitt, 1981), there may be important group differences in people’s impressions of heritage tourism sites.

METHODS

Participants

To study the different and perhaps conflicting impressions of the Taman Sari heritage conservation area among different groups of people, and to allow statistical generalization to similar populations living in and visiting heritage tourism sites elsewhere in the developing world, three groups of respondents living in or visiting Taman Sari were chosen randomly.

A random sample of 230 tourists (115 international and 115 domestic tourists) was selected. Following the procedure of Hull and Revell (1989), the researcher went to the main gates to the site at a variety of random times. The first person of each group of international or domestic tourists in view was invited to be a participant.

A random sample of 105 residents was selected based on the map of the Taman Sari complex. Each house on the map was given a number and the sample selected using a random number table. The interviewer went to each selected house in the evening, the best time to find all members of the family at home. The respondent chosen was the first adult resident found by the interviewer when approaching the house. From the 335 people randomly selected to be in the sample, data from 17 respondents was later discarded as the majority of their questionnaires was left unanswered and 10 participants withdrew before completion. As a result, data from 308 participants were used for analysis, consisting of 100 international tourists, 106 domestic tourists and 102 residents.

Stimuli

Rather than have participants wander the site and therefore have different, uncontrolled experiences, a pilot study was conducted to standardize the stimuli by using photographs that were agreed on by participants ahead of time as being familiar and meaningful aspects of the heritage complex. To select pictures as stimuli, a participant photography method (see Chenoweth, 1984; Hull & Revell, 1989) was employed. This method leads to the selection of...
scenes that was meaningful to participants rather than meaningful to the researcher. Sixty people (20 from each of the three types of respondents) were given inexpensive cameras and asked to photograph scenes in the area that were the most “impressive” to them according to their own values and perceptions. This resulted in 480 photographs of 20 different scenes. The photographs were sorted by the researcher to identify those scenes and angles of photographs most frequently photographed by all three groups. The consensus scenes taken by at least 10% of the participants were then re-photographed by the researcher using a high-quality camera.

This process produced nine consensus scenes (shown in Figure 1): (1) Umbul Binangun Tower, (2) the ventilation buildings of the Underground Passageways, Cemeti Island and Indigenous Settlement, (3) Stage Gate, (4) the gate to Umbul Muncar Bathing Pool, (5) the gate to the Lopak-Lopak Building and Indigenous Settlement, (6) Umbul Muncar Bathing Pool, (7) the Great Gate, (8) Batik Painting Art Gallery, and (9) Sumur Gumuling Underground Mosque.

| 1. Umbul Binangun Tower                                                                 |
| 2. Underground Passageways, Cemeti Island and Indigenous Settlement                    |
| 3. Stage Gate                                                                         |
| 4. Gate to Umbul Muncar Bathing Pool                                                  |
| 5. Gate to Lopak-Lopak Building and Indigenous Settlement                              |
| 6. Umbul Muncar Bathing Pool                                                          |
| 7. Great Gate                                                                         |
| 8. Batik Painting Art Gallery                                                         |
| 9. Sumur Gumuling                                                                     |

Figure 1: Stimuli for the independent variables (Source: Authors).
However, it was found from a second pilot study that the most reasonable number of stimuli that met participant's time limitation was six pictures. Therefore, replicating the Hull and Revell (1989) procedure, but to shorten the respondent completion time, the nine stimuli were divided into two questionnaires of six pictures each. Each questionnaire contained the three most preferred scenes (pictures 1-3) plus three of the remaining six pictures. One questionnaire, therefore, consisted of pictures 1-6 and the other consisted of pictures 1-3 and 7-9.

With this arrangement, 308 people responded to pictures 1-3, 153 responded to pictures 4-6, and 155 responded to pictures 7-9. This corresponds to accepted statistical techniques (see Alreck & Settle, 2004; Stamps, 2000). Moreover, since respondents rated the stimuli on the same rating scale, the number of stimuli increased the number of cases for statistical purposes (Hair, Anderson, Tatham, & Black, 1998).

**Dependent Variables**

To measure the dependent variable of people’s impressions, a linear-numeric semantic differential scale was developed. Based on previous research, 25 items were selected to measure the underlying dimensions of people's impressions of the heritage tourism site, including items representing the three constructs of attractiveness, order, and novelty.

Eight of the 25-items were chosen to reflect people’s impressions of the attractiveness or unattractiveness of the site. These were derived from studies of the experience of West Berlin conducted by Franke (1969) and Franke and Bortz (1972; both in German; cited in Krampen, 1979). The items were unattractive-attractive, subdued-colorful, strange-familiar, restricted-free space, ugly-beautiful, dull-varied, unpleasant-pleasant, and monotonous-diverse.

As has been done in a number of previous studies, preference was measured using Nasar’s (1998) single item like-dislike scale. Interestingness of places is also considered as an important variable that may enhance the attractiveness of the precinct; therefore interesting-uninteresting was chosen from Bortz (1972).

Beside these qualities of the precinct, an ordering dimension might play an important role in people's impressions. It has been suggested in architectural theory, based on empirical studies (e.g., Rapoport, 1993), that people usually like areas that have visual order and do not like areas with disorder or chaos. This notion is supported by other research that order and related variables such as organization and coherence enhance people’s preferences (Nasar, 1998). It should be noted, however, that in heritage sites, visitors might not be put off by the chaos of the precinct caused by the combination of old and new, historic buildings and local settlement. To measure people’s impressions of the ordering dimension of the area, three adjective pairs – orderly-chaotic, exciting-calming, and complex-simple – were derived from Hershberger (1972) and disorganized-organized, impressive-unimpressive, and neat-messy were chosen from Kasmar’s (1970) study of the lexicon of environmental descriptors.

Novelty has also emerged as a prominent dimension of historic settings. Robins (1991) emphasized the importance of distinctive qualities and place-specific differences in historic areas to gain advantage in an increasingly competitive market. He argued that in a world where differences are being erased, the commodification of place, historic areas in particular, is about creating distinct place-identities in the eyes of global tourists. This can create a sense of place, an environment that possesses a distinctive and desirable character. Therefore, two adjective pairs – ordinary-distinctive and desirable-undesirable – were chosen from Green’s (1999) study of town character and Kasmar’s (1970) lexicon of environmental descriptors.

Another important quality of historic precincts is the uniqueness of the place. This was measured using the adjective pair common-unique (Hershberger, 1972; Kasmar, 1970). An adjective pair for the meaningfulness of place was taken from Ertel’s (1964) study of visual impressions of facades of different styles, namely meaningless-meaningful (cited in Krampen, 1979).
Another important aspect of place is whether it is memorable, for which forgettable-memorable was selected from the research of Prentice (1993), who pointed out that the only things tourists take home are photographs, purchased souvenirs, and memories. Memorable places will make people's minds contain special and powerful images that contribute to a special sense of place in particular settings (Steele, 1981). Four additional items – incoherent-coherent, disturbing-restful, worthless-valuable, and expected-unexpected – were added by the researcher based on their relevance to the research questions and context of the present study. The 25 items were organized on a 7-point linear-numeric bi-polar semantic differential scale, each item ranging from one adjective (e.g., very unattractive=1) to its opposite (e.g., very attractive=7) with number four as the neutral point.

**Procedure**

After being selected and agreeing to participate in the study, each tourist respondent was invited to explore the Taman Sari heritage area on their own, as they would have had they not been invited to be a part of the study, and to return to the researcher stationed at the rest area near the exit gate after they completed their visit. Resident respondents were contacted at their homes as described above. Each respondent received a set of research instrument consisted of an album of six photographs of the Taman Sari complex and 25 semantic-differential items questionnaire for each photograph. Each participant was asked to rate each photograph by circling the number of a 7-point bi-polar semantic differential scale that best described their impression of each photograph.

**Data Analysis**

To identify the dimensions underlying tourists' and residents' impressions of the heritage tourism site, this study employed principal factor analysis to the 25 semantic differential items. Since there were 106 domestic tourists, 100 international tourists, and 102 residents who rated their responses to nine stimuli, the number of cases in the data set for analysis was 1848 (each of the stimuli numbers 1-3 were rated by all respondents, n=308; stimuli 4-6 were rated by 153 respondents and stimuli 7-9 were rated by 155 respondents). After preliminary tests, three variables – strange, complex, and coherent – were dropped from further analysis because those variables could have redundancy problems with other variables and should therefore be eliminated before proceeding to factor analysis (see Field, 2009). Factor analysis was then conducted on the remaining 22 variables with oblique rotation (direct Oblimin).

Analysis of variance (ANOVA) was used to examine the similarities and differences in impressions of the heritage tourism site among international and domestic tourists and residents. The ANOVA was based on factor scores (see Field, 2009; Hair, et al., 1998). Three one-way ANOVAs were conducted. Each analysis was followed by post-hoc tests to examine differences between groups. Since the group sample sizes were slightly different, the post-hoc analysis used Gabriel's procedure, which has greater power to deal with slightly unequal sample sizes (see Field, 2009).

**RESULTS AND DISCUSSION**

**Dimensions Underlying People's Impressions: The Attractiveness, Organization, and Novelty of Heritage Tourism Sites**

Principal axis factoring with oblique rotation (direct Oblimin) was employed on the remaining 22 semantic differential items. Results indicated there are three principle dimensions underlying tourists' and residents' impressions of the Taman Sari heritage area with Eigen values exceeding 1, explaining 87.9% of the total variance.
Table 1: Factor pattern matrix of the semantic differential scale of impressions of the Taman Sari heritage tourism site with Oblimin rotation (n=308).

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Communalities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Attractiveness</td>
<td>Organization</td>
<td>Novelty</td>
<td></td>
</tr>
<tr>
<td>Uninteresting-Interesting</td>
<td>.614*</td>
<td>.007</td>
<td>.290</td>
<td>.625</td>
</tr>
<tr>
<td>Unpleasant-Pleasant</td>
<td>.596</td>
<td>-.300</td>
<td>.039</td>
<td>.701</td>
</tr>
<tr>
<td>Ugly-Beautiful</td>
<td>.569</td>
<td>-.340</td>
<td>-.016</td>
<td>.669</td>
</tr>
<tr>
<td>Unattractive-Attractive</td>
<td>.522</td>
<td>-.206</td>
<td>.132</td>
<td>.551</td>
</tr>
<tr>
<td>Dull-Varied</td>
<td>.494</td>
<td>-.082</td>
<td>.145</td>
<td>.400</td>
</tr>
<tr>
<td>Monotonous-Diverse</td>
<td>.493</td>
<td>.066</td>
<td>.092</td>
<td>.255</td>
</tr>
<tr>
<td>Unimpressive-Impressive</td>
<td>.490</td>
<td>-.097</td>
<td>.316</td>
<td>.579</td>
</tr>
<tr>
<td>Dislike-Like</td>
<td>.486</td>
<td>-.236</td>
<td>.200</td>
<td>.601</td>
</tr>
<tr>
<td>Subdued-Colorful</td>
<td>.447</td>
<td>-.224</td>
<td>-.260</td>
<td>.292</td>
</tr>
<tr>
<td>Chaotic-Orderly</td>
<td>-.046</td>
<td>-.871</td>
<td>.015</td>
<td>.719</td>
</tr>
<tr>
<td>Messy-Neat</td>
<td>-.032</td>
<td>-.867</td>
<td>.010</td>
<td>.723</td>
</tr>
<tr>
<td>Disorganized-Organized</td>
<td>.019</td>
<td>-.797</td>
<td>.029</td>
<td>.673</td>
</tr>
<tr>
<td>Disturbing-Restful</td>
<td>.037</td>
<td>-.646</td>
<td>.126</td>
<td>.524</td>
</tr>
<tr>
<td>Restricted-Free</td>
<td>.149</td>
<td>-.511</td>
<td>.046</td>
<td>.404</td>
</tr>
<tr>
<td>Common-Unique</td>
<td>.049</td>
<td>.013</td>
<td>.723</td>
<td>.552</td>
</tr>
<tr>
<td>Ordinary-Distinctive</td>
<td>.076</td>
<td>-.055</td>
<td>.652</td>
<td>.511</td>
</tr>
<tr>
<td>Expected-Unexpected</td>
<td>-.155</td>
<td>-.100</td>
<td>.604</td>
<td>.331</td>
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<tr>
<td>Meaningless-Meaningful</td>
<td>.280</td>
<td>-.034</td>
<td>.557</td>
<td>.564</td>
</tr>
<tr>
<td>Worthless-Valuable</td>
<td>.144</td>
<td>-.153</td>
<td>.519</td>
<td>.466</td>
</tr>
<tr>
<td>Forgettable-Memorable</td>
<td>.206</td>
<td>-.157</td>
<td>.462</td>
<td>.463</td>
</tr>
<tr>
<td>Undesirable-Desirable</td>
<td>.387</td>
<td>-.084</td>
<td>.420</td>
<td>.555</td>
</tr>
<tr>
<td>Calming-Exciting</td>
<td>.206</td>
<td>.060</td>
<td>.407</td>
<td>.260</td>
</tr>
</tbody>
</table>

| % of Variance | 32.88 | 30.01 | 25.02 |               |

* Loadings in excess of .4 are shown in bold (per Stevens, 1992)

As seen in Table 1, there are three major common dimensions in people’s impressions of the heritage tourism site. Factor 1 consists of the variables interestingness, pleasantness, beauty, attractiveness, variety, diversity, impressiveness, liking, and colorfulness. All of these variables relate to the visual attractiveness of the site; the factor can therefore be named Attractiveness. The second factor consists of the variables chaotic, messy, disorganized, disturbing, and restricted, all with negative loadings. If these items are interpreted in reverse, the factor brings together the ideas of orderly, neat, organized, restful, and free. This factor is related to the organization of the environment, and is named Organization. The third factor consists of the variables uniqueness, distinctiveness, unexpectedness, meaningfulness, valuableness, memorability, desirability, and excitingness. Although desirability and excitingness are included in this factor, overall the factor is best characterized by this area being different from others, and is therefore named Novelty. The reliability test for assessing the internal consistency of the three
factors yielded a Cronbach’s alpha of .89 for Attractiveness (nine items), .88 for organization (five items), and .85 for Novelty (eight items), indicating that all three factors were internally consistent.

The result that Attractiveness as a major common dimension in people’s impressions is consistent with other research on environmental aesthetics. For example, the study of Lowenthal and Riel (1972) found that places that are regularly described as beautiful are also regularly described as pleasant and vice versa (Canter, 1977).

A variety of studies examining subjective response to environments (e.g., Canter, 1969; Hershberger & Cass, 1988; Lowenthal & Riel, 1972; Oostendorp & Berlyne, 1978; Russell & Ward, 1981) have indicated the importance of the aesthetic dimension in people’s responses to the environment. Canter (1969), for example, using factor analysis, found that for both architects and lay people, the major factor in response to simulated environments was pleasantness. Lowenthal and Riel (1972) found that aesthetic variables such as beautiful-ugly and pleasant-unpleasant account for most of the variance in people’s response to the aesthetic dimension of an environment.

The attractiveness dimension of the heritage tourism site reflects the overall feelings the people have about the aesthetic appreciation of the ideal place. It shows how bad or good the historic tourism site is in people’s minds. Heritage tourism sites, therefore, should aim to generate positive, attractive settings to provide positive impressions of a good tourist destination while maintaining it as an attractive living environment.

In terms of the scale, the findings of Attractiveness in this study are also consistent with the findings of Franke (1969) and Franke and Bortz (1972; cited in Krampen, 1979). In their study of people’s experience of city districts in West Berlin, Attractiveness, which consisted of the variables pleasant, beautiful, attractive, varied, diverse, colorful, familiar, and free, was found to be a major common dimension underlying people’s impressions. In the present study, these affective qualities were found to coalesce. However, in this research, interesting and liking, the likeability of the place, replaced the two variables, familiar and free. This is probably because of the differences in environmental features between the districts evaluated in Germany and Indonesia.

In the studies of Franke (1969) and Franke and Bortz (1972), the Attractiveness dimension was influenced by the impressions of subjects living in districts with a great deal of greenery and little traffic (Krampen, 1979). Perhaps familiarity and freeness of the area played a significant role in the attractiveness of the site. In the present study, interestingness and liking seemed to be more significant. This implies that peripheral attributes of districts may play a significant role in forming the dimension underlying people’s impressions. However, the six variables of Attractiveness, i.e., pleasant, beautiful, attractive, varied, diverse, and colorful, which remain stable in both studies may have strength as a scale of attractiveness of heritage areas and can be tested further in subsequent research.

Organization, another common dimension of impressions of a heritage tourism site, is concerned with the formal quality of the scenes, the orderliness, neatness, organization, freeness, and restfulness of the site. Organization or coherence has been found to be one of predictors of environmental preference (Kaplan & Kaplan, 1982). People tend to prefer scenes that are well organized, orderly, and neat. This notion is also applied to the heritage tourism site.

Results also indicated that the Novelty dimension is a significant factor in people’s impressions. The power of heritage tourism places lies in their distinctive quality and uniqueness, their value as heritage, and the meaning that attaches to them. Although the concept of Novelty is often difficult to express or define clearly, places which people categorize as unique and distinctive can bring forth strong mental images of a remembered or imagined character (Garnham, 1985). A memorable place triggers memories for residents, who have shared a common past, and at the same time it can represent shared pasts to visitors who might be interested in knowing about them in the present (Hayden, 1995). A large body of heritage
literature also stresses the importance of the Novelty quality of historic places (e.g. Boniface, 1995; Orbasli, 2000; Tiesdell et al., 1996).

Results further suggest that the Novelty dimension is likely to involve a cognitive response to the impressions of a heritage tourism site. The factor includes variables of unique, distinctive, unexpected, meaningful, valuable, memorable, desirable and exciting. It can be argued that one needs to collect and process information from images to make a judgment on items such as the degree of meaningfulness, valuableness and uniqueness.

Concerning the relationship among those three factors, the factor correlation matrix produced from the factor scores as seen in Table 2 shows that Attractiveness and Organization of the site are highly negatively correlated (r=-.627). However, it should be noted that Organization, as shown in Table 1, had negative loading for its items. This means that Organization and Attractiveness of the site are actually positively correlated. With regards to the Novelty of the site, it is moderately correlated to the Attractiveness of the site (r=.480), while Novelty has a negative low correlation with the Organization of the site (r=-.340). However, Organization has negative loading for its items as shown on Table 1. This means Organization and Novelty are positively correlated.

Table 2: Factor correlation matrix of people’s impressions of the heritage tourism site (n=308).

<table>
<thead>
<tr>
<th></th>
<th>Factor 1 Attractiveness</th>
<th>Factor 2 Organization</th>
<th>Factor 3 Novelty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1 (Attractiveness)</td>
<td>1.000</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Factor 2 (Organisation)</td>
<td>-.627</td>
<td>1.000</td>
<td>-.340</td>
</tr>
<tr>
<td>Factor 3 (Novelty)</td>
<td>.480</td>
<td>-.340</td>
<td>1.000</td>
</tr>
</tbody>
</table>

The results that show a highly inter-correlated that exist between Attractiveness and Organization of the site is consistent with previous studies. The literature indicates that coherence (organisedness and orderliness) should influence pleasantness, the dimension of Attractiveness, in predictable ways (Nasar, 1988). The literature also suggests that pleasantness should be highest for high coherence or organisedness of the elements in the scene (Nasar, 1988).

Table 2 also shows that the Attractiveness is moderately correlated to the Novelty of the site (r = .480). This finding suggests that the Novelty factor is somewhat associated with the affection quality of the place. As Lynch (1976) suggested, the specific quality of place such as its distinctive quality is often recalled with affection. Places that provide a distinctive and desirable character experience have been suggested as one way of mitigating some of the negative psychological effects of town growth on communities (Green, Barclay & McCarthy, 1985; Lynch, 1976). The concept of placelessness, the weakening of a distinct experience and of identities of places, was also found as being associated with a variety of negative perceptual and affective responses (in this case the Attractiveness of the site) to the environment (Garnham, 1985; Giuliani & Feldman, 1993; Altman & Low, 1992; Relph, 1976).

These findings suggest that a heritage tourism site should have a strong distinctive quality to make it attractive. The ideal in developing an appealing attraction would be to reveal the unique aspect of a place (Boniface, 1995). Novelty, ‘otherness’, as long as it is not frightening, is customarily quite attractive (Boniface, 1995). Fundamentally, what a visitor seeks in a heritage tourism site is a quality of difference from that which constitutes everyday life.

The results shown in Table 2 further indicated that although the Organization of the site correlated relatively highly with Attractiveness (r = -.627, interpreted inversely as explained in the previous section), it correlated relatively low with the Novelty dimension (r = -.340, interpreted inversely). This indicates that the Novelty of the precinct seems unlikely to be affected by the
Organization of the site. This finding indicates that although some urban tourism destinations in developing countries may not be well-organized, global tourists may still find them unique, distinctive, and desirable.

**Similarities And Differences in Impressions Among Groups**

Using the three factors, the second analysis involved three composite variables as the dependent variables (i.e., the three factors of impressions) and the three groups of participants as the independent variables (i.e., international and domestic tourists and local residents).

The results of the ANOVA shown in Table 3 demonstrated that there are significance differences between international and domestic tourists and resident groups in their impressions of the heritage tourism site. Lack of significant differences were only found between domestic tourists and international tourists in terms of the Organisation of the site, and between domestic tourists and the local people in terms of the Novelty of the site. All other comparisons among the three groups showed significant differences.

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1 (Attractiveness)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>55.820</td>
<td>27.910</td>
<td>28.748***</td>
</tr>
<tr>
<td>Within groups</td>
<td>1845</td>
<td>1791.180</td>
<td>.971</td>
<td></td>
</tr>
<tr>
<td>Factor 2 (Organisation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>27.505</td>
<td>13.753</td>
<td>13.945***</td>
</tr>
<tr>
<td>Within groups</td>
<td>1845</td>
<td>1819.495</td>
<td>.986</td>
<td></td>
</tr>
<tr>
<td>Factor 3 (Novelty)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between groups</td>
<td>2</td>
<td>141.161</td>
<td>70.581</td>
<td>76.339***</td>
</tr>
<tr>
<td>Within groups</td>
<td>1845</td>
<td>1705.839</td>
<td>.925</td>
<td></td>
</tr>
</tbody>
</table>

***p < .001

There are potential reasons for this situation. The aesthetic response depends on association, memory, and knowledge (Tuan, 1989). These might change continuously because of changes in people's experience and learning. People have somewhat different aesthetic criteria and differ in the aesthetic quality they ascribe to a heritage tourism site. Preferences regarding heritage conservation sites are something learned or developed over time, dependent upon a person's experiences and current purposes. Environmental cognition theory suggests that people build an image of their environment using information from their experiences (e.g., Moore & Golledge, 1976). This image is used as a template to form expectations, structure incoming information and evaluate environments. People also evaluate the precinct with a particular purpose in mind (see Ittelson, Proshansky, Rivlin, & Winkel, 1974; Russell & Snodgrass, 1987). A person's immediate purpose in an environment influences the type of information sought and the criteria used to evaluate the environment. Therefore, local residents looking at the historic environment with the purpose of living there evaluate it differently from a tourist visiting it for three to four hours.

Based on these rationales, each group – residents, international and domestic tourists – from different backgrounds have different experiences and purposes, and thus different impressions of the heritage tourism site.
Furthermore, a post-hoc comparison of means of the three factor scores using Gabriel’s procedure indicated that there are significant differences in Attractiveness of the site between all groups, i.e., between international tourists and domestic tourists (p < .001), between international tourists and local residents (p < .05), and between domestic tourists and local residents (p < .001). Local residents rated the Attractiveness of the district higher than tourists did, while international tourist rated the Attractiveness of the precinct higher than domestic tourists did. Overall, all three groups of respondents evaluated the area as having an attractive quality.

The potential reason local people rated the Attractiveness of the site higher than tourists did is because residents are often people with a somewhat egocentric orientation to the environment, with all nearby places considered as being ‘good’. Research has reasonably well documented this idea (Altman & Chemers, 1980). Local people may be influenced by their egocentric attitude so they evaluated the Attractiveness quality higher than the two other groups of users. However, international tourists rated Attractiveness of the precinct higher than domestic tourists did. This implies that difference perceptions emerge between these two groups. This may be caused because international tourists that come from other cultures may have experienced visiting similar places in other cultures. Therefore, they unconsciously compare the precinct to other places. This may enrich their evaluations of the Attractiveness dimension. The local tourists, on the other hand, may only have visited similar districts of the same culture. This experience may make them evaluate the precinct in comparison to other places from the same culture that may have the same features. This, in turn, may influence the fact that local tourists rated the Attractiveness quality lower than the global tourists did.

There is, however, a similarity existing between international tourists and domestic tourists in their evaluation of the Organization of the historic precinct. Post-hoc tests found no significant difference between the two groups of tourists. International and domestic tourists were similar in their impressions of the Organization of the site (p < .05), while local residents’ impressions of Organization of the site were significantly different from those of both domestic tourists (p < .001) and international tourists (p < .001). Although all respondent groups had positive impressions of the Organization of the site, tourists evaluated the Organization of the precinct lower than the local residents did.

This similarity in group’s impressions is possibly because the subjects evaluated the Organization of the precinct having the idea of recreation in mind. Possibly the level of similarities or agreement is a result of tourists all having the same overriding purpose, i.e. tourism. Tourists, being foreigners, the Organization of scenes emerges in their mind; various sections are put in relation to one another and the district begins to take on a semblance of organization (Altman & Chemers, 1980). As tourists may have some experience in visiting heritage tourism site in other places, they may also unconsciously compare the orderliness of the area to other places elsewhere. This situation may mean tourists have higher criteria when judging the Organization pattern compared to a similar heritage tourism area. Residents, on the other hand, may be influenced by their egocentric attitude so they evaluated Organization dimension higher than tourists did. Different purposes between visitors and residents resulted in different responses to the Organization of the heritage tourism site.

As regards the Novelty dimension, results indicated significant differences in scores on Novelty between international tourists and local residents (p < .001) and between international and domestic tourists (p < .001), while there is no significant difference between domestic tourists and residents. Domestic tourists and local residents were similar in their impressions of the Novelty of the site (p < .05). Local people and domestic tourists evaluated the Novelty of the district higher than international tourists did. However, all groups of respondents rated the historic precinct as having the quality of Novelty. For the local community as well as domestic tourists, the heritage tourism site creates an atmosphere that serves as a symbol of their national culture. Locals, in order to reflect and reinforce their identity with the community, often use these symbols. Such symbols help give a
sense of unity to the community, something that both its members (the local residents) and related outsiders (the domestic tourists) use to label and identify the historic precinct. Taken together, all activities, symbols and features of the historic precinct suggest that people often have a sense of identity, imageability and feelings of bonding with their historic environment. These represent forces of togetherness and community identity. By a sense of belonging of the property, both groups reinforce and demonstrate its internal unity as a subculture and simultaneously display distinctiveness and separateness from others, i.e. the international tourists. Thus, local people and domestic tourists because of community familiarity and close ties with the history of the nation have similar interpretations of the Novelty dimension of the heritage tourism site and hence different evaluations from international tourists.

CONCLUSIONS AND FUTURE DIRECTIONS

The research findings have implications for the management and development of heritage tourism sites. As this research found, similarities and differences in people's impressions is a key component in the planning, design and management of historic environments for future development. The impressions of the places may be different between the experts and lay people, especially people who experience and use the historic environment such as tourists and residents. Therefore, urban design in such areas, being both a tourism object as well as a living environment, should aim to generate good impressions in people who experience it.

The findings suggest that the Attractiveness, Organization and Novelty of place are the most dominant factors that evoke impressions of those experiencing the place. This stresses the need for environmental planning and design that accommodates those qualities. Furthermore, the nature of the relationship among the three factors contributes to an understanding of how to deal with environmental features in the juxtaposition between historic precinct and urban living environments.

Findings suggest a moderate correlation between Novelty and Attractiveness. This has implications for the management of the visitors, which in planning terms means making and keeping a place attractive. For this purpose, the unique character and distinctiveness of the place need to be maintained and enhanced. Findings further indicate the importance of conferring a sense of place. Although Organization has a relatively low correlation with Novelty, it has a high correlation with Attractiveness. This suggests that environmental designers should take careful note of the nature of the relationship among those factors. This also suggests a need for creative thinking by environmental designers to produce a novel quality within these particular settings.

In sum, the visual quality of historic environments should be maintained and managed carefully because of its obvious importance to the aesthetic experience. In this sense, the visual quality of historic tourism sites must satisfy both tourists who experience it for a short period of time and the local inhabitants who experience it daily. However, it should be noted that this study does not reveal the specific historic environmental features that lead to the emergence of these impressions. Therefore, further research needs to be done to uncover the environmental features of heritage tourism sites that gave rise to these impressions. As Nasar (1988) pointed out, knowledge of the relationship between properties of the visual environment and human affect will better assist environmental designers to plan, design, and manage setting to fit the preferences and activities of the variety of users.

Future research regarding people's impressions in a wider range of developing countries is also necessary to contribute to the development of knowledge in heritage tourism. The characteristics of urban heritage tourism environments in western countries and non-western countries may be different. To explore this, studies like the above should be replicated in historic precincts existing in other developing countries.
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URBAN DEVELOPMENT STRATEGIES OF CITY CENTERS: The Case of Rafah City, Palestinian Territories

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Abstract
City centers worldwide are perceived as essential parts of the city, where city memories are preserved and its identity is expressed. They are planned to satisfy the functional requirements and pleasurable qualities of the city. Under the accelerating urbanization of the modern city, several challenges face these centers including demographic, economic, and environmental challenges. This requires a continuous and incremental urban development process based on clear strategy and action plans. Thus, this study focuses on urban development strategies of city centers, with a focus on Rafah city located in the Gaza Strip, Palestinian Territories. The geographic location of this city near the Palestinian-Egyptian borders makes it a promising commercial city at local and regional levels. Thus, the current situation of Rafah city center has been analyzed, and several development strategies have been proposed. This has been done through a field survey based on observation and a questionnaire directed to city center users. It has been found that there is a great potential of Rafah city center to be developed as a commercial center. In this regard, several strategies and required actions have been proposed in the fields of transportation, environmental quality, shopping activities, investment opportunities, and visual perception.

Keywords: Urban development; City center; Development strategy; the Gaza Strip.

INTRODUCTION
City centers, or downtowns, hold a special importance for communities. They form high-value urban hearts of the city, where needs and services are provided. Historically, the Greek “agora” and Roman “forum” formed an integral part of the ancient city center, where public meetings and occasions were organized. In general, public squares have been historically used to form city centers, where religious and public buildings are manifested (Herzog, 2006). In the modern city, city centers are generally characterized by concentration of services, high traffic density, high land prices leading to buildings vertical expansion, and high variation of population density between day and night time. Several types of services are concentrated in city centers. Among these services, the commercial role of city centers is essential.

This is reflected in the existence of shopping facilities and headquarters of commercial firms, which form the so-called Central Business District (CBD). Some even argue that city center strength depends on its ability to maintain the main economic center of the city, even under the trend of decentralizing of shopping services (Gallion & Eisner, 1986). However, planning centers of mixed uses, including residential one, ensures vitality of these centers and reduces the potential of urban crime (Tallon & Bromley, 2004). This is essential to face the desire of maximizing the income rate from commercial land development on the account of the essential urban and cultural role of the city center as a main image maker of the city. Within this context, several challenges emerge in the modern city. This mainly includes reclaiming city centers from the automobile for the pedestrian and open spaces (Riddell, 2004). In this regard, local culture should be favored to create the required connection between aesthetics and design values (Taylor, 1998). Thus, a comprehensive development approach is required to invest the high commercial value of city centers without compromising urban quality of the city. Despite the fact
that cities grow and develop, response of city centers is usually slower. This is related to the complicated urban situation of these centers characterized by high population density and concentration of services and transportation. Thus, it is essential to propose proper and incremental development strategies of this vital part of the city.

Several studies have been carried out in this regard. Al-Qaddomi (2000) investigated development strategies of the CBD of Nablus City, Palestinian Territories. Al-Qaddomi discussed the current needs that exist in Nablus city center through a filed study. These needs have been diagnosed depending on a questionnaire analysis. As a result, several development strategies have been proposed including planning for pedestrians, conservation and reuse of historical buildings, improving pleasurable and visual qualities of the center, and encouraging community participation. Donaldson and Du Plessis (2013) also investigated urban development of city centers as an area-based process. The study reviewed the lessons learnt from the proposed governmental urban renewal program of the CBD of Cape Town’s Khayelitsha node. The paper used qualitative evidence obtained from a sample of the program stakeholders. It concluded several strategic recommendations in the context of urban development. This includes the need for a flexible system of land-use management to respond to both private and public-sector investment and requirements. In another study, Pérez and Rey (2013) presented a multi-criteria approach in the context of urban renewal of existing neighborhoods. This aimed to ensure sustainability through the integration of socio-cultural, economic, and environmental criteria in these neighborhoods. This has been done through an evaluative approach applied to a specific case study. This approach consists of a structured assessment based on a multi-criteria comparison of three possible development scenarios.

In this study, Rafah city center has been selected as a case study. Rafah has a great regional importance attributed to its location as the southern gateway of the Palestinian Territories, where Africa and Asia connects. Rafah city is located in the southern part of the Gaza Strip, which stretches along the Mediterranean coast with an area of 365 km2. Rafah city is surrounded by the city of Khan Younis from the north, the Egyptian borders from the south, the Mediterranean Sea from the west, and Al-Showka village from the east. Rafah governorate area is 64 km2, representing 17.53% of the Gaza Strip area. Its population is estimated at 188,690, which represents 12.3% of the Gaza Strip population (PCBS, 2013). Fig. 1 illustrates Rafah location within the Gaza Strip.

Figure 1: Rafah city in the Gaza Strip, Palestinian Territories (Source: PCBS, 2012).
Considering the regional importance of Rafah city explained above and the shortage of studies in this regard, this study focuses on the center of Rafah city as the most important part of this city. It is assumed that this center can effectively contribute to the development of the city as a whole. This task is challenging considering the current situation of the center as will be explained in the field study. However, several development opportunities exist and can't be ignored. Thus, the importance of this study lies mainly in the fact that it offers holistic strategies and solutions to the urban problems of Rafah city center considering its crucial urban and commercial role for the Gaza Strip.

FIELD STUDY OF RAFAH CITY CENTER
This study is based on a field study, where data about urban situation of the study area has been collected and analyzed. This is a valid approach for urban development studies, and has been implemented in several studies such as Sullivan & Lovell (2005), Dempsey, Brown & Bramley (2012) and Chan & Yung (2004). Field quantitative and qualitative surveying has been done through:

- Direct participatory observation to understand the current urban situation.
- Photography to records the reality of the place.
- A questionnaire distributed in the study area to understand people’s problems.
- Collection of the available data about the study area from the municipality of Rafah, the Palestinian Central Bureau of Statistics (BCBS), and many other official resources.

Specifying the center boundary
There is no clear official specification of Rafah city center. Thus, boundaries of the study area have been identified to encompass the central commercial area of the city in addition to Abu Bakr Street as a central street. This area is characterized by high urban and traffic density, and existence of services and utility buildings such as the central market and the Municipal building. Fig. 2 shows the proposed boundaries of the central area of Rafah. Area of the specified zone is about 39.2 hectare. It is clear from Fig. 2 that the center accommodates a dense built up area and major traffic streets.

Field Study through Observation
Direct observation gets researchers involved in the study environment and allows getting to know people’s problems and suggestions. Based on the related references and direct observation, the following were observed:

Figure 2: Suggested Rafah city center boundaries
(Source: Municipality of Rafah, no date).
1. Urban Land Uses: Based on the satellite images of the city and the public buildings guide produced by Municipality of Rafah (2007), land uses in the study area have been identified. Fig. 3 illustrates these uses, while Table 1 shows their proportions.

Residential use is the main use in the area, which represents about 60% of the study zone. This percentage is normal in urban areas in general, but it is relatively high being located in the city center, where services are supposed to be centralized. Also, most of this zone is classified as refugee camps. Thus, overcrowding is the main problem that can be noticed in the residential zones, where buildings are tightly clustered and served by narrow alleys (Fig. 4).

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Area (1000 m²)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential (Refugees Camps)</td>
<td>241.7</td>
<td>57.02</td>
</tr>
<tr>
<td>Residential (Planned)</td>
<td>11.64</td>
<td>2.75</td>
</tr>
<tr>
<td>Educational</td>
<td>40.1</td>
<td>9.46</td>
</tr>
<tr>
<td>Commercial</td>
<td>18.48</td>
<td>4.24</td>
</tr>
<tr>
<td>Services</td>
<td>9.32</td>
<td>2.20</td>
</tr>
<tr>
<td>Religious</td>
<td>1.73</td>
<td>0.41</td>
</tr>
<tr>
<td>Sport</td>
<td>6.33</td>
<td>1.49</td>
</tr>
<tr>
<td>Green Areas</td>
<td>3.11</td>
<td>0.73</td>
</tr>
<tr>
<td>Roads</td>
<td>91.44</td>
<td>21.69</td>
</tr>
<tr>
<td>Total</td>
<td>423.85</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Figure 3: Land uses in the study area (Source: Authors).

Table 1: Proportions of land uses in the study area

Figure 4: Overcrowding in the residential zone (Source: Authors).
The educational uses represent 9.5% of the study zone. There are seven schools in the area, which significantly increases the number of individuals in the center during daytime. This puts more pressure on the traffic and road network, where traffic jams occur as students leave their schools. The third main land use is the commercial one, which represents 4.2% of the study zone. This use is mainly concentrated on the main streets in the ground floor of mixed-use residential buildings, especially in Abu Bakr Street, which passes through the study area. The rest of land uses are limited in general. It is clear that the area requires more green areas and sport zones, which currently represents less than 2%.

2. Land Ownership: Determining land ownership is important to facilitate the development process and to help finding appropriate solutions for land tenure. Table 2 shows percentages of the different types of land ownership in the study area, excluding streets. It can be noticed that the majority of land ownership in the study area is classified as private land. Rest of categories, the public land, is mostly used for schools and services and there is a limited area of vacant land. For example, only 1650 m² (0.6%) of the land owned by Rafah Municipality in the study area is vacant land (Municipality of Rafah, 2008). This means that land required for development projects in the area should be either bought or rented.

<table>
<thead>
<tr>
<th>Ownership Types</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private</td>
<td>73.43</td>
</tr>
<tr>
<td>Governmental</td>
<td>7.07</td>
</tr>
<tr>
<td>Waqf*</td>
<td>0.2</td>
</tr>
<tr>
<td>UNRWA**</td>
<td>7.2</td>
</tr>
<tr>
<td>Municipal</td>
<td>12.09</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
</tr>
</tbody>
</table>

* Managed by Ministry of Religious Affairs
** United Nations Relief and Works Agency for Palestinian Refugees

3. Building Uses and Heights: The highest percentage of buildings in the study area is low-rise buildings, which shows that the high-value land in the center is not properly investigated (Fig. 5). As for building uses, most of buildings are residential ones, where commercial use is less than what is expected. This is related to the fact that commercial uses are linear in pattern, i.e. concentrated along the main streets. Inner streets have insignificant investment value. As for building character, there are no historical buildings in the area. All buildings have been established following the 1948 migration. They form crowded concrete or stone blocks with unclear architectural character. This negatively affects the urban value of the place and the city. Thus, building rehabilitation to improve their character should be an essential goal in the development strategy of the center.
4. Roads and Transportation: The area is characterized by the existence of several main roads that form vital commercial axes in the city. Through the field surveying, the following were observed:

- Traffic congestion reflected in the low-speed movement of vehicles. For example, this is clearly observed in Abu Bakre Street, which is a vital street that penetrates the city center. On the contrary, the lowest traffic flow is noticed at night time.
- Pavements misuse and poor conditions of in some main streets, especially Al-Huda Street, and Abu Bakr Street. This forces pedestrians to use car lanes for walking.
- High percentage of animal-driven carts in the city center (3.5%), and motorcycles (7.9%), which are hazardous for both pedestrians and cars (Natuf for Development, 2007).
- Lack of traffic control tools such as signs, signals and safety measures.
- There is a conflict between pedestrians and vehicles movement at the school area, where appropriate sidewalks and pedestrian routes are not provided.
- There’s a shortage of places for car parking, especially in the crowded places near markets and public places. As a result, most cars use both sides of the main streets for parking.
- There is no public transportation system in the city center.

5. Landscaping and Land Marks: Lack of proper and consistent landscaping and street furniture is generally easy to observe in the study area. This is reflected in several aspects including lack of sufficient green areas, lack of landscaping elements such as sculptures, artistic views and water elements, insufficient night-time lighting for secure shopping environment, and lack of street furniture elements such as benches, flowerbeds, pergolas, and litters. As for landmarks, some have been observed in the area such as Al-Awda mosque and the Martyrs statue in the former Al-Nejma square.

5. Pollution: Pollution in its different kinds is considered the most serious problem that characterizes the city center. Sources of air, noise and visual pollution are common. These are direct results of the crowding and the unplanned urban growth. Air and noise pollutions in general are caused by car emotions, and electricity generators. In addition, waste resulting from domestic and commercial activities is a major source of air and visual pollution. Other causes of visual pollution include mixed nonconforming land uses, occupying sidewalks by peddlers, irregular arrangement of the street lights, unplanned car parking, and the absence of a proper character of buildings and facades.

Field Study through Questionnaire

A questionnaire has been carried out to help identifying the urban problems from users’ point of view, and to confirm the findings of the field study by observation. The targeted population of the questionnaire is city center users including vendors, shoppers, workers, drivers, etc. Assuming that all Rafah governorate residents regularly visit the center, then population of the study equals population of the governorate. This is estimated at 188,690 residents (PCBS, 2013). For this population, a sample of 100 units would be representative, with 95% confidence level, and 90% precision level (Dhamen, 2009). Questionnaire has been distributed in person, and individuals have been selected randomly until the required number of returned sheets is achieved.

The questionnaire has been designed to cover five areas: users’ recognition of the city center, shopping problems, environmental concerns, transportation and traffic problems, and visual quality. Under each area, several closed and opened questions are listed, using five-level Likert scale. Questionnaire validity has been reviewed by five referees, in addition to a pilot study. In total, respondents have been asked to answer 45 questions. Results have been analyzed using SPSS to produce frequencies and relative weights. Main findings of the questionnaire were as follows:
1. Recognition of the City Center: Most of the respondents (67%) believe that the center of Rafah city is limited to the Sea Street, known as Abu Bakr street. This is possibly because this central street gathers most of city facilities and commercial services, in addition to its importance as a district distributor. The rest of opinions are divided into different options, which indicates the need of clearly define the center boundaries. This has several implications including proposing and implementing special building regulations in this specific area to meet its special urban needs. As for the city center function, 77% of the respondents indicated its important commercial role.

2. Shopping Problems: This part of the city is in the commercial center. Thus, it is characterized by overcrowding caused by day-time visitors of the center. Table 3 lists shopping problems in Rafah city center from the respondents’ point of view, presented according to their average and relative weights. It shows that shortage of pedestrian facilities is the main concern of respondents. With the exception of night-time lighting, the rest of shopping problems is also confirmed by the majority of respondents. This requires implementing strategies and measures that prevent obstacles on shopping paths and improve pavement conditions. Respondents have been asked to suggest some pedestrian facilities that they need in the center. Several facilities have been suggested by the respondents in the following order: gardens and parks (29.2%), squares and open spaces (22.7%), and sports and leisure facilities (163%).

3. Environmental Problems: In general, respondents believe that Rafah city center suffers from the following environmental problems: air pollution, street hygiene, and noise. In order to face these problems, it is important to find solutions for the reasons behind them. Table 4 presents these reasons from respondents’ point of view.

4. Transportation and Traffic Problems: Results show that there are several problems related to transportation in Rafah city center. There is almost consent that the main problem affecting city center users is the difficulty of parking their cars. This is followed by the lack of adequate sidewalks, which force pedestrians to walk through vehicle lanes. In addition, the necessity of preventing animal-drawn carts from using the main streets is stressed. Table 5 shows other problems as seen by the questionnaire respondents. Insufficiency of public transportation came at the bottom. However, it can be noticed from the study sample characteristics that the largest
number of respondents (42%) lives outside the city center, and use taxis to travel to and from the center (Fig. 6). This explains the taxis crowding in the center, which also confirms the need of proposing bus system to serve the city as a whole and the center in particular.

Table 5: Transportation and traffic problems in Rafah city center.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Relative Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficiency of car parks</td>
<td>93.3</td>
</tr>
<tr>
<td>Obstructions on pavements</td>
<td>88.8</td>
</tr>
<tr>
<td>Animal-driven carts on main streets</td>
<td>87</td>
</tr>
<tr>
<td>Pedestrians crowding causing cars congestion</td>
<td>83</td>
</tr>
<tr>
<td>Traffic flow restriction commercial facilities</td>
<td>81.4</td>
</tr>
<tr>
<td>Insufficiency of public transportation</td>
<td>65.4</td>
</tr>
</tbody>
</table>

Figure 6: Mean of transportation used to travel to Rafah city center, and its relationship to the place of residence (Source: Authors).

Respondents have been asked to give their opinion regarding some proposed solutions to the traffic problems. These solutions are listed in Table 6. It can be noticed that some ideas such as changing the Saturday market location is not acceptable to the respondents. Alternatively, respondents believe that the best way to overcome the problem of traffic congestion in the city center is to prevent the entry of animal-driven carts at peak times of the day. In addition, it is required to enforce some traffic control tools such as signs and signals. Finally, the use of multi-story car parks is acceptable to the respondents.

5. **Visual Quality Problems**: Results show that there are several visual problems in Rafah city center. Table 7 lists these problems. Absence of amenities and visual interest is the main problem as indicated by 83% of respondents. The following problems, presented in Table 7, are in fact the aspects of the aforementioned main problem. Thus, the required actions include improving the surrounding built environment, rehabilitation of building facades in the center, and provision of urban design elements such as seats, green elements, phone booths, trash cans, and water bodies and fountains. In this regard, the current construction works of a new square at al-Najma area is appreciated by the respondents, where 75% of them believe that it will create a focal point and unique amenity in the area.
Table 6: Respondents’ opinion regarding the proposed solutions to the transportation problems.

<table>
<thead>
<tr>
<th>Solution</th>
<th>Relative Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Restricting specific sections of the main street (Abu Bakr Street) to pedestrians</td>
<td>51.20</td>
</tr>
<tr>
<td>Converting specific sections of the main street to one-way street</td>
<td>53.00</td>
</tr>
<tr>
<td>Moving Saturday market outside the center</td>
<td>58.80</td>
</tr>
<tr>
<td>Restriction of vehicle entry at certain hours</td>
<td>60.80</td>
</tr>
<tr>
<td>Provision of multi-story car parks</td>
<td>76.4</td>
</tr>
<tr>
<td>Prevention of carts entry at peak times</td>
<td>80.20</td>
</tr>
<tr>
<td>Traffic signals to control congestion</td>
<td>82.00</td>
</tr>
</tbody>
</table>

Table 7: Visual appearance problems in Rafah city center.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Relative Weight (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The absence of visual attractiveness in general</td>
<td>83.00</td>
</tr>
<tr>
<td>The negative effect of adjacent slums</td>
<td>78.2</td>
</tr>
<tr>
<td>The lack of urban design elements</td>
<td>74.6</td>
</tr>
<tr>
<td>Building facades need maintenance</td>
<td>73.6</td>
</tr>
<tr>
<td>Inconsistency of shops banners</td>
<td>73.2</td>
</tr>
<tr>
<td>Encroachment on the sidewalks by adjacent shops</td>
<td>71.6</td>
</tr>
<tr>
<td>Unplanned car parks</td>
<td>68.8</td>
</tr>
</tbody>
</table>

URBAN DEVELOPMENT STRATEGIES OF RAFAH CITY CENTER

The process of formulating a strategy means setting achievable goals, development projects, and practical indicators. This strategy should be implemented in accordance with clear policies and in accordance with the relevant legislations. This framework is out of the scope of this study. Rather, the main aim is to outline the urban development priorities and needs that help strategic planners in forming detailed development strategies. In the previous section of the study, the current situation and urban problems of Rafah city center have been explored using detailed field study. This study was based on direct observation and questionnaire directed to the center users. Based on the findings of this field study with reference to the similar experiences in this field, it has become possible to set some urban development goals and actions for the development of the center. This includes the fields explained below:

**Improving Traffic Movement in the City Center**

- **Vision:**
  - Traffic movement in the center of Rafah city will be easy and safe for all.

- **Proposed goals and actions:**
  1. Facilitating traffic movement and prevention of through traffic:
     - Implementing an integrated system of buses which includes a central bus station, bus stops, and effective operating system.
     - Planning a ring road to prevent the through traffic in the city center.
     - Keeping animal-driven carts off the main streets, especially Abu Baker Street.
     - Installing traffic control signs and signals to improve safety.
     - Providing proper pedestrian paths and landscaping, and limiting the crowded side streets to pedestrian use at peak times.
  2. Providing sufficient and well-planned car parking:
     - Analyzing parking needs and availability.
Increasing the effective width of streets to include on-street parking, or alternatively using parking courts.

- Developing a parking fee system, with restrictions on allowed parking time.
- Provision of effective car park arrangements such as underground and multi-story parking, and encouraging the private sector to invest in this field.

**Improving Quality of the City Center Environment**

- **Vision:**
  Rafah city center will enjoy a clean and healthy environment that attracts visitors.
- **Proposed goals and actions:**
  1. Reducing levels of air and noise pollution:
     - To issue a penalty fine for unnecessary use of car horns.
     - To monitor cars with excessive emissions and keep them off streets.
     - To prevent the use of amplifiers or any source of noise in the streets of the city center, cafes and public places, especially at night-time.
     - Planting trees along the streets to dissipate noise and absorb carbon dioxide.
     - Reducing the use of taxis and encouraging the use of public transportation.
     - To issue commercial licenses only for uses that cause acceptable levels of noise and emissions.
     - To replace the individual electricity generators that run during electrical power interruption by large ones that serve clusters of shops.
  2. Improving public hygiene:
     - Development and implementation of a waste management plan for the city center.
     - Provision of trash cans and recycling bins all around the city center and maintaining them on a regular basis.
     - Organizing an awareness program on the importance of environmental quality.
     - To issue a penalty fine in the case of inappropriate waste disposal.
     - Provision of rainwater collection system from streets to keep market area clean and hygienic.

**Improving the Overall Appearance of the City Center**

- **Vision:**
  The center of Rafah city will become an urban attraction point locally and regionally.
- **Proposed goals and actions:**
  1. Improving streets urban design:
     - Providing urban furniture and amenities necessary for the pedestrians.
     - Providing additional green areas, especially in sidewalks, wide street islands, and squares (Shohadaa Square and Bilal bin Rabah Street).
     - Maintenance of pavements and sidewalks to favor pedestrians and the disabled people.
     - Developing current squares especially Shohada Square, and Al-Awda square.
     - Developing a system for numbering buildings and streets.
  2. Providing open spaces for social and civic activities:
     - Creating a mixed-use development and plaza near Shohada Square to serve center visitors.
     - Creating recreational opportunities for youth such as sports fields.
     - Reconstructing Al-Najma Park as it is the only park in the area.
  3. Rehabilitation of buildings:
     - Cleaning building facades overlooking the main streets and squares, and preventing of vandalism.
     - Removing encroachments caused by shops located on the main streets.
     - Proposing specific regulations to give buildings located in the center a unique character that reflects city history.
Making a detailed study of the camps zones in the city center to propose a development plan for them jointly with UNRWA.

Making a comprehensive survey on the banners in order to identify the need to improve, remove or replace them in an acceptable character.

Organizing awareness campaigns and offer incentives to get people involved.

Encouraging the use of green buildings and sustainable design.

Promoting Development and Investment Opportunities

- **Vision:**
  Rafah city center will represent a stimulating development environment.

- **Proposed goals and actions:**
  1. To support the existing and new investment firms:
     - To contact the existing retailers and consider their complaints and suggestions.
     - Developing an cooperation program between the educational system and local businesses.
     - Leasing governmental lands to the private sector on a long term and facilitating the subsidies and investment loans.
     - Capacity building of the local labor.
  2. Upgrading the shopping environment:
     - Encouraging mixed-use land uses in the city center to enhance its vitality.
     - To establish municipal investment projects in the center, and to use their revenue for the upgrading process.
     - To promote night-time shopping, and implement the required measures.

**CONCLUSION**

The process of developing city centers needs efforts and involvement of several stakeholders including concerned municipality, ministries, and private sector, in addition to community participation. The large number of stakeholders in the development process may ease the burden, but it also requires high level of effective coordination and responsibility sharing. This study aimed to study the current situation of the commercial center of Rafah city in order to outline the main strategies required for the urban development process. This has been done through a field survey based on observation trips and a questionnaire directed to city center users. It has been found that community participation is essential in such studies in order to understand people’s needs and to get them involved in the planning process. It has been also found that there is a great potential for the study area to be developed as a central urban area that serves at local and regional levels. In this regard, main development fields have been identified. For each field, development vision and goals have been specified. To achieve these goals several strategies and actions have been proposed.

Firstly, there is a need to improve traffic movement in the city center. Increasing efficiency of traffic network, prevention of through traffic, and providing well-planned car parking are essential actions in this regard. The second strategy concluded is improving the overall appearance of the city center. In this regard, there is a need to improve streets urban design, providing open spaces for social and civic activities, and rehabilitate building facades. Improving quality of the city center environment is an essential strategy too. This requires reducing levels of air and noise pollution, and proposing an effective system for waste collection and disposal. Finally, developments should be oriented towards promoting investment opportunities, which can enhance the overall development process and create a self-incentive to upgrade the area. Implementing these strategies requires a further investigation to guide detailed action plan proposals and development scenarios. This should be done in a way that ensures an incremental development process in which different stakeholder roles are well-coordinated based on clear goals and indicators. It is also required to study and develop the current legislative frameworks that govern local planning processes to make them more responsive to the development needs and plans.
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HOUSING IN PREMODERN CITIES: 
Patterns of Social and Spatial Variation

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Abstract
This paper describes a broad comparative perspective on urban housing in cities before the modern era, including the newly-defined category of low-density city. My objective is to promote comparative analysis of premodern urban housing forms. I present a typology of house types that is based on the concepts of dwelling and household. The types are: individual house; house group; contiguous houses; walled compound; and apartment building. Among the many factors that influenced the forms and nature of premodern urban housing, I single out three causal forces: cultural tradition, density, and political dynamics.

Keywords: Housing; Premodern cities; comparative analysis; typology.

INTRODUCTION
A critical need in urban scholarship today is to explore the similarities and differences among cities around the world to identify patterns, trends, and processes of change. In this task, housing can play an important role. The architectural, spatial, and social aspects of urban housing varied widely among premodern cities, yet this variation remains poorly understood. A major reason is that research on housing in cities before the modern era has tended to focus on individual cities or regions (e.g., Nevett, 1999; Petruccioli, 2006; Schwerdtfeger, 1982), with little concern for cross-cultural comparison or generalization; for an exception, see Crouch and Johnson (2001).

The recent recognition of the prevalence of low-density cities before the modern era (Fletcher, 2009; Isendahl and Smith, 2013) provides a new impetus to analyze urban housing patterns in a comparative fashion. Archaeologist Roland Fletcher (2009) argues that housing and social dynamics in ancient low-density urban societies such as the Maya of Central America or the Khmer of Cambodia have implications for understanding contemporary urban processes. In this paper I bring a comparative and analytical perspective to housing in cities before the modern era.

This paper has three objectives. The first is to explore a range of case studies of urban housing, from the earliest cities uncovered by archaeologists up through the period of European expansion. My second objective is to organize these cases with a spatial-social typology. This typology is designed to promote comparative analysis of urban housing in different urban traditions and through history. I chose to base the typology on the spatial forms of urban dwellings so that it can help archaeologists and architectural historians reconstruct patterns of urban housing from the evidence of the built environment, in contexts where historical documents may be limited or unavailable. A third objective is to briefly review some of the causal factors that determined the types of housing in cities around the world and through history. There is not space for a full analysis of such causes, but I will suggest three of the most important factors that influenced the form of urban housing before the modern era: cultural tradition, density, and political dynamics.
CONCEPTUAL FRAMEWORK

The literature contains two dominant definitions of city and urban. In the sociological definition (Wirth, 1938), a city is a permanent settlement with a large, dense, and socially heterogeneous population. This definition fits western industrialized cities, but it fails to identify the largest and most influential settlements in many ancient and non-western traditions as “urban.” To better accommodate the diversity of urban expressions around the world, many geographers and anthropologists take a functional perspective (Blanton, 1976; Fox, 1977), defining a city as a settlement whose activities and institutions affect a wider hinterland; these activities and institutions are called “urban functions.”

This paper focuses on “premodern cities.” This category resembles Gideon Sjoberg’s (1955) concept of preindustrial city. Preindustrial cities “have arisen without stimulus from that form of production which we associate with the European industrial revolution” (Sjoberg, 1955:438). Premodern cities are a subset of preindustrial cities, but this category does not include European cities between the Medieval period and the Industrial Revolution (because these cities are very similar to later industrial cities in their forms and functions). A distinctive type of premodern city is the low-density city. Roland Fletcher (1995: 93) defines a low-density city as one whose population density is less than 10 persons per hectare. The urban status of low-density cities is typically denied by scholars employing Wirth’s sociological definition. What the sociological and functional definitions of urban have in common is their emphasis on the role of social interactions in generating urban change and growth (Storper & Venables, 2004). Cities can be described as “social reactors” (Bettencourt, 2013) that amplify interactions among individuals. Where and how these individuals live in cities is thus a crucial variable in urban analysis.

Two fundamental concepts for analyzing the relationships between housing and society are the household and the dwelling (Tipple, Amole, Korboe, & Onyeacholem, 1994). In most agrarian societies—that is, societies not heavily industrialized whose subsistence is based on agriculture and not on hunting and gathering—the household is the basal social unit. The U. S. Bureau of the Census has defined the household as follows:

...all the persons who occupy a housing unit. A house, an apartment or other group of rooms, or a single room, is regarded as a housing unit when it is occupied or intended for occupancy as separate living quarters; that is, when the occupants do not live and deal with any other persons in the structure and there is direct access from the outside through a common hall. A household includes the related family members and all the unrelated persons, if any, such as lodgers, foster children, wards, or employees who share the housing unit. A person living alone in a housing unit, or a group of persons sharing a housing unit as partners, is also counted as a household (quoted in Tipple et al., 1994:439).

In agrarian societies, the household is typically the most important unit of production, distribution, reproduction, socialization, and property transmission, as well as the basic unit of coresidence (Bender, 1967; Netting, Wilk, & Arnould, 1984). Anthropologists have stressed the role of common economic tasks in shaping the size and structure of households; indeed, Netting et al. (1984) refer to the household as a “task-oriented residence unit.” The concept of the household is often contrasted with that of the family, a kin-based group whose members may or may not live together. The dwelling is the unit of housing or shelter where a household resides. According to Tipple et al.:

Among housing specialists, ‘dwelling’ or ‘dwelling unit’ is generally defined as the accommodation occupied by the social unit ‘a household’. It would consist of part or parts of a building, comprising a habitable room or rooms plus any services, ancillary spaces, and storage used exclusively by one household. It would normally have an entrance from a public or semi-public street or area, leading only to itself (Tipple et al., 1994:435).
The U.S. Bureau of the Census uses the term “housing unit” for what Tipple et al. (1994) call the dwelling. A housing unit is:

...a house, an apartment, a mobile home or trailer, a group of rooms or a single room occupied as separate living quarters or, if vacant, intended for occupation as separate living quarters. Separate living quarters are those in which the occupants live and eat separately from any other persons in the building and which have direct access from outside the building or through a common hall (Tipple et al., 1994:434).

The term “house” most commonly refers to a single built structure that serves as a dwelling—or part of a dwelling—for a single household. The term is useful for low-density housing, but it becomes problematic with respect to higher density housing such as apartment buildings or house compounds. In cases where a single household inhabits several structures (such as the Classic Maya patio groups discussed below), the buildings are sometimes labeled “houses,” but in fact the several structures together constitute a dwelling.

In order to understand housing and its dynamics, it is helpful to focus on spatial contexts that extend beyond the individual dwelling. Amos Rapoport (1969:69-73; 1980; 1990) has promoted this notion most forcefully with his concept of the “house-settlement system.” He notes that,

Many activities which take place within what we call a dwelling may occur in a widely dispersed system of settings in another culture which also, apparently, has dwellings. The units to be compared, therefore, are not the two dwellings but the system of settings within which a particular system of activities takes place (Rapoport, 1980:15).

If domestic activities occur at some distance from the dwelling, they can be difficult or impossible for historians or archaeologists to identify. But in many cases—particularly in rural areas and low-density cities—domestic tasks are carried out in exterior areas close to the dwelling. For this reason, archaeologists who study ancient households typically excavate areas adjacent to the dwelling in order to reconstruct the activities and conditions of the household. They employ the concept of the “household cluster” (Jongsma & Greenfield, 2003; Winter, 1976), which refers to the series of domestic features or facilities used regularly by a household. In ancient Mesoamerica, for example, these include the dwelling and associated storage pits, ovens, trash deposits, and burials (Winter, 1976). In a similar fashion, individual house-lots in many informal settlements today contain extra-dwelling spaces for domestic tasks, work or production, and leisure (Caminos, Turner, & Steffian, 1969).

**HOUSING TYPOLOGY**

The typology presented below is based on the relationship between the built environment—the dwelling—and the household. It is designed to be useful for archaeologists and architectural historians who analyze housing based on the spatial patterning of the built environment. I divide housing into five types, differentiated by the spatial configuration of nearby dwellings (discrete, clustered, or dense) and by the presence or absence of a walled enclosure that encompasses one or more dwellings (Figure 1). Most premodern cities had a mix of housing types, although in many cases one type predominated numerically.
Individual House
An individual house is a single residential structure that is not spatially associated with other dwellings. This is a common form of housing in low-density cities, where houses and neighborhoods resemble those typical of rural areas (Smith, 2011). Addis Ababa in 1897 provides an example (figure 2). Among European visitors, statements like this were common: Addis Ababa “resembles a collection of villages rather than what we understand by a town.” (Powell-Cotton, 1902:80). Yet this was a city of some 50,000 to 100,000 inhabitants and capital of a powerful empire (Giorgis & Gérard, 2007). Like other low-density cities, Addis Ababa was clearly a city according to the functional definition of urban, but not from Wirth’s sociological perspective. In addition to individual houses, many residents of Addis Ababa lived in walled compounds.

Figure 1: Housing typology (Source: Author).

Figure 2: Individual houses in the city of Addis Ababa, in 1897. The royal palace is visible at the top of the hill. Reproduced with permission. (Source: Giorgis & Gérard, 2007:55).
House Group

A house group consists of two or more residential structures located in close proximity to one another. In most cases the houses are arranged around an open patio which is the setting for domestic activities; many authors use the term patio group for these units. In ancient Mesoamerica, patio groups were usually arranged formally, following an orthogonal, symmetrical layout (figure 3), whereas in the Andes, pre-Spanish patio groups were less formally arranged (figure 4). In the language of premodern planning theory (Smith, 2007), the structures in the Mesoamerican groups show a greater degree of coordination and standardization than those in the Andean groups.

Figure 3: Classic Maya patio group, a formal house group common in both urban and rural settings. Reproduced with permission. (Source: Lohse, 2007:21).

Figure 4: An informal house group at the provincial Inka town of Tunanmarco, Peru. Reproduced with permission. Drawing by Robert Keller. (Source: DeMarrais, 2001:124).

The relationship between the structures of a house group and dwellings is variable. For example, the structures that make up a Classic-period Maya patio group together comprised
the dwelling of a single household, whether of nuclear-family or extended-family form (Freter, 2004). The structures were functionally specialized, with a kitchen, sleeping quarters, and a shrine (Becker, 2001), as in figure 3. In contrast, Aztec patio groups consisted of two to four dwellings; each household inhabited a single structure (Smith, 1993). The residents of Aztec patio groups made up a social group called “people of a yard” whose significance is not clear from the available sources. These two patterns can be difficult to identify from plans alone, but they are quite clear from archaeological excavations of Maya and Aztec patio groups. In both cultures, patio groups were the dominant form of residence. Formal patio groups are rare in the Old World, although African examples have been described for Ashanti towns in the nineteenth century (Rutter, 1971).

**Contiguous Houses**

Contiguous houses refers to dwellings that share two or three outer walls with adjoining dwellings, and each has its own entrance to a street or other exterior space (i.e., these are not apartments). I identify two subtypes: linear and extensive. The linear category describes rows of connected or adjacent houses with a depth of one or two rows. Formal linear arrangements are typically laid out following the principles of orthogonal planning. The Classical Greek city of Olynthus (figure 5) is a good example (Cahill, 2001), and this form remains the dominant urban housing form in many cities today.

![Figure 5: Contiguous houses with a formal linear pattern at the Greek city of Olynthus. (Modified after: Cahill, 2001:28).](image)

The historical pueblo villages of northern New Mexico exhibit a less formally planned linear arrangement of houses. Figure 6 shows room block 7 at Acoma Pueblo in New Mexico in the 1930s; this is one of eight linear room blocks, arranged in three parallel lines. Although Acoma and the other New Mexico pueblos do not fit standard definitions of city and urban, they are urban-like in one major sense: population density. The median density of recent (19th and early 20th century) pueblo settlements is 134 persons per hectare (Dohm, 1990:211), a figure higher than the density of European cities in the 14th through 16th century (Bairoch, 1988:23). In 1948 the density of Acoma Pueblo was 148 persons per hectare.
I call the second type of contiguous houses “extensive.” This describes aerially-extensive (non-linear) neighborhoods where the depth of houses from a major street or other open space is greater than two dwellings. In some cases—such as ancient Mohenjo-daro in Parkistan—the layout is close to orthogonal in an arrangement that Smith (2007) calls “semi-orthogonal urban blocks.” In other cases, such as the ancient Peruvian city of Chan Chan (figure 7) and many Ottoman cities, the arrangement of walls and dwellings is more haphazard.

**Walled Compound**

A walled compound is an area enclosed by a wall that contains one or more dwellings and associated open space. This is a very common form of housing around the world in both rural and urban areas. In most cases documented by ethnographers, compounds house an extended
family or a segment of a kin-based lineage. While the walls may have utilitarian functions (e.g., to keep out intruders, or to keep livestock in), they also serve a social role of marking the boundary of an important social group. Traditional Chinese house compounds (Knapp, 2005) fit this category; Freedman (1958:46) describes these as “a single set of buildings housing an extended family.” In Bali, walled compounds are called “houseyards” (figure 8). A houseyard contains the dwellings of several households, usually patrilineally related families. Each household has its own kitchen, sleeping structure, and pavilion, but they share a temple and a granary (H. Geertz & Geertz, 1975:47-52). Royal palaces in traditional Bali were large-scale versions of these houseyards (C. Geertz, 1980).

Walled compounds were the dominant form of residence in West African towns prior to the twentieth century, and they continue to be important in many towns and cities today (Hakim & Ahmed, 2006; Schwerdtfeger, 1982); see figure 9. In cases where a compound housed a man and several wives, the definitions of households and dwellings become complex. Each wife and her children typically occupied either a separate house (or else separate rooms) within the compound, and the husband would eat with each wife in turn. As discussed by Tipple et al. (1994:440), the Ghana census considers the entire compound a single household. Anthropologists and archaeologists, on the other hand, typically use the presence of a hearth for food preparation as a basic marker of a household; from this perspective, the compound would correspond to several dwellings (for several households).

Archaeologists have debated the urban status of the Classic-period settlements of the ancient Hohokam peoples of the U.S. southwest (Fish & Fish, 2008). During this period the walled compound, with six to twenty rooms, was the dominant form of housing at Pueblo Grande and other Hohokam towns. Some archaeologists argue that the entire compound corresponds to a single household (Foster, Mitchell, Dale, & Robinson, 1996:39). These compounds can often be divided into several “plaza units,” each with two to three rooms plus other features. Following the terminology of this paper—which is based on the ethnographic record of house compounds in Africa and Asia—the Hohokam plaza unit was the dwelling, and the compounds thus contained several individual households. The walled house compound was also common in Inka cities.
(Gasparini & Margolies, 1980) and in the Iron Age European towns known as Oppida (Fichtl, 2005). The dwellings within a walled compound can take the form of individual houses, house groups, or even contiguous houses.

Figure 9: Small walled compounds that constitute a neighborhood in nineteenth-century Zaria, Nigeria. Reproduced with permission. (Source: Hakim & Ahmed, 2006:14).

**Apartment Building**

An apartment building can be defined as a single building that contains multiple dwellings, all of which connect to the outside world through a single exterior doorway. Definitions of apartment buildings designed for contemporary cities are too broad for comparative analysis. Cromley (1999:6), for example, defines apartment building as “a building designed specifically to accommodate the dwelling needs of several (usually three or more) families.” I exclude from consideration large communal houses (e.g., the Iroquois longhouse, or large buildings in Indonesia) where individual dwelling areas are not separated by fixed-feature elements. While these structures may fit my definition of apartment building, no known examples are from urban settings; instead, this form is found in the villages of tribal societies (Coupland & Banning, 1996).

The apartment building was very rare in cities prior to the nineteenth century. The best known ancient examples are those of Imperial Rome (Packer, 1971; Storey, 2004). An insula was a complex group of inter-connected structures that typically included commercial, industrial, and ritual spaces in addition to multistoried residences (figure 10); these latter structures are the apartment buildings. Many were created by subdividing older large houses into apartments (Packer, 1971).

Another early form was the rab, a type of apartment building that originated in early Ottoman Cairo. In the words of Petruccioli, this structure can be seen as,
...the modern version of a middle-class residential apartment complex. It was formally structured and consisted of a series of apartments derived from the qa’a [a residential hall in Mamluk cities], distributed around a courtyard in duplexes or sometimes triplexes. Each apartment included a portion of the terrace, the only external outlet for the residence. (Petruccioli 2006:17); see also Raymond (1980).

In many cases, a rab was constructed out of a large and spacious courtyard house, much the same way as early tenements in New York City were converted from large single-family houses (Cromley, 1999:32-37); in both cases the subdivision was done to accommodate growing lower-class urban populations. In the case of the rab, an attempt was made to maintain the building’s courtyard as a space shared among the apartments.

A very different form of apartment building was built in the ancient Mesoamerican city of Teotihuacan (Millon, 1973; Séjourné, 2002). An “apartment compound” is a single-story building with several dwellings, each with a small open patio surrounded by rooms (figure 11). Many of the compounds also contained communal patios and shrines. Most of the more than 2,000 compounds in Teotihuacan were built in an episode of urban renewal in the third century A.D. when authorities destroyed older, less formal houses as well as irrigated agricultural fields and replaced them with semi-standardized housing. This was a true innovation in ancient Mesoamerica, and the only case of apartment buildings in the New World prior to the nineteenth century. The apartment compound form, however, did not survive the fall of Teotihuacan.

DETERMINANTS OF URBAN HOUSING FORM

Many conditions and forces influence the spatial, architectural, and social expressions of urban housing. A full analysis is beyond the scope of this paper, but some of the major determinants of premodern housing form can be highlighted. I organize these under the headings of cultural tradition; density; and political dynamics and planning.
Cultural Tradition

Forms of urban housing usually conform to the norms of the local cultural tradition (Rapoport, 1969). It is easy to distinguish the house compounds of traditional China, West Africa, Bali or Inka Peru, or the courtyard houses of the Mediterranean area, on the basis of their plans alone. In many cases, forms of housing in premodern cities were based on long-standing culturally-based house types.

Housing in the two largest cities of ancient Mesoamerica—Teotihuacan and Tenochtitlan—illustrates the role of cultural tradition in shaping urban house form. These were the only two Mesoamerican cities with populations on the order of 100,000 residents; both were powerful capitals of empires and centers of trade and immigration. Houses in Aztec Tenochtitlan—the larger and denser of the two cities—were slightly modified versions of the standard Aztec house form found throughout the Basin of Mexico (Calnek, 1974; Smith, 2008), which in turn was a local variant of the ancient Mesoamerican pattern of patio group housing. The residents of Tenochtitlan thus adapted local housing forms with little modification.

A millennium earlier, however, the rulers of Teotihuacan had broken with tradition by designing a radical new form of housing—apartment buildings—which were constructed on a massive scale in a single act of urban renewal. Although the individual dwellings were based loosely on the patio group principle (Kubler, 1964), the size, population density, and degree of standardization of these structures make them unique in ancient Mesoamerica. This new form of housing was just one of a series of innovations in political organization, social structure, and urban planning at Teotihuacan (Cowgill, 1997; Pasztory, 1997). When the city collapsed in the sixth century AD, these features were abandoned and subsequent cities returned to ancient Mesoamerican principles of housing, urbanism, and society. The rulers of Teotihuacan had created new cultural forms that did not outlast their city.
Density
The horizontal axis of the housing typology (figure 1) is a rough gradient of population density. Urban density is a complex set of concepts and measures (Dovey & Pafka, 2014), several of which are very relevant for the study of premodern urban housing: dwelling density (number of dwellings per hectare), floor area ratio (ratio of total floor area to site area), and external density (population density at the neighborhood scale). Dovey and Pafka (2014) explore the relationships among these and other density measures and emphasize that “different density measures deliver vastly different results in different morphologies” (p. 66). The vertical axis of the typology (presence of an enclosure) is also related to density. As a city’s population grows, land becomes more valuable, creating pressure toward both denser forms of housing and increased expression of territorial behavior such as demarcating houselots with walls. The nature and extent of open spaces (Al-Hagla, 2008; Stanley, Stark, Johnston, & Smith, 2012) is an important determinant of urban density that is not incorporated into my typology.

Although any given city will likely have a combination of housing types, in general the types at the left side of figure 1 are most common in low-density cities, while the types at the right side are most common in higher-density cities. The early adoption of apartment buildings in Roman and Ottoman cities was clearly a response to city growth (McKay, 1975:83; Raymond, 1980), as was the establishment of apartment compounds in Teotihuacan (Millon, 1981). A parallel process operated in both Yoruba towns (Mabogunje, 1962:60) when increasing urbanization led to the subdivision of urban walled compounds into individual, densely-packed, houses, and in Saudi cities (al-Said, 1992, al-Naim 2008) in which the scattered individual houses inside walled compounds were gradually replaced by house groups and contiguous houses, still inside the walled compound.

Political Dynamics and Planning
The structure of government and its role in urban planning exerted a strong influence on the forms of housing in premodern cities. Current understanding of variation in premodern governments (Blanton & Fargher, 2008) is based on a continuum that runs from despotic to collective or democratic regimes, with examples spread out between the extremes. Collective regimes, which have greater citizen participation, provide more services, which typically include urban planning and infrastructure (Blanton & Fargher, 2011). The Classical Greek city-state is a good illustration of a highly collective polity that engaged in extensive orthogonal urban planning (Wycherly, 1962). More autocratic regimes, on the other hand, provided few services and rarely engaged in the planning of residential zones. Hardoy (1982) and Smith (2007, 2010) have argued that unplanned residential zones were in fact the norm in cities before the modern era. John Bintliff (2014) has chronicled the manner in which house forms changed with different political systems in the Mediterranean from the Iron Age through the Roman Empire.

The extent of planning can be measured from the types and degree of coordination among buildings, and from the degree of standardization among cities (Smith, 2007). Whereas patio groups (figures 3-4) and walled compounds (figures 8-9) typically exhibit planning among the structures within the group (Gabrilopoulos, Mather, & Apentiik, 2002), their overall configuration within a city is most commonly irregular and not centrally planned. The distinction between the centrally planned linear housing of Olynthus (figure 5) and the more generative, unplanned linear housing of San Juan Pueblo (figure 6), is striking, a strong signal of the very different political systems of the two settings.

DISCUSSION AND CONCLUSIONS
The great variability among forms of urban housing in premodern cities can be organized for comparative purposes using a five-category typology of housing forms (figure 1). This typology is independent of cultural tradition or historical period, although culture and history are always important influences on urban housing. There is an overall progression of the types from lower to
higher density. Low-density cities, as identified by Roland Fletcher (2009) and others, tend to feature the lower-density housing types at the left side of the typology. Walled compounds and contiguous houses are probably the most common forms of urban housing before modern times, although judgments like this require quantitative comparative research. Only a few cities in the premodern world had populations sufficiently large and dense to generate apartment buildings.

Cultural traditions, density, and political form all exert strong influences on the nature of urban housing. An adequate understanding of causal dynamics will require intensive comparative research with a large sample. The five types of housing have different implications for the closeness or strength of social bonds among households. The households that live in house groups and walled compounds are most commonly linked by kinship or other close social bonds. This is not surprising, given that the social distance between two households is often directly associated with the physical or spatial distance between their dwellings (Gabrilopoulos et al., 2002; Hipp & Perrin, 2009). One reflection of the greater social bonds among households in these housing types is the higher level of coordination and planning among dwellings in these types of housing. At the denser end of the continuum (contiguous houses and apartment buildings), physical proximity is less commonly generated by close social bonds. Extended families or other kin-based groups may inhabit adjacent houses or apartments, but this is not the most common pattern in dense urban housing.

For scholars of past cities, urban housing is a window into ancient patterns of life and society. Knowledge of premodern urban housing can also improve our understanding contemporary processes of urbanization (Smith 2012). Many forms of premodern housing have continued into existence in cities of the contemporary world, and study of the ancient forms can improve efforts to manage urban heritage and improve the quality of modern urban life (Hakim, 2012; Hakim and Ahmed, 2006). Furthermore, the record of premodern housing complements scholarly knowledge of contemporary forms, creating a larger sample of housing forms, which can lead to more comprehensive generalizations and explanations about urban housing. Furthermore, a consideration of premodern housing gives architects and planners more examples to draw on when creating the housing and cities of the future.

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A FRAMEWORK FOR EXPLORING THE SENSE OF COMMUNITY AND SOCIAL LIFE IN RESIDENTIAL ENVIRONMENTS

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Abstract
Sense of community and social life are two key concepts related to social cohesion, which have been the subject of extensive studies in several disciplines including sociology, psychology and built environment. Social life studies have been mostly conducted in the built environment discipline focusing on city centres; while sense of community studies were mostly the target of sociologists and psychologists focusing on neighbourhoods. As a result, the role of the built environment on the sense of community and social life of neighbourhoods is considered as a missing gap in the literature. This paper, through defining the concepts of social life and sense of community, aims to develop a conceptual framework for further implementation in future research. Accurate implication and interpretation of the concepts show that neighbourhoods can include the sense of community in the residential environment and the social life in the commercial environment. This is because residential environments are where residents' requirements can be met through their commitment to the community and commercial environments are the fulcrum of interaction and communication.

Keywords: Neighbourhood; Sense of community; Social life; locality.

INTRODUCTION
Sense of community and social life are two key concepts in the literature of the built environment discipline, which have been discussed in regard to the effect of the physical characteristics on the residents' socializing patterns. Sense of community is a feeling of belonging and shared interests among members of a community while social life of a place refers to the patterns of socializing behaviours among residents. Social life has been mostly discussed in the literature of the built environment discipline whereas sense of community has been mostly the subject of several studies in other disciplines such as sociology and psychology (Figure 1).

![Figure 1: Previous studies on Sense of community and Social life in regard to cities and neighbourhoods](Source: Authors)

Social life studies have mostly focused on city centres, therefore, when it comes to residential environments, the number of these studies decreases dramatically and it can be considered as a gap in the literature of the built environment (Figure 1). Additionally, most studies on the sense of community among neighbourhoods’ residents are from the disciplines of psychology and sociology. A neighbourhood is the realization of a geographical community known as community of place(Glynn, 1986). As a result, scholars from social and psychological disciplines have...
repeatedly selected this context for investigating and comparing the residents’ sense of community; however, in these studies, the influence of the built environment on creating a sense of community have been mostly overlooked. Therefore there is a need for research on both concepts of sense of community and social life in the context of neighbourhoods from a built environment perspective.

This study suggests that both concepts of social life and sense of community can be included in neighbourhood studies (Figure 2). The neighbourhood environment consists of a residential part, which is the key to feeling a sense of community, and a non-residential environment, which is the place for socializing behaviours. This study argues that socializing patterns in a neighbourhood have a twofold perspective, which can include both concepts of sense of community and social life.

Figure 2: Neighbourhood can be the place for both sense of community studies and social life studies (Source: Authors).

The aim of this study is to develop a better definition and understanding of these concepts. This paper, by developing a conceptual framework on neighbourhood’s socializing patterns, can contribute to future community studies and especially neighbourhood planning research. This study will explore the established key theories around sense of community and social life from the built environment perspective and will investigate how the related theories can be applied to the neighbourhood environment. Physical characteristics in the neighbourhood environment can influence the way in which residents in a neighbourhood environment feel a sense of community.

BACKGROUND

Public life and the neighbourhood’s environment were historically a cohesive unit. Historical neighbourhoods grew little by little in accordance with their residents’ changing needs. Residents’ requirements had to be satisfied within the neighbourhood’s boundaries and through their commitments to the local communities. Therefore, historically neighbourhoods were places with a high degree of socializing patterns and sense of community among residents. Two occurrences changed this process: the shift to industrial cities and the shift to the media and virtual societies.

First, the shift to industrial societies had a major impact on the way people were living and socializing. Industrialization caused people to migrate to cities in search for jobs and social welfare. Migrations and population growth in cities changed the way people live. People moved to places where they were no longer able to get to know all the residents and therefore they structured “imagined communities” (Anderson, 2006) in which people could not and would not know each other. Consequently, the social ties and the form of everyday interactions were affected and that led to the theories of loss of meaningful relationships by many sociologists (Webber, 1963; Wellman & Leighton, 1979).

Industrialization was not the only occurrence to change the community patterns in the neighbourhoods. The invention of media and virtual networks has also affected the way people contact and create their communities. Throughout history, cities have been regarded as the fulcrum of human communication and social life; however, the emergence of virtual societies and electronic public spaces in recent decades has changed the role of public places in the social life of cities. The progress made in modern technologies and the emergence of media and virtual
networks have contributed to some transformations in the form of communications, transportation and as a result people’s social life.

Parallel to the virtual societies there is still a need for face-to-face interactions and non-virtual local communities which neighbourhoods can provide the opportunity for their development. The built environment in the neighbourhood may enhance the chance of encounters through promoting walkability and stationary activities. Therefore, there is a need, in the literature of public life studies, for research on the social life and community patterns in residential neighbourhoods.

Social life studies started in the 1960s, when criticism on modern architecture and urbanization was peaking due to the neglect of social needs and marginalizing human interactions. Consequently, the public life studies were initiated by scholars such as Jacobs (1961) and Gehl (1987), who are considered as the key authors in this area of knowledge. Following Jacobs and Gehl, several scholars have studied how the built environment and the related characteristics can affect social life of public places. These studies were mostly focused on city centres and city elements such as streets and plazas (Figure 1) and the significance of residential environments in contributing to the social life of cities was neglected.

SENSE OF COMMUNITY
Sense of community is a concept in the field of community psychology, which has been defined as “the sense that one was part of a readily available mutually supportive network of relationship” (Sarason, 1974). In the early 1970s, Sarason pointed to the popularity of the books with the themes of loneliness, isolation and the feeling of not belonging. He described this occurrence as “a decline in psychological sense of community” (Cochran, 1994). McMillan and Chavis (1986), whose study is frequently used in the psychology literature, argue that sense of community is composed of four elements: 1) Membership- the feeling that who belongs to the community and who does not; 2) Influence- the ability to express and influence the group which works both ways, some influence by the group on its members is needed for group cohesion; 3) Integration and fulfilment of needs- the feeling that members are awarded and some needs are satisfied by being a member of the community; 4) Shared emotional connections- the common history of members in a community, which includes the extent and quality of interaction between members.

![Conceptual model of relationship between public space and sense of community](Source: Francis et al., 2012).
These definitions of sense of community, which were raised in the context of community psychology, have dominated the few studies of sense of community in the fields of architecture and urban planning (Kashef, 2009; Kim, 2001, 2007; Moustafa, 2009; Talen, 1999, 2000, 2003). Most studies on the sense of community in neighbourhoods have been conducted by psychologists and sociologists. They have adopted psychological and social science methodologies and as a result, the influence of the built environment on the sense of community has not been adequately addressed (Plas & Lewis, 1996). The few studies in the built environment discipline have also adopted the psychological definitions and indexes. However, Kim and Kaplan have tried to develop a framework based on the physical factors in order to add another dimension to the mentioned psychological aspects (Kim & Kaplan, 2004).

Whether physical characteristics in the built environment can encourage a sense of community or not is a debate among scholars. Talen (1999) argues that built environment characteristics can promote interactions, but they cannot create a sense of community directly. She believes that the built environment can encourage human interactions, but it is not clear whether these interactions will lead to feeling a sense of community among residents. She argues that there are numerous variables affecting the sense of community among residents and the role of the physical factors has been overestimated in the built environment discipline (Talen, 1999).

In spite of these criticisms, studies have found a correlation between physical built environment characteristics and feeling a sense of community. These studies are not limited to the built environment discipline. According to community psychologists such as Plas and Lewis, environmental factors may be crucial for the development of a sense of community in urban communities (Plas & Lewis, 1996). Cochran also argues that planners are able to preserve and strengthen a neighbourhood’s sense of community through both social policies and physical design strategies (Cochran, 1994).

Therefore, from these debates it can be concluded that the built environment is able to influence the feeling of sense of community either directly or indirectly through increasing the chance of interactions among residents (Francis et al., 2012). Informal interactions in neighbourhoods with lead to some acquaintanceships which are known as weak ties in the literature (Granovetter, 1973). High levels of weak ties among neighbours are believed to increase the occurrence of strong ties and social affiliation (Granovetter, 1973; Greenbaum, 1982). Ties between neighbours may contribute to security on the basis of regular action and interaction, recognition between people during occasional encounters, while doing the everyday tasks (Henriksen & Tjora, 2013). According to Mehta (2013), weak ties are possible beginnings of deeper more enduring social interactions which might contribute to feeling a sense of community.

The built environment is able to increase the chance of interaction by two identified factors: first by improving walkability factors and second by encouraging the stationary activities. Developing pedestrian friendly environment, easy pedestrian access and encouraging walkability are believed to be the key factors in increasing the sense of community in neighbourhoods (Lund, 2002, 2003; Wood et al., 2010). The presence and quality of public places such as parks have been associated with a strong sense of community among residents (Francis et al., 2012). In contrast, it has been argued that vehicular traffic and car parking negatively affect perceptions of sense of community and neighbouring behaviours in residential areas (Appleyard, 1981; Mullan, 2003). Additionally according to Lockwood (1997) the existence of a neighbourhood main street can help bring about a strong sense of community and provide an opportunity for the occurrence of stationary activities (Mehta, 2007; Mehta, 2008, 2013).
Conceptual Frameworks
Scholars from the built environment discipline are increasingly trying to develop frameworks to facilitate the study of sense of community in neighbourhoods. Francis et al. (2012) have developed a conceptual model for the relationship between public space and the sense of community. They define four categories of policy, physical environment, individual and social factors that directly or indirectly effect the sense of community (see figure 3). Either these characteristics influence the sense of community among residents, or they increase the use of public places, and the sense of community will increase as a result of the increase in interactions in public places.

Kim and Kaplan (2004) have also developed a framework to study the sense of community regarding physical aspects of neighbourhoods. The framework identifies four domains, which are hypothesized to relate to an important aspect of residents’ feeling that they belong to the community (see table 1). The four domains of sense of community are described as: 1) Community or place attachment, refers to residents’ connections to their community; 2) Community identity, refers to personal and public identifications with a specific community with its own character; 3) social interactions, is defined as formal and informal social opportunity in which residents attend to the quality of their relationships; 4) pedestrianism implies that a community is designed for walking and encouraging street side activities, are the four domains. However, all these domains consist of some subcategories and are interconnected in several aspects (Kim & Kaplan, 2004). In their hypothesized relationships model, Kim and Kaplan (2004) show that the domains of sense of community have a range of social to collective characteristics and also another range of physical to psychological characteristics. While community identity and community attachment is meaning-based, pedestrianism and social interaction are activity-based. The built environment characteristics that influence the feeling of sense of community can be summarized in four categories (see figure 4): Presence of public places such as parks, plazas and commercial streets, easy pedestrian access and walkability, human scale developments, mixed land use developments and greenery. In several studies, these categories have been identified as promoting factors for feelings of a sense of community among residents.

Table 1: Sense of Community: Theoretical Dimensions (Source: Kim and Kaplan, 2004).

<table>
<thead>
<tr>
<th>Domains of Sense of Community</th>
<th>Community Attachment</th>
<th>Community Identity</th>
<th>Social Interaction</th>
<th>Pedestrianism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary action</td>
<td>Bonding with community</td>
<td>Identifying (with) community</td>
<td>Being involved in community</td>
<td>Knowing community</td>
</tr>
<tr>
<td>Subcomponents</td>
<td>Community satisfaction Connectedness Sense of ownership Long-term local integration</td>
<td>Uniqueness Continuity Significance Congruence Cohesiveness</td>
<td>Neighboring Casual social encounter Community participation Social support</td>
<td>Walkability Pedestrian propinquity Mass transit Pedestrian scale/street-level activities</td>
</tr>
</tbody>
</table>
**SOCIAL LIFE**

Sociability is a primary role of public places in cities and neighbourhoods. Good public places in cities provide an avenue for communication and socializing behaviours. Public life has been acknowledged as everything that occurs in public spaces between buildings: sitting, chatting, walking, cycling, running, standing and playing, which form “the life between buildings” (Gehl, 1987). Being alive for architecture is about being complex: forming, transforming and maintaining a structural organization that consists of multiple constituents arranged in specific patterns (Bhat, 2014). Similarly, being socially alive refers to the complex socializing patterns in a specific context. According to Bianchini, public social life is “the interacting of socialising or sociability...that occurs within the public realm” (Bianchini, 1999).

In the periods of rapid urban growth, the social life between buildings was reduced as a result of automobile dependency, large-scale designing and overly rationalized, specialized processes. Jacobs was a dominant critic who called for a change in the social life of cities. Jacobs stressed the importance of high-density neighbourhoods, mixed land use and promoting public places in cities for creating vitality. She claimed that the physical structure of cities can lead to experiencing cohesive community and life (Jacobs, J 1961). In 1971, Jan Gehl in his book *Life Between Buildings* stressed the qualities of urban life and how the built environment can encourage social life of public places and especially city centres. He repeatedly criticize the neglect of the human dimension in urban design, the emergence of car-dominated cities, and the loss of pedestrian-oriented environments for their negative influence on the public life of cities (Gehl, J 1987).

After Gehl, several studies were conducted in order to critique and analyse the social life of cities. However most of this research has focused on city centres (Gehl, 2010; Gehl & Gemzoe, 2001; Whyte, 1988) and some have addressed city elements such as streets (Appleyard, 1980; Appleyard, 1981; Jacobs, 1993). The role of residential environments in creating social life has been neglected. In most of these studies, it has been assumed that the city life is associated with the city centres’ sociability. But is the city life exclusively limited to the centre? Are the residential environments able to contribute to the social life of cities? Social life of neighbourhoods can benefit residents and cities in terms of mental health and well-being and feeling of safety and security. Empirical findings have shown that experiencing a sense
of community may create psychological benefits in neighbourhoods. In studying the town of Seaside, Florida, Riger and Lavrakas (1981) showed that sense of community can be an explanatory tool for individual well-being. Additionally, lack of vitality in neighbourhoods may decrease the feeling of safety and security. In a study Ross and Jang (2000) argue that social ties with neighbours have buffering effects on neighbourhoods fear and mistrust.

Only a few studies have focused on the sociability of residential environments; however some of the factors that have been studied regarding the public life of city centres and streets are applicable to residential environments (see Figure 5). Qualities that are thought to provide opportunities for social interactions in public places include the factors that encourage residents to walk or which encourage them to engage in stationary activities. The factors that encourages walking behaviours are higher density (Amick & Kviz, 1975; Franck & Stevens, 2007; Gehl, 1987; Jacobs, 1961; Pendola & Gen, 2008; Talen, 1999), human scale development (Amick & Kviz, 1975; Gehl, 1987, 2010; Langdon, 1997), mixed land use (Alexander, 1977; Audirac & Shermyen, 1994; Jacobs, 1961; Mehta, 2013; Montgomery, 1998), easy pedestrian access and walkability (Cooper Marcus & Francis, 1998; Gehl, 1987, 2010; Gehl & Gemzøe, 2004), improvement of cyclist conditions (Gehl, 1987).

The qualities that are studied to encourage stationary activities in public places are provision of seats and sitting areas (Gehl, 2010; Gehl & Gemze, 2004; Mehta, 2009, 2013; Mehta & Bosson, 2009; Whyte, 1980), provision of community gathering places (Lofland, 1989; Oldenburg, 2009), improvements in sidewalks and building edges (Mehta, 2013),greenery (Al-Hagla, 2008; Sullivan, 2004; Whyte, 1980), using a fine hierarchy (Chermayeff, 1971; Chermayeff & Alexander, 1966) and activity generators (e.g. food) (Carr, 1992; Franck, 2005; Whyte, 1980). These qualities have been summarized from several studies in order to make a comparison between the qualities that are believed to improve the social life of cities and those that create feeling a sense of community from a built environment point of view.

![Figure 5: Physical Characteristics that affect the social life in public places (Source: Authors).](image-url)
Comparing social life studies to sense of community studies (see Figure 4 and 5) shows that built environment characteristics that promote the social life in cities are similar to those discussed in the sense of community section. There are two accounts for this similarity. First, since for both a social life and a sense of community, the built environment must provide an avenue for encounters and increase the chance of interactions, the contributing factors are mostly similar. Second, in the built environment literature, the meanings of sense of community and social life have sometimes been misinterpreted and misplaced.

In the literature of the built environment, the boundary between the meaning and interpretation of the terms sense of community and social life is not rigid and clear. To fully grasp this misinterpretation, I use the New Urbanism Paradigm as an example. New Urbanism is an urban design movement, which arose in the United States in 1980s with the goal of promoting walkable neighbourhoods and encouraging a sense of community among residents. In the literature of New Urbanism, the term sense of community has been mostly used to show the effect of design on socializing patterns in neighbourhoods. Talen (1999) criticizes New Urbanism for overestimating the effects of the built environment on the sense of community. She argues that the claim of the New Urbanism in encouraging sense of community via physical design factors is ambiguous and built environment characteristics can promote interactions, but they cannot create a sense of community directly. However, some studies have shown a higher sense of community in the neighbourhoods developed by New Urbanists (Kim, 2000).

There can be two accounts for this contradiction. First the meaning of sense of community has not been interpreted correctly in the literature of the built environment. Second the target of New Urbanism has been mostly to encourage social life of neighbourhoods and not promoting the sense of community among neighbours. Taking Lund’s study into consideration clarifies that New Urbanism has been successful in promoting pedestrian-friendly environments and streetscapes (Lund, 2003); and therefore, the claim of New Urbanism in promoting social life has been successful.

SENSE OF COMMUNITY AND SOCIAL LIFE IN THE CONTEXT OF NEIGHBOURHOOD

Neighbourhoods are the connecting points between homes and the city. Therefore, the social life of a neighbourhood is the interface of the private life of residents and the social life of the whole city. Neighbourhoods have been defined in several ways and with several characteristics. Brower(1996) accounts three dimensions for a neighbourhood: Ambience, Engagement and Choicefulness. Engagement refers to the extent of intensity among residents and the presence of facilities and features that foster or inhibit the interactions. Engagement is the interface of the private home life to the public city life. The dimension of engagement in neighbourhoods occurs in two manners: first the feeling of sense of community among residents and second the social life of the whole neighbourhood.

Neighbourhood environment provides a twofold opportunity for socializing behaviours among residents. Neighbourhoods are a combination of housing units and extended housing units (Brower 1996). The Extended-housing unit is the place for home-related facilities outside homes, such as parks, community gathering places, and commercial streets. Since extended housing units are shared between several housing units, they are considered as points of connection, which can provide a chance of encounters for residents. Brower explains that some points of connections are mostly for neighbours and some connect the neighbourhood’s residents to non-residents or strangers. Therefore, in each neighbourhood, there are two parts to study in terms of public life. First, the residential environment and second, the neighbourhood centre or commercial street or as Brower has defined extended housing unit (Brower 1996).

Similar to the hierarchy of the urban-public and family-private or individual-private (Chermayeff & Alexander, 1966), a hierarchy of socializing behaviours can be traced in neighbourhoods. The neighbourhood environment can provide the space for this hierarchy. From
private-family-home to semi-private front yard to the quasi-public residential street and the public-commercial street or neighbourhood centre. The residential street can provide the avenue for community interactions and neighbouring behaviours (sense of community); while the commercial street as the most public space in the neighbourhood provides the chance of encounters between residents and non-residents (social life) (Figure 6).

![Figure 6: Model of the sense of community and social life of neighbourhoods (Source: Authors).](image)

Residential streets are the fulcrums of feeling a sense of community among residents. The residential environment is where neighbours get to know each other; they change their relationship from strangers to acquaintances, neighbours or friends; in other words they become a community. According to Unger and Wandersman, neighbouring consists of a social component, a cognitive component and an affective component. The affective bonds between neighbours are categorized in three forms: sense of mutual aid, sense of community, and attachment to place (Unger & Wandersman, 1985) (Figure 7). This classification shows that the sense of community as a component of neighbouring can be just considered among immediate neighbours and not the whole neighbourhood. Additionally, according to Banerjee and Baer residents experience a sense of community at the smaller scale of neighbourhood or block (Banerjee & Baer, 1978).

![Figure 7: Neighbouring components (Source: Unger and Wandersman, 1985).](image)

Studies conducted on the sense of community of neighbourhoods have not separated the residential environment from the commercial non-residential environment. There are few key studies that have been partially dedicated to the social life in the residential environments. Appleyard (1981) in the study of three streets in Italian residential neighbourhoods in America noticed that the traffic has affected the number of interactions in the streets. As it can be seen in figure 8, the number of neighbouring and visiting activities is much higher, in the light traffic street in comparison to the heavy traffic street. He also found that in the light traffic street the area that people identify as their home territory is much wider than the heavy traffic street. Therefore, it can be concluded that traffic affects people’s perception of the home territory and this will indirectly affect social life of residential streets.
Figure 8: Study of neighbourhoods interactions in relation to traffic (Source: Appleyard, 1981).

Gehl’s 1976 study of Australian terrace houses with semi-private front yards shows that front yards are the starting point of many activities which can encourage the social life in residential neighbourhoods (Gehl, 1980). A great number of the observed staying activities (76 percent) took place in (or was related) to the front yards. The study also showed that semi-private front yards can create a buffer zone between the street and the house which enables residents to control the degree of interaction and intimacy. Gehl argues that front yards should be narrow enough to enable a quick chat between the sidewalk and the house and wide enough for staying activities to feel safe from the unwanted intrusions (From 1.5 meter to 4 meters wide is the range which Gehl believes is convenient for the front yards).

Alongside residential environments that bring the sense of community to the locality, neighbourhoods also consist a commercial component. Commercial streets or neighbourhood centres are the fulcrums of creating social life in neighbourhoods. The function of the commercial street in a neighbourhood is similar to the function of the main street in a town. Emergence of main streets in towns, neighbourhoods and suburbs encourages the economic activity and increases the chance of encounters and the sense of community among residents (Lockwood, 1997; Pendola & Gen, 2008). Therefore several studies have been conducted on revitalization and vitality of main streets and their influence on the social life of cities (Ewing et al., 2005; Francaviglia, 1996; Lagerfeld, 1995; Orvell, 2009; Pendola & Gen, 2008; Robertson, 2004; Southworth, 2005; Wolshon & Wahl, 1999). Commercial streets in a residential neighbourhood act similar to a main street for a town. Commercial streets or neighbourhood centres are the avenues for interactions and communications. Residents can meet their everyday needs through the commercial streets and become the regulars while socializing with other residents.

A recent study by Mehta shows that the commercial street in neighbourhoods can influence the social, land use and the physical qualities (Mehta, 2007; Mehta, 2013). Encouraging these qualities will affect the public life of commercial streets and the whole neighbourhoods. Land use qualities are related to the business variety, presence of independent stores, personalization and permeability of stores. Physical qualities include commercial and public seating, sidewalk width, shade and building articulation. Social qualities are related to community gathering spaces. To improve the social life of commercial streets, Mehta (2013) has developed a design guideline that can be seen in Figure 9.
Reviewing the studies on main streets or commercial streets illustrates that neighbourhoods’ commercial streets can be the place where residents interact and particularly the place for stationary activities and spending time on enduring activities (Mehta, 2013). Increasing in the chance of interactions might lead to a stronger sense of community among residents. Design and physical characteristics of the commercial streets have a contributing role in promoting the chance of encounters and providing pedestrian-friendly environments. Therefore, a crucial part of the social life of neighbourhoods is assigned to the social life the commercial street. The commercial street in a neighbourhood is where people can experience public life. It can be a lively place, which provide safety and security for the neighbourhoods while encouraging the social life and creating healthy communities (Figure 10).

In today’s world, localized interactions are not the requirements for building a sense of community. Residents are also involved in placeless communities, which are famous as communities of interests. However, the neighbourhood as a geographical place has the benefit of locality, which makes it more worthy in comparison to the communities of interests. Proximity and locality give neighbourhoods an advantage. According to Unger and Wandersman (1985) neighbours’ social support consists of personal and emotional support, functional and instrumental support, and informational support which come with the privilege of proximity. Two decades have passed from Unger and Wandersman’s study and the role of informational support has partially lost its importance due to the progress in the information technology. Nonetheless neighbours supportive interactions can still provide the emotional and functional supports.
CONCLUSION
Residential environments in neighbourhoods may provide the feeling of sense of community among residents. The built environment characteristics can influence the intensity of this feeling through increasing the number of interactions and providing pedestrian-friendly environments. Interactions and weak social ties are the starting points of deeper and stronger interactions. Neighbours interactions in the residential environment may increase the feeling of sense of community. Additionally improving the walkability parameters and promoting the stationary activities influence the social life of the neighbourhood in commercial streets. Sense of community and social life of neighbourhoods make the community healthy, safe, socially sustainable, and strengthen the local economy.

Neighbourhoods consist of residential environments and commercial streets which are the avenue for socializing behaviours among residents. In regard to the definitions and implications of sense of community and social life, neighbourhoods can be investigated with two different approaches: in residential streets, the sense of community can be explored, while in commercial streets, creating vitality and encouraging social life can be considered.

There is a gap of sufficient studies, in the literature of built environment, in regard to the social life of residential neighbourhoods. While several social life studies, in this discipline, have focused on city centres, plazas and streets, the importance of residential neighbourhoods in providing social life in cities has been neglected. With the absence of necessary public life and social bonds, many neighbourhoods and suburbs around the world have been transformed to “bedroom communities”; and accordingly, this study aims to stress the significance of residential environments in creating the social life of cities through the prospect of the given framework. The analysis of the literature presented in this paper clarifies the meanings and implications of the concept of sense of community from a built environment perspective. Furthermore, exploring the literature with an interdisciplinary perspective shows that the proposed framework can fit the existing relevant research. The framework is offered as a way to facilitate future studies in the context of neighbourhoods through differentiating the residential environment from the non-residential environment.

This study recommends that distinguishing the residential streets from commercial streets can provide a prospect for future researchers to identify the effective elements in the public life of neighbourhoods. However, this division of neighbourhoods does not suggest that sense of community in residential streets and the social life in commercial streets are non-related. Rather this differentiation and clarification can facilitate future studies and increase their accuracy in finding the built environment affective elements in terms of social life in neighbourhoods.

Several suggestions for future research can be presented. First, there is still a need for research on the built environment characteristics that encourage a sense of community in residential streets and social life in commercial streets in neighbourhoods. Since previous public life studies in neighbourhoods have sometimes misinterpreted or misplaced these two terms, this study can create a convenient standpoint for future research in this area. Future research may also investigate the extent to which neighbourhood communities can be affected by the physical environment. This study also lays a foundation for future debate over the place of local communities, in a world where residents are mostly involved in non-local or virtual communities. Although previous research investigations provide some insight into the application of the sense of community in neighbourhoods, there is a need for continued research on the necessity of the existence of local communities in neighbourhoods.
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BETWEEN TRADITION AND MODERNITY:
Determining Spatial Systems of Privacy in the Domestic Architecture of Contemporary Iraq

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Abstract
The notion of privacy represents a central criterion for both indoor and outdoor social spaces in most traditional Arab settlements. This paper investigates privacy and everyday life as determinants of the physical properties of the built and urban fabric and will study their impact on traditional settlements and architecture of the home in the contemporary Iraqi city. It illustrates the relationship between socio-cultural aspects of public/private realms using the notion of the social sphere as an investigative tool of the concept of social space in Iraqi houses and local communities (Mahalla). This paper reports that in spite of the impact of other factors in articulating built forms, privacy embodies the primary role under the effects of Islamic rules, principles and culture. The crucial problem is the underestimation of traditional inherited values through opening social spaces to the outside that giving unlimited accesses to the indoor social environment creating many problems with regard to privacy and communal social integration.

Keywords: Privacy; Traditional built environment; Social sphere; Urban sphere; Public/Private spaces.

INTRODUCTION
The concept of privacy represents an important factor in the articulation of the built environment which has been largely interrogated in the analysis of the architecture of home and spatial organisation of social spaces (Abdelmonem, 2010). The moral and behavioural system of Islam; as in the revelations of the holy Qur’an (4, 5 - 49), “Indeed, those who call you, [O Muhammad], from behind the chambers - most of them do not use reason, And if they had been patient until you [could] come out to them, it would have been better for them. But Allah is Forgiving and Merciful,” prescribe a central criterion in determining privacy in the shaping of domestic social life of Iraqi society, yet they can equally be observed in non-Muslim communities in Iraq. Privacy, hence, helps to refine the interrelationship between spaces within the same living unit or between the unit and the outside context (Stewart, 2001). The separation of public/private spaces summarizes the impact of the cultural and behavioural value systems on the sequence and hierarchy of spaces that largely defines the organic pattern of the traditional fabric at large. This context, in turn, introduces harmonious, integrated and controlled social relations within. Most cases dealing with privacy end up in separating the public from the private through physical,
behavioural and spatial codes which relate them to a consistent set of rules within a specific society (Abu-Gazzeh, 1993). The traditional house obtains its priority over public realms as it accommodates the social and cultural aspects of life. It demonstrates, moreover, the thresholds of social interaction between male and female members of the same family in the everyday social practices (Alizadeh, 2005). This is reflected in the architecture of the house through dividing it into two distinct parts: male section ‘Diwan-khana’, and female part ‘Haram’ (Fethi, 1977).

Intrinsic to modernity is the underestimation of inherited socio-cultural values that have limited the impact of privacy and opening social spaces to the outside, giving unlimited visual accesses to indoor social contexts and creating many restrictions with regard to privacy and communal social integration. Modern architects and planners tend to neglect the centrality of privacy in the housing design process with some considering it a limitation to freedom of design. Moreover, formal aesthetics, economic factors and new technological methods are among those deemed more important in the progress of design mechanism than inherited social and cultural values (Eben Saleh, 1997).

This paper aims at addressing the changing characteristics and re-evaluates the architecture of home according to the concept of privacy. It attempts to answer a central question: ‘how does the change of our attitude to privacy affect the latent aspects of house design and planning in contemporary Iraq?’ For achieving a built environment that is more responsive to the needs and requirements of its users in terms of privacy and social interaction, one should analyse both traditional and contemporary settlements in Iraq. The first will give an idea of the meaning of privacy and its interpretations as well as the dynamic of public and private social spaces in traditional and contemporary built environment. It will address the importance of privacy and social flexibility or fluidity in the spatial organisation of Iraqi traditional home and residential quarter – mahalla. The following part will study the impact of modernity in changing the latent socio-cultural aspects of society and respectively the articulation of the home and the spatial morphology of the neighbourhood unit. Finally, conclusions including key design implications of how socio-spatial aspects of privacy can be considered in future Iraqi development efforts will be produced.

METHODOLOGY
On the basis of the nature of research’s question and inquiry, this study is of qualitative nature that is effective in identifying the intangible factors of the human side and in understanding the practice of everyday life. In-depth, open-ended and unstructured interviews with users from both contexts, the traditional and the contemporary, were mainly used to obtain the relevant information. This method offers the opportunity of observing the real meaning of the idea in question. Moreover, it helps to observe how consciously users relate privacy to their home environment and the surrounding. Many educated and working-class users of both contexts refer to the same rule, as the majority of traditional context’s households, or, preferably, middle class have been interviewed. This segment of society is more rational, spontaneous in their relationships and social behaviour and open in their discussions and judgements.

This paper depends on theoretical investigation, spatial analysis and analytical discussions with architects, planners and general public who are engaged with these environments frequently. Case studies of both contexts have been analysed spatially to find out the role of the socio-cultural aspects of privacy in determining the spatial characteristics of the specific home environment.

ON PRIVACY AND THE HOME
The notion of privacy acquires various interpretations in different contexts. A clear definition of privacy is needed to accommodate the different social and cultural changes. Basically, privacy is defined as the mechanism of developing and maintaining process in the mutual relationship among individuals, within a small social group or in society at large. Irwin Altman (1975) indicated that, individual’s identity and personality can be achieved and maintained by the guidance of
privacy through the creation of fundamental personal boundaries (Al-Homoud, 2009). Alan. F. Westin (1967) argued that, privacy works as the withdrawal of individual from society through the use of physical and behavioural boundaries. Individual's need to be included in the social intercourse of everyday life is a considerable determinant in the perception of the social space and boundaries of privacy. In this respect, privacy is never absolute as long as it refers to a changeable social and cultural sphere and interaction (Ramezani & Hamidi, 2010).

According to Altman (1975), privacy represents the interpersonal boundary-control process which organizes our social interactions in manners similar to the shifting permeability of a cell membrane. Moreover, it is a dialectic mechanism and a system that stands between the restriction of interpersonal boundaries and being part of society through its dynamic ability of pushing towards an essential degree of openness-closeness, or accessibility-inaccessibility. This mechanism occurs with the presence of the relative reaction of various powers which change temporarily according to different circumstances. Altman presented the ‘desired’ and ‘achieved’ privacy where the subjectivity of the first is in the nobility of the sociocultural interactions between people at a specific period of time (Georgiou, 2006). For Rapoport (1977), privacy is the power and ability of managing social and cultural interactions between different social groups and being responsible for achieving the desired and acquired level of interaction (Ramezani & Hamidi, 2010). Seeking a degree of privacy does not mean, according to Schwartz (1986), the desire for achieving social isolation but a communicative mechanism and guide for human social behaviour and showing at the same time the socio-physical boundary which isolate two different spaces (Georgiou, 2006). In this sense, privacy ought to be conceptualized according to its relation with the different meanings of private and public realms.

THE CONCEPT OF PUBLIC/PRIVATE REALMS
Public and private domains have an essential role in the articulation of spaces. The social, cultural or physical division of urban spaces into public and private realms expresses the relation between the two different spheres in society which reflect respectively the different types of relations that combine the individual with society and, in other words, between the self and the others within the same context.

Public spaces have basically been related to spaces where social interactions can take place in larger groups without censorship. They show the embodiment of the notion of promotion into the unrestricted visibility or accessibility of social interactions such as being in a street coffeehouse or in a shopping centre. However, the socio-cultural notion of the private/public segregation refers to the meaning of the private realm and its different spaces. The female domain provides a high degree of desired privacy, secrecy, concealments and isolation from the attention of the public. This mechanism articulates the integral meaning of privacy including visual, aural and accessibility determinants (Rahim & Abu Hassan, 2011). The intimate, closed and separated private domain and the opposite public one constitute a social and contextual environment of people’s daily life in an interrelated relationship. They present the realisation of relatedness and being with each other in every single action. This idea can be clearly shown when, for example, the public domain of the alleyway ‘agd’ in local communities transforms into private to accommodate diverse social and cultural occasions (Abdelmonem, 2011).

The role of public/private domains can simply be understood by referring them to a specific system of social spaces for the purpose of presenting their indications. This kind of classification has different forms and layouts. The private realm articulates the innermost part of conscious in human beings and shows the most secure and safe environment through viewing some kind of refuge fields from the public. Consequently, the public realm appears to be in accessible attribute to all other social spaces, except the innermost part of the human (Abdelmonem, 2012a; Mazumdar and Mazumdar, 2001).

The term ‘sphere’ has been used by different studies concerning people’s social interaction and intercourse (Abdelmonem, 2011). In the case of environmental psychology, each person is realized and perceived through an invisible shelter or a series of shelters surrounding his body.
These shelters are different among people and cultures. Time is central to the variety of these spheres due to the continuity of the reconstructed dynamicity of the environment (Hall, 1969). Habermas (1991) argued that each environmental context reflects one of these realms where the family stands in charge of the private. According to Sennett (1974); De Certeau (1984) and Tonkiss (2005), people, in traditional public contexts, act collectively establishing a sense of familiarity and reflecting the internal private domain. The crucial necessity of the private within the public realm has an important influence on the perception of the social sphere.

**SOCIAL PRIVACY IN IRAQI TRADITIONAL HOME ENVIRONMENT**

The home is a reliable organisation that can be more responsive to the changing needs of the family which thus can develop flexible solutions to the increasingly limited spaces to encompass the different needs. The perspective of different spaces of the house has been wrapped by various cultural, social and behavioural rules. Social habits, cultural values and lifestyle dictate the form of social spaces (Fig.1) (Khattab, 2005). Users of traditional context indicate that the spatial settings of the house can be rearranged formally and functionally according to the degree of privacy. Therefore, there is always an opportunity for informality with functions despite the rigidity of the house plan. (Boudiaf, 2010). This can, for instance, be shown clearly in the case of marriage and when the house is expecting the arrival of a new member through birth or marriage and the need for crucial changes in the spatial organization of the house to embrace the new family.

![Figure 1: The compact built form and cohesive housing settlements in the old city of Al-Hilla-Iraq (Source: Authors).](image)

Being alone is an indication of non-social involvement and building an exclusive environment within the house. Salama in 2006 argued that the determining factors in the formation of the traditional house are both the implicit and explicit socio-cultural and socio-religious beliefs and rituals which define what is really acceptable socially and what is not. In his discussion of the issues needed to provide affordable housing, Salama stated that *environmental and socio-cultural contexts demand should not aim at merely providing affordable shelters. It should also offer design solutions that are sensitive to the local contexts such as privacy, social cohesion,*
and perceptions on residential density, preferences, and the lifestyle of the target populations (Hashim and Rahim, 2008, p.95). The architecture of the traditional house and the spatial organization of its activities have the aim of holding family gatherings within a single protective shelter without intrusion from strangers (Hall, 1969, p.158). Physical and spatial treatments with regard to privacy, gender segregation and direct visual contacts have been performed in a manner that shows a deep understanding of social, cultural and religious values. This can be shown in the spatial and functional properties of the ‘Iwan’, ‘Talar’, the fountain ‘shithirwan’ which divides the court spatially, the plants and the variation in spaces’ levels (Fig. 2).

The real concept of privacy in traditional domestic units in Iraq can be practised in the cantilevered elements (shanashil), the (ursi) and the (kabishkan) which represent physical components within the whole structural compound that help assert the privacy of its users (Fig.1, 3) (Warren & Fethi, 1982). They are particularly important for women to ensure the notion of gender segregation and achieve a visual contact to the public outside or visitors inside the house without being observed except from those who belong to the same family. At the same time, the components of ‘shanashil’ allow an interpersonal relationship between women of nearby houses to contact freely each other.

Each house shows the private domain in various levels with regard to the nature of privacy, social groups and mechanisms used. Whilst the private refers in some degree to the concept of the public, the form of this relation and the different transitional spaces has the tendency to vary more over the course of time (Rapoport, 2007). The house has a range of public and private realms reflecting different activities over the course of time. It contains many physical boundaries which perform the thresholds between the public domain associated with the outside alleyway (agd); and the semi-public realm of the house illustrated by the entrance (mejaz) as shown in Al-Kubai house in Al-Kadhimiya-Iraq (Fig. 4) (Bianca, 2000; Fethi, 1977).

The space of the entrance has been articulated in a way that prevents any kind of direct visual intrusion from the outside towards the main social core of the house associated with the courtyard or the family room. Semi-private and, often, private realms represent particularly the socio-cultural core of the house, while the semi-public realm, which is in direct association with the semi-public realm of the entrance, views the world of men, guests and uninvited visitors as well as many public affairs such as wedding ceremonies. The public and private relations inside the house are largely arranged in relation to the lines of familiar strangers, guests and, most certainly, male-female relations (Madanipour, 2003; Bianca, 2000). The entrance hall encompasses an explicit spatial order and use. It regulates the personal properties of the place. That can also be shown in many contemporary designs as in the case of Rasool Hasoon’s house in Kerbala-Iraq, designed by the architect Ali Al-Thahab, 2012 (Fig. 5).
ASPECTS OF FLEXIBILITY IN IRAQI TRADITIONAL QUARTER: MAHALLA

The spatial morphology of the traditional neighbourhood unit ‘mahalla’ depends on social activities and interactions very specific to its context within a certain period of time. There is always a flexible mechanism that emphasises the dynamic notion of the space socially. This includes various socio-cultural situations whose limitations can be changed continuously. Both domains in daily activities are flexible and not fixed to the impact of the physical boundaries of the house or sometimes the close outside world. In this sense, the private and public realms might be in an interchangeable social role temporarily. The public open space of the alleyway, ‘agd’, can be turned over into private during certain periods in spite of its public or semi-public nature. The social transitional nature of the alleyway has been used by female correspondingly as one of the internal spaces of the house. On such occasions, women from nearby units can gather in a small social group practicing their own social interactions and activities where men are outside the mahalla in coffee houses. Moreover, strangers, using the main public zone of the Mahalla, become a source of suspicion to be observed and exposed to a set of questions from the Mahalla’s members and children who usually gather around asking many investigative questions such as: ‘where are you going?’ and ‘which house are you looking for?’ and so on (Rapoport, 2007; Abdelmonem, 2011).

Male visitors create another important daily occasion that affects the nature of the social space. On these occasions, the ground floor is socially turned over into public space while women use the first floor (Ragette, 2003). The social sphere of such spaces is flexible and can change into a public one when required. This mechanism strengthens social accessibility and permeability of certain spaces at specific times. Jurgen Habermas (1991) insisted that this mechanism represents the effective situation of both domains which has a great influence on the division of the social sphere and the nature of social spaces. The main family space, according to Rapoport (2007), shows a certain system of activities within the whole system of the house that could be indoor or outdoor. Consequently, the semi-public nature of reception areas, and many other social spaces, may be used as sleeping areas in specific periods by the rearrangement of fixed, semi-fixed or non-fixed features within the same space. Social and cultural flexibility can be practised in most private/public realms of the house and extended outside it demonstrating social, cultural and spatial continuity with the external public alleyway ‘agd’ (Abdelmonem, 2012b). Its predominant role is in strengthening the social relations and enhancing the level of social cohesion between society’s members. This fluidity can be seen through many social practices such as wedding festivals or sorrow ceremonies where members of the Mahalla share and
collaborate for the sake of the collective wellbeing and social solidarity using voluntary contribution through, for example, the performance of specific activities. Very frequently, they allow their houses to be at the disposal of their neighbour.

Culture and its different factors play a main role in influencing our behaviour and social interactions with others, whereas architecture is just a physical expression of that influence. People and their social, cultural and psychological aspects draw and define the physical properties of the home which in turn give a clear expression of the social style and status of the group using it. The degree of social and cultural consistency between the male/female, public/private, outside/inside and exterior/interior notions determines the architecture of the home within the cultural context of Iraqi society.

MODERNITY AND THE CHANGING CULTURE OF IRAQ'S HOME ENVIRONMENT

Since the early twentieth century and precisely following the oil-economy boom in Iraq in the 1970s, economic and political changes have affected the socio-cultural inherited aspects, traditions and, as a consequence, the behavioural patterns within the home. Due to the continuous migration of the population from rural areas to urban contexts and the large demand for new residential settlements which consequently sprang up in most Iraqi cities, new values and principles controlled by economic and political powers have emerged as the main determinants of the home and affected respectively the latent aspects of society (Raouf, 1985; Eben Saleh, 1997). The structure and the nature of the family have changed as the family unit becomes smaller or reduces in size. Male-residents tend to spend longer time with their families, thus, reducing their social interaction with some colleagues outside the boundaries of the neighbourhood unit. The elimination of transitional social spaces has forced them to limit their social relations to some formal visits that frequently take place within the physical properties of the house (Al-Wardi, 1965). Equally, rapid changes have affected architectural and planning standards following the universal practices of the international style and its association with industrial. Despite the recent concerns for health, safety and welfare, ideological preconceptions have ignored cultural values and, thus, provided a fundamental base for utopian concepts. The vital needs of the human have been neglected at the expense of physical and environmental factors which have been dominated by the concept of rationality, anonymity and increasing abstractions of social relations. The new approach marginalised the social features for the sake of the architectural image that is disconnected from local values and is largely implanted in irrelevant social context (Fig.6) (Heynen, 1999; Salama, 2006).

The concept of the public domain has changed to exclusively become squares and wide linear streets. The idea of the semi-private space and the everyday life concept have been rendered undesirable and set to be replaced with a rigid physical barrier between private and public. The provision of the in-between areas in traditional quarters met human needs, socially and culturally, in a more sensitive way than contemporary methods (Mousavi, 1998; Bianca, 2000; Ramezani & Hamidi, 2010). As a natural result of modernity and its ideology, the concept of the neighbourhood as a home cannot effectively accommodate the coherent relations between former neighbouring families within the ‘mahalla’. At the same time, the sensitive hierarchy of the different subdivisions of spaces, where the individual can locate his/her social; cultural and behavioural values into a clear system, are broken by the concept of the strict separation, represented by the rigid physical boundary of the outer wall, in contemporary designed residential quarters (Abdelmonem, 2011). The lack of social and cultural considerations represents the main weakness in the architecture of home (Hashim and Rahim, 2008). The new approach creates an extroverted form of houses, sometimes called villa pattern, situated in the centre of the individual lot. The private spaces are opened outwards creating unlimited accesses and lessen the socio-cultural role of privacy. The notion of social space and/or social sphere in contemporary houses is distorted and unclear. It is misunderstood, ignored or actually underestimated as it represents an obstacle to modernity where the “Dwelling is now impossible...The house is past,” (Theodor Adorno, cited in Heynen, 1999, p.17) (Fig. 7). In the context of philosophy, modernity frees the
human from the limitations and impact imposed by his family, community and local habits (Heynen, 1999).

The concept of family social space as the main multifunctional activity space has been diminished through dividing the inside territory of the house into separate closed spaces indicating specific functions (i.e., bed rooms, kitchen, dining, etc.). Some architectural treatments have old and traditional effects such as the balcony on the first level which has been closed by lightweight screen materials to get an additional space and prevent visual intrusion from opposite or adjacent houses reflecting the concept of the ‘shanashil’. This can also be recognized in the segmentation of the social space through the use of different levels which reflects the difference in levels between the courtyard (hosh) and the open reception space (iwan). In such treatments, families have tried to gain more separate spaces in order to satisfy their basic needs and achieve privacy or social segregation which modernity has failed to provide (Fig. 8) (Abu-Gazzeh, 1993).

MODERNITY AND PRIVACY IN IRAQ’S NEW QUARTERS
The changes in the architectural factors and the planning principles of the small neighbourhood unit from organic and spontaneous form to geometric and grid-iron pattern affects largely the concept of private/public domains and the prominent impact of transitional social spaces. It also

Figure 6: Raouf Shnawa’s house of the 1960s-70s of the last century in the city of Al-Hilla, Iraq. The physical properties of the elevation demonstrate the notion of privacy (Source: Authors).

Figure 7: Contemporary residential units in Iraq and the openness towards the outside public realm (Source: Authors).

Figure 8: The impact of the new trend on privacy and the socio-cultural aspects of society (Source: Authors).
affects the humanity of the individual and his personality as long as it destroys his security and privacy. Accordingly, the neighbourhood unit has gained an extroverted form rather than the introverted concept of the traditional which presented the mahalla as an isolated and integrated complex socially, culturally, economically and politically. The new doctrine has led to the transition from the inner core of the mahalla to the outside providing easy and wide accesses for the penetration of the car and direct visual view from the outsider towards the inner social space of the house. Respectively, the social, cultural and structural properties of the newly designed residential quarters have been broken through the elimination of transitional realms which have a negative impact on residents’ everyday life (Fig. 9).

Figure 9: A typical residential neighbourhoods with the organic pattern (left) and the gridiron pattern (right) in Al-Kadhimiya– Bagdad (Source: Authors).

Modernity affects in most cases the everyday conditions of Iraqi society through the destruction of the informal networks of social bonds and mutual responsibilities replacing them by a highly formalised administrative system (Bianca, 2000). Modernity changes the concept of the ‘single family’, ‘home’ and ‘dwelling’ as well. These concepts, according to theorists of modernity, fade into the distance, while all assert that modernity and dwelling are completely opposed to each other (Heynen, 1999). Indeed, with regard to the neighbourhood unit, the social gathering space of the residents in traditional open spaces have been diminished and confined to certain areas in specific corners of the residential blocks. Moreover, social interactions and festivities have been moved to specific places outside the boundaries of the mahalla and sometimes with the absence of its people especially when there is a differentiation on the basis of wealth and poverty (Eben Saleh, 1997). As a result of these thoughts, a sense of privacy, security, belonging and communal affiliation have been marginalized and eliminated. This can be clearly seen through the breaking of woman’s privacy by members of the same quarter in contrast to traditional customs and norms. As a reflection of this phenomenon, the family takes some physical actions against these abnormal behaviours in order to achieve privacy as in the construction of high solid walls or fences, changing the position of private spaces to the opposite side of the house, closing the front windows on first floors and many others.

The main intellectual dimensions of the new approach involve drawing strict boundaries between the public and the private for achieving privacy, restricting social gathering within the unit and the residential quarter, having less involvement in the public sphere.....while the traditional involves blurred boundaries and ease of access from the private to the public and vice versa in a proper sequence (Abdelmonem, 2012b). People, in general, have the desire to interact socially and culturally with others in open contexts with the presence of tangible boundaries.
(Sennett, 1974; Abdelmonem, 2011). This concept presents the limiting barrier of social interactions through the establishment of strict guidelines and principles for managing people's interaction and behaviour (Abu-Gazzeh, 1993).

One of the main deficiencies of modernity was its contempt and disregard for the inherited social, cultural, spiritual and physical environments as proved in its refusal of historically grown built environments (Bianca, 2000). This concept was revealed through the rejection of the organic pattern of the traditional in favour of the benefits of the anti-social gridiron approach. The crucial point was that contemporary settlements have been imported as unquestioned developments and complete packages (Eben Saleh, 1997) as the case of most developments in Iraq after 2003 (Nagy, 2006) (Fig. 10). This type of change affects the social and cultural norms of Iraqi people and precisely privacy and social communications.

**CONCLUSION**

The rapid and successive economic and political changes in Iraq in the last three decades, especially after 2003 and Iraq's entry into a new transitional stage of social, cultural, religious and intellectual transformative conflicts, have affected people’s social and cultural values and the associated psychological and behavioural aspects to adhere to contemporary principles of the home environment. Following a long period of deprivation experienced by the Iraqi people, there has been a sudden openness towards modernity in its all impressive aspects. The differentiation in layers of Iraqi society has been influenced by the changeable categories of socio-cultural and religious factors. All these changes affect the architectural properties of the house as long as the physical and spatial arrangement of the house and the use of the social space are metaphors for the invisible image of the social and cultural values of society.

Privacy, as a social and cultural aspect, is a serious matter in the spatial formation and articulation of the built environment in Iraq. For communities, privacy plays an important factor in strengthening and accommodating communal social interactions which, in turn, strengthens the ability of space in achieving a more sustainable and secured residential environment. There is a crucial need to understand the concept of privacy and its related social, cultural and psychological issues in architectural practices and philosophies. In future development efforts for sustainable home environments in Iraq, the emphasis need to be on the importance and necessity of personal privacy in the socio-spatial organisation of the home rather than the personal space which represents the perspective of Western movement. Moreover, a
comprehensive study of all segments of Iraqi society is crucial for understanding privacy and its role as a means of knowledge for the common good of the house.

The house, as the basic social and human organisation, encompasses many systems of activities which are different in their socio-cultural nature. These systems have been viewed as social spheres which present essential factors in expressing social spaces. This notion is embodied by dividing the space according to the social nature and the degree of privacy that can be obtained. Therefore, the significant concept of the social sphere is in the classification of spaces socially to the public/private and the transitional spaces to achieve the best arrangement for interior and exterior spaces.

The hierarchical and sensitive subdivision of social spaces on the scale of the Mahalla and the house is an effective mechanism in response to the changing requirements of the social group. It reflects the sustainable aspects of the social activities within the home through maintaining privacy and social interaction. The mechanism, used in achieving the transitional spatial sequence in traditional context, creates the essence of social, cultural and behavioural fluidity in everyday life and the reciprocal relation between the social space and the activity over the course of time. These aspects need to be re-evaluated in contemporary Iraqi settlements to provide an active mechanism for more sustainable developments.

It is important to investigate, analyse and study the neighbourhood unit according to the socio-cultural aspects of the human in order to create a relevant social context instead of the spatial demands of the car which represents the main determinant in contemporary one. A sense of privacy, security, belonging and communal affiliation are crucial factors in creating the concept of the neighbourhood as a home. This approach can be applied by associated and shared values between decision makers and an effective and active participation from local users.

In the meantime, creating responsive settlements that respond to the concern over privacy, building regulations, frameworks for architects and developers provide a better and engaging living environments that consider the application of the socio-spatial needs of its users a central strategy for successful planning and housing design.

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ROOFS FUNCTIONS IN VERNACULAR RESIDENTIAL BUILDINGS
Case Study in Kashan, Iran

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Abstract

The vernacular roofs in Iran served more than protective functions and were in response to the people’s behaviors. The case study has explored the different functions of the vernacular roofs regarding the people’s behaviors. It has focused on Kashan, as an ancient and historical city with hot and dry climate. The semi-structured interview has been conducted among the local master builders and experts, which respondents have answered to the open-ended questions. As the results show climate, religion, culture and economy affected people’s behaviors on the roofs and caused creating spatial, socio-cultural, spiritual, economic, recreational and passage functions of the roofs. In response to these functions, particular roofing strategies emerged, including aligned and connected roof, flat and double surface roof, staircase, partition walls around the roof, and some spaces on the roofs. Consequently, the vernacular roofs were in response to the people’s behaviors, improved physical and mental health, offered spiritual and intangible benefits. The study recommends professionals consider the people’s demands and behaviors during roofing in order to use all the potential of the roofs in residential buildings.

Keywords: People’s behaviors; Roof functions; Vernacular roofing; Residential buildings.

INTRODUCTION

People who mainly live in contemporary apartments consider roofs as final surfaces of the buildings, which are full of installation pipes, chimneys and heating or cooling equipment (Haeri, 2010), whereas, roofs in the vernacular residential buildings (VRB) of Iran acted as main spaces in the past (Fallahfar, 2007). The vernacular roofs served more than protective function in the urban areas and were efficient and open spaces in the VRB, which occupants could take advantage of them (Sadeghipey, 2011). They acted as public, social and cultural interaction spaces, living and resting areas, and workplaces. Roofs in Iran acted as open spaces in the VRB and provided living activities for occupants in the summers (Mirmoghtadaee, 2009). The residents slept on the roofs at nights and watch the stars (Sadeghipey, 2011). People in the past were responsive to their neighbors, helped them in difficulties and performed communal activities (Esfahani, 2004). Hence, the vernacular roofs provided the possibility of neighbors’ communication (Haeri, 2010) (Fig. 1). Furthermore, the vernacular roofs were used as recreational spaces and people kept, bred and flew domestic pigeons on the roof as a hobby (Fallahfar, 2007) (Fig. 2).
In addition, the roofs of the VRB improved interaction of human being with the environment. People used the roofs for taking the advantage of natural resources and providing thermal comfort. The vernacular roofs were used for sun drying purposes. People could dry their washed clothes, carpet, fruits, vegetables on the roofs (Sadeghipey, 2011). Likewise, according to the occupation of the residents, the roofs in the VRB were used as places for producing dried fruits or drying the dyed yarn on the roofs (Fallahfar, 2007) (Figs. 3 and 4).

Figure 1. Watching religious ceremonies on the roof, Masooleh, Gilan, Iran
(Source: Amin Karami, 2013)

Figure 2. Pigeon fanciers used the roofs for keeping and flying pigeons as a hobby
(Source: Mohsen Mazaheri, 2012)
Figure 3. Producing dried fruits on the roofs, Zenoozagh Village, Eastern Azerbaijan, Iran (Source: Hamed Haghdoust, 2009).

Figure 4. Hanging and drying the yarns on the roofs by dyers (Source: Saeed Mahmoodi, 1999).
Iran is a vast country with a variety of climatic conditions. This study has focused on the hot and dry climate, which included a large proportion of the country. Diversity of climatic responsive strategies in architecture (Jamshidi, Yazdanfar, & Nasri, 2011) has been characteristic of these regions. In hot and arid regions, the VRB were built compactly and closely together in order to reduce sun-exposed surfaces and consequently, to avoid heat penetration through the building enclosures. Hence, the roofs were connected (Zargar, 2007) and provided passing across the roofs and watching the city (Haeri, 2010). The study has selected Kashan, as an ancient and historical city with hot and dry climate (Jamshidi et al., 2011) to explore the different functions of the vernacular roofs regarding the people’s behaviors in this area.

CHARACTERISTICS OF ROOFS DESIGN IN VRB OF KASHAN

Kashan is located at the center of Iran and its climate is similar to desert with significant changes in temperature between night and day. The weather is hot and dry most of the year (Taleghani, Behboud, & Heidari, 2010). The study has considered the roofs of the VRB in Kashan, which were built between 1778, before the great earthquake, and 1920. The design of the buildings was, according to the climate. Characteristics of the VRB in Kashan were introverted houses with minimum openings, vents and windcatchers on the roofs, arches and vaulted roofs (Jamshidi et al., 2011). Types of the roofs varied according to the function and size of the below plan (Memarian, 2012). Flat, domed and vaulted roofs were different types of the roofs in this region (Fig. 5).

Figure 5. The different forms of the vaulted roofs in the VRB of Iran, Abbasian house, Kashan, Iran (Source: Authors, 2012).

The VRB were built closely in order to reduce sun-exposed surfaces, hence, the roofs were connected. Moreover, the roofs were built with around 30-40 centimeters thickness in order to avoid heat conduction. Brick and adobe were the best choices in response to the hot weather. Moreover, a mixture of mud and straw was common roofing layer in this region, which straw mainly...
acted as a proper material against heat transfer (Zargar, 2007). Additionally, due to the saving energy of bright color roofs (Jamshidi et al., 2011), light brown color of mud and straw was an appropriate choice for the hot regions, which mitigate radiation and avoid glare. Double surface roofs were used in this city to save the heat during the day and discharging it at night (Moradchelleh, 2011). High and sometimes lattice parapets were built around the roofs in order to create shadow and consequently, reduce heat convection during the day (Zargar, 2007). Consequently, connected roofs, thick and the double surface roof, made from high thermal mass materials with windcatcher were roofing strategies in the hot and arid climate. After describing the roof characteristics in Kashan, there is a need to investigate the people’s behaviors on the roofs.

METHODS
This study has selected qualitative approach as a research methodology and according to Strauss and Corbin (2008), the important reason for choosing this method is entering into the world of the interviewees in order to gain their experiences and perspectives, discover and explore. The single case study as a research approach has been chosen for the study that has enabled exploration of the phenomenon within its context, using a variety of data sources (Yin, 2009). Kashan, as an ancient city with 7000 years history, has been selected as the single case study. The case study is an appropriate research method in this study to contribute to the knowledge of local master builders, and experts for understanding the roof functions in the VRB of Kashan regarding the people's behaviors (Yin, 2009). Hence, the local master builders and experts have been the units of analysis in this case. Data collection procedure has been conducted in the city of Kashan. Semi-structured interviews, documents and literature review have been different types of the qualitative data in this study.

Interviews
This study has used semi-structured interviews, which respondents have answered to the open-ended questions. It has been a face-to-face data collection and usually conducted in their office. One-on-one interviews has been a proper approach due to the ability of the interviewees in speaking and sharing their ideas, as well. Text data have been gathered through transcribing of audiotapes, which recorded during the open-ended interviews. Information has been recorded by informal notes and self-designed protocols in order to organize responses for each question. This study has used gatekeepers in order to provide the opportunity of obtaining permission from respondents for interviews. This type of sampling is useful for exploratory purposes and when locating interviewees is difficult (Babbie, 2012). Regarding Creswell (2008) suggestions, snowball sampling as a strategy of qualitative purposeful sampling has been used after the beginning of the research in order to ask interviewees to introduce other respondents through informal conversations. Interviewees have suggested other experts or master builders who can help in discovering the functions of the roofs regarding the people’s behaviors and providing information about it. Hence, the selected respondents and cases have been information rich and illuminative (Creswell, 2008; Patton, 2002).

Participants
The interviews have been conducted with the local master builders and experts, who involved in the preservation and renovation of the VRB of Kashan, to understand the people’s behaviors on the vernacular roofs from their opinions and perspectives. Their specialty has allocated for reconstructing and renovation of the VRB in this city. The identified master builders and experts for interviews have been a public-recognition and famous in the city for their experiences in the reconstruction and renovation of the VRB. The residents and public were not an appropriate choice for an interview. The residents of the VRB mainly have died and new generation and public mainly
are young and not information rich. Therefore, the local master builders and experts have been an appropriate choice for interviews.

Due to the limited number of knowledgeable master builders and experts in this scope, few interviews have been conducted. Nine interviewees, including master builders and experts have formed samples of the research, which four participants with 20-30 years experiences have been experts in the preservation and renovation of the VRB. Five respondents have been master builders with 20-30 years’ experiences in reconstruction and renovation of the VRB of Kashan. The picked master builders and experts have played major role in understanding the people’s behaviors on the vernacular roofs. Their knowledge has been informative and educational. The master builders and experts have been coded and their profession has been indicated in table 1.

Respondents have been free to respond to the broad, general and open-ended questions and declare their views and experiences. The answers have been recorded, simultaneously. The responses have been transcribed, translated, and typed into the computer for later analysis. Although the interviews have been planned, respondents have been flexible in order to continue and be involved with the questions closely during the conservation (Creswell, 2008). Collecting data have been continued to reach saturation, which means no new data would be gained to develop categories (Creswell, 2008; Strauss & Corbin, 2008).

The study has developed an interview protocol consisted of general questions in order to record data. The questions related to the people’s behaviors on the vernacular roofs are as follows:

1. Why were the roofs of the VRB built in this way?
2. How was the access to the roofs in the vernacular residential buildings?
3. What types of activities were done by residents on the roofs?
4. Did any factor affect the type of residents’ activities on the roofs?
5. Was there any space on the roofs in response to the residents’ behaviors?
6. Have the people’s behaviors on the vernacular roofs neglected in the recent years?

Table 1. Respondents’ codes.

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Profession</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Abbasi</td>
<td>Master Builder</td>
<td>MB1</td>
</tr>
<tr>
<td>Mr. Asarfini</td>
<td>Master Builder</td>
<td>MB2</td>
</tr>
<tr>
<td>Mr. Asekhi</td>
<td>Master Builder</td>
<td>MB3</td>
</tr>
<tr>
<td>Mr. Helli</td>
<td>Master Builder</td>
<td>MB4</td>
</tr>
<tr>
<td>Mr. Salehi</td>
<td>Master Builder</td>
<td>MB5</td>
</tr>
<tr>
<td>Ir. Aminian</td>
<td>Expert</td>
<td>E1</td>
</tr>
<tr>
<td>Ir. Emamina</td>
<td>Expert</td>
<td>E2</td>
</tr>
<tr>
<td>Ir. Haeri</td>
<td>Expert</td>
<td>E3</td>
</tr>
<tr>
<td>Ir. Rayati Moghaddam</td>
<td>Expert</td>
<td>E4</td>
</tr>
</tbody>
</table>

Data Analysis

Analysis has been a process of meaning data. Data collection and analysis has been a simultaneous process in this method. Steps of the process have been repetitive, which means there has been a need to gain more information after data collection and during analysis (Creswell, 2008). In this study, collected data have been analyzed by transcribing and translating, reading them for several times, meaning, and interpreting them each time. It has been an inductive process, which have achieved general and broad codes from detailed data. Coding has been an act of drawing concepts out from data and developing them. Categories or themes have been generated through grouping concepts regarding to their properties (Strauss & Corbin, 2008). According to Creswell (2008), procedure has been validated through comparing it with existing...
The study has used computer for analyzing the qualitative data, which means process of saving, organizing, categorizing, coding, and searching has been facilitated by a qualitative computer program. However, it does not analyzed the data. The selected program in this study has been NVivo10, with ability of coding, creating matrices for comparisons and showing categories graphical.

**FINDINGS**

According to the analysis of responds and findings of interviews, the people’s behaviors on the roofs caused creating spatial, socio-cultural, spiritual, economic, recreational and passage, functions of the vernacular roofs. Several factors played a role in creating people’s behaviors on the roofs. They could motivate residents to move to the roofs, prevent doing some activities or vary the neighbors’ behaviors. Generally, climate, economy, religion and culture could affect people’s behaviors on the roofs in the VRB. Climate and culture caused spatial, sociocultural and recreational functions of the roofs. Religious convictions created spiritual functions of the roofs and the economy caused using the roofs as workplaces. As the findings show, the vernacular roofs were built in response to the people’s behaviors. The master builders flattened the roofs in response to this demand (Fig. 6). Moreover, the roofs of the adjacent VRB were separated by a partition wall with around two meters height, in order to provide privacy for residents during the activities on the roofs (Fig. 7). The related quote of E1 is as follows:

“When several households lived in a place, there was not sufficient space for sleeping and relaxation. For this reason, they used the roofs for sleeping and the master builder considered it during roof construction. Therefore, they flattened some parts of the roof. A partition wall around the roof was built for different purposes. Firstly, neighbor’s house was not visible from this roof, or this house was hidden from the others views when the residents of the adjacent house came on the roof.”

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**Figure 6.**
(a) Double surfaces roof technique in the VRB, Akhbari house, Kashan, Iran, (b) The perspective of the double surfaces roof technique  
(Source: Authors, 2012).
Furthermore, for access to the roofs, the staircases were built in the VRB, which all respondents confirmed it (Fig. 8). As MB2 stated, the master builders considered access to the roofs at the beginning of the construction. The design of the staircases varied in each house. Although, the roof staircases provided access due to the residents’ activities on the roofs and for carrying the materials to the upper levels during construction, the entry of strangers was prevented for security issues. According to E4 declaration, some of the VRB had several staircases, while MB4 stated that the inherited houses had shared staircases outside or between them. Except the inherited houses, all staircases were located inside the VRB at corners, in dead spaces, main rooms, open areas or public places. As MB4 mentioned, the least area was allocated for staircase space, thus, they were narrow. The staircases included numerous steps with high risers and narrow treads (MB1, MB3-MB5, E2 and E3). Generally, the people VRB had irrational and improper roof staircases with difficult access, whereas, the rich ones had proper and beautiful staircases (MB3, MB5 and E2). The following quote of E2 has indicated that the staircases in the VRB of rich people were more beautiful and proper:

"...They usually used staircase, which the rich one was regular and comfort and for the poor was irregular. Sometimes the stairs were high and narrow and access was difficult such as Bafandeh house and in some cases, they had beautiful staircases."

The functions related to the people’s behaviors, including spatial, socio-cultural, spiritual, economic, recreational and passage functions gained through interviews, have been described in the following sections.
Figure 8. a. The roof staircase has been located inside the house in corner of a room, b. Curved roof above the staircase space called Kharpsheh
(Source: Author, 2012)
Spatial Function
The vernacular roofs acted as useful and open spaces for the residents' behaviors. In response to the culture of people, master builders flattened some parts of the roofs during the constructions to provide the possibility of people activities on them. The residents used the vernacular roofs as living spaces that have been described as follows:

Roofs as living spaces
Several factors were effective in using the roofs as living spaces by residents. The climatic conditions of Kashan and the hot temperature in the evenings (MB4, E1 and E2), motivated people to move to the roofs and used it as living spaces. Lack of spaces in the small and populous VRB (MB5 and E2), lack of new technologies such as lighting for nights, cooling and heating systems were other effective factors, which encouraged residents to use the roofs as living spaces (MB4 and E1). The effects of wealth on people’s behaviors on the roofs can be detected by this function. According to (E1 and E2) declarations, the rich usually did not use the roofs for doing activities due to the below sufficient spaces and large courtyards.

The residents prepared the roofs for sitting and sleeping at the summer nights by sprinkling the roofs in the evenings to mitigate the temperature, carpeting them and erecting the mosquito nets (MB1-MB4 and E3). They gathered, sat, ate dinner on the roofs and talked to their families or neighbors at nights in the summers. They also held meetings and family parties on the roofs. According to the respondents, sleeping on the roofs, watching the stars and enjoying the cool breeze was an interesting tradition of people in Kashan (MB2-MB4, E1, E4). The quote from MB2 about the living activities of people on the vernacular roofs is as follows:

“In the past, roofs were used for sleeping at night, mosquito nets were erected between two domes… and people slept in them and enjoyed the cool weather at night, the breeze and the stars… Several households lived in the old houses. In the evenings, they carpeted the roofs and sat, …, ate their dinner, used the night breeze and slept there.”

The residents used Kharposhteh spaces as closets to keep the coverlets and beddings (MB4 and MB5). In addition to the partition walls between the neighbors for keeping the privacy of residents on the roofs (MB1, MB2, MB4, MB5, E1 and E2), the domes on the roofs acted as barriers between sleeping people on the roofs and kept their privacy (MB5). Moreover, as MB3 stated, the roofs were used as storages. Furthermore, the roofs in the VRB were used for sun drying purposes. People could dry their washed clothes, carpet, fruits, vegetables and products by using the direct sunlight on the roofs. Following quote from E1 has shown these activities:

“Roofs were places for hanging clothes and drying them and the residents tied rope over the roofs for hanging washed clothes… In the past, after washing vegetation, residents dried them on the roofs… Generally, they used the roofs for more sunlight utilization. The roofs were vast and captured daylight more than courtyards. Hence, they were used for drying different things such as skin of pomegranate and eggplant pickle.”

According to MB4 statement, some residents used the sunlight of winter at noon on the roofs during the physical activities, for heating and health benefits. Using the sunlight and cool weather of nights on the roofs was one of the energy efficient approaches in the VRB.
Sociocultural Function
The limited presence of women in the society (E1), close relationships between neighbors and members of families, were some factors that caused emerging various activities on the roofs. According to the culture, neighbors’ communication was the considerable behavior of people on the roofs in Kashan. Moreover, as E3 during the interviews stated, the roofs were good places for some private activities such as lovers’ dates. According to E1 statement, Persian-Room was a small space on the roofs that some residents built for some private meetings. The following behaviors indicate the friendly relationships between people in the past neighborhoods.

Roofs as neighbors’ interaction centers
The roofs in the VRB provided the possibility of neighbors’ communication (MB1, MB2, MB4 and E1-E2) and watching the neighborhood happenings (MB1-MB4 and E3). The neighbors met each other and spent their time on the roofs, especially in the summer evenings or at nights. Furthermore, the roofs were places for informing news to each other, when something was lost or found, and for political issues and chanting (MB2). Mainly, women, who had limited social activities, used the roofs more than men did. They gathered and watched the neighborhood happenings such as the wedding, ceremonies or funeral on the roofs and communicated with the neighbors (MB4, E1 and E2). The following quote from E1 indicates this behavior on the vernacular roofs:

“Generally, women had not any activity in the society and were not permitted to go outside the home or participate in some ceremonies. The roofs were the only places that women could use it for watching rituals, ceremonies, and wedding. They were free there. Hence, women had to go to the roofs for watching the city happenings.”

These activities changed the roofs to the interaction centers in the neighborhoods. Obviously, it shows the people’s friendships and their socializing tendency.

Economic Function
People did some economic activities on the roofs and used them as workplaces. The following quote from MB4 is about the economic activities on the roofs.

“... The people’s behaviors depended to the economical workshop activities in the houses. Therefore, they used the roofs for doing part of their work.”

These behaviors have been described in the following section.

Roofs as workplaces
Occupation of the residents was an effective factor for differing types of activities performed on the roofs. Some residents regarding to their occupation, used the vernacular roofs as workplaces, worked on the roofs, and prepared their products. Dyers, weavers, and farmers used the roofs for drying their products by using sunlight and prepared them for sale. Farmers dried their products on the roofs and produced dried fruits (MB3, E1, and E4). Dyers laid and dried the dyed yarns on the roofs (MB4, E1 and E2). Moreover, panegyrists used the roofs as pulpits for making speak and calling to prayer at dawns during the Ramadan months and earned money through the neighbors (E1). Furthermore, weavers, weaved, dried, and prepared their products on the roofs (MB3, MB4 and E3). Therefore, the roofs served the residents as workplaces.

Spiritual Function
The religious convictions of people in Kashan were an effective factor in emerging some spiritual behaviors on the roofs such as the call to prayer and worship. The roofs provided intangible and
spiritual benefits for the residents. Some residents performed timely Azan on the roofs to inform the time of prayer to the neighbors due to the lack of the timepieces (MB2-MB4 and E1). Likewise, when a neighbor faced to a problem or a woman was in her hard labor time, they performed untimely Azan to inform the others to pray for him or her (MB1, MB2 and MB4). They also played timpani on the roof to request praying (MB4). Some residents called to prayer and invocated at dawns in Ramadan months on the roofs (MB4 and E1). Generally, women and older people used the roofs for listening or watching the ritual and religious ceremonies (MB2 and E1). Furthermore, the residents sent a panegyrist to the roof, when a group of people was going to the pilgrimage trip, in order to inform the neighbors. Then, people went to the roofs, gathered, listened, watched and wished a good trip for them (MB2). Therefore, the roofs in VRB were in response to the religious demands of the people in Kashan. These activities indicate that the neighbors were united and informed the religious traditions to each other. They intended to take advantage of spiritual activities collectively.

Recreational Function
In addition to the aforementioned activities, the roofs in the VRB offered open spaces for entertainment and children playing (MB4 and E3). However, MB4 mentioned that the vernacular roofs were rather dangerous for children due to the lack of safety and safeguards at the edge of the roofs. Hence, they could play during their parent assembly on the roofs and under their supervisions. The hobby of some people in Kashan was keeping and flying domestic pigeons (MB1-MB5 and E1-E4). Pigeon fanciers kept, bred and flew them on the roofs. Sometime, they held matches between pigeons on the roofs (MB4). They built a space on the roofs, called it Ganjeh to keep and bred their pigeons (MB1, MB2, MB4 and E1-E4). Moreover, they gathered there to fly them and enjoy their aerial performance. It was a joyful entertainment for them, although their activities bothered the neighbors due to their prying (MB4). Hence, the people of Kashan recognized the roofs as places for restoration and relaxation.

Passage Function
According to the statements of MB3 and MB4, the levels of the roofs in the VRB of Kashan were aligned, which means the roof of a house was as level as the adjacent roofs and were connected. In some cases, they were separated by a partition wall with up to nearly 2 meters height to keep the privacy of the residents and neighbors, and provide the comfort of occupants during their physical activities on the roofs (MB1, MB2, MB4, MB5 and E1-E3). The aligned roof concept was, according to the principles of Iranian vernacular architecture. It shows the culture of the same respect for all human beings and every household dignity, whether rich or poor (MB4). As the MB4 quote indicates, aligned roofs also provided privacy of residents.

“…all the roofs of the houses were built at the same level,… Indeed, the aligned roofs caused keeping the privacy and security of the house.”

Furthermore, this approach provided passing across the roofs (Fig. 9). The residents could walk on the roofs and reach to the other neighborhood (MB2, MB3, E1 and E4). However, MB3 stated that in some cases, it was difficult to pass across the rooftops due to the domes on the roofs or partition walls between the VRB. Passing across the roofs caused erosion of the final layer of roofs and necessitated maintenance and re-covering every 2-3 years (MB2, MB4 and E1).
Although the vernacular roofs were not costly (MB1-MB5 and E1-E4), the interviewees have confirmed that the vernacular roofing, and people’s behaviors on the roofs have been neglected in the contemporary residential buildings (CRB). The roofs have been changed thoroughly compared to the vernacular roofs. The principles of Iranian architecture have been disappeared in the new roofs (MB3). The roofs have become a place for keeping antenna, installation and chiller equipment and are used as storages (MB3, E1 and E3). The final layer of the roofing has been replaced with the cement or isolated layers, which both are improper materials and weak in hot temperature. Isolated layer is penetrable, absorbs heat during the day, and releases it at night, which increases ambience temperature (MB2, MB4 and E1). The partition walls between the neighbors have been disappeared, hence, the roofs do not provide privacy for the residents (E2). Subsequently, the people’s behaviors have been disappeared on the roofs (MB2-MB4 and E1), although, E2 and E4 stated that some residents in Kashan or in small cities still use the roofs in the evening and sleep on them.

**Interrelating Themes**

The obtained themes have been interrelated and generated a conceptual model, which have been shown as a visual model in figure 10. The functions of the vernacular roofs caused creating roofing strategies and consequently, benefited the residents. As the model has shown, climate, religion, culture, and economy affected the people’s behaviors on the roofs and caused creating spatial, sociocultural, economic, recreational, spiritual, and passage functions of the roofs. In response to these functions, particular roofing strategies emerged, including aligned and connected roof, flat and double surface roof, staircase, partition walls around the roof, spaces such as *Kharposhteh*, cage and small space on the roofs. Consequently, the vernacular roofs were in response to the people’s behaviors, improved physical and mental health, offered spiritual and intangible benefits.
Conclusion

The vernacular roofs in Iran served more than protective functions and were in response to the people’s behaviors. The case study has investigated the people’s behaviors on the roofs of the VRB through conducting semi-structured interviews with local master builders and experts. The results show that climate, economy, religion and culture affected people’s behaviors on the roofs in the VRB. The roofs functions regarding the people’s behaviors included spatial, socio-cultural, spiritual, economic, recreational and passage functions. The residents used the vernacular roofs as living spaces and did some physical activities. People used the sunlight on the roofs for drying purposes or heating and health benefits. Additionally, the vernacular roofs were used as workplaces by panegyrist, farmers or weavers. Some people, who were pigeon fanciers, used the roofs as recreational spaces. Furthermore, the vernacular roofs acted as passages for access to the other neighborhoods. The aforementioned functions demonstrate that the occupants knew the roofs as main spaces in the buildings and used them regarding their demands; likewise, the roofs provided security and privacy of the residents. The vernacular roofs were also neighbors’ interaction centers and worship spaces. The functions related to the people’s behaviors, indicate the friendly relationships and communication between the family members and neighbors. It shows that people had small integrated and healthy society in the neighborhoods. The vernacular roof functions that have been neglected recently can be adapted for the CRB according to the new lifestyle. Hence, the study recommends professionals consider people’s demands and behaviors during roofing in order to use all the potential of the roofs in the CRB. Choosing appropriate roofing materials, keeping the privacy and security of residents and considering climate, culture, religion, and economy of people would assist in improving the roofs functions in the CRB. Therefore, the further research is needed to investigate the new lifestyle, culture and demands of residents in order to provide the people’s behavioral responsive roofs.

Figure 10. Conceptual model generated by interrelating themes
(Source: author, 2013)
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OBSERVING PRIVACY, MODESTY AND HOSPITALITY IN THE HOME DOMAIN: Three Case Studies of Muslim Homes in Brisbane, Australia

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Abstract
A home embodies a sensorial space that is layered with personal memories and traces of history. The success of a home in providing a strong sense of place depends on various factors such as geographical location, climatic conditions, and occupants’ world-views and perceptions. This paper explores Muslims’ perceptions of privacy, modesty and hospitality within their homes through their lived experiences. This case study focuses on three Muslim families living in Australian designed homes within the same suburb of Brisbane, Australia. The study provides prefatory insight into the ways in which these families perform their daily activities and entertain their guests without jeopardizing their privacy needs. The study examines the significance of modesty in the design of Muslim homes as a means by which family members are able to achieve optimum privacy while simultaneously extending hospitality to guests inside and outside their homes. The findings of this study provide opportunities too, for expanding research into culturally adaptable housing systems to help meet the changing needs of Australian multicultural society.

Keywords: Home; Islam; Privacy; Modesty; Hospitality.

INTRODUCTION
A home - or sakan (in Arabic) or rumah (in Malay) - is an unparalleled base for human settlement (Heathcote, 2012; Rybczynski, 1987) that conveys “a complex multi-layered conditions that integrates” symbolic expressions and messages (Shirazi, 2011; Malkawi and Al-Qudah, 2003). An individual’s arrangements and sense of interior spaces within a home are known to be affected by several factors such as religion and culture (Guzman, 2007; Rapoport, 2005; Theano, 1995). Religious and cultural values provide significant effects the structures of families and their domestic behaviors and the use of their interior spaces. Traditional Muslim families concentrate on adhering to Islamic religious teachings that vary considerably from those normally associated with Western society (Belk and Sobh, 2011). These teachings require that a home fulfills three essential needs, including: (a) privacy - a secure and private sanctuary for family, (b) modesty - spaces to perform religious and spiritual activities through frugality and design humility, and (c) hospitality - a place to strengthen relationship with neighbors and society.

a) Privacy
Privacy is regarded as being of paramount importance in the design of Muslim homes (Lockerbie, 2014) and is largely determined by Islamic teachings and traditions from two main sources: a) Al-Quran - the revelations of Allah (God) to Prophet Muhammad; and b) sunnah - the utterances and actions of Prophet Muhammad (Hamid, 2010; Mortada, 2005; Hallak, 2000). Bahammam (1987) suggests that privacy in traditional Muslim homes, especially in the Middle East, is explicitly followed according to these teachings and involves three distinct layers of privacy. These include: a) privacy between outsiders and neighbors, b) privacy between male and female, and c) privacy between family members and relatives inside a home (see Figure 1) (Bahammam, 1987). These layers of privacy are achieved through the visual, acoustical and olfactory privacies (Sobh and Belk, 2011; Mortada, 2005; Hallak, 2000).
In the Middle East, the use of lattice screens or *mashrabiya* and courtyards are considered to be the popular options in maintaining optimum visual privacy for the owners from outsiders (Belk and Sobh, 2011; Belk and Sobh, 2009; Bahammam, 1987). Thick walls and high windows in some parts of external and bedroom walls provide optimum acoustical privacy for the dwellers neighbours externally and from adjacent rooms internally (Mortada, 2005; Bahammam, 1987). These architectural designs and features not only satisfy Islamic privacy requirements, but are energy-efficient design features that create a comfortable home environment despite the extreme climate conditions outside (St. Clair, 2009). In addition, Sobh and Belk (2011) claim that non-visual privacy such as 'good smell' can play an important role in controlling the contamination of hospitality spaces by olfaction produced within the home. In consideration of these privacy patterns examples, Mortada (2005) argues that optimum privacy in an Islamic traditional home entails a gender segregation system that preserves women's safety from any *non-muhrim* (not blood-related) males (Belk and Sobh, 2011). However, gendered space is interpreted differently in other Islamic countries of different cultural backgrounds such as Malaysia, Iran and Yemen, where most contemporary and affordable homes are in the form of terrace-housing and apartments (Hashim and Rahim, 2008).

b) Modesty

In Islam, the act of modesty (*haya* in Arabic), refers to a demeanor or an attitude of shyness, politeness, humility and moderation (Chen et al., 2009; Boulanouar, 2006) and is considered to be a part of one’s faith (Hussain, 2012). The first act of modesty in Islam is represented in the form of praying to Allah (Hussain, 2012). Humbly prostrating on the ground, it symbolizes Muslims’ recognition of Allah in seeking constant guidance and support (Hussain, 2012; Mohammad Akram, 2004). Five prayers are undertaken each day in order to remind Muslims on the importance of Islamic virtues such as modesty, and put them into practice (Mohammad Akram, 2004). Muslims are reminded to possess outer (physical) and inner modesty based on the teachings in Al-Quran and *sunnahs* (Boulanouar, 2006; Mortada, 2005). The need for being modest is common to many traditions, cultures and religions, but Western society in the 21st century mostly considers Islamic modesty in terms of physical dress codes alone (such as veiling) (Sobh et al., 2012). Physical Islamic modesty is concerned with the covering of intimate parts of a body or *awrah* (Boulanouar, 2006) to protect women and men from *non-muhrims* from
any indecent gestures that may lead to prohibited sexual encounters or abuses (Ali, 2013; Sayeed, 2013; Vahaji and Hadiyanni, 2009).

Another physical Islamic modesty can be represented in the form of design humility on buildings (Mortada, 2005). Mortada (2005) highlights the importance of humility in the appearance of the house and interior spaces of a Muslim home. Profligacy in home design is not recommended in Islam. However, a Muslim home can maintain its elegance and beauty through minimal design and fastidious furniture arrangements (Mortada, 2005). The traditional Malay houses in Malaysia are constructed using locally available materials (Lim, 1987). Coconut leaves or palm leaves (nipah) are excellent waterproofing materials for roof structure while floral engraved timber walls and panels as nomenclature of Islamic design motifs (Kamaruddin and Said, 2011; Lim, 1987). A Muslim’s home is also a place to perform and practice religious activities such as prayers, reciting of Quran or even families’ funeral services (Omer, 2010). The flexibility of performing the prayers at home individually, with families and friends highlights the importance of the provision of internal modesty spaces for these activities.

Possessing inner modesty in the form of positive internal perceptions such as self-improvement or self-motivation (Ahmad, 2009) is encouraged. Offering a helping hand to neighbors in need, avoiding negative thoughts such as jealousy, suspicious and distrust are some of the examples (Mortada, 2005). Modesty demonstrates a close connection between privacy and modesty within Muslim home (Mortada, 2005), signifying that a person is moderate, humble and in control of his/her life while ensuring that he/she intact with the society and environment (Sobh et al., 2012; Fay, 2010).

c) Hospitality
Receiving guests is a significant domestic etiquette in Islamic hospitality teachings. Hospitality can be defined as a constitutional acceptance or receptiveness to the other (Derrida, 2005; Kuokkanen, 2003). It is conceived to be closely associated with acting compassionately towards strangers and sharing with others (Sobh and Belk, 2011; Derrida and Dufourmantelle, 2000). Like privacy and modesty, hospitality too has a substantial impact upon the designs and layouts of Muslim home worldwide. In traditional Middle Eastern homes (Sobh and Belk, 2011), for example, men play an important role in entertaining guests in the public domain of the house, called majlis. This is the only section of the house that is accessible directly from the main entrance. The majlis represents the masculinity and honor of a Muslim host (Sobh and Belk, 2011). Another important purpose of majlis is the provision of a space where young male members can be introduced to guests and participate in discussion of current affairs and debates with adult men, while being carefully observed by their male parents (Lockerbie, 2014). Women, on the other hand, control most of the interior spaces (Sobh and Belk, 2011; Wynn, 2007) and socialize in the salon (female formal space), with all food preparation being done in the kitchen area (Wynn, 2007).

Contrary to traditional home-based hospitality in the Middle East, traditional Muslim homes in South East Asia such as Malaysia, embrace community intimacy (inter-relationship) over family privacy (intra-relationship) (Hashim et al., 2009; Vlatseas, 1990; Lim, 1987) despite having similar design patterns that enable hospitality to be extended to others within homes in the Middle East. It is common to find a spacious guest reception area (men's area) or serambi at the front section of a traditional Malay house (Wan Hashim and Nasir, 2011; Hashim et al., 2009; Lim, 1987), which is similar in function to men’s majlis. Key social activities such as guest entertainment, meetings, discussions and salat jamaah (congregational prayers) take place in this area (Lim, 1987). Women socialise in a selang (transition space), located between the serambi and rumah tengah (middle room or dining area) while all food preparation is done in dapur (kitchen) (Wan Hashim and Nasir, 2011; Hashim et al., 2009). However, enforced segregation is not an absolute requirement in traditional Malay homes. Women assist in handing
out food to guests intermittently but retreat back to their own spaces and continue their activities (Lim, 1987).

Islamic teachings on privacy, modesty and hospitality have their own complex natures, which are often misconceived by non-Muslims (Sobh et al., 2012; Sobh and Belk, 2011; Hallak, 2000; Bahammam, 1987). These teachings strongly shape their activities, behaviors and the use of space. Furthermore, Muslims come from different parts of the world and have their own cultural traditions with regards to home privacy, modesty and hospitality. Muslims in Australia come from more than seventy countries and they bring along their cultural and religious traditions with them when they settle in the country. The complexity is further compounded by the circumstances that most homes built in Australia follow regional climatic conditions, Australian architectural styles, movements and building codes, not the traditional Islamic privacy, modesty and hospitality values. Houses in Queensland, especially, are designed to follow the extroverted lifestyle in a sub-tropical climate, in comparison to the introverted lifestyle of the typical traditional Middle East Muslim homes. The main purpose of this paper is to observe and examine the ways in which three Muslim families in Brisbane, the capital city of Queensland, perceive and achieve privacy, modesty and hospitality within their Australian-designed homes as well as the influence of their different Islamic cultural backgrounds on their use of interior spaces and domestic behaviors.

**METHODOLOGY**

The data were gathered from three case studies of Muslim households within a single suburb of Brisbane and derived from face-to-face semi-structured interviews (lasting between 90 to 120 minutes) using semi-structured questions, participant observation and photographs of their homes. Observation was also used to obtain data related to participants’ behaviors within their daily domestic settings. Participants were recruited through Islamic organizations in Brisbane. All participants are married and aged between 40 and 60 years. Two of the participants are Australian citizens while one is an Australian born Muslim. Pseudonyms are used to ensure anonymity and confidentiality of all information gathered from individuals.

**CASE STUDIES**

All individuals are currently owner occupiers or renters of detached homes. A summary of demographic characteristics of householders is shown in Table 1.

Table 1: Summary of the three case studies.

<table>
<thead>
<tr>
<th>CASE STUDY</th>
<th>GENDER</th>
<th>TENURE STATUS</th>
<th>HOUSE TYPE</th>
<th>NO. OF CHILDREN</th>
<th>NO. OF HOUSEHOLD AT HOME</th>
<th>ETHNIC BACKGROUND</th>
<th>YEARS IN AUSTRALIA</th>
</tr>
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<td>Female</td>
<td>Owner</td>
<td>Detached 1-storey</td>
<td>-</td>
<td>2</td>
<td>Indian/Pakistan</td>
<td>5th Generation Australian</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>Owner</td>
<td>Detached 2-storey</td>
<td>3</td>
<td>2</td>
<td>Egyptian</td>
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<tr>
<td>3</td>
<td>Male</td>
<td>Renter</td>
<td>Detached 2-storey</td>
<td>1</td>
<td>3</td>
<td>Palestinian</td>
<td>27</td>
</tr>
</tbody>
</table>

**Case Study 1**

**Description**

Aishah is married and is a fifth-generation Australian Muslim. Aishah purchased and lives in a home built by an Australian builder. She purchased her new five-bedroom detached home because of work commitments and moved in without design changes except for new floor carpeting. Although Aishah and her husband, Aziz, do not have any children, they receive regular
visits from their relatives. Aishah is highly involved with Islamic organizations and often, some of the committee meetings of all of these organizations are held at her home. In consideration to this, Aishah converted her lounge into a meeting/discussion room as shown in Figure 2. Another room is dedicated to being a namaz (prayer) room where it is big enough to perform salat jamaah, if required. Other spaces include a double carport, a large patio, open living/dining concept and a swimming pool at the back of the house (Figure 2).

![Figure 2: Floor plan of Aishah's home (Source: Author).](image)

**Case Study 2**

**Description**

The two-level corner lot brickwork detached home that Amina owns was built by an Australian builder. However, several changes were made to the floor plans during the early construction phase to suit her family’s privacy needs based on her wish to comply with Islamic teachings and to gain better views of the surroundings from the rooms. The six-bedroom home (Figure 3) was originally designed to accommodate Amina, her husband (Ali) and their children. However, only Amina and Ali currently live in their home because all their children are now married and live in their own homes.
Case Study 3
Description
Built by a Muslim architect/builder, the two-story detached home that Ahmet is currently renting was designed to meet some requirements of privacy according to Muslim teachings. Ahmet is married with Sofia and has a son Jalil, who is 15 years of age. There are two sets of staircases that lead up to two separate wings on the first floor and these two wings are separated by a balcony that spans across the width of the house (see Figure 4). A third staircase from the kitchen leads down to a granny flat on the lower split level of the house with its own kitchenette and ensuite (Figure 4). Ahmet is currently building his new home designed and to be built by a Muslim architect to suit his family’s privacy needs. This new home will allow for future expansion should he require more space.
RESULTS
All participants perceived their participation in this research as a great contribution to Islamic domestic architectural design research and the use of the interior spaces, as well as part of cross-cultural social study in Australia. The following results discuss on the three main Islamic fundamental requirements (privacy, modesty and hospitality) from each case study through their lived experience within their homes:

Case Study 1
Privacy
Aishah perceives her home as a private and safe haven for herself and her family. She is content with the levels of privacy and security of her current home. The front fence (Figure 5) was already built by the previous owner and it provides Aishah and her family an optimum visual privacy while they are within their territorial boundary:

I like to think that my home is my castle. And it’s private and I can do whatever in my home and I have no problems with how I dress in my home or anything like that.

Aishah is grateful that most of the landscaping works, especially around the backyard and the pool area (Figure 5), were already complete when she moved in, ensuring visual and acoustic privacies are maintained while the pool is in use:

I like the fact that whole pool area is private. You can go for a swim and no neighbors are looking in. The neighbors on the left are below us, so they can’t see in. The ones on right side are above and that’s their backyards.

Aishah however does not practice using traditional incense such as agarwood or agrabati as non-visual privacy device for her home but prefers using fresh flowers and plants instead:
I don’t like the smell of it. My brother brought it back once and he put it on and that can be a little overpowering. I’ll have flowers and all sorts of things to refresh my home instead.

Figure 5: Aishah’s front fence and backyard pool area (Source: Author).

**Modesty**

In response to dress code, Aishah perceives it as cultural traditions on how men and women cover themselves:

> I’m not into wearing abaya (a one-piece black loose robe-like garment). I don’t wanna own one. I understand the people that wear them because of cultural and climatic backgrounds but I also understand that some wear it because of convenience.

Aishah stresses that the dress code is a personal option and it is up one to what extent she/he would cover:

> I have the problem with enforcing covering. If you want to cover, that’s fine but don’t tell me that I have to. That’s what I have the problem with. I would wear the same clothes here at home as what they would see me in the shopping mall. I wouldn’t overly cover and I wouldn’t under cover.

Modesty is perceived by Aishah more than just physical dress code but through inner modesty quality and humble about the design of her home. Aishah believes on the importance of appreciating on all the things she has rather than wanting things that are unaffordable:

> I’m not jealous with what the neighbors have because I really don’t. I lived in my previous home for nine years. It was a little wooden house and I thought it was the most beautiful thing in this world. And I loved it! I cried the day I left my house. We sold it as it was the right time to sell. I’m not one of those who want something that is beyond budget. I’m always thankful to Allah that we have a house. I’m contented with what I have and with the luck that gives me next time, I’ll appreciate that too.

Aishah converted one of the rooms adjacent to the kitchen (Figure 2) into a dedicated prayer (namaz) room for any guests and families to perform both individual and small congregational (jamaah) prayers:

> Well, actually we have a separate room now for the namaz (prayer) room. All the Islamic items are in there; all guests’ caps and hijabs can be stored in there, and prayer mats too. I’ll get bookshelf to put all the Islamic books and Quran soon. I have a lot of Islamic books, so that’s my next mission.

**Hospitality**

Practicing gender segregation while receiving and entertaining guests has become a tradition in many Muslim homes across the globe. However, Aishah has a different opinion with regards to this. As a fifth generation of Australian born Muslim, Aishah does not believe on gender...
segregation in her home or even in any functions. However, she highlights that men and women would naturally segregate according to the genders to discuss topics of similar interests:

I don’t believe in segregation. I think it’s atrocious. Sometimes when we do have a function, I may sit with my husband but that does not mean the person sitting next to us have to be of same gender. We don’t have an issue with that. You know, if you go to some Australian functions or parties, you’ll sometimes see one corner with all the women and one corner, all the men. So they’ll just naturally progress to that segregation. I don’t have a problem with naturally progressing to segregation; I have a problem with enforced segregation.

The open living and dining in Aishah’s home (Figure 6) allows all her family members and guests to socialize and naturally segregate to different spaces if required.

Case Study 2
Privacy
Amina is satisfied with the availability of both front and back yards that provide her with optimum setbacks as visual privacy for her family. However, she feels that more could have been utilized with the front yard to its full purpose:

What I would like is having my front home with verandah. It reminds me with my home back home where every house has verandah. People will sit in the afternoon on the verandah. This house doesn’t have front verandah, backyard patio. I’d love to sit outside to watch people pass by.

Amina repented changing the original floor plans of the house (Figure 3) in hope to gain more privacy and better views for living room and upper bedrooms. Some of the rooms from the original design were mirrored (e.g. kitchen and living/dining rooms) with the addition of bay windows during construction phase, while the staircase was rotated at 45° angle to achieve some visual privacy from the entrance lobby:

I regret reversing the floor plan. I have this living room facing the road just to have the nice view because originally, we had this on the other side, looking at the retaining wall. But actually, it is very hot in here in the afternoon as well as my master bedroom upstairs. I didn’t consider that. We thought that it was going give us beautiful views of surroundings but most of the time, we close our windows because of the afternoon sun.

Amina uses incense inside her home prior to receiving guests as part of achieving non-visual privacy and ensuring the guests are comfortable during their time in her home:

Yes we do use the incense. And normally, we make sure that the bed is covered and we will not allow someone to go to our bathroom unless we inspected it while we have guests. And make sure the house smells nice and if I have time to prepare some food.
Modesty
With regards to modesty behaviors upon entering her home, Amina is relaxed about the custom of removing off shoes among guests:

_Some people take off their shoes before entering the house. Some people think it is offensive not to take their shoes off. We don't bother because we have pray mats and we put it on the floor before pray; so we are not too strict. So, people usually automatically just take their shoes off._

When asked about the effects of cross-culture between Australian culture and Islamic teachings to the attitudes on humility in design within her home, Amina responded that she leans towards her cultural and religious backgrounds although not eliminating the importance on Australian cultural and modesty values:

_Well, I am more leaning towards Egyptian and Islamic teachings, then Australian culture, but you can see my house is more Australian._

Amina is also concerned with the uniformity of the neighborhood building facades and the choices of colors and materials used on buildings in Brisbane:

_I like modern brick houses and I like the Queenslander home too but I don't like timber Colonial and bungalow homes with lattice screens; it looks like a cage. I like the idea of having the whole town of white houses. In Dubai, it's all of creamish color and in Oman, it's all white; I love it! I don't like people experimenting on colors and conflicting with other people's home. Back then, the whole suburb have all similar houses but here lately, there are orange and then green, it shocks the eye!_

There is a dedicated prayer room for guests located adjacent to the front living area and the staircase (Figure 3). The researcher used this room to perform _Dhuhr_ (midday) prayer after the interview session.

Hospitality
The back patio (Figure 3) of Amina's home is used from time to time to entertain her family and guests especially during festive seasons such as _Eid Al Fitri_:

_We have an outdoor space for barbecue and entertaining guests. My husband put this on when he was not sick. He assembled it himself. I didn't like it but it works (laugh). It is very warm in winter and breezy in summer._

Amina explained that her family's hospitality activities are not as frequent as compared to past years because of several family reasons. Although working full time, Amina nurses her husband, Ali, who recently undergone a medical procedure:

_I used to entertain a lot when with my son was still alive; at least 5-6 families. We were rotating the place to come. My husband is now sick. He's hardly able to move and at home all the time. He would have to go to the hospital three times a week to do the dialysis but other than that, he's at home. He doesn't drive anymore. I'll drive him to the hospital and back._

The front office is now converted as Ali's resting room (Figure 3) since he is incapable of walking up the stairs anymore. Their home is currently normally visited by her family and close friends only. Their children and grandchildren take turn looking after Ali and keep him entertained during his recovery.

Case Study 3
Privacy
Ahmet and his family are very satisfied with their current Australian designed home. However, he feels slightly introverted inside the home (Figure 4) and prefers an extroverted concept living while being able to control privacy:
One thing that I don’t like about this house is that I can’t see outside; it’s not open living. I love open living. This house is very much enclosed. However, I like the fact that it meets our requirements for privacy, especially in the case of the separation between male members and female members.

A safe environment and good neighbors was found to be a very important criteria when Ahmet chose a home to live in. He feels safe within his current home and the surrounding neighborhood. He maintains close relationship with his neighbors and often helps them when required:

*Family safety is very obviously important. The suburb itself is safe. We had one of our neighbours looking after our house and fed our cats when we were away. When they go overseas, we look after theirs, so there is a neighbourhood spirit. But safety is very important. Our children can go and play on the street outside safely.*

Apart from visual and acoustical privacy, Ahmet practices the use of incense (*oud* or *agarwood*) or incense sticks (*agrabati*) as non-visual privacy to ensure that guests are maintained at comfortable level while Ahmet and his family are preparing food for them:

*We use the incense. In fact we had one this morning. There are two types of incense; one is the stick incense which is more intense and the other one is the oud. Obviously it is not used in every house simply because people have no access to purchase it. Since I go for Hajj in Mecca almost every year, I buy some and bring them home. We use it before the guests come, so they are comfortable; that sign of welcoming.*

**Modesty**

Modesty is of high value in Ahmet’s home. For example, the act removing off shoes at the entrance door prior to entering his home is practiced. Removing off shoes is a cultural modesty tradition of many countries across the globe. Many cultures consider it as practical, polite and hygienic way of entering someone’s home while some cultures use it for spiritual reasons:

*There is at front a sign at front that says “Please take your shoes off”. And people usually do that. But we find even non-Muslims, workmen or whoever, they understand. Unless my father in law, who is unwell. It is difficult for him to take the shoes off, so there’s no issue there, he can walk in with his shoes.*

Answering the door prior to receiving guests and strangers is the first act of modesty every home. It is an act of controlling visual exposure to any guests and strangers if family members need some extra time to get ready to receive them. In Islamic traditions, it can be a good gesture that female members of the family need to cover themselves prior to receiving guests:

*No, I won’t open the door straight away. If it’s a male visitor or handyman coming to fix the door, then I’ll inform my wife. She will go upstairs to put the hijab on. When strangers are not here, she can put the hijab back off. So yes, that’s how it works. But, in Islamic way too; Muslim ladies outside generally do not want to be received by a man (host). Then, I will call my wide; she will come and greet her, you know, instead of by me. Some of them are stricter than others, but to make them feel comfortable, my wife will answer it. But if she’s a non-Muslim lady then there is no problem of who answers the door.*

With regards to design humility, Ahmet believes that his home should respect the Australian culture and Australian house styles externally but the internal layouts can fit to individual’s needs:

*Within our house, to an extent, Australian culture has an impact. Well, obviously it has a tremendous impact because the designs of houses here are meant to suit the typical Australian family and they are not particularly designed to suit any particular minority community. They are meant to suit the mainstream society. That is an aspect of Australian culture where you have no control unless you build your own house.*
A guest prayer room is located on the first floor of Ahmet’s home, and this room also acts as the men’s area or majlis (Figure 4). The majlis is equipped with two toilets for convenience of ablution or cleansing prior to prayers, as seen in Figure 4.

**Hospitality**

Ahmet expressed the importance of having a spacious backyard patio for his family to entertain guests and engage in family activities (Figure 7). This is necessary to ensure that there is enough entertaining space for overflow guests, especially during festive seasons such as Eid Day or during fasting month of Ramadan:

> We do have a small backyard patio, not enough for play but for a barbecue. Usually, if a family turns up with children, the men and the children would sit outside; it is a nice area. The women have the freedom here to take their hijabs off and walk around without them.

The concept of ummah (unity or brotherhood) has always been an important value in Ahmet’s life. Ahmet converted one of his the first floor rooms as majlis (Figures 4 and 8) and utilizes the majority of the ground floor area (kitchen and living) as women’s area (salon) when there are guests to entertain. However, when families and close relatives are visiting, they are free to socialize freely without any segregation of genders.

> Men, when they first arrive with female members of family, will go straight to the majlis upstairs. The ladies will go inside; they have the luxury of the house. I know a few houses use the garage as men’s majlis. Luckily we don’t have to do that. I have a dedicated men’s majlis upstairs.

There is still an exception whereas some female members may still wear the hijab if there are male relatives who are not members of the immediate family.
Ahmet often receives visitors from overseas and uses his granny flat (Figure 4) as a place for them to stay during their period of time in Brisbane:

*I do have visitors from overseas, we’ll have 4-5 times a year. You want to make them comfortable, so they’ll stay here with their own ensuite, kitchen and living area in the granny flat.*

**DISCUSSION**

This study provides insight into commonalities, similarities and differences in observance of the three principles of privacy, modesty and hospitality within the home among the three Muslim families in Brisbane.

**Commonalities**

This study identifies some commonalities among the three homes with regards to observance of privacy, modesty, hospitality and the use of spaces within participants’ domestic domains. Despite coming from different ethnic backgrounds, all participants perceive their homes to be a safe haven for themselves and their families; a place to relax and unwind from the daily chores at work. All agree that privacy, in general, is a basic human right and is very important in a home regardless of their cultures, religions, socio-economic status or even the size and property value of the house in which they live.

Regarding modesty spaces, each case study highlights the importance of a transition space between public spaces and guest spaces to allow hosts to dress appropriately (not restricted to hijabs only) when answering the door, for guests to remove their shoes or umbrellas or even as a guest waiting space prior to guests being received into the home by the host. In addition, participants highlighted the importance of modesty spaces for religious activities such as a prayer room for families and guests, as well as availability of a room where female guests can hang or store their hijabs and veils (when removal of them is permitted). Every toilet in each home was observed to have a *shattaf*, an Islamic handheld bidet hose, in line with Islamic hygienical jurisprudence and toilet etiquette.

**Similarities**

Similarities were observed among the three homes with respect to adherence to the Islamic principles of privacy, modesty and hospitality. These include visual and acoustical privacies as well as family safety. All of the homes were built according to Australia’s National Construction Codes (Australian Building Codes Board, 2014 and Brisbane City Council’s House Code (Brisbane City Council, 2000). Building requirements according to these codes as well as other local guidelines enable visual and acoustical privacy requirements to be achieved. All participants expressed that their privacy is not violated and that they are able to engage with their daily activities and interact with their families, friends and neighbors.
Layers of privacy as described by Bahammam (1987) were found to be relevant to Amina’s and Ahmet’s homes. By contrast, these layers of privacy between genders are not strictly enforced in Aishah’s home. The findings from the three cases suggest the importance of the location of bedrooms, especially master bedrooms, to ensure that privacy is maintained while entertaining guests in the house. Ideally, bedrooms should be designed and located away from main living or dining areas for visual and acoustical privacy. In the case of Aishah, for example, the house was designed in a way that situated her master bedroom next to entrance lobby, giving Aishah minimal visual and acoustical privacy. Minor design modifications, such as changing the direction of door openings and the addition of partition walls, would greatly enhance visual privacy to this room. However, these modifications require due consideration of climatic factors. In the case of Amina, her own design changes produced some negative impacts to the usability of some rooms. These are some of the aspects that builders, architects and designers need to take into consideration in the future, when designing homes for Muslims (Briscoe, 2013). In order to fully understand the ways in which Muslims in Australia perceive and achieve privacy in their homes, further research attention needs to be directed to different forms of housing such as apartment units, terraced houses and council housing. These types of housing offer less control of privacy within the home domain and research of this kind has the potential to furnish a more comprehensive understanding of the methods used to achieve privacy within the home by Muslims living in Australia. Research that considers the perceptions of both home dwellers’ and designers’ points of view could enrich the findings by considering the perspectives of each of these groups.

In discussion about humility in design, all participants favored frugal home design approaches to avoid the squandering of resources on excessive decorations. Aishah is satisfied with her current home and appreciates simplicity in the façade areas of the home. Amina is in favor of uniformity of the façades within a neighborhood or suburb. In her opinion, this serves to convey a unique and strong character of a neighborhood or suburb.

Although all participants come from different cultural backgrounds, there are some similarities in hospitality patterns and zoned areas where hospitality takes place. Each case study shows a clear definition of public and private zones (as shown in Figures 2, 3 and 4). Aishah’s home clearly defines its entertaining zones at the back portion of the house (Figure 2). All public and semi-public spaces (living, dining, kitchen, prayer room and lounge) are located next to each other. The open kitchen to dining and living spaces reflect the contemporary Australian open living concept that has become popular in recent years. Aishah’s private spaces are located at the front façade of the building (Figure 2), which is contrary to traditional Islamic home designs. Amina’s double-storey home provides an opportunity to separate public and private spaces vertically (Figure 3). All of her hospitality spaces are carefully located at ground floor (living, dining and kitchen) with the exception of Ali’s new resting room. All bedrooms and family room are located at first floor and not visible to guests during their time at her home. Ahmet’s double-storey home, on the other hand, has clearly demarcated public and private domains, both vertically and horizontally (Figure 4). Public spaces are placed within the front zones while private spaces occupy the rear zones of the house. At ground floor, a split level to lower granny flat defines the public-private domains, while this demarcation is defined by a narrow balcony along the width of the building and separate staircases to the upper level (Figure 4) to allow both visual and acoustical privacy between the public and private spheres of the house. Unlike Aishah’s home, both Amina’s and Ahmet’s homes follow similar public-private zoning and hierarchy principles (Figure 9) to those adhered to in traditional Muslim homes in the Middle East (Lockerbie, 2014; Belk and Sobh, 2011; Sobh and Belk, 2011; Belk and Sobh, 2009; Bahammam, 1987) and Malaysia (Wan Hashim & Nasir, 2011; Hashim et al., 2008; Vlatseas, 1990; Lim, 1987).
Differences
It is noteworthy that the use of incense (*agarwood*) or lighting incense sticks (*agrahati*) was used for the purpose of achieving olfactory privacy in both Amina’s and Ahmet’s homes. A good olfactory perception is important in Muslim’s home as a non-visual privacy device to fumigate guest spaces (Sobh and Belk, 2011). However, the use of incense may result in negative effects to some homeowners and guests. For example, Aishah is not in favor of using any incense within the house and prefers the use of natural scents from flowers or plant cuttings to refresh her home instead. The use of incense is a personal choice and independent from any cultural or religious teachings. The findings of this study support the view that different Muslim families interpret Islamic teachings and traditions and privacy requirements in different ways. This finding may raise awareness among architects and designers that they need to consider these differences in interpretation when designing homes for Muslim clients in the future.

Modesty was found to play an important role in all participants’ homes. Demonstrating modesty signifies that a person is moderate and humble, yet still capable of being in close contact with society (Ali, 2013; Sayeed, 2013; Sobh et al., 2012; Fay, 2010; Wynn, 2007; Boulanouar, 2006). Nevertheless, different Muslim cultures hold different perceptions about physical modesty as demonstrated by each case study. Veiling or *hijab* plays important roles in protecting female’s body privacy and maintaining their modesty within their own domestic domains when they need to retreat to areas where there is no control of visual privacy (Vahaji and Hadijyanni, 2009). Participants in this study regarded this form of modesty to be a personal decision. This study demonstrates that one’s choices about home design can be affected by cultural traditions, design inspirations and available budgetary resources. As a fifth generation Australian born Muslim, Aishah is not in favour of wearing *abaya* or *hijab*. Aishah wears a scarf instead to cover her hair in functions or meetings as part of maintaining her modesty in public. Both Amina and Ahmet perceive *hijab* as an important dress code to protect female’s *awrah* from any strangers in the house. Although both have settled in Australia for more than 25 years (Table 1), both Amina and Ahmet strictly follow Islamic teachings, especially the protection of female privacy.

With regards to hospitality, a number of differences in spatial patterns and hospitality behaviors were observed among the participants, which appear to be mainly related to difference in cultural background. Aishah disagrees with the conception of gendered spaces within her home. Aishah prefers the open living concept in her current home and she believes natural progression to gendered socialization rather than enforced segregation. Amina, on the other hand is neutral about gendered segregation. The interview with Amina was initially conducted with her as an individual, but Ali, her daughter and grand-daughter visited at times as the interview proceeded. Ahmet believes in gendered segregation, mainly to protect females’ visual privacy (Sofia and other female guests) when there are *non-muhrim* guests or strangers in his home. However, Ahmet does not have issues about socializing with his non-Muslim Australian neighbors because Ahmet and his family considers them as part of their extended family and they help each other in times of need.

Even though there is a minor difference in the socio-economic backgrounds and education levels among the three participants, their homes are of a similar type (detached homes) within the same suburb. All of them are directors and leaders of Islamic organizations in Brisbane. In addition to this, Ahmet is a well-educated individual with a Doctorate degree. Only Amina owns her home outright, while Ahmet is building his new dream home nearby that will suit all his privacy, modesty and hospitality requirements.

LIMITATIONS AND FURTHER RESEARCH
This study illustrate that perceptions of home privacy are relatively similar, especially in relation to particular emphasis being placed on the visual protection of female members of the family. However, this does not mean that social exclusion of females is necessary for this is achieved.
Each of the case studies suggest the importance of modesty spaces for religious activities, humility in design and the functions on *hijab* in domestic spaces. The case studies indicate that neighborhood strength and sense of community are as important as family privacy (Moustafa, 2009) and one of the ways to maintain good relationships with the community is by extending their hospitality and introducing their Islamic cultural traditions to non-Muslim neighbors and friends. The study provides the first analysis on how principles of privacy, modesty and hospitality affect the social behaviors and the use of spaces among Muslims living in a western context.

Nevertheless, the findings of this research are based on just three case studies and thus cannot be extrapolated to other Muslim homes in Australia. The findings do provide valuable information that can be used by local Australian architects, builders and designers to guide them in designing homes for Muslim clients in the future. The study also focuses on participants’ domestic perceptions and behaviors based on the three principles within an Australian setting around Brisbane. Their perceptions and behaviors may be different in other jurisdictions or in countries where they were originally came from (Amina and Ahmet). Future research concentrating on the three principles of privacy, modesty and hospitality within Muslim homes across Queensland and nationwide would provide better understanding of the they ways in which these principles affect the overall design of a home and help to shape and control their social behaviors and use of domestic spaces within a predominantly non-Muslim environment.

CONCLUSION

Western-styled modern housing in Australia can be readily adapted by the Muslim population to achieve adherence to the principles of privacy, modesty and hospitality. Greater awareness from mainstream designers in the culture-related aspects of housing could improve adaptability designing interior spaces in ways that allow them to be easily reconfigured without major renovations. In each of the case studies, the participants agreed that both Islamic and Australian cultural traditions are major influences on their use their domestic spaces, while Islamic teachings guides them on both their domestic behaviors and perceptions. This supports Rapoport’s (2007) claim that culture plays a larger influence on housing design and domestic settings as conceptualized in his framework as culture-environment relations.

The findings from the three case studies also illustrate that the three principles of privacy, modesty and hospitality are interdependent and synergetic in creating a safe and practical home for a Muslim family. The conceptual approach of a home as: a) private and safe place for an individual and family; b) a practical base for personal and families’ religious activities using frugal design approaches and; c) a hospitable domestic environment to entertain extended families and guests, provides a tripartite model for architects and designers to consider when designing homes for their Muslim clients. The increasing number of Muslims in Australia necessarily means that more homes need to be provided for this segment of the population. Further studies in other non-Muslim countries with ongoing rapid growth in the Muslim population are also needed to determine the extent that established cultural norms in these host countries affect Muslims’ home environments and their use of spaces. While trying to adhere to the three principles of privacy, modesty and hospitality when residing in these countries, Muslim home dwellers and owners are subject to their respective local regulatory building codes. It is vital that they are able to apply these principles within the context of non-Muslim or western built homes. At the same time, greater awareness of Islamic and other ethnic minorities’ cultural traditions is needed within the broader community of host countries if cultural diversity is to be truly embraced and social inclusion of these groups is to be fostered.
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ANTHROPOLOGICAL QUESTS IN ARCHITECTURE: PURSUING THE HUMAN SUBJECT

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Abstract
In this paper, we explore what architectural practice and, more specifically, the architectural research domain, may gain from the theoretical and methodological premise of anthropology and ethnography. The paper explores a historical link between anthropology and architecture as academic disciplines, arguing that the disciplines are aligned through anthropology’s search for understanding the conditions of humanity and architecture’s role in forming these very conditions. We do not intend to explicate the individual disciplines but are interested in the crossover between the two and, more specifically, what insights anthropology and ethnography may offer to the discipline of architecture. We consider the relationship between anthropology and architecture, as both a research domain and a profession, and question how anthropology—as an approach to research more so than a discipline—can contribute to the advancement of architectural practice and research.

Keywords: Architecture; Anthropology; Design practice; Design research; Research methods.

INTRODUCTION
As a dynamic discipline, architecture is an ever-changing practice that responds to the cultural, social, political and financial circumstances of which it is part. At different historical periods, architecture—as both art and practice—will manifest a particular pattern that reflects a reciprocal relationship between the discipline as a social agent and society itself. In the era between the world wars, for example, the rise of modernism led to changes in the way that architecture was practiced and to the architecture that was created; that is, it led to changes both in terms of how architecture was made and what was made (Cesal, 2010). Similarly, the postmodern movement as a societal process led to changes in architectural expressions and practices. It energised new questions about epistemology, ethics and the politics of architecture, subsequently resulting in ground breaking architectural expressions such as the Neue Staatsgalerie in Stuttgart, Germany, and the EMP Museum in Seattle, USA. Gauging the cultural relevance of architectural ideas and expressions has always been an intuitive part of the profession, however, until the end of the last century, critical engagement with academic discourses, theories and methods rarely supported such processes (Clarke, 2011a; Suri, 2011). There is today a growing recognition within the architecture and design community that a more detailed understanding of the cultural, creative and aspirational values that structure the profession and the role this plays for productivity, commercial viability and innovation is required in the move towards disciplinary creativity and innovation. Upon recognition of the fact that ‘[c]ontemporary design […] is as much about the spaces, interactions, and meanings between things and people as it is about things themselves’ (Clarke, 2011a, p. 9), architects are increasingly turning to social science theory to seek relevance and impact of ideas.

The synthesis of architecture and social science has come together in the nascent discipline of design anthropology (e.g. Clarke, 2011b), which represents a merging of the academic discipline of anthropology with the profession of design. Essentially, design anthropology is an approach to design and architecture that seeks to understand how design
forms part of defining what it means to be human, the diversity of human values, and the transformation of such values into tangible experiences. Placing a focus on watching, noticing, and learning about people, places and artefacts (Suri, 2011), it represents a designerly shift towards cultural sensitivity that is believed to support a move towards socially responsive design; an approach that ‘takes into account “soft” factors such as notions of pollution, sacredness, humility, and modesty’ (Clarke, 2011a, p. 10-11). As such, it represents as much a methodology as a discourse; it is a method that supports designers in their search for patterns and hidden rules, for generating a sense of future orientation and making strategic judgements about the relevance and meaning of design (Suri, 2011).

Referring to the changing economical conditions of design and innovation, Halse (2008, p. 1) explains that:

[development in the global relations of production and consumption have led companies [...] to look for new business opportunities based on the creative potential residing with their users and the everyday practice of these. These two developments in design and business signal a readiness for actively including users and images of their practice as valuable contributions in the design process. Anthropological competences are increasingly called for in this ongoing reformulation of design, which intersects the categories of production and consumption.

According to Halse (2008), anthropology represents a vital resource for facilitating exchange between the various sites of use, business and design. The link between anthropology and architecture is not new, with a particular association between architecture and ethnography, the key method of anthropology. In anthropology, ethnography is a well-established method of data collection. It encapsulates at the same time a methodology and an epistemology; it refers to a family of qualitative methods that involve direct and sustained contact with human agents, such as participant observation and interviews, and to a particular approach to knowledge that reflects the philosophical position of social constructivism and phenomenology. It is an approach that perceives human beings as both objects and subjects, that emphasises the dynamic relationship between the researcher and those that are being studied and the role of the researcher’s self, and that leads to rich, written accounts that emphasise the irreducibility of human experience. It is generally small-scale and focuses on rich, deep data rather than broad, quantifiable facts, and it is up to the ethnographer’s discretion whether or not to consider historical and/or macro factors and engage in a critical cultural/political discourse (O’Reilly, 2009).

In architecture, on the other hand, ethnography is less defined and, as McGowan (2011, p. 8) proclaims, ‘the role of fieldwork [ethnography] in the present is still negotiable.’ Whilst negotiable and ambiguous, ethnography in architecture has been summarised by Ewing (2011a, p. 5) as

tacit design knowledge, a resource for the study of site and the making of projects, enacted by learnt strategies, techniques and skills, rather than disciplinary-drive models of applied methods or articulated methodologies.

Ethnography, thus, takes on quite a different meaning within the discipline of architecture compared to anthropology. Focussing on the ethnographic tradition of inhabiting and writing about the field, ethnographic approaches may, however, as McGowan (2011, p. 8) asserts, ‘be used in architecture as a method of observation, data acquisition and representation; a way of interacting with, documenting and responding to a specific people, time, place and circumstance.’ In this paper, we explore what architectural practice and, more specifically, the architectural research domain, may gain from anthropology and ethnography and why there is a natural link between anthropology and architecture as academic disciplines. Through consideration of the historical and philosophical alignment of architecture and anthropology, we consider the relationship between anthropology and architecture, as both a research domain and a profession,
and question how anthropology—as an approach to research more so than a discipline—can contribute to the advancement of architectural practice and research.

ANTHROPOLOGY AND ARCHITECTURE: EXPLORING CONDITIONS OF HUMANITY – FORMING CONDITIONS FOR HUMANITY

As a discipline, anthropology is guided by a moral ethos—or political purpose—to ‘rediscover the humanity in the peripheral subjects’ (Westbrook, 2008, p. 11). It is the science about human diversity, essentially concerned in the ontological idea of ‘being’. Most anthropologists promote the view of humans and the world as being co-constituted. The concepts of self and person are largely seen as cultural or social constructions; rather than there being an essential, preordained concept of personhood, religion, law, custom, kinship systems, rituals and everyday living determine who we are and how we see ourselves (e.g. Mauss, 1985; Geertz, 1973). These cultural elements provide insight into the notion of personhood within individual societies and delineate a set of possible social roles and statuses for those who reside within them. As Meyer Fortes (1987, p. 251) notes:

the distinctive qualities, capacities and roles a society endows a person enable the person to be known to be and show him to be the person he is supposed to be.

Rejecting positivist notions of the social world, anthropological analysis looks closely at people’s everyday lives and interrogates the habitual, customary and routine. Rather than writing from a preconceived determination of culture, ethnography and other qualitative research methods reconsider how members of a certain community or social group act, feel, interpret the world and understand social behaviour (Spradley, 1979). Emphasising the immersion of the field researcher in a particular socio-cultural context over an extensive period of time, the anthropologist attempts to provide a holistic, culturally relativist interpretation of human interaction through rich and detailed field observations (Geertz, 1973). Providing descriptive, rather than prescriptive, accounts, the anthropologist takes a cultural relativistic stance, attempting to understand the type of socio-cognitive interactions that take place within everyday life from the point of the people studies. As such, anthropology seeks an emic understanding; that is, an understanding of the people studied on their terms (Maykut & Morehouse, 1994).

Whereas anthropology seeks to understand what it means to be human, architecture provides conditions for being human and responds to the human condition. Exploring the architectural conditions that support and form part of socio-cultural structures have always formed part of ethnographic inquiry, though recent decades have seen a proliferation of ethnographic research (e.g. Carsten & Hugh-Jones, 1995; Fox, 1993; Waterson, 1990) that illustrate how architectural forms and their configuration represent enduring and significant repositories of knowledge and cultural meaning (McWilliams, 2005, p. 29). Anthropologists have been interested in the affective attachments that link people to place, the ways rooms, buildings and land are endowed with emotional meaning, and the aspects of individual identity that have a desire for, memory of, and emotional attachment to, a physical setting (Hochschild, 2010; Milligan, 2003). The link between architecture and anthropology is, however, not singular and there has been a mutual interest of anthropological discourses within architectural domains. Much of the material that is available to an architect or designer is, essentially, social (Bucciarelli, 1994), and architectural research naturally links with the anthropological concepts of culture and social practice (e.g. Owen, 2008; Shakur et al., 2012). The anthropological interest in, knowledge of, and methods for understanding the social may, thus represent a vital tool for architectural practitioners. Possibly, for this reason, ethnography has been a recurring theme in methodological approaches to architectural history and, in the period since the Second World War, been widely appropriated in architectural discourse.

In the contemporary environment, anthropological theory and ethnographic methods may support architects experimenting with provocative conceptions of design. One of the leaders of the global movement in architecture, Aaron Betsky (2008), for example, argues for a more
dynamic approach to design that places its emphasis on thinking and arguing over constructing. He challenges architects to experiment questioning how we feel at home in the world, to criticise and engage in taken for granted assumptions. Others, such as the Director of the 13th International Biennale di Venezia, David Chipperfield, provokes the architectural profession to reimagine the possibilities of architecture, ‘both as individual acts and as part of a greater vision’ (Chipperfield, 2012, no p.). He invites dialogue, debate and opinion, forwarding ‘an opportunity to reflect on the discipline of architecture’ (Chipperfield, 2012, no p.) for the industry to reimagine itself. Similarly, reflecting what has been perceived as a ‘crisis of identity’ within the discipline, the President of the 13th International Architecture Exhibition, Paolo Baratta (2012, no p.), calls for a consideration of the fact ‘that something different is possible, that we are not condemned to passive acceptance.’

Within the crisis of identity, architectural education, research and artistic production has increasingly experimented with modes of ethnographic exploration. An example of such experimentation can be found in Al-Maimani, Salama and Fadli’s paper on the socio-spatial aspects of traditional souqs in the Arabian Peninsula (2014). Whereas Al-Maimani and her colleagues do not mention the words ethnography and anthropology, their research adopts typical ethnographic elements, such as detailed observation of space and behaviour related to spatial, historical and cultural contexts. In the paper, they develop an experiential walkthrough assessment of selected marked spaces within the Souq Mutrah and examines their spatial and socio-cultural aspects through systematic and strategic observation and behavioural mapping. The authors show some ethnographic tendencies in their search for detailed, location-based observations of human behaviour and movement. Despite these tendencies, however, the ethnographic potential of this project remains underutilised and the authors’ search for in-depth understanding of movement and activity is restricted to the level of what is happening and how this can be understood in spatial and historical terms. The authors adopt elements of quantitative mapping that allows scoring of the different spaces and their associated activities and behaviours. From this they reveal valuable insights into the spatial and cultural environments of the souq that can support its future development and preservation. The structured and quantitative nature of the observations is, however, limited in its ability to foster understandings of the underpinning and less overt dynamics that form part of people’s movement in localised space. Such understanding could be advanced by further embracing the ethnographic elements of the research and include more unstructured observation and positioning the researcher as a participant observer within the spaces. Al-Maimani and her colleagues (2014, 57) dismiss such observation as it ‘may result in inadequate findings that may reveal only what seems to be already obvious’. In contrast, we would argue that it is indeed through such observations and engagement with the field that the less obvious spatial and socio-cultural aspects that guide people’s behaviour can be revealed.

We acknowledge that the ethnographic potential embedded in Al-Maimani et al.’s (2014) study is beyond the scope of their research. When discussed here, it is with the intention of illustrating how architectural research is engaging with ethnographic topics that may be beyond the traditional architectural domain. There is an increased recognition of the potential of ethnography in architectural research and practice. Architect Suzanne Ewing (2011b, p. 309) calls this the ‘ethnographic turn’ and argues that ‘it has affected, and is unsettling architecture’s understanding of its own domain, scope, limit, habits, practices, potential and trajectory’. According to Ewing (2011b), fieldwork in architecture will always, unlike other disciplines, contribute and connect, ‘whether closely or more indirectly or collaboratively, to a form of architectural production, rather than remaining autonomous as field data’. Ethnography in this sense addresses what has often been articulated as ‘a gulf to be bridged between observations and interventions’ (Halse, 2008, p. iv), moving anthropology’s emphasis on descriptive practices towards architecture’s more prescriptive practices. It reinterprets the ethnographic field as a field that is not only subject to inquiry but may also be an object of inquiry seeking a service. Here,
ethnography becomes a hybrid approach that ‘actively combines insights and practices from both design and anthropology’ (Halse, 2008, p. 1).

The discourse of ethnography in architecture is, however, not restricted to this more applied approach. Henry Glassie, for example, forwards the use of more traditional ethnographic study to expand current understandings of humankind, values, community and history with the aim of attaining a ‘more comprehensive definition of architecture’ (Glassie, 2000, p. 69). He posits:

> [a]ll architects are born into architectural environments that condition their notions of beauty and bodily comfort and social propriety. Before they have been burdened with knowledge about architecture, their eyes have seen, their fingers have touched, their minds have inquired into the wholeness of their scenes. They have begun collecting scraps of experience without regard to the segregation of facts by logical class. Released from the hug of pleasure and nurture, they have toddled into space, learning to dwell, to feel at home. Those first acts of occupation deposit a core of connection in the memory (Glassie, 2000, p. 17).

The cultural conditioning of architects and their practice have been explored in studies such as Robert Venturi, Denise Scott-Brown and Steven Izenour’s *Learning from Las Vegas* (1977), Judith Blau’s *Architects and Firms* (1984), and Edward Robbins’ *Why Architects Draw* (1994). Each of these studies uses anthropological methods and relate to anthropological theory about practice, structure, power and embodiment. Over the past two decades, researchers and designers in the field of Human-Computer Interaction (HCI) have also looked to the discipline of anthropology and the insights triggered by ethnographic analysis. Traditional design methodologies, such as attitude surveys, focus groups and telephone interviews, have accordingly lost their hegemonic influence on design research, and ethnographically informed design practice has attained a permanent place in HCI research due to its suitability to inform design of new products and interactive solutions (e.g. Blomberg & Burrell, 2009).

As is suggested by the above, ethnography attains different roles in relation to architecture. It represents both a means and an end for the architectural profession. On the one hand, it can be used by representatives of the architectural profession to understand the field in which they are working; it can be used as a method to seek the relevance and impact of ideas, and as a way to attain a holistic perspective of the local (social, cultural, political, financial, etc.) conditions in which future architectural expressions are to be situated. As such, it supports architects in the identification of the social material of their practice, and, at the disciplinary level, it provides a method and theory for thinking and questioning that can support the discipline in its ever-present need to reimagine itself. On the other hand, ethnography can be seen as an end in itself, by which its role is to generate rich descriptions of architectural practice and, subsequently, support both internal and more wide reaching calls to understand the architectural profession and identify the issues that both affect and condition it. This latter role will be at the centre of the remainder of this paper.

**ETHNOGRAPHY: INVESTIGATING WHAT AFFECTS AND CONDITIONS ARCHITECTURAL PRACTICE**

The ethnographic approach adopted from anthropology provides a unique perspective into, for example, the cultural and managerial structure of contemporary practice. There is a dearth of research integrating such an approach and understanding of practice and management within the wider architecture profession. Indeed, where the object of analysis has remained fixed on design, the built environment and the professional product, the analysis of architects and architectural practice and managerialist orientation as objects of inquiry remain limited. This does not suggest that studies that explore (everyday) design practice do not exist. In conjunction to the studies mentioned in the previous section, research has been conducted at institutions such as Palo Alto Research Centre (PARC) and Xerox that explore users’ work practices and the ways design
technologies support work activities (Blomberg 1987, 1988; Blomberg, Giacomi, Mosher, & Swenton-Well, 1993). Aimed at transforming current design practices within Xerox to promote a more participatory product process, Blomberg and her colleagues (1993, p. 148) write that ethnographic fieldwork provided the study with ‘an opportunity for continued involvement of users in the design process and for design iteration in relation to actual situations of use’. According to them, through the use of ethnographic research techniques such as open-ended interviews, observation and video analysis, designers at Xerox were able to develop ‘a deeper understanding of use work practices and to provide a context for designers to collaborate with users of the design of new technologies’ (Blomberg et al. 1993, p. 151). Similarly, Robert Anderson (1994, p. 179) found in his study of systems design that ‘analytical ethnographies can make a contribution to design that may deliberately question conventional frames of reference’ and, in doing so, ‘they may well bring novel and deep possibilities to light’. Anderson (1994, p. 179) further argues that ethnography may ‘offer sensibilities that will cause designers to question the presuppositions of their conventional outlooks’ rather than simply ‘providing more gist to the mill of conventional design solutions’.

Yet other studies exist that not only emphasise the role of anthropological methodology but also illustrate the role that anthropological theory can bring fore. Using fieldwork as their approach, Brown, Kornberger, Clegg and Carter (2010), for example, examine the relations of power that structure the activities and creativity of professionals working in an architecture firm and investigate ‘how power relates to the production of creative identities and outcomes’ (Brown et al., 2010, p. 526-527). Using the theoretical framework of Foucault, they consider how power is embedded and reified by the social order and design of organisations and their discursive practices, arguing that

the notionally creative work of professional architects – as a unique cultural construction – is governed by relations of power to become a disciplined, organized, situated practice subject to routine constraints and characterized by repetition (Brown et al. 2010, p. 527).

An architectural practice is, as an organism, anything but transparent and constitutes a highly competitive and often secretive organisational structure. The design studio in itself is an organisational structure that is based on various and often unstated relationships where the design process is concealed behind layers of social and cultural interaction and in competition with alternative practices against which it competes. Through the use of Foucault’s theoretical framework and the anthropological discourse, Brown et al. (2010) are able to dwell into this secretive structure and analyse how discursive practices form ‘the instinctively shared calibration points for defining local reality’ (Brown et al. 2010, p. 528).

The theoretical and philosophical underpinnings of anthropology presents architecture with vast opportunity to conceptualise, theorise and, ultimately, understand architectural practice. Unlike other commercial fields, architectural practice is distinguished by an emphasis on interpersonal relationships and the emergence of highly idiosyncratic and multifaceted social groups that are governed or restricted by bureaucratic and economic constraints. The cultural conditions of architectural practice are unique to the discipline and are rarely, if ever, transgressed ([reference to be inserted]). As such, the architectural profession and, even more so, architectural practices can be classified as a social group or social groups; what has, ever since anthropology entered the academic research milieu, been the anthropological subject. Within architectural practice there is a microcosm of organisational data that can be distilled through ethnographic models of analysis. Ethnography provides a methodological approach that can support reflections upon the technological, cultural, social and economic forces that are reinventing architectural practice and the design process more generally, and provide a contemporary overview of the broader contextual issues of architecture through a focus on organisation, as a starting point ([reference to be inserted]).
ANTHROPOLOGICAL OFFERINGS

So, what is it that anthropology can bring to architecture? In the foreword of the highly inquisitive set of essays, *Future Practice: Conversations from the Edge of Architecture* (Hyde, 2012), designer Dan Hill (2012, p. 7) writes:

> [f]rom within, it is difficult to [...] perceive, and so question, the deeper values, motives, models or possibilities for the profession; hence, many professional bodies tend to be fossilising within the compacting strata or their habits, discourse and silent assumptions.

Anthropology allows for a ‘creative disruption’ of the discipline, generating debate, hybridity and movement, providing methodological, theoretical and analytical measures to do so. The anthropological method—the ethnographic fieldwork—offers a rich form of dialogue to the architectural profession and ‘the transient and ephemeral way in which artifacts, people, ambiances are encountered’ (Iacucci & Wagner, 2003, p. 17). Its potential for architecture lies in its ability to analyse people and communities from the inside, and, as Ewing (2011b, p. 310) contends, the inherent aptitude to work ‘[w]ith the overlooked and understanding the generative potential of carefully crafted observation output which might activate some aspect of the complex condition of the contemporary, contested public urban domain’.

As is implied in the citation by Ewing, anthropology often works with the overlooked. Traditionally, anthropologists worked in geographically remote areas. This legacy has led to the common assumption that anthropology is a study of ‘the Other’; the ‘Other’ being associated with ‘the exotic’, a people removed from the world of the anthropologist that, most often, live in a closed, uniform and undifferentiated world. The contemporary condition and the emphasis on the analytical paradigm of culture and society as ‘contested, temporal and emergent’ (Clifford, 1986, p. 19) have, however, challenged such assumptions. Anthropology is increasingly identified by a subject where ‘the whole studied or made manifest […] is not a reifiable entity, but a space that embraces the process of knowledge production itself’ (Hasstrup & Hervik, 1999, p. 2). Ethnography has, accordingly, moved

> [f]rom its conventional single-site location, contextualized by macro-constructions of a larger social order, such as the capitalist world system, to multiple sites of observation and participation that cross-cut dichotomies such as the ‘local’ and the ‘global,’ and ‘lifeworld’ and the ‘system’ (Marcus, 1995, p. 95).

Nonetheless, anthropology and anthropologists remain focussed on subjects that are marginally defined and ‘thrives at the margins, where other folks are either inarticulate, outside society’s interest, or even oppressed’ (Westbrook, 2008, p. 11). Whereas these margins used to be demarcated by geography, they are now socially defined. The anthropological focus on marginal subjects can, and has been, seen as a political project (Westbrook, 2008), something that may potentially support the architectural profession. Within architecture, there are practices that continuously push the boundaries of what is expected, that challenge the ordinary through practice and imagination. In the social field of architecture, these practices will be found at the margins where they balance the roles of insider and outsider. This relates to anthropology, firstly, in its subject matter, and, secondly, in its role. In relation to the subject matter, the historical engagement of anthropology with the marginal subject have led to a wealth of theories and approaches that can be used to explore the being and practice of these organisations (i.e. it is a tool for external investigation and representation of such practices). In relation to the role, on the other hand, the anthropological legacy may provide a springboard for the marginal practices themselves in their balancing act; it can provide theories and tools that can support them in their search for creative, innovative and cutting-edge practice (i.e. it can be used as a tool for internal investigation of how to provoke ideas and identify the impact and relevance of these).

Architecture—as practice and as expression—emerges through the dynamic interrelationship between the discipline (as a social agent or a cohort of social agents) and the
world of which it is part. Understanding architectural practice and expression requires an understanding of the contemporary condition under which it came to existence; it requires an understanding of the social, cultural, financial and political milieu of which it is part, as well as the contemporary imaginings of the future. The notion of culture is at the centre of all discussions of the contemporary; indeed, as Westbrook (2008, p. 8) asserts, ‘in aspect after problematic aspect of our lives, answers are sought, or at least presumed to exist, under the rubric of ‘culture’’. This assertion underpins the last observation that we would like to make in relation to what anthropology may offer architecture. Positioned in the midst of and influencing contemporary and future understandings of culture, architecture both embodies and prescribes culture as expressions of social, political and financial forces. As a discipline, anthropology is often perceived as ‘key to ‘Culture’’ (Reddy, 2008, p. 6); it is ‘charged with operationalizing knowledge about culture’ (Reddy, 2008, p. 6) and represents ‘an instrument, a stepping stone, the means by which to mobilize Culture’ (Reddy, 2008, p. 7). As such, anthropology may—through its theory, approach and method—provide insight into the cultural currents that underpin architectural practice, both in the past and in the present, and it offers an analytical framework in which the cultural influence and relevance of architectural expressions can be explored. It also offers a historical record through a particular way of writing about the contemporary, which promotes rich, detailed descriptions. Ethnographic writing provides the reader with ‘thick’ (Geertz, 1973) scientific accounts that present a comprehensive description of the phenomena observed and place it within its context. Such accounts have the advantage of creating images of events and people through rich and relevant details, allowing the reader to develop their personal understanding for further knowledge and perception. Moreover, it is often written in a relatively jargon-free manner, which makes the material more accessible than other scientific texts.

Whereas all of this may seem to support the bridge connecting architecture and anthropology, it is important to note that, whilst the disciplines may thematically, theoretically and methodologically support one another, their integration is not without challenges. A drawback to the anthropological approach is the fact that both the inquest into culture and ethnographic writing are very time consuming. Calling for the immersion of the researcher into the research field, ethnographic fieldwork will most commonly last months, if not years, and the writing of ethnographic monographs will often take equally as long. Moreover, ethnographic fieldwork will—regardless of how much time is spent in the field—produce huge sets of data, consisting of interview transcripts, field notes, observations, reflections, photographs, video recordings, secondary data and more. But are architects able to conduct anthropological fieldwork in its conventional manner and will such huge data sets be of value to an architect?

Whilst the ethnographic richness of fieldwork data is likely to be useful, its extensive nature may pose a problem to many architectural projects. Working under often-strong constraints in terms of time and money, collecting, analysing and writing up such data may easily exceed the timeline of an architectural project. Simply adopting the anthropological approach may therefore be problematic. Indeed, as Bichard and Gheerawo (2011, p. 54) proclaim, whilst ‘[t]he longer studies and observational methods of research that ethnography favors can lead to fundamental truths about the way individuals and groups behave’, in time-pressed projects ‘designers have to deal with shorter time frames and provoke response rather than waiting for interesting behaviour to be revealed’. The time constraints and the restrictions of cost have seen an adaption of traditional ethnographic methods, which has become known as ‘rapid ethnography’ (Norman, 1999, as cited in Bichard & Gheerawo, 2011, p. 48). Drawing on the philosophy of anthropological research, this method ‘has enabled designers to gain insights into users’ activities in daily life but also keep up with the fast paced needs of commercial business practice’ and it ‘enables designers to gain access to people’s worlds and help them to understand their situation’ (Bichard & Gheerawo, 2011, p. 48). As such, it remains close to the anthropological project of understanding practice and perception on people’s own terms and it supports architects and designers in their strive for, as Suri (2011, p. 32) eloquently acclaims
a designed world that has meaning beyond the resolution of purely functional needs, one that also has poetry, communicates subtly something that makes sense, not just by fitting in with the culture and environment in which it lives, but by adding a new dimension to it.

CONCLUSION

We have in this paper aimed to illustrate the historical alignment between architecture and anthropology and the possible contribution that anthropology can make to architectural practice and research. Speaking of the potential contribution that anthropology can make to other disciplines, Westbrook (2008, p. 76) states that 'ethnography can provide intellectual lives outside of anthropology with (1) a viable aesthetic of adventure; (2) a fairly disciplined preoccupation with the imaginary […]; and, (3) a sense of intellectual play.' By being brought into the architectural field site, anthropologists can help the profession better understand how practices and management styles influence creativity and development.

The study of anthropology has direct implications for the practice of architecture, and specifically with the recent focus on programmatic and social, rather than formal or aesthetic discourses for the production of architecture. As contemporary architectural production realigns itself with the reassembled values of modernism from the 1920s, a range of recognised practices have expanded on the anthropological understanding of architecture through a focus on planning and organisation as a primary motive for spatial invention. In the work of OMA, BIG and MVRDV, amongst others, a sensitivity towards the social and human aspects of experience is conspicuous and influential enough to be considered paradigmatic. This reappropriation of the human subject, at the expense of the detached architectural object, only reinforces the significance of anthropology for the theorisation of contemporary architecture, and its continued multi-disciplinary exploration. This is clear not just in the production of architecture over the last decade, but in the restructuring of architectural practice as a unit, framed by social and human conditions.

Qualitative research brings knowledge of opportunities and constraints within the workplace, management styles that both foster or otherwise hinder workplace creativity and professional development. As Blomberg et al. (1993, p. 147) note:

armed with knowledge of user work practices gained through direct observation of users at work, designers are in a much better position to accurately, and more fully, incorporate users’ perspectives in the design, with the potential of improving existing products as well as identifying opportunities for new products.

For architecture, the use of ethnography implies a re-evaluation of taken-for-granted practices, norms and management styles, and the way these render behaviour within the firm. Current research on architectural practice lacks the kind of thick description necessary for this re-evaluation. Shifting perspective, anthropological analysis can lead architecture towards the edges of the discipline, to question, criticise and overturn the inherited assumptions that have for so long plagued the profession (Hyde, 2012). By becoming an observer of the day-to-day practices, decision-making and consultation that architects engage with everyday within the firm, anthropology can provide clues and insights to suggest, inquire and explore a set of principles to better design practice—to ‘back out the cul-de-sac that architecture has partly built’ (Hill, 2012, p. 11).

This article has not intended to explicate the individual disciplines of architecture and anthropology but rather to illustrate the crossover between the two and, more specifically, what ethnography and anthropological analysis may offer the discipline of architecture. The historical association between the disciplines whereby architecture has formed part of the anthropological project and the anthropological method has been a recurring theme in architectural history provide fertile ground for interdisciplinary collaboration, as well as more solitary disciplinary inquiry. It provides an approach for exploring the architectural profession and its practices as social fields (Bourdieu, 1977), for investigating questions such as: what conditions the architect?;
what constitutes and generates architectural praxis?; what defines the disciplinary field?; what values guide architectural practice?; how is architectural practice shaped by and, mutually, shaping its social, cultural and political milieu?; how can certain professional codes and practice be organised and institutionalised so as to reproduce particular power relations?; and, so on. Whilst architecture has over the past two decades become increasingly receptive to the insights of ethnographic analysis and cultural theory, the focus has remained on professional conduct and studies of practice remain scarce. Compared to the ever-growing interest in social and ethnographic research of buildings, space and place (e.g. Lineu, 2010), studies that pay attention to architectural practice itself as a unit of study are limited. Ethnographic analysis offers a holistic approach to the whole of the architectural practice and profession. Like vernacular architecture, ‘it favors completeness, recognizes diversity and seeks ways to [...] tell better versions of the human story’ (Glassie, 2000, p. 21). It is a tool that can be used to ‘crack open’ the practice of architecture and interrogate its often secretive and opaque organisational structures. Addressing the calls to ‘reinvent the discipline’ and resolve ‘the crisis of identity’, anthropology and its associated method of ethnography provide a means of rethinking architectural practice and management, raising important questions about the practice of architecture and how to approach it in the contemporary, rapidly changing, world.

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