Architectural Research
Planning
Built Environment Studies

An International Fully Refereed Journal
Published three times a year
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Chief Editor
Ashraf M. Salama

Includes
Selected Papers from IAPS 19th
19th International Conference of the International Association
of People Environments Studies (Editor: Aleya Abdel-Hadi)

Papers on Traditional Public Baths-Hammams-in the
Mediterranean (Editor: Fodil Fadli)

Regular Papers
Review and Trigger Articles

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Archnet-IJAR is published and archived by ARCHNET, the most comprehensive
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MIT School of Architecture and Planning in close cooperation with, and with
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International Journal of Architectural Research

Archnet-IJAR

Archnet International Journal of Architectural Research – Archnet-IJAR is the first of its kind; an interdisciplinary comprehensive scholarly journal of architecture, planning, and built environment studies, that is blind reviewed and published on the World Wide Web three times a year.

Objectives
Archnet-IJAR objective is to establish a bridge between theory and practice in the fields of architectural and design research, and urban planning and built environment studies. It reports on the latest research findings and innovative approaches for creating responsive environments, with special focus on architecture and planning in developing countries.

Archnet-IJAR is truly international and aims at strengthening ties between scholars from different parts of the world with contributors and readers reaching across geography, boundaries, and cultures.

Archnet-IJAR articles come from architects, interior designers, planners, and landscape architects, and from those working in these fields in academic institutions, universities, research centers, government agencies, and private practice.

Reader
Archnet-IJAR addresses academics, practitioners, and students of architecture, planning and interior design. It addresses those who are interested in developing their understanding and enhancing their knowledge about how environments are designed, created, and used in physical, social, cultural, economic, and aesthetic terms. Archnet-IJAR content keeps readers up-to-date on the latest ideas, designs, and developments in built environment related fields.

Archnet-JAR publishes research studies, criticisms and evaluation studies, and critical analyses about the creation, use, and evaluation of different types of environments at the macro and micro scales. The journal includes original empirical research papers, analytical case studies, and high quality position papers. Three major areas are covered by Archnet-IJAR:

Architectural and Design Research:
Topics include –but not limited to: architectural pedagogy and design studio teaching practices; architectural technology and sustainable design; design methods and architectural theories; design and project programming; environment-behavior studies; information technology; Islamic architecture; computer applications and virtual environments; post occupancy and facility performance evaluation; and social and cultural factors in design.

Urban and Built Environment Studies:
Topics include --but not limited to: administrative and political factors contributing to the shaping of communities, cities and urban regions, community planning; sustainable urban conservation; environmental planning and eco
development; housing policy, planning, and design; new urbanism; sustainable development; space syntax and GIS applications; and wayfinding and signage systems.

**Critical Essays on Architectural and Planning Projects:**

Essays that cover the above topics; critically discussing projects in use; after they have been designed, built and occupied. Articles are preferred to utilize the case study approach as a critical method in built environment research.

**Advisory and Editorial Boards**

The Chief Editor is in charge of developing journal issues, seeking out resources and articles, establishing publishing strategies, coordinating the review process, and posting each issue and its articles online. Archnet-IJAR has two boards; advisory and editorial. The range of expertise of the boards that include the panel of referees –academics and professionals- ensures high quality scholarly papers and allows for a comprehensive academic review of contributions that span wide spectrum of issues, methods, theoretical approaches, and professional practice.

**Submission Process**

Unlike other printed Journals where contributors wait for periods that reach two or three years for their work to get published, the value of Archnet-IJAR as an online journal is that it eliminates the large lead time needed for publication. However, submission, referee, and publishing processes are strict and adhere to the following procedures:

Interested contributors contact the chief editor expressing interest, and submitting a summary of their paper. One page will do.

The chief editor consults with the advisory and editorial board members according to their relevant expertise.

Soon after receiving feedback from the referees, author(s) are contacted to submit their full papers.

When full papers are received, they will be forwarded to two editorial board members for blind review, according to the referee form.

The chief editor contacts the author(s) with the referee form filled by the reviewers. While papers will be blind reviewed, in exceptional cases author(s) will be asked to communicate directly with the reviewers.

Author(s) revise their papers as noted by the reviewers and re-submit their work to the chief editor.

Author(s) should make sure that their submissions should be free of jargon, clear, simple and to the point.

Papers will be published in the next issue according to the following schedule:

- March 30th (publishing date): December 15th (deadline to receive papers after reviews)
- July 30th (publishing date): April 15th (deadline to receive papers after reviews)
- November 30th (publishing date): August 15th (deadline to receive papers after reviews)

Interested reviewers and members of the advisory board may submit their work for publication in Archnet-IJAR. Their work will go
through the same blind review process and will follow the preceding procedures.

Notes to Contributors

1. Submission of Manuscripts
The language of the journal is English. All submissions will be online. One copy of the manuscript (in word document format) together with original figures and tables must be submitted to the editor: Ashraf Salama ijar@mit.edu
The name, mailing address, position, affiliation, telephone, fax, and email of each author must be supplied in a cover letter attached to an email. All papers will be blind reviewed and assessed by at least two referees.

2. Preparation of Manuscripts
   Layout
Manuscripts should be typed in double spacing on one side of A4 (21x29.7 cm) paper with reasonable margins (2.5 cm). All pages should be numbered consecutively.

Title page (page 1)
The first page of the manuscript must contain a concise and informative title; names, affiliations and addresses (including e-mail) of all authors, and identify the corresponding author (who will be responsible for correspondence and reviewing proofs). An abbreviated title of less than 50 characters (including letters and spaces) should also be suggested.

Title of paper, abstract and keywords (page 2)
Title of the paper should be written at the top of abstract without authors’ name. A concise and informative abstract must not exceed 300 words in length, should summarize the objective, methods and major findings of the paper. Keywords must be carefully selected to facilitate the readers’ search on Archnet Website, and should not exceed 5 key words.

Articles
Articles should not exceed 6000 words, including references.

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Avoid the use of footnotes and endnotes, if unavoidable, label as (1), (2) and list all together at the end of the paper.

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References in the text should give the surname of the author and the year of publication in brackets, for example, Rowe (1985) or (Rowe, 1985), followed by a, b,...when two or more references to work by one author are given for the same year. Page numbers should be given for quotes (Mitchell, 2003:33). At the end of the text the references should be listed in alphabetical order of authors’ names and in chronological order for each author. Initial and final page numbers of articles and papers should be given. The names of books and periodicals should be given in full, and the publisher and the city of publication should be given for books, conference proceedings, etc. Details of availability should be given for unpublished conference papers. Full references should also be given for legal judgments, bylaws and regulations, and government publications, etc. Examples of reference citation are given below.


Comportments, Lausanne, Switzerland, pp. 93-100.


### Tables
Each table must be typed, and consecutively numbered. They should have a brief informative title placed as a heading. Tables should be understandable without reference to the text, but they should be referred to in the text. Explanatory captions should be brief and placed beneath the table.

### Figures
Figures should be numbered consecutively throughout the paper and identified with the authors’ name and the figure number outside the reproduction area. Figures should be referred to in the text and should be placed within the body of the paper. However, all figures should be supplied in separate files as JPEG file format. Figure dimensions should not exceed 21x30 cm. Photographs should be used with restraint and must be of high quality. Explanatory captions should be brief, placed beneath the figure.

All correspondence should be addressed to the chief editor.

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3. Submission Process, Copyright, and Originality of Work

Proofs will be sent to the corresponding author for checking. Proofs should be returned within one week of receipt. Authors should correct typesetting errors only; they should not add any new material to the paper at proof stage.

Please read the submission process and procedures, and copyright notes under the general outline of the ARCHNET-IJAR.
Contents

Editorial: Transdisciplinarity, People-Environment, and Design Research  
*Aleya Abdel-Hadi and Ashraf M. Salama*  
08/13

**Selected Papers from IAPS 19th**  
19th International Conference of the International Association of People Environments Studies

Historical Conceptions of a Healthy City: The Greek Paradigm  
*Sophia Chatzicocoli and Athena-Christina Syrakoy*  
14/29

An Evaluation of Urban Transformation Projects  
*Yasemin Alkışer, Yurdanur Dulgeroglu-Yuksel, and Gulcin Pulat-Gokmen*  
30/44

Habitat and Habitants in the Catalan Pyrenees:  
Dynamics and Policies for Under-Populated High Mountain Villages  
*Mª Rosa Bonet, Miquel Domingo, and Miquel Martí*  
54/56

Dynamics of Gated Communities, their Impact and Challenges for Sustainable Development: A Case Study of Lahore, Pakistan  
*Anis ur Rahmaan and Bushra Anis*  
57/70

Design and Neighborhood Sense of Community:  
An Integrative and Cross-Culturally Valid Theoretical Framework  
*Yasser M. Moustafa*  
71/91

The Future of Houses:  
What Real-Estate Ads Tell About the Evolution of Single-Family Dwellings  
*Gabriel Rodriguez and Daniel Siret*  
92/100

At Home in Hospital? Competing Constructions of Hospital Environments  
*Peter Kellett and Peter Collins*  
101/115
Development of an Environmental Rating Tool for Buildings through a New Kind of Dialogue between Stakeholders and Researchers

Mauritz Glaumann, Åsa Svenfelt, Tove Malmqvist, Göran Finnveden, and Ola Eriksson

The Significance of Climate for the Use of Urban Outdoor Spaces: Some Results from Case Studies in Two Nordic Cities.

Ulla Westerberg

Papers on Traditional Public Baths in the Mediterranean (Editor: Fodil Fadli) - continued from the previous special issue Vol 2 (3)

Architectural Correlation Analysis of the Hammāms of Cherchell (Algeria): Linear vs. Aggregate Space in the Traditional Bath

Youcef Chennaoui

The Medieval and Ottoman Hammams of Algeria; Elements for a Historical Study of Baths Architecture in North Africa

Nabila Cherif-Seffadj

A Sustainable Approach for Urban Integration of Hammām Samārah in the Historic City of Gaza

Nihad Almughany, Mohammad El-Wazir, Farid Al-Qeeq and Hosam Dawood

Regular Papers (refereed- outside the scope of the special sections)

A Conceptual Framework for Sustainable Urbanisation in Future China

Zbigniew Bromberek

Urban Malays’ User-Behaviour and Perspective on Privacy and Spatial Organization of Housing

Ahmad Hariza Hashim, Harlina Mohamad Ali, and Asnarulkhadi Abu Samah
International Journal of Architectural Research
Archnet- IJAR
Volume (3) - Issue (1) - March 2009

Analysis of Climatic and Social Performances of Low Cost Terrace Housing (LCTH): Introducing the Affordable Quality Housing (AQH) Concept in Malaysia
Noor Hanita Abdul Majid

Planning Education and Sustainable Development: Students’ Perception and Knowledge- A Case from Turkey
Ebru Cubukcu and Gozde Eksioglu

A Conceptual Understanding for Teaching the History of Islamic Architecture: An Iranian (Persian) Perspective
Rafoneh Mokhtarshahi Sani

Reviews and Trigger Articles

The Importance of Green Space: Towards a Quality Living Environment in Urban Areas
Dzarul Hardy Azwar and Izham Ghani

Cities, Cultural Diversity, and Design Pedagogy
Enhancing “People-Environments” Paradigm in Education
Symposium organized jointly by IAPS Culture and Space and Education Networks
20th IAPS Conference: Urban Diversities, Biosphere and well-being, Rome, Italy 28th July-1st August 2008
Hülya Turgut Yıldız, Ashraf M. Salama, and Peter Kellett

Book Review: Community Participation Methods in Design and Planning by Henry Sanoff
Amira Elnokaly

urban RESET (Call for Papers)
Disclosing the Immanent Potentials of Urban Spaces
Jörg Seifert
EDITORIAL: TRANSDISCIPLINARITY, PEOPLE-ENVIRONMENTS, AND DESIGN RESEARCH

Aleya Abdel-Hadi and Ashraf M. Salama

This issue marks the beginning of the third year of Archnet-IJAR life. In the first two years, over 85 quality contributions by 70 scholars, academics and practitioners from 27 countries have been published after a rigorous review process followed by leading journals. Due to the high demand on Archnet-IJAR, the issue is divided into three refereed sections in addition to the review and trigger articles section. This issue is thus adding another dimension where many papers from countries not represented before are included to address the transdisciplinary nature of architecture, and people-environments and design research while exhibiting the international dimension of the journal.

The first section accommodates 9 papers selected from IAPS 19th – the 19th conference of the International Association for People-Environments Studies which was held in Bibliotheca Alexandrina in September 2006. The typical norm of the IAPS conferences is that complete papers are submitted for publication after the conference in a post conference book, and they are subjected to a strict review process. The scientific committee of IAPS 19th selected 31 papers for inclusion in the post conference book. However, due to the limited size constraints mandated by the publisher, 9 papers were not included. Based on discussions of Archnet-IJAR chief editor, the scientific committee of the conference, and IAPS board the nine papers are published in this issue.

The second section includes three papers on Traditional Public Baths-Hammam- in the Mediterranean, which represent a continuation of the previous special issue. Thanks to Dr. Fodil Fadli in giving those three papers the opportunity to see the light through an intensive translation and editing process since two of them were originally written in French. While the third section includes five papers submitted and refereed through the typical review process of Archnet-IJAR--offering a wide variety of topics and themes, the review and trigger articles section encompasses four submissions in the form of a review article, symposium abstracts, and book and conference reviews.

Reflecting on some contributions in this issue, it is believed that while not stated explicitly, transdisciplinarity appears to be at the heart of
the essence of these people-environments and design research. Theorists and practitioners have been discussing the issue of architectural and design knowledge for several decades. Recent years, however, have witnessed intensive debates in built environment literature (Salama, 2008). Donald Watson attempted to define a demand for knowledge in architecture and the built environment. He argues that: “The discipline of architecture needs a rigorous knowledge base by which to support its premises and principles that define the relationship between human and community health, and between building and urban design,” (Quote from Boyer and Mitgang, 1996). Henry Sanoff confirms this view when he argues that architecture should be based on knowledge of people needs; it should not be based just on the creative impulses of architects (Sanoff, 2003).

The design discipline, planning and architecture, like other fields of vocational expertise, can be classified as professional disciplines, especially when we regard them as fields of inquiry (Becher, 1989). Ulf Sandström has followed the development in profession-related studies since he identified two trends in research and knowledge production in the field of professional expertise: one which is oriented towards the production of mono-disciplinary academic knowledge, and the other which is directed towards subjects derived from concrete life situations, these being solution-oriented (Dunin-Woyseth, 2002). King and Burnell offer a broad and convincing representation of what constitutes an academic discipline. They propose several aspects that include a community, a network of communications, a tradition, a particular set of values and beliefs, a domain, a mode of inquiry, and a conceptual structure (Becher, 1989). Another definition, by Toulmin, focuses more on epistemological considerations, presenting disciplines like this “…each is characterized by its own body of concepts, methods and fundamental aims” (Becher, 1989).

The work of Klein, 1998; Ramadier, 2004; and Lawrence and Depres, 2004 suggest that transdisciplinarity is envisioned to tackle complexity while challenging fragmentation. As a mode of knowledge production, it is characterized by its hybrid nature and non-linearity — transcending any academic disciplinary structure. Transdisciplinary knowledge is a result of inter-subjectivity — a process that includes practical reasoning of individuals within the constraints of social, organizational, and material context, requiring continuous collaboration between different disciplines (by crossing their boundaries) (Dunin-Woyseth and Nielsen, 2004). Transdisciplinarity entails making linkages not only across disciplinary boundaries but also between theoretical development and professional practice, addressing real world problems and contributing to their solution. As a practice-oriented approach, transdisciplinarity is not confined to a closed circle of scientific experts, professional journals and academic departments where knowledge is produced. Through mutual learning, the knowledge of all participants (from different disciplines) is enhanced, including local knowledge, scientific knowledge and the knowledge of concerned industries, businesses, and non-governmental organizations (Nowotny, 2004). The sum of this knowledge is greater than the knowledge of any single partner. In the process, the bias of each perspective is also minimized.
To date, the development of rigorous theory/knowledge building has been at the edge of the profession and frequently marginalized as something separate from the professions of architecture and planning, that is: environment-behavior studies, building sciences, environment-technology studies, etc. As a result, most practitioners are not well equipped or even interested in understanding the value of their professional services. Concomitantly, the standing of these professions is being marginalized in the eyes of the public (Salama, 2008).

Sophia Chatzicocoli and Athena-Christina Syrakoy adopt the premise that the study of precedents can enrich the understanding of a healthy city’s historical background and can help in learning from the past. They introduce the Greek paradigm where the idea of the creation of healthy cities seems to be central in the Hellenic (Greek) culture, the first anthropocentric culture developed in Europe. The conceptions of a healthy city were supported by the Hellenic Mythology, Philosophy, Art and Science. The principles of the planning and design of healthy cities were expressed through various applications concerning the Greek cities and, especially, through the creation of specific settlements devoted to the restoration of health. In essence, the intersection of all of these disciplines exhibits a transdisciplinary discourse.

In their contribution, Yasemin Alkışer, Yurdanur Dulgeroglu-Yuksel, and Gulcin Pulat-Gokmen through an in-depth analysis of the Urban transformation projects within the context of Turkey, argue that architects, researchers and other professionals in the field, when they design such large-scale urban transformation projects, must understand the issue of the rapid growth of developing cities, which are at the same time trying to become global cities. In this respect, their argument is based on the value of integrating environmental, economical, and societal issues when dealing urban transformation projects. However, they also argue for integrating other dimensions that include legislations and bylaws at the local level that enable the realization of these interventions.

In an attempt to define guidelines amenable to the recovery of the architectural and scenic values of villages in almost abandoned Pyrenean valleys in Catalunya Mª Rosa Bonet, Miquel Domingo, and Miquel Martí present another transdisciplinary argument and case are presented where efforts of two teams with background in physical planning and social research. Their study involved several layers including geographical, urban, and architectural aspects of these villages in order to establish and prioritize a number of factors that help envision different degrees of decay and the level of revitalization and intervention strategies in those villages.

Anis Ur Rahman and Bushra Anis offers a study in the context of Lahore, Pakistan that covers historical and contemporary theories and understandings of gated communities, their role in shaping the urban fabric of the city, while conceptualizing the impact and challenges facing these communities in achieving a true sustainable development processes. This work is transdisciplinary in nature as it covers historical and temporal dimensions while at the same time bridges the boundaries of disciplines such as planning, architecture, and social sciences.
In his intensive study of the notion of “Neighborhood Sense of Community” Yasser Moustafa offers an integrated framework for understanding reciprocal relationships of social, cultural, and physical issues that achieve a sense of community. Arguing for the indispensable aspects of theoretical frameworks, Yasser proposes a framework that establishes links between the notion of the sense of community and community characteristics and the instrumental and symbolic roles of the built environment in achieving the sense of community. While the framework does not explicitly address the role that environmental design may play in the constructive integration of the local community in the larger society, he argues that this could be an important area for future research and explorations.

While the study of Gabriel Rodriguez and Daniel Siret offers an intensive analysis of the evolution of people’s preferences of single family dwellings, they conclude that evolutionary preferences are taking place in two important aspects exemplified by the utilization of spaces and the understanding of comfort. On another front, Peter Kellett and Peter Collins offer a conceptualization which underpins the various user responses and offer a critique of the design language of the current healthcare buildings. They present a transdisciplinary piece on the attribute of “Homeliness” in hospital environments. The fact that the two authors are from two different yet related backgrounds in Architecture and Anthropology reflects a transdisciplinary understanding. In essence, they rely on anthropological and architectural frameworks to analyze the data which consists of extensive interview transcripts complemented by photographs.

The research team from Sweden, composed of Mauritz Glaumann, Åsa Svenfelt, Tove Malmqvist, Göran Finnveden, Ola Eriksson, argues for the need of developing responsive assessment tools where the scientific community together with stakeholders are actively engaged. They present the first phase of a research project, entitled Building-Living and Property Management for the future. In this respect, the dialogue they propose offers another transdisciplinary dimension where researchers, professionals, and public officials are involved. Ulla Westerberg on the other hand investigates habits and attitudes related to climate and outdoor activities. In the context of Nordic cities she concludes that demands on comfort are on the rise and the presence of climatically pleasant outdoor urban environments is critically needed.

The three papers on Traditional Public Baths in the Mediterranean offer another dimension for transdisciplinarity where historical aspects, urban issues, decay, environmental concerns, social factors, and conservation and revitalization efforts are all integrated in discussing and analyzing such a unique building type. Aspects that pertain to crossing the boundaries of typical disciplinary discourse are also reflected in the regular papers which offer a wide spectrum of issues that range from general urbanization and sustainable development to integrating sustainable planning and design dimension in education, and from privacy, comfort and social behaviour to a rethinking of history through education in a specific region.

Further understanding of transdisciplinarity is evident in the reviews and trigger articles section where the abstracts of the symposium on Cities, cultural Diversity, and Design Pedagogy are
presented. They explore mechanisms and aspects by which the people environments paradigm can be fostered. Such a symposium was organized jointly by IAPS Culture and Space and Education Networks and convened by Hülya Turgut Yıldız, Ashraf M. Salama, and Peter Kellett—as part of the 20th IAPS Conference: Urban Diversities, Biosphere and well-being that was held Rome, Italy in July 2008.

While the full potential of transdisciplinary research and knowledge is not yet realized, Archnet-IJAR encourages submissions that cross the boundaries of disciplines, that foster dialogue between the professional and academic communities and that invigorate yet demystify the complexity of people-environments and design research.

References


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HISTORICAL CONCEPTIONS OF A HEALTHY CITY: THE GREEK PARADIGM

Sophia Chatzicocoli and Athena-Christina Syrakoy

Abstract
Today much attention is being given to the concept of a “healthy city”. However, the need for incoming paradigms is needed since this concept is still developing both as a term and as a real experience. The study of the historical experiences and examples can enrich the understanding of a healthy city’s historical background and can help in learning from the past. Especially the Greek paradigm appears of a particular importance as the idea of the creation of healthy cities seems to be central in the Hellenic (Greek) culture, the first anthropocentric culture developed in Europe, which is perceived to form the base of the so called Western Civilization. The conceptions of a healthy city were supported by the Hellenic Mythology, Philosophy, Art and Science. The principles of the planning and design of healthy cities were expressed through various applications concerning the Greek cities and, especially, through the creation of specific settlements devoted to the restoration of health, such as Asklepieia. Asklepieia were centres of worship of the hero, divine physician and healing god, Asklepios and became the first health care centres in Europe. Asklepieia offered their healing environment and services for many centuries in the then Hellenic territory, from the pre-historic era and the War of Troy though out the Classical, Hellenistic and Roman times to the early-Byzantine times until the total prevalence of Christianity. In Asklepieia the restoration of health was understood as a result of positive interaction of physical, psychological, mental, spiritual, social, environmental, etc, factors.

Keywords: Healthy cities; Greek Mythology; Greek history; Asklepieia.

Introduction
The contemporary Healthy City conceptions seem to be expressed mainly by the work of several local, national and international organizations. These conceptions are rooted in the international Healthy Cities movement of the end of the 20th century which is considered to first conceived in Canada in 1984 as a result of the “Healthy Toronto 2000: Beyond Health Care” symposium. The movement has since spread across the globe and now is said to involve more than 3,000 municipalities, all of which share a common objective: improving quality of life for and with their citizens (Hancock T. & Duhl L., 1988).

One of the organisations that offer a lot to a contemporary Healthy City conception is the World Health Organization (WHO). WHO...
adopted a Healthy City Movement in the mid 1980’s due to several factors related initially to the rising proportion of urban population. This proportion seems to be dramatically escalating as by 1900 one person in ten lived in a city; by 1948 the proportion was three in ten and by 2000 over half the world’s population lived in cities (WHO, 1996a). Furthermore, the number of people jammed into many of these cities exceeds those of entire countries. The explosive urban growth, outdating and inactivating ambitious planning, seems to be at the root of most problems of city life. It is causing increasingly intolerable pressures on the most conditions for health such as proper food, housing, employment, safe environment, healthcare services, hospital and health facilities function, etc.

Other factors that can influence the contemporary Healthy City conceptions are the common problems of the cities. Contemporary cities share many problems such as too much traffic and noise, pollution, inadequate and insufficient housing, problematic access to healthcare or basic needs (food, water, etc). And the final factors that could justify a Healthy City Movement and form its conceptions are the common potential of the cities, as cities seem to share the same potential to become healthier.

WHO’s conception is also related to its conviction that a Healthy City is not just an outcome, but also a process as it supports the following definition: “A Healthy City is one that improves its environments and expands its resources so that people can support each other in achieving their highest potential…a healthy city is conscious of health as an urban issue and is striving to improve it. Any city can be a healthy city if it is committed to health” (WHO, 1995).

In symphony with WHO there are the efforts of other organizations such as the Pan-American Health Organization, the International Healthy Cities Foundation, the United Nations various agencies, in particular the UN Development Programmes, the UN Centre for Human Settlements, the UN HABITAT programme, the UN URBAN initiatives as well as the work of UNESCO, UNICEF, etc. (Web-sides sources). Furthermore, on 11 January 2004, the European Commission adopted a Communication plan titled: “Towards a Thematic Strategy on the Urban Environment” which introduces the Commission’s conception and ideas concerning a strategic approach to understanding and upgrading the European urban environment (European Commission, EUROPA - COM, 2004).

**Contemporary Conceptions of Healthy City Characteristics**

The contemporary conceptions of the characteristics and qualities of a Healthy City have been expressed and described by several writers and organisations, who agree that there are certain qualities and characteristics that can make a city healthier, although it is widely recognized that no two cities have identical needs and priorities.

According to WHO (1996b) a Healthy City:
- Has a clean and safe physical environment.
- Meets the basic needs of all its inhabitants.
- Has a strong, mutually supportive, integrated, non-exploitative community.
- Involves the community in Local Government.
Historical Conceptions of a Healthy City: The Greek Paradigm

SOPHIA CHATZICOCOLI and ATHENA-CHRISTINA SYRAKOS

- Offers its inhabitants access to a wide variety of experiences, interaction and communication.
- Promotes and celebrates its historical and cultural heritage.
- Provides easily accessible Health Services.
- Has a diverse, innovative economy.
- Rests on a sustainable ecosystem.

Additionally, the following list contains eleven characteristics of a Healthy Community/City as they are conceived and outlined in Trevor Hancock’s and Leonard Duhl’s (1988) work. According to this work a Healthy Community/City should have:
- A clean, safe physical environment of high quality (including housing quality)
- An ecosystem that is stable now and sustainable in the long term.
- A strong mutually supportive and non-exploitative community.
- A high degree of participation and control by the public over the decisions affecting their lives, health and well-being.
- The meeting of basic needs for food, water, shelter, income, safety and work, for all the people in the city.
- Access to a wide variety of experiences and resources, with the chance for a wide variety of contact, interaction, and communication.
- A diverse, vital and innovative city economy.
- The encouragement of connectedness with the past, and the cultural and biological heritage of city dwellers and with other groups and individuals.
- A forum that is compatible with and enhances the preceding characteristics.
- An optimal level of appropriate public health and sick care services accessible to all.
- High health status (high levels of positive health and low levels of disease).

In line with the above are the following six characteristics of a Healthy City as they are identified by Len J Duhl (2000) who states that:
- Healthy cities/communities have a sense of history to which their citizens relate and upon which their commonly held values are grounded.
- Healthy cities are multidimensional... and have a complex and interactive economy.
- Healthy cities strive for decentralization of power and citizen participation in making decisions about policy.
- Healthy cities are represented by leadership that focuses on the whole of a city and can visualize both parts and “wholes” simultaneously.
- Healthy cities can adapt to change, cope with breakdown, repair themselves, and learn both from their own experience and that of other cities. Healthy cities are those that support and maintain their infrastructures.

The above concepts on Healthy Cities qualities and characteristics seem to be part of a wider effort aiming at making cities healthier in which local, national and international organizations as well as individuals, communities and cities collaborate and contribute offering information and examples (Chatzicocoli S., Syrakos T., 2006). As the problem seems to be increasingly demanding and the various efforts are still searching for new ideas and practices, further examples and experiences might be of great help. Historical examples can offer a valuable source of information and experiences contributing significantly to the understanding of the evolution of the Healthy City conception.
The Hellenic World Philosophical Conception

The basic ideas and conceptions of the Hellenic (Greek) Philosophy, Art and Science are considered to have their origin in the Hellenic Mythology as, according to several writers (P. Decharme, 1878, p. 44) it is “…mythological at form but philosophical at substance.” Furthermore, other writers (Aldo Rossi, 1982, p.134) seem to believe generally that the Hellenic city “…embodies the passage from nature to culture and this passage… is conveyed to us by myth.” as “…the reality of Greek art and Greek cities presupposes a mythology and a mythological relation with nature”.

These abstract philosophical ideas leading the passage from nature to culture were codified and expressed through attractive mythological stories which through the time were carrying their meanings to the future generations.

Thus, the deep roots of the Hellenic world philosophical conceptions concerning a healthy and consequently healing environment might be searched into the mythological stories connected with the notion of “health”. One of these stories is the Myth of Asklepios, in which the origin of the philosophical ideas and conceptions of health were considered to be embedded.

However, the worship of Asklepios (Asklepius* or Aesclepius*, etc, as his name appeared later in the Latin language), was first spread as that of a hero of the prehistoric era, who lived and served as a physician, in the region of Thessalia.

Historical Conceptions of a Healthy City: The Greek Paradigm

SOPHIA CHATZICOCOLI and ATHENA-CHRISTINA SYRAKOY

[Thessaly]* on the central Hellenic mainland. His prehistoric existence is connected with the Argonauts (Homeros [Homer]*, 8th century BC, or earlier, a, Hesiodos [Hesiod]*, 8th century BC, a, Apollonios of Rhodes, 3rd century BC, etc), Hermes Trismegistos (Neoplatonic School of Thinking, 3rd century AC) and the Trojan War, where Asklepios’ two, considered as biological, sons, Machaon and Podaleirios, served as physicians and leaders of the forces from Trikke, Ithomi and Oihalia, cities of Thessalia [Thessaly]* (Homeros [Homer]*, 8th century BC, or earlier, b, B 731).

The disagreement among the historians and archaeologists, on the chronology of the existence of Asklepios, is connected with the long lasting debate concerning the dating of the above major events of the prehistoric Hellenic world.

Asklepios, having been a hero seems to have become a God in the Hellenic Mythology between the era of Homeros, and the 7th century BC, where Asklepieia were widely recognized and built. During those centuries, several myths were formed to support the divine presence of Asklepios in the Hellenic Mythology.

With those myths Asklepios was understood as the basic God of Health, who represented the Healing Art in general. The Healing Environment was seen as an important component of the Healing Art and the Healing Man-made Environment was understood also as a component of the Healing Environment (Chatzicoccoli S., Syrakou A.C, Syrakos T., 1997). The conception of Asklepios was also identified through the presence of his mythical children that had been given to him who represented his divine properties. Among Asklepios’ mythical children, the most prominent, was Hygeia (Health), who became the goddess of health and provides the etymological origin for the word “hygiene”. Panakeia (Cure for all diseases) was considered as another Asklepios’ daughter from which derives the concept of a “panacea”. Among Asklepios’ mythical children there were also Aigle (Luminosity), Iaso (Healing), Akeso and Akesis (Remedy/Cure), Eumarion (Well-being), Alexinor (Defense against diseases), Telesphoros (Recovery), etc. (Picture 1a and 1b).

In order to further identify the philosophical ideas and conceptions of the Hellenic world concerning a healthy and healing environment one has to try to decode them following the myth of Asklepios. According to the most prominent of Asklepios’ myth (Hesiodos [Hesiod]*, 8th century BC a,b, Apollodoros, 2nd century BC, Homeric and Orphic Hymns, Inscriptions, etc), Asklepios’ father was God Apollon [Apollo]*, the third greatest deity in the Hellenic Dodekatheon, son of Zeus, the father of Gods. Asklepios' mother was the human princess Koronis, daughter of king Phlegias (meaning The Fiery), who reigned over the Hellenic region of Thessalia in the prehistoric era. Goddess Artemis, Apollon’s twin sister, also played a central role in Asklepios' myth. According to Chatzicoccoli S. (1997, 1999 and Chatzicoccoli S., Syrakoy A.C., 2004a), the conception that is represented in this mythological thesis might be that “…philosophically, the healing environment, had its origin in the divine healing powers of nature and the fire of human effort, and it was understood to be a product of harmonised collaboration between nature and man.”
Continuing Asklepios’ Myth, we have to notice that Asklepios’ mother, Koronis deceived God Apollon, though she was expecting a child by him, by taking the human Ischis (meaning Strength) as her husband. The punishment was inevitable. Apollon’s twin sister, Artemis, Goddess of morality, brought about the death of Koronis. Thus, “... the golden rule No 1, in the healing environment philosophy, is formed which says: Any time humanity forgets the divine nature of the healing art and begins seeking for independent and arrogant human strength (Ischis), it will be punished” (Chatzicocoli S. 1997, 1999).

Back to the Myth, we have to mention that Apollon rescued his son, Asklepios, from Koronis dead body and carried him to Mount Pelion where he delivered him to the wise Centauros Chiron (meaning Handman), Zeus’ brother, surgeon and medical tutor. Asklepios became the best of Chiron’s students and God of healing. For the healing environment philosophy, that means another statement saying “…the healing of the health care environment can be restored, if it is not too late for that, and planning and design for a healing environment should be reinforced by studies” (Chatzicocoli S. 1997, 1999).

Back to the Myth, we see finally that the resurrection of the dead person by Asklepios’ miraculous medicine caused the punishment and death of Asklepios by Zeus’ lightning. That was because the natural balance was upset. Hence “…the golden rule No 2, in the healing environment philosophy, is formed which says: Any time humanity forgets the human nature of the healing art, it will also be punished” (Chatzicocoli S. 1997, 1999).

If we wanted to go deeper trying to recognise the conceptions of the philosophical characteristics and requirements of the healthy and healing environment, then we should initially search the philosophical properties and characteristics embedded in the divine healing powers of nature. These divine healing powers of nature were expressed by Asklepios’ divine origin, represented in the Myth by his ancestors, God Apollon and Goddess Artemis (Chatzicocoli S., Syrakou A.C., Syrakos T., 2001a).

God Apollon and his twin sister Goddess Artemis philosophically represented the general and abstract idea of the divine healing powers of nature (Homeros [Homer]*, 8th century BC, or earlier, b, Homeric Hymns, 8th century BC, or earlier, Orpheus or Orphic Hymns, 8th century BC, or earlier, Apollodoros, 2nd century BC, Decharme P., 1878, Chatzicocoli S., Syrakoy A.C., 2004b) (Picture 2a and 2b). For example, Apollon was the physician of the gods. That means “…as philosophical characteristic of the notion of Healing Environment: Respect to the natural healing powers” (Chatzicocoli S., Syrakou A.C., Syrakos T., 1997).

Apollon was the God of sun. He represented the life-giving sunlight and warmth. Decoding this Apollon property we could recognize the conception that the healthy and healing environment characteristics should include: “Natural and spiritual light, meaning good environmental conditions as well as concern about spiritual welfare” (Chatzicocoli S., Syrakou A.C., Syrakos T., 2001b).

He was also the God of natural beauty of the countryside and its divine strengths. That also could lead to a characteristic for the healing environment: “Preservation of the natural
beauty” (Chatzicocoli S., Syrakoy A.C., 2004c). Apollon was considered to be the leader of the Nymphs, beautiful virgins, spirits of wild forests, rivers, lakes and mountains, who represented the natural harmony and were often nurses of gods and heroes. He was also the leader of the three Charities (Graces), who represented the delightful nature of art. That could be interpreted as healthy environment characteristic proposals: “The healing environment should also show respect to the spirits of wild nature and natural harmony (running waters, plants, etc) and moreover, should be supported by art works, art performances and art facilities” (Chatzicocoli S., 2002).

Statues of Apollon show him as a handsome young man with eternal youth, health and graceful strength. He usually holds a snake, a symbol of medicine, or lyre, a symbol of music, peace and harmony, or even a bow and arrows, symbols of punishment to the unfaithful.

Interpreting Apollon’s symbols, we can recognize as healthy environment characteristics and preposition that: “...The healing environment should accommodate the medical (health care) activities and should stress, symbolically, the medical achievements in order to strengthen the people’s belief in the final, positive results. The healing environment should also be reinforced by music, creating a peaceful atmosphere, and a sense of harmony. Finally, the punishment to the unfaithful of the above rules should be symbolically reminded to maintain the healing environment conditions” (Chatzicocoli S., Syrakoy A.C., 2004b).

Figures 2a and 2b: 2a) Image of God Apollon (marble statue, Olympia, GR, 5th Century BC) and 2b) Goddess Artemis (statue, Versailles, FR, copy, Hellenistic era). (Photos: S Chatzicocoli and AC Syrakoy).
Goddess Artemis, Apollon’s twin sister, who brought about the death of Asklepios’ mother for her unfaithfulness to Apollon, may be another source of origin and healthy environment conceptions research. Goddess Artemis, according to the Hellenic Mythology (Homer, 8th century BC, or earlier, b, Homeric Hymns, 8th century BC, or earlier, Orpheus or Orphic Hymns, 8th century BC, or earlier, Apollodoros, 2nd century BC, Decharme P., 1878), was always described as a virgin huntress, a female athletic figure. That may mean that “…for creating a healing environment the preservation of the natural virginity and the wild nature proximity is needed as well as facilities for mild athletics (of the female origin of Goddess Artemis)”, (Chatzicocoli S., Syrakoy A.C, Syrakos T., 1997). Artemis also appeared to be the Goddess of Celini (the moon), representing purity and morality. Hence, “...the healing environment should also be supported by purity, such as pure fresh air, pure fresh water, pure building material, etc. and, furthermore, the healing environment should support moral life activities” (Chatzicocoli S., 2002).

Symbols of Artemis appeared to be the wild animals (symbols of pure wild nature) and bow and arrows (symbol of punishment). Thus, according to Artemis’ symbols, “...animals and wild nature as well as the punishment to the unfaithful and arrogant catastrophers of healing conditions, should be symbolically included in the healing environment” (Chatzicocoli S., 2002).

The Hellenic World Applied Examples

The conceptions of a healthy city were expressed also by various applications on the Greek cities and some settings particularly devoted to health, such as Asklepieia. Asklepieia were centres of worship of the hero, divine physician and healing god, Asklepios and, in fact, they were the first health care settings and Medical Schools in Europe. The first Asklepieion was considered to be founded by Asklepios himself in Thessalia, during the era of Trojan War. Asklepieia, starting from central Greece, were spread throughout the Mediterranean Basin and beyond. As one of the out of the Mediterranean Basin examples we can mention here the Asklepieion of Bahrain, which used to be the ancient Greek island of Tylos, during the Hellenistic era (Vine P.). Asklepieia offered therapeutic treatment for many centuries in the then Hellenic territory, from the War of Troy though out the Classical, Hellenistic and Roman times to the early-Byzantine times and the total prevalence of Christianity (approximately the 6th century AD).

A kind of holistic healthcare was offered in Asklepieia through the conception of the illnesses as a result of interaction of physical, psychological, mental, spiritual, social, emotional, environmental, etc, factors (Chatzicocoli S., Syrakoy A.C., 2000).

Asklepieia were of various types. One of these types was the independent and self-contained “city like type”, as this type of Asklepieia were situated far from an urban setting and included all the amenities of a city. The most famous Asklepieia of the ancient Hellenic world were paradigms of this type. One of these Asklepieia, probably the most famous in the Antiquity, was the Asklepieion of Epidauros, which had been the archetype and the origin of many other Asklepieia as Pausanias (2nd century AD, B.26.8.) wrote: “...the most famous sanctuaries of Asklepios had their origin from Epidauros.”
This Asklepieion, being out of the main roads of the Roman Empire troops, had also the chance to survive the extended alterations done in certain Asklepieia by the Romans, during the Roman occupation, to adapt them to cover their different and mostly practical needs. Therefore, Asklepieion of Epidauros, including all the amenities of a city, without major alteration through the time, can be considered as a relatively pure paradigm of the physical manifestation of the philosophy concerning the healthy and healing environment and a healthy city conception in Ancient Greece. The concept of the healthy environment was understood, as we have seen, to be originated in the divine healing powers of nature and the fire of human effort and it was identified as a product of harmonised collaboration between nature and man. The required human contribution to the creation of a healthy environment seemed to be consisted of the respect, preservation and best use of the natural healing power and resources (sun, air, water, natural beauty and virginity, etc.), and a well-designed and built environment for the appropriate accommodation for healthy procedures deriving from the philosophical requirements of the healthy environment concept (Chatzicocoli S., 1994).

The layout of the Asklepieion of Epidauros manifested, physically and symbolically, the philosophical ideas concerning the healthy and healing environment (Figure 3). From the entrance, located in the northern side, people were led through the whole Asklepieion towards the South. Visitors, patients, relatives or friends, on their way southwards, met the temple of
Asklepios in the centre, having at its rear the medical intervention units, and by its side the Bibliothekē (library). Continuing southwards people passed by the political, social life and athletic centres reaching the accommodation centre and finally the Theatre. It is interesting to notice that the Theatre, devoted to mental and spiritual therapy, seemed to act, through the layout, as the final and outmost destination. Furthermore, the Theatre was dedicated to God Apollon, who represented the sun and the Theatre’s location, at the southern side of Asklepieion, probably stressed symbolically the most powerful position of the sun and Apollon’s properties significant contribution to the healing process (Chatzicocoli S. 1999). According to the plan of the Asklepieion of Epidauros the facilities which were included were generally the following (Chatzicocoli S., Syrakoy A.C., Syrakos S., 2005):

A) Accommodation. In this category of facilities can be included the Priest’s (staff) accommodation building, that was placed close to the Temple of Asklepios. There was also a Xenon (hotel) for the lodging of patients, their relatives and friends, strengthening the social support of the patients. That was a square building of 76.30 m long containing approximately 160 rooms arranged around four square courtyards surrounded by stoas with Doric columns.

B) Medical centre. That was placed by the side of the central area of the sanctuary. The medical intervention and clinical centre consisted of separate buildings, but in close proximity. Thymele or Tholos, a circular building and the most elaborate building within the sanctuary, was probably the surgical suite building. North of Tholos, was a long narrow building, named, according to inscriptions, Cataklinterio or Enkoimeterion or Abato or Adyto (meaning Dormitory, Inaccessible, etc). All of the south side of the Avato, facing Tholos and Asklepios’ temple, was opened into a stoa with a double row of Ionic columns. This building was the place in which the patients had to spend the night in order to be cured though the apparition of the god in a dream. Probably this was the pre- and post-operation ward and high dependency nursing unit. The dream most probably was the medical intervention experience in a state of half-hypnosis or anaesthesia, as recorded in the numerous dreams and cures description of the inscribed columns, which were found in the sanctuary (Strabon, 1st century BC, H, 15, Pausanias, 2nd century AD, B.27.3, Kabbadias P, 1900, Aravantinos A., 1906). These numerous cure descriptions were offered by the healed patients to the sanctuary of Asklepios.

C) Religious centres. The altar and the temple of Asklepios formed the main religious centre. The temple was centrally located in the sanctuary at the entrance of the medical centre unit. The Temple contained the gold and ivory statue of the god Asklepios in a seated position. The temple looking eastwards and having the rest of the medical centre complex at its back seems to protect the rest of medical centre unit function by monopolising the visitors’ interest and discouraging their curiosity concerning what was happening at the back. Additionally, further temples and altars of deities with positive qualities, related to Asklepios and the idea of healthy life style and activities were spread throughout the sanctuary.

D) Political & social life centre. Although the
whole sanctuary layout supported a policy for enhancing political and social life opportunities the building of Gymnasion [Gymnasium]* is considered to be the main political and social life centre. This was a very large building 75.57 X 69.53 m. The interior of the Gymnasion was organised into several apartments, large halls, stoas, baths, out-door areas, etc. It was believed to have been dedicated to the exercise of the whole person, body and the mind, with physical exercise and rhetoric skills training lessons offered to the athletes and patients under the supervision of special trainers.

E) Settings for athletics. As athletics were considered to be an important factor for maintaining health, settings for athletics were to be of outmost importance. The Palaistra and Gymnasion combined with Baths and the Stadion [Stadium]* constituted a complete athletic unit. The Stadion was built in the 4th century BC maybe upon an earlier structure. It was 181.08 m long, that is approximately one Hellenic stadion as a metric unit (a Roman Stadium was 177.55 m long), in the shape of a regular parallelogram. Along both long sides there were raised benches of stone. There was a system for draining the rain water and cleaning the running track and on the north side where was an underground passage leading to ancillary buildings. The Epidaurian Games took place every four years in parallel with the Olympic and other athletic games.

F) Settings for art performances. The arts, combined with sentiments of pleasure and eudemonia that they can stimulate, were seen as another important means of balancing the disorder of illness and restoring harmony and health. Music, poetry, comedy and drama performances were considered to be essential means of patient treatment. The Theatre was the main building for this purpose. It is believed to have been the best designed and constructed theatre in antiquity considering its harmonious proportions, elegance and its extraordinary acoustics with a seating capacity of 14300 spectators, which is still in use today. One of the principal sources of information about the musical contests that took place in this theatre is the dialogue in Platon’s “Ion” (5th Century BC, a). In that dialogue we can learn about the customs and appearance of the rhapsodists and the performances.

G) Centre for education. Continuing education seemed to be an additional important means of strengthening a holistic orientation of the healthcare offered by the Asklepieion. Various activities in the Gymnasion, Stadion and the Theatre may be considered as educational and in addition a bibliothek (library) seemed to help in that direction.

H) The natural environment. A sacred forest dedicated to the God was always attached to Asklepieia. A high quality natural environment was recognized to play an important role to the healing process. Therefore, it was represented and protected by various Gods, Goddesses and by the Nymphs. Nymphs were female spirits of the natural world, minor goddesses of the trees, forests, rivers, springs, mountains, seas, etc. They were responsible for the nature’s wild beauty protection and they were often nurses of gods and heroes. Buildings also were always connected with the spirit of their natural environment. In addition water treatment facilities such as baths, wells and fountains were found all over the side of the Asklepieion as the mineral, hot and cold water were seen as important means of healing by cleaning and
strengthening the body and purifying the soul.

The above conceptions of the healthy and healing environments, encoded and represented in their simple and original form in the Hellenic Mythology and applied in Asklepieia, are extensively analyzed in the work of many philosophers of the Hellenic world. Among them we can mention here Hippocrates. Hippocrates (460-370 BC), the famous Greek physician and philosopher, was the most celebrated of the famous teachers in the Asklepieion and Medical School of the island of Kos and he has been internationally known as “The father of Medicine”. Hippocrates was considered to be an Asklepiades, Asklepios’s descendant of 18 generations by, Asklepios’ son Podaleirios (Soranos of Ephessos, 2nd century AD). An important source of information can be considered the Hippocrates Collection and especially his treatise: “About Air, Water, Topos (Places)”, which is dealing with the ways the physical (air, water, climate, orientation, ground fertility, cosmic powers, etc) as well as the political social and the general manmade environments of a “topos” can influence and form their inhabitants’ characteristics, habits, behaviour and health.

Other sources of information can be Platon’s philosophical work, mainly his “Politeia” (Platon, 5th century BC, b) and Aristoteles [Aristotle]* philosophical thesis, expressed mainly in his “Politika” (Aristoteles, 4th century BC). Aristoteles was also an Asklepiades, by both his parents, another descendant by Asklepios’ son Machaon. This great philosopher was also known as the teacher of Megas Alexandros [Alexander the Great]*, the famous young Macedonian king and leader of the Pan-Hellenes (Pan-Greeks)*, who extended the Hellenic territory and civilization to India.

**Conclusion**

It is valuable to look for examples and developed studies not only among contemporary cultures and experiences but also among various historical periods in order to approach a holistic conception of a “healthy city”, as this conception is still developing as a term, as well as a real experience, and there is an urgent need for incoming paradigms.

One of the sources for the provision of historical examples is the Hellenic World which can offer the Mythological and Philosophical base, as well as a plethora of applied examples that can support a “healthy city” conception.

The most characteristic of the applied examples can be the example of the “city like type” Asklepieia. Asklepieia, as settlements devoted to health, had been acting as prototypes for the development of healthy cities in the Hellenic World. Greek cities included just the same type of amenities, although of a different scale and proportions, based on the same philosophical ideas with the same physical and symbolic manifestations, following the Aristoteles belief that “the first and necessary condition of a city is health” (Aristoteles, 4th century BC, book 7, 10). The main amenities that were included were: accommodation, the medical centre and various religious, political and social life centres, settings for athletics and art performances and centres for education, enriched by the required supporting services. All of these amenities were planned, designed and built in a carefully selected location and environment to fulfil the
qualitative and quantitative requirements of a healthy place. These requirements included beneficial site characteristics, orientation and natural resources, the loose layout and the perfect avoidance of deep planning in a natural environment which was in symphony with its healthy philosophical and mythological conception.

However, despite the fact that the contemporary conceptions of the characteristics and qualities of a Healthy City, expressed by various national and international organizations, are generally in line with those expressed by the Hellenic World of the past and despite the fact that it is believed that “…the memory of the city ultimately makes its way back to Greece, where urban artefacts coincide with the development of thought, and imagination becomes history and experience” (Rossi A., 1982, p. 134), the situation today seems different.

In the present both of the golden rules of the healing environment philosophy as noted before, according to the Hellenic Mythology, seem to be forgotten. Humanity forgetting its human nature and the divine nature of healing art, seeking for independent and arrogant human strength (Ischis=power and money) manages to destroy the natural healing powers. So a natural “punishment” begins. The main natural healing forces such as the air and the water, because of the pollution, and the sun, because of the hole in the ozone layer, can no longer heal but, on a contrary, they kill (Chatzicocoli S., 1997).

Having destroyed the main natural conditions for a healing environment, humanity seems to realise again their vital necessity to health care. This came more than 3000 years after the establishment of the healing environment philosophy by the Hellenic Mythology, forming its theoretical level, and the application of such a philosophy to the Asklepieia, forming its practical level. However, because of the destruction of the natural components of healing environment, all the criticism, interest and demands are concentrated on the only component of the environment that remains still controlled by man, the designed and built environment, mainly the urban one.

The question is: How a small component, as the designed and built environment, even of big cities seems to be, can replace and restore the total whole? And finally another question is risen: Whether or not and for how much longer, Asklepios and his mythical children, Hygeia (Health), Aigle (Luminosity), Panakeia (Cure for all diseases), Iasos (Healing) and Telesphoros (Recovery) will be able to serve the unfaithful and arrogant humanity?

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Historical Conceptions of a Healthy City: The Greek Paradigm

Sophia Chatzicocoli and Athena-Christina Syrakoy


Hesiodos [Hesiod]*, (8th century BC a), “Theogonia”. **
Hesiodos [Hesiod]*, (8th century BC b), “Women Catalogue or Heoiai”. **


Homer [Homer]*, (8th century BC, or earlier, a), “Odyssea” [Odyssey]*. **
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Hesiodos [Hesiod]*, (8th century BC b), “Women Catalogue or Heoiai”. **


Neoplatonic School of Thinking, (3rd century AC), 18 Hellenic works of writing based on a lot earlier ideas. Some titles of them are: “To Asklepios”, “Asklepios’ terms to king Ammon”, etc, translated into Latin language by Marcilus Fissen by the title “Mercurii Trismegistus liber de potestate et sapientis Dei” in 1471.


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*The terms in brackets [ ] state the Latinised or Englishised version of the presiding Greek terms.


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AN EVALUATION OF URBAN TRANSFORMATION PROJECTS

Yasemin Alkışer, Yurdanur Dulgeroğlu-Yuksel, and Gulcin Pulat-Gokmen

Abstract
The paper aims to find criteria for appraising the existing urban transformation projects in view of capacity, quality and participation. The way of developing processes affecting the urban zone transformed as (1) socio-culturally and (2) physically is discussed within a case study, called Zeytinburnu. It is the oldest squatter settlement in Istanbul and represents the first project implementation area of squatter housing rehabilitation in the nation. In the last decade, urban transformation has found a way to have the pilot project in the Zeytinburnu region. Throughout its examination, it has been possible to put into perspective the national housing policy and local strategies. Architects, researchers and other professionals in the field, when they design such large-scale urban transformation projects, must understand the issue of the rapid growth of developing cities, which are at the same time trying to become global cities; and generate alternatives, which are sustainable and economical, as well as fit for the community and formal authorities. It is then hoped that some generalized principles of evaluation with strategies flexible enough to match diverse and complex urban problems will be arrived at, which in turn be a direct feedback on the beginning of the planning process.

Keywords:
Urban transformation; participation; spatial quality.

Introduction
Goal and Approach
This paper aims to examine the final transformation, in particular, to find criteria to provide feedback for appraising the existing urban transformation projects. These projects have been examined recently for their non-democratic implementation and for non-feasible components within the existing legal framework. Zeytinburnu was selected to start with urban transformation. It has become a major experimentation case on the national and international agenda, as represented in the formation of a special unit involving transformation with local municipal institutions. A key point will be Zeytinburnu as a sub-center to Bakirkoy. Furthermore, Istanbul has been declared to be a mega city in the future by the World Bank – which also projected that more than 97% of the world’s population would be living in the mega cities by the year 2030 (Yapıcı, 2005). Archival studies on Zeytinburnu, updated by the current work of the Istanbul Municipality...
Urban Transformation Atelier and compared to the actual current situation through visual documents taken by a group of graduate students of Architecture Faculty of Istanbul Technical University for a course, constitute the main methodology to the selected region in Istanbul (Course Notes, 2005-2006).

Theoretical Background

Urban transformation aims to better the social, economic and spatial quality of the cities. Related concepts are urban regeneration, urban renewal, rehabilitation and gentrification. Sustainability of urban renewal must be provided in planning. For urban transformation, urban rehabilitation and urban housing stock management must be integrated. Dilapidation of a neighborhood is an important consequence in the changing cities.

Urban renewal, rehabilitation, improvement and regeneration are synonymously used for urban transformation. Ironically among some groups like NGOs, these connotations or components of urban transformations actually lead to urban restructuring, privatization, and control in the globalized world (www.peyzaj.org/2005/Haber/haberdetay.asp,HABER). Urban transformation takes place as part of the nature of the dynamics of the city. However, it can be planned and positively oriented through policies. At the base of such policies lie values and change in the values. The transformation of the whole society takes place. A new relationship is formed between culture and economy. Cultural industries include broadcast media, film, publishing, recorded music, design, architecture (classical) and visual art, theater, concerts and museums (traditional ones).

“Innovation, continual transformations, personal choice, creativity—all these were cultural values in the 1970s and 80s ran close to the transformation of cultural consumption and, increasingly, cultural production”. In this context, cultural intermediaries must link global flows to a specifically local component, to make cultural infrastructures a significant element of local city planning. The cultural intermediaries are concerned with opening up local space to new practices, to transform local cultures to act as agents of cultural change. According to Zukin those transform symbolic and spatial practices of an area: specialist shops, cafe bars, galleries and restaurants and change consumption of an area; i.e. loft-living, historic restoration, valuing the character (Zukin, 1995). Many cultural intermediaries across Europe have emerged as entrepreneurs, cultural catalysts that actively transform the local cultural landscape of the city. In this sense, first linkages between cultural industries and local policy makers are found around urban regeneration projects.

Urry states that global flows are increasingly made up of signs, images, texts, designs and sounds that have primarily aesthetic significance. Thus the city from a global economy perspective becomes more important than the state. The cultural sector usually mixes the value and the money by making the economic value dependent on the cultural value. There is an emotional investment in the product but at the same time a want and need to sell it (Urry, 1995).

The first major transformation of the cities was during the breakthrough of the 19th century in European cities. It was the period of industrialization and those cities of the
Developed Countries had completed their “industrialization” by the end of the 19th century. In that sense their first transformations were complete. However, the Developing Countries experienced their industrialization in the mid 20th century, and unlike those cities of the Developed World, they have not been able to complete their industrialization; they are struggling between the growth to meet the requirements of industrialization and “globalization” - the current transformation state of the contemporary cities. Major cities all over the world are unavoidably under the influence of this transformation due to the fact that the new millennium is the age of rapid spreading of information and online communications.

A major difference between the two stages of transformation is that in the first there was a separation in geography of rural and urban; while in the second, the location in geography was not as significant. Thus during the first era, the urban areas increased at the expense of rural areas by in-and-out migrations to the urban areas where capital is to be produced and in the second one, one could be less dependent on physical location and still be in touch with the world (Thorns, 2002).

In the Developing World, a lot of urban rehabilitation projects have been designed to tackle the regularizing of urban transformation. Some implementations such as the following have been successful in achieving their goals: the Guangzhou case in 2003 in China was realized during the last decade of the 20th century. The goals were to provide workers with a reasonable income level, and to promote the purchase of a house with a flexible credit system. Its success is in the renewal of the houses and construction of apartments. In Indonesia after the 1980s, in order to complete the improvement of conditions of Kampung, all houses were provided with water and electricity. The major issue was to tackle the integration of this area with the existing urban geography. In Sri Lanka, the Million House Program took place in the 1980s to meet the needs of one million homeless, despite, some organization problems. In Thailand, Bangkok, during the late 70s, a transformation project took place in a hundred year old settlement, Sengki. The community had invaded this public land. The aim was to sell to the settlers the land they had invaded for a low price. It was a successful project. In Caracas, Barrio Brisas de Truno, a project was implemented at the beginning of the 21st century. Solution to the issues of the settlement regarded land ownership, an infrastructure network, education through participation, and provision of housing especially for women. Unique to this project each family was given two plots of land, one for its shelter needs and the other to sell out in order to meet the housing and infrastructure costs. The final achievement was in re-organizing the land and increasing its value. In Rio, Carioca River, a participatory improvement of a composite neighborhood took place. Three middle-class neighborhood associations, twelve low-income groups, the municipality and various governmental firms have worked together for its success. The aim was to clean Carioca River and to revert to the canal’s orientation on the border. The project ended with a low budget due to participation. In Turkey in Ankara 4000 gecekonduvs and 120,000 people in Dikmen and Portakal Cicegi Vadi were affected by projects. In the Portakal Cicegi project, the goal was to share the rent to be created (Pulat-Gokmen, Dulgeroglu- Yuksel et al., 2003).
Turkey is a Developing Country, and Istanbul is one of its major cities, which accommodates a very significant proportion of the total industry in the nation. The city is not only in the process of becoming a world city, but also on the way to getting prepared for the possibility of a big Marmara earthquake. This preparation by the urban authorities is in the form of identifying the risky areas to be redeemed and to demolish the deteriorated quarters which have been rehabilitated before (Anon, 2006). The current transformations focus on the “not well-rehabilitated” squatter neighborhoods, rather than the whole city. Zeytinburnu is a former squatter settlement (stated to be so formally by Saran (1971) and Hart (1969)), dating back to the 1950s, but prior to that it was a planned industrial site, mainly for leather processing. Its closeness to water and its location at the periphery, made it fit for industrial investments.

**Urban Transformation Processes**

The assumption here is new economies, political and cultural relations coming out of a transformation, experienced globally, are embedded in the space. The actors of the transformation must have some sort of an agreement if not a consensus among themselves to carry it out. The local, central authorities, CBOs and NGOs, etc. must participate and make a consensus. It should be considered as what it was before the 1980s when it flourished all over the world, and after 1980 when it spread out. This chronological classification must be discussed in view of the role of the city on the national and spatial specialization and task-share, as it influences the urban transformation processes. National as well as local resources shape it. These components must be supported by institutional infrastructures.

In the 21st century, the economical, political and social factors as well as spatial factors interact with the fast transportation networks. These factors actually form the transformation processes. The new era is described by scholars as global information economies. While passing into this stage, the cities are transformed. In turn, information and technological developments are spread (Kayasu, Yasar, 2003). Information-based economies and urban areas are closely related as these economies generate strategic collaborations beyond the national borders supported by intense travels. These (urban) areas have become centers of attention as they are being transformed economically, politically, socially and spatially with global restructuring. With the movement from Fordist production into post-Fordist production, reaction against international markets arises and spatial production becomes dependent on the space in the need to be close to the natural sources. The finance and service sectors gather in the central metropolis. Within this context, various social groups have chosen different life styles, which in turn are reflected in the transformation and development of residential spaces. This in turn has motivated transformation.

The post-Fordist era, has caused degeneration in the urban areas, both in socio-economic terms and spatial terms (Sokmen, 2003). Here space is a means of generating sources. According to the author, entrepreneurship and post-modern architecture and urban forms are closely related. The urban medium has a competitive quality. Between 1982 and 1992, mass-housing became a major life style in Turkey or in Istanbul, producing a prominent housing type.
Components

The components of urban transformation can be classified as “social”, “economical” and “physical”. The social components are: advanced educational level, improved quality of the social infrastructure, and social interaction. The economic components are: increasing the quality of the existing economic activities, the types of the economic activities, and the dependency of the areas with close proximity. The physical components are: increasing cultural areas and natural areas, rehabilitating the housing stock, generating the green areas and life corridors.

Relations with each other and relations with foreign partners become important when conceiving transformation projects. The sector to be involved into transformation process is tourism. Lefebvre, Harvey and Castells all have theorized about the urban land and its dynamics with emphasis on the lands’ transformations. The pros are (a) various groups that begin to occupy the area, and (b) safety in view of earthquake. Urban dynamics leading to urban transformation require, according to Tekeli (2006): (1) multi-actor participation, (2) sustainable urban development, (3) protective cultural inheritance, (4) urban integration, (5) marketable land, and (6) viable cultural activities. New collaboration can be sought for source generating activities, i.e. with the IMF or the World Bank which play significant roles in economic globalization. Dynamics affecting the urban population after the 1980s are new technology, global economies, world city, and need for distinction (Tekeli, 2006). The two groups of factors of urban dynamics interact with each other as well as within. The National Report from the HABITAT II Conference and the process of involvement into the European Union have influenced the production of action plans to be sustainable within a sound and healthy life leading to the generation of new models for urban transformation projects.

The major properties of the Zeytinburnu Transformation Project, as proposed, are that it is a phased process and a neighborhood based housing renewal project and that priorities are given to the risky buildings which are to be mitigated. The idea has been to increase the low-density areas and decrease the high-density areas. In general, the transformation project was planned in such a way so as not to relocate the existing settlers. There would be about half times increase in the number of new built areas, which is estimated to bring a 95% increase in total real-estate values. Commerce, housing, offices and such urban services as the like are to be built along the major transportation axes, with the housing areas deliberately intended to have sufficient services. An urban spine with a linear urban center is considered and a major pedestrian route is planned with heavy building activity around it. The properties of this spine are as follows:

- metro-gate and metro-mod foci connected,
- tram and bus transportation systems included,
- pedestrianized main route,
- occasional urban plazas,
- green belts,
- multi-story and continuous new building orientations,
- ground, underground and upper-ground floor connections of pedestrians,
- extensive and large parking capacity (www.ibb.gov.tr).
With this planned transformation, a large sub-center is to be formed, and a sustainable development is expected to be achieved. Thus, the surplus to be achieved through increased land use and values is to be shared by and used for the local community. Two approaches to gentrification are (1) the economic approach and (2) the individual approach. The first one is concerned with rent differential in the city or the urban land due to population mobility; while the second is related to consumer choices (Uzun, 2005). The first one seems to be the case for Zeytinburnu. Yet, unlike the conventional major actors in gentrification, the elite administrators and professionals, here the planned transformation is initiated by the local authorities and supported by various agencies and sponsors (FIG. 1).

**Urban Transformation Projects in Istanbul**

The conceptual framework of the urban transformation projects in Istanbul can be explained by generating a global vision in which the Euro-Asia corridor is opened by way of the city; forming regional vision central districts and stages, city axes and their locations and roles; mega-urban transformation as civilization jumps; improving the information society as reflected in space organization in the form of a communication valley and prestigious center; generating green corridors/belts for green to join blue. Furthermore, big environmental projects and ecological transformations are envisioned in which nature recreates herself. In four mahalles of Zeytinburnu and Uskudar, one on the European and the other on the Anatolian side of Istanbul, for instance, MAG (meaning Quarter Disaster Volunteers in Turkish) have been formed. They give educational services to the communities for getting prepared for the expected big Marmara earthquake.

Zeytinburnu is not the only area to be transformed in a planned fashion but it is considered an exemplary one to continue the transformation process. Moreover, just like in Zeytinburnu, in Galata and Haydarpasa, both areas by the sea and with cultural landmarks, are to be transformed into large scale port-projects. Yet, Zeytinburnu was the first among them because it was thought to be the most risky in its urban pattern with very
little green and over-built quarters. This is not a surprise because it was the first squatter housing area, which later became a squatter town within the city of Istanbul. In order to change the area into a contemporary settlement, in-depth studies are to be undertaken in order to examine its urban structure. Local authorities have formed a responsible unit for this design task.

The idea was to create planned sustainable urban designs, for Zeytinburnu in particular, and for Istanbul in general. These projects involved the following zoning types: recreational, cultural and touristic areas (as in Kucukcekmece, Avcilar); central construction areas (as in Kartal, Ikitelli and Zeytinburnu); Community Center Projects (as in Beylikduzu and Kagithane); Residential Zones Urban Transformation Projects (as in Zeytinburnu).

As the first transformation project, Zeytinburnu with its total area of 1,560,000m² is intended to be a national and international tourism and commercial center. The existing land use being mostly residential, by the transformation project, the population living in the settlement is planned to be moved to the Ikitelli region and its vicinity. Projects can be categorized as: landscape development to connect the inlands to the water; cultural valley project (city wall) to renew city walls; industrial zone transformation (www.ibb.gov.tr).

Development of Zeytinburnu and its Planned Transformation

Before the Planned Period, gecekondu policies were to prevent squatter house construction, legalization, and prevention through the allocation of low cost land. Their implementation has been loose: Some regions, although within the demolition program, have been put under rehabilitation because demolition implementation could not be carried out.

The former squatter town has a population of 247,669 within 16,030 buildings in 13 quarters (mahalies) on a land of 1,200 ha. In the engineering reports of the Zeytinburnu Pilot Project, Zeytinburnu is found to have 2,295 high risk buildings, 15,019 of which are housing, 2,893 of which are commercial, and 791 of which are industrial. It was estimated that overall, 72,388 individuals will be affected. The area has been intensely built up, lacking adequate green for parks and playgrounds also to be used as gathering areas during a disaster. The demolition and rebuilding activities are expected to be completed within 3 years (www.ibb.gov.tr). The first squatter town in Istanbul, Zeytinburnu is expected to have an exemplary transformation project which will consider the earthquake risk. The head of the metropolitan municipality considered this area to represent Istanbul in view of its social make up and building construction. The project offers two alternatives to the Zeytinburnu inhabitants: (1) those who would like to stay within the settlement may remain if they are willing to pay extra for the new housing (2) those who want to move out, there will be other quarters in Istanbul, such as Topkapi and Ikitelli where new housing – 100,000 and 300,000 respectively, are to be built. Furthermore, this project of transformation is planned to be implemented in 10 other sub-municipalities of Istanbul. Some legal changes to be made at the existing urban development plans are considered to be supportive of these activities (www.ibb.gov.tr).

Zeytinburnu was originally agricultural land which
was later illegally subdivided and invaded by the in-migrants coming from Western Thrace and in-migrants coming from rural Turkey. The need for low-cost housing for them who were mostly working in the factories was unmet by the government, so they found their own solutions for shelter. They built houses themselves near the factories to minimize cost. The pilot project attacks these problems vis-à-vis developing strategies for economic growth, increase the educational level, and increase the human capacities. Middle or higher income groups go through an infiltration process. The gentrification may take place in Zeytinburnu in the future, because if the pilot transformation project is implemented with the expected new law on Istanbul’s transformation to be issued, then, the movement of certain social groups who would be forced to evacuate their houses either because they block the existing routes according to the Emergency Plan or because they are in earthquake hazardous condition.

Authorities’ reasons for choosing Zeytinburnu for the first pilot project are the following: i) It has high potential for transformation; ii) it constitutes a model for Turkey at large; iii) it has high concentrations of squatter houses; iv) it has unplanned urban growth going out of control; v) it accommodates all problematic building categories.

The total cost of the entire project is estimated to be US$950 million, and in 2004 the Mayor’s request to undertake the planning of the Zeytinburnu Transformation Project was accepted. He formed a Disaster Preparedness Group because a big Marmara earthquake is expected. Also, for the year 2010, Istanbul has been selected by the European Cultural Union as the Cultural Capital of Europe. This was the mission given to the city in the process of joining the European Union. Zeytinburnu has been selected as a pilot project to make it safe in view of building stock, urban-public spaces, and infrastructure. It is a coordinated project and was started simultaneously with the Earthquake Master Plan for Istanbul with four distinguished universities in Turkey after the big Earthquake in Turkey in 1999. It is expected that when this pilot project is completed, it would be applied to other locations in Istanbul. According to the Earthquake Master Plan, the existing building stock must be reassessed carefully.

The Zeytinburnu urban transformation project was first initiated by Mayor Gurtuna in 1999 with the Istanbul 2030 Vision Project, called “the leader city of the Information Age: Istanbul”. In 2002 the Istanbul Metropolitan Atelier was formed in order to implement urban transformation projects. In 2003, the project was bid to BIMTAS, a foundation of Municipality. Studies on the identification of the model, and the implementation phase are in progress. In the meanwhile, hotel complexes were constructed by the end of 2006 on land with an area of 12,000m2. The Action Plan, resulting from the earthquake preparedness pilot project in Zeytinburnu starts with examining the existing situation. In Istanbul, the high-rises which were started in the mid-80s have grown greatly (2110) (Yapici, 2005). According to the plan, three luxury hotels were planned. These can be realized only if 2400 houses out of a total of 16,030 are demolished in Zeytinburnu. That means that in place of the old and removed leather ateliers, touristic and cultural spaces are to be created. Local Action Planning involves the following Units and tasks: (1) investigations of diagnose; (2) making of road maps by IDMP (The
Earthquake Master Plan for Istanbul-EMPI); (3) YEP prescription; and (4) Pilot Project for Curement / medication.

Zeytinburnu, predominantly a residential area, is accessed from the sea through the nearby Bakirkoy Port for sea bus services starting from the 1980s. In the 1990s, light-rail and metro systems connected the region to Aksaray, a transition area. The railway was an old transportation system and minibus routes had been created there much earlier, in the 1960s and ’70s as a major connection between various neighborhoods in Zeytinburnu as well as with other parts of the city. The transformation project is the Strategic and Action Plan and aims to provide priorities in short, medium, and long terms in order to re-orient areas like Zeytinburnu in Istanbul where the earthquake risk is high. Factors justifying such effort and motivating factors are (1) unsafe building stock; (2) over-built areas; and (3) insufficient urban standards. The next step is to determine the priorities of escape routes and additional open areas.

Leather factories started to be established in the 1950s and with the opening of the roads connected to the sea, the factories were spread out over the whole of Kazlicesme (with an area of 190,000m2). In multi-story buildings, 220 leather ateliers were established. Even before the conquest of Constantinople, Fatih Sultan Mehmet built leather factories there next to the sea (Sinik, 2006). So it has a long history of contributing to the leather sector of the city and of the country. A significant portion of these ateliers actually occupied invaded land and were not removed due to the amnesty laws. This was all part of the planned development of industrial zones in Istanbul. Yet as the policies changed, so did Zeytinburnu and during the period from 1985 to 1992, those factories were moved to Tuzla on the Anatolian side of the Bosphorus.

Zeytinburnu has had three phases of transformation: The first, was the change in the nature of the land from agricultural use into housing settlement by way of in-migrations into the area, causing the settlement to be over-populated and over-built (1947-on). The Second, transformation occurred when the first and major Squatter Law was passed and the whole area was marked for implementation of “Rehabilitation” vis-à-vis the housing typology which changed from one or two story temporarily-built structures for one family each into a vertical, multi-story dense housing area, while the composition of the population changed into a more heterogeneous one since 1966. The third major transformation is the one in which the area has been denoted as a “high-risk” earthquake zone with the result of remapping, and re-working (2000-on) are about to be undertaken in order to: (1) open new corridors of escape; (2) make place for gathering areas, and (3) demolish buildings at risk. All are parts and components of the Emergency Action Plan of Istanbul.

The Emergency Action Plan

According to the IMM (Istanbul Metropolitan Municipality) map, Zeytinburnu has been classified with “irregular buildings” (IMM, 1995); this program involves demolition of high-risk buildings and re-building on their sites. The criteria for each are interesting (FIG. 2). The Emergency corridors or the green belts are designed routes, which are to move personnel, supplies and equipment to staging areas in order to serve major population centers. Gathering zones are public
places such as schools, mosques, gardens and sports facilities. For Gathering Areas, exit routes and intersections, risky buildings and grounds, south-east and west orientations have been the criteria. In selecting the buildings to demolish, risky buildings on the exit routes and interfering buildings blocking the exit roads are the criteria. Selecting axes as exit routes the criteria has been: accessibility to gathering areas, accessibility to forming a transportation network and counter-forming of the mahalle (quarter) borders, along with building axes, building numbers, heights and title-deeds. Also needed is the creation of gathering areas to serve as first aid and first care areas after an earthquake before being moved to their temporary shelters. The emergency gathering places are also considered parks during regular times.

Temporary shelter areas are for immediate shelter, sanitation, and distribution of aid while the damage is assessed in the case of an earthquake. They must have capacities for communication and transportation by air, land, or sea by cars, helicopters and ferries. The third goal is the creation of temporary housing to serve until the victims of the earthquake are moved to their long-term residences, after a natural disease and or after the demolition of high-risk buildings. The Quarter-renewing Action Program depends on the re-building approach. The improvement of the Zeytinburnu Community and the settlement during the first decade of formation of the settlement was due to the informal network based on voluntary associations which helped with the physical and social development of the settlement (Aksoylu-Dulgeroglu, 1984). Actually the first transportation network had been locally created and enabled the settlement to have access to the city center in the late 50s and even during the 60s. Furthermore, the associations which were classified according to their mission (i.e., sports, mini-buses, etc..) continually helped with the consolidation of the community.

The Sumer neighborhood is the oldest quarter in Zeytinburnu and the most deteriorated residential area. The strategies for upgrading the habitable houses and demolishing those which are not, become important. In other words,
the area has priority over other mahalles in that regard. Zeytinburnu was declared an industrial zone or site in 1947. The population reached 247,669 (2000 Census, Turkish Statistical Institute). Creation of a second-degree transportation axis will be constructed (20m wide) serving as the main evacuation and transportation way.

Dilemmas and Issues

Urban transformation projects aim at increasing the quality of the community and the settlement but just the opposite unwanted outcomes may occur: dilapidation of the houses, deterioration of the environment, all due to the non-integrated approach. Moving from Fordism into post-Fordism in the Post-Modern Era is characterized by opportunities, easy flow of information, personnel and product over the world. Flexibility and privatization policies have become important in that respect.

Urban transformation is more than “gecekondu” spatial transformation into a rehabilitated residential area or any other zoning. It is important to make at least part of the transformation project however, because of rapidly changing social and physical structures which need to be planned for growth with respect to the city. About 15% of the houses will be demolished (Zeytinburnu Pilot Project Report). People feel uncertainty and lack information about the pilot transformation project to be implemented on their site and to affect their lives directly as well as their use of urban space. A recently formed association in Cirpici mahalle has the view of the citizens: uncertainty and lack of trust in the government.

Amnesty Laws were increasing housing problems because they were short-term solutions. When mobility is motivated, migration and social change inevitably affect the spatial organization of the city as well as the production and communication. There are several dilemmas involved in the urban transformation projects: firstly, collaboration of public institutions and the community. In most cases, including Zeytinburnu, the dwellers are uninformed about the decisions about their settlements which will directly affect their lives. These decisions may carry adverse consequences and may be deliberately hidden from them. A Zeytinburnu NGO member had expressed such concerns in confronting the Zeytinburnu transformation project. Secondly, the notion of an ideal urban transformation project involves the generation of healthy and high quality living environments for the dwellers. Yet, this activity frequently involves demolition and eviction which would be followed by relocation and displacement of the dwellers (for example in Zeytinburnu, to open up green land a significant number of houses will have to be demolished). Thirdly, a more delicate rehabilitation would have been a better choice than a pilot transformation project for an old squatter settlement which has already been rehabilitated in the past. Thus the selection of the setting is an issue. Fourthly, some groups think that the implied institutional goal of the transformation project is to gain further rent or profit through re-zoning the land spared for residential, thus shifting the target group from the already existing dwellers to another group outside, which usually has a higher income status.

Critique and Concluding Assessment Principles

The Zeytinburnu Transformation Project can be criticized for not being transparently planned
to be implemented. Furthermore, the reality of the possibility of an earthquake requires a paradigmatic shift in terms of replacing urban growth with urban rehabilitation and urban transformation processes. There should be local participation and implementation methods, and action planning with urgent implementation, and the development of a relevant legal framework (Balamir, 2004). Possible negative impact of the plans is that the tightly knit social make up of the settlement could be broken if the members of the neighborhood are forced to leave. This in turn, may generate a community upheaval – detrimental to the local (administrative) authorities and the project itself. They may have to go to lower-income settlements, which would and might be unacceptable to the people who actually prospered there over the decades by starting from scratch and moving from vendor to small entrepreneur, from temporary to permanent shelter and who built for their offsprings. It is wrong to think of the Zeytinburnu transformation project as a squatter housing transformation project only, because unfortunately the squatter dwelling is sometimes recognized as the type first developed in Zeytinburnu. Squatter housing transformation projects usually mean that an area invaded by squatters is cleaned through expropriation of these lands by the Municipality and the Mass Housing Authority to later build Mass housing projects.

During the last decade, the law implementers and the academicians have discussed the pros and cons of urban transformation projects. As a result (1) the construction does not go to all potential beneficiaries; and (2) the interest span of the participants has not become continuous. (3) phased construction is a very useful possibility; (4) it is a low-cost alternative; (5) it is socially fit; and (6) as long as it protects the ease of access to the social facilities.

The new projects to be built require so much demolition that the sincere attachment of the local authorities to the transformation project is questioned by the local people. Too much demolition, as if building from scratch, was a mistake. This is an already highly populated area. For creating parks and gardens, 500,000 demolitions have to take place. In Istanbul urban transformation is interpreted differently than the usual definitions would convey and is interpreted as an earthquake transformation and a ‘gecekondu’ transformation (www.wow.TURKEY.com). The projects of urban transformation are limited by their own space orientations, scales and goals. The multi-actor issue is significant but unfortunately is approached as a technical matter and in a fragmented manner. Over the last two decades, ‘space’ and ‘society’ have created transformable impacts on each other (Unverdi, 2003).

A planned effort is advantageous in the long term, as long as it takes into account the sustainable multi-dimensional outlook. Sometimes there is no integration with the rest of the planning system. There is a discussion about the issue of squatter housing areas which have not been enabled to be transformed with community participation during urban re-generation / gentrification or restructuring (Dundar, 2003). Accordingly, social transformation is an indicator of cultural and economical re-structuring following the physical transformation. As a principle, “transformation” should be defined as a process, which should help the urban competition in integration with the global system. In Turkey, its implementations are done with the underlying concept of the
only “remedy” to the slum and squatter housing areas; however, in general it is meant to increase the global competition in the central zones of the global capital starting with the 1970s. Applications in Turkey have been in the form of providing alternatives to rehabilitation plans. Many existing roads being too narrow do not fulfill the necessities in case of emergency. The seaside provides or rather should provide a huge gathering area as well as huge spaces for every sort of supply in case of an earthquake, the railway tracks could collapse and block the connection to the seaside. Gathering areas by the coast are found to be more fit for temporary dwellings.

People’s reactions are restless and uneasy about the transformation process. They need to participate into the process through NGOs and CBOs during the decision process. So far, it is not a ‘community-based’ project but a ‘from- top-down’ one. In France, when people protested the demolitions as part of the urban transformation project, the government had to take back some steps and stopped the implementation of the project. It is a multi-actor, multi-disciplinary activity, according to the plan. Furthermore, the legal and administrative infrastructure needs to be strengthened before and after an earthquake. However, the NGOs and the community at large seem to be not given the opportunity to have their decisions heard. The community organizations or the nonprofit organizations consider the whole project as one in which poverty and deprivation are made even worse, with the lack of infrastructure. Under these conditions, Istanbul cannot become a world city like New York or London or Tokyo or Paris. Fewer demolitions, a participatory process, and moving from project to policy are the key points to an acceptable transformation process. Thus, for a successful and feasible urban transformation, the level of intervention must be gentle and public and private, all actors, formal and informal (government and community) should work in full collaboration.

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An Evaluation of Urban Transformation Projects

YASEMIN ALKIŞER, YURDANUR DULONGOĞLU-YÜKSEL, and GÜLCİN PULAT-GÖKMEN

Iyileştirilmesi ve Yaşanabilir Mekanlara Dönüştürülmesine Yönelik Bir Model Oluşturulması (A Model to Transform the Squatter Settlements into Upgraded and Livable Urban Areas Resistant to Earthquakes in Istanbul), (in Turkish), 3. Aşama Raporu İstanbul Teknik Üniversitesi, Çevre ve Şehircilik Uygulama-Araştırmaları Merkezi, İstanbul, Turkey.


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HABITAT AND HABITANTS IN THE CATALAN PYRENEES: DYNAMICS AND POLICIES FOR UNDER-POPULATED HIGH MOUNTAIN VILLAGES

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Abstract
This paper is the result of a research carried out in 2006 in a partnership between the Universitat de Barcelona and the Universitat Politècnica de Catalunya which was aimed to define guidelines to recover the architectural and scenic values of villages in almost abandoned Pyrenean valleys in Catalunya. The research studied at different levels (geographical, urban and architectural) the villages of several valleys in order to find out the factors more determinant to explain their degree of revitalization or decay. As a result of the research, the paper presents some conclusions on how to intervene on those pyrenean valleys: to work at the level of geographical units rather than with singular villages or individuals; to establish degrees of priority of intervention between the valleys in order to increase the efficiency of the actions; to ensure high quality infrastructure levels on the selected valleys; to fix strict limits to the construction of new vacation houses in high mountain villages in order to orient the real state demand to the rehabilitation of existing buildings; to create a program of subsidies to help the permanent population working on the primary sector to rehabilitate their dwellings; to promote the display of the natural and cultural richness of the valleys as a main factor for their revitalization; to support private and civic actions oriented to the recover of the valleys.

Keywords:
Habitats; habitants; Catalan Pyrenees; transformations; development policies.

Introduction
The basis of the social and urban structure of the small settlements split on high mountain valleys in the Catalan Pyrenees have been undermined since the beginning of the XXth century because of the continuous decay of the old agricultural and live-stock economy. The consequence of this situation is the abandon of a large amount of other time human laboured landscapes, areas particularly rich on scenic and natural values and cultural heritage.

This research is the result of a commitment of the Catalan government aimed to set up urban, regional and social policies able to recover the built heritage in these almost abandoned Pyrenean valleys. Originally, the politicians had a very precise question: if we wished to create a program of subsidies for rehabilitate houses in high mountain villages, what should be the criteria to assign such funds? We proposed to enlarge the question to a reflection on helpful...
guidelines for policies in order to recover the architectural and scenic values of these villages. Anyway, this original commitment explains the practical approach of our work. The objective was neither to built a theory on the socio-urban situation of Pyrenean valleys nor an exhaustive inventory of villages, but useful guidelines for decision-makers.

Another main feature of this research is its multidisciplinary approach. The partnership between two universities (the Universitat Politècnica de Catalunya, UPC, and the Universitat de Barcelona, UB) made possible to combine the know-how on architecture and urbanism of the first and the know-how on social-environmental psychology of the second.

The practical approach also guides the structure of this paper, organized in four parts: the presentation of the area of study, the methodology built up for the research, the results of our work and the conclusions in terms of policy guidelines.

**High Mountain Valleys in Catalunya**

The high mountain Catalan Pyrenees, located on the north-west part of Catalunya (fig.1), constitute, altogether with the area of the low section and mouth of the Ebro river, the region with slowest developing trends, and it even shows some signs of stagnation compared to the other areas of Catalunya, all of them under expanding metropolitan dynamics.

The High Catalan Pyrenees are organised on six counties. Two of them (la Cerdanya i la Vall d’Aran) are experiencing high rates of economical activity related to winter sport activities and real state and construction sectors. In the other four counties the development trends don’t manage to counteract the regression of the historical socio-economical structure of most of the valleys. The research has focused on these four counties: el Pallars Jussà, el Pallars Sobirà, l’Alt Urgell i la Ribagorça.

The rough topography explains the main features...
of these counties. First, the communication infrastructures have been historically deficient, reduced to the corridors of the main rivers, and as a consequence the economy of most of the villages was essentially self-sustained. Second, the structure of the settlements has followed the geography, establishing a clear distinction in each county between the towns located in the main valley and a myriad of small villages on the side-valleys.

However, for centuries, the high mountain valleys, cradle of the Catalan identity, were integrated in a balanced system with the more dynamic economy of the planes and coasts. This balance between very different socio-economic realities ended at the beginning of the XIXth century, when agriculture in high mountain valleys stopped to be competitive and new urban centres started to attract population flows. It was the end of a socio-economical structure that had created and maintained for centuries the landscape and the way of life in the high mountain counties. Along the XX century these counties have experienced a non-stop economical decay and a continuous lost of population. If the creation of power production plants (the first one in 1912) or winter sports resorts later revitalized the economy of some particular valleys, they were unable to shift the general trend of decay. In 1900 many of the small villages on the secondary valleys had more than 500 inhabitants and most of them had between 200 and 500. In 2001, there is any village left with such population on the side valleys and the towns on the main valley concentrates almost the whole inhabitants of the county (fig.2).

![Figure 2: Population’s Diminution on High Mountain Villages Between 1900 and 2001 (Source: Authors).]
Nevertheless, the analysis of last years statistical data and the talks with representative people of the political, social, cultural and economical life of the counties through which we started the research show some changes on currents trends compared to the last two centuries:

a) Investments on infrastructures have been very important on the last decades. Nowadays, the high mountain counties have the best road system they have never had along history. In this context, infrastructures are a double edge sworn. The villages are more accessible, but good roads also enable inhabitants to move to a dwelling in the near towns, while they continue to work on the fields and farms around the villages.

b) While the traditional family and social models broke definitively down, new social forms appear on the mountain villages. Among them, the neo-rural settlers play an important role. They are individuals or groups of people that decide to live in the rural world, those developing handicraft activities appealing tourism having replaced over the years the counter-cultural groups of the beginning of the eighties. Neo-rurals don’t have any social or economic impact on the whole, but, as we will show later, they can constitute a helpful factor in the revitalization of particular villages.

c) Tourism and leisure activities, reduced to winter sports some decades ago, have nowadays extended towards new domains (from adventure sports to cultural tourism) and to the whole year. The rise of vacation houses is another effect of the increasingly appreciated values of these regions. The construction sector has become the core of the economy of many mountain counties, and while vacation houses can contribute to recover some villages, they represent also a clear threat of urban sprawl.

d) The consciousness of the need to act in order to preserve the landscape of Pyrenean valleys is pervasive, not only because of they beauty, but also because of their symbolism as witness of crucial historical periods on the history and for the cultural identity of Catalunya.

**Construction of the Research Methodology**

Confronted to this historical, socio-economical and urban context, our work started with the analysis of the existing data and bibliography on the study area (particularly, it existed an exhaustive work committed by the Catalan itself at the beginning of the nineties collecting information about the inhabitant and buildings in almost all the villages). It was a very useful starting point for our research, which was not oriented to update this information, but to use it to conceive intervention guidelines.

The second step of the research was to establish a series of meetings with representatives of all the county councils, the agencies responsible for proximity policies in the counties. All along the study we tried to maintain a strong relationship with the agents and stakeholders of the territory in order to orient our work on the basis of a panoramic view of the problem grounded on the perceptions and views of its inhabitants.

An important result of this first glimpse on the situation of high mountain valleys was to realise that rather than focus directly on the villages, we should work with geographical units, mainly the valleys, grouping several villages that had developed historical and structural links. We had the intuition that some important factors
of revitalization depended on the synergies between villages within such geographical units.

Then a main step of the methodology was to define these geographical units and to select those to be studied. In order to define the geographical units we grouped the villages that shared a common topographical, historical and cultural background (fig.3).

Secondly, in order to select the valleys that we were going to visit we chose geographical units representative of different degrees of development: valleys with clear ongoing development trends, valleys with symptoms of starting development, valleys sinking on a permanent decay... Doing so it was possible to compare different factors and consider they impact on the different levels of development.

On the whole 18 valleys and 96 villages where visited through this research (fig.4).

The analysis through field work of the geographical units and villages selected was the core of our study. The analysis was based on in situ observation complemented with interviews with inhabitants. A filing card was elaborated both for each geographical unit and for each village.

The observational grids and the filing cards were conceived with the objective to find out which were the factors more determinant to explain the degree of revitalization or decay of the different villages. The final aim was to be able to set up guidelines to enhance the positive factors and measures to avoid the negative ones.

For the observational grid we took into account

![Figure 3: Definition of Geographical Units (Source: Authors).](image-url)
many factors at different levels. At the scale of the county, we considered the relationships between villages and valleys. At the urban scale, the quality of infrastructures and facilities and the kind of inhabitants and activities were key factors to consider. At the level of buildings, their degree of conservation was the main aspect (fig.5).

If the filing cards for villages organised the information collected by the field work, the filing cards for geographical units where already oriented to find out the influence of several factors on the degree of development of the valleys. They were structured in five sections:

- Geographical conditions
- Accessibility and quality of infrastructures
- Socio-economic life (population and activities)
- Degree of conservation of buildings
- Potential of revitalisation

The comparison of the analysis of the geographical units and villages made possible to set up the results and conclusions of the research. Figure 6 summarizes the methodology employed in this research.

**Results of the Study**

A first result of the study was a perception of the general situation of high mountain valleys someway different from that we had when starting research. The continuous lost of population that had decimated these valleys on the last centuries is no more the main trend. The few permanent inhabitants that continuous to live in those valleys constitute a reduced but quite stable population. At the same time, starting dynamics of recovering related to the tourist and leisure sectors suggest an eventual period of development for the mountain counties. However, the main results of the research where the correlations that could be established between the degree pf conservation of the villages and the different factors analysed. It was possible to set up four main correlations.
Good infrastructures are a necessary but not sufficient condition.
The network of roads has enormously improved (and continues to do so) in the mountain counties on the last two decades. The study shows that all villages with starting revitalization processes have good road accesses and that villages with very bad accessibility are almost completely abandoned. Therefore, good infrastructures are a necessary condition for the recover of villages. Nevertheless, we also found some villages very well connected that were very degraded. It is the case of villages located near important connection roads between mountain counties, which channel important passing flows that have no positive influence on the villages’ dynamics. Therefore, good infrastructures are not a sufficient condition for revitalization.

The existence of few permanent populations is a key factor.
The remaining population in the high mountain villages is very little. In most villages we can be talking about two or five people. However, the permanence of this population is important to avoid the complete abandon of the village and they can support other revitalization factors,
like attracting vacation housing and leisure activities. Among the permanent population in the villages is important to distinguish different kinds:

The peasants and farmers. More and more they complement their agricultural works with rural tourist activities (rural hostels, horse riding, rent a bicycle...). Even if they are few, they continue to play a major role in the maintenance not only of the villages, but mainly of the rural landscape surrounding them. In that sense, even if profiting from the improvement of infrastructures some farmers decide to move to the towns in the main valleys, as while as they continue to work in the villages' fields, their contribution to preserve the territory is clue.

People working in the near county capitals. If some peasants move to the main towns for better services, the villages located near these towns experience the opposite phenomena. People working in urban activities in such towns move to the small villages to benefit of the better geographical conditions (scenic view, peaceful ambiance, better weather...). They introduce to these villages social and cultural diversity.

Neo-rural settlers tend to play an active role in the recovery of villages. By developing handicraft activities, they contribute to the tourist attractiveness of the area. In other cases, they promote directly the rehabilitation process of the village. They usually help to increase the consciousness of the values of the villages and landscapes among the peasant autochthon population, which often are not aware or underestimate such values.

Vacation housing is the only opportunity to completely rehabilitate the villages.

Vacation housing, with very high rates in Catalunya, is often considered a cause of non sustainable urbanism and a threat for the territory. And it is so. The negative effects of the new low density developments having on the scenic beauty of the rural landscape has already arrived to the mountain counties. But at the same time, in the context of our research,
the possibility to rehabilitate the abandoned existing buildings in order to transform them in vacation houses is an opportunity for the small high mountain villages. The study shows that a good geographical location (scenic views and sun conditions), the existence of a permanent population avoiding the village to remain completely abandoned, and the development of the tourist sector (with rural hostels or leisure activities that attract visitors) are three factors that promote the appearance of vacation houses in the villages.

**A developed tourist and leisure sector has positive effects.**

The development of a new tourist sector valuing the many values of the mountain counties (scenic views, open-air leisure activities, cultural heritage...) is becoming an important pillar for the economies of the Pyrenean region, and one of the most sustainable in the future. Such tourism dynamics help the revitalization of small villages as they support the creation of new economic activities (like rural houses) or increase their attractiveness for vacation housing and visitors.

The valleys as geographical units grouping several villages play an important role on the consolidation of a tourism sector, as it depends not on the existence of singular natural or historical landmarks on particular villages, but on a critical mass of natural and cultural resources that only the whole valleys can offer. Besides, very often the valleys also share a cultural identity. The display of this cultural identity through the way the resources of the territory are treated and valued appears as a powerful mechanism to strength the attractiveness of an area.

Figure 8: PVacation House in Cabó (Source: Authors).

Figure 9: Historical Heritage in Ars (Source: Authors).
Conclusions

Based on these correlations between urban and socio-economical conditions of the villages and their degree of development it has been possible to conclude some guidelines for the revitalization policies of high mountain villages.

The first conclusion was that the policies should focus on interventions for the geographical units rather than programs for individuals (like the original idea of subsidies programs for rehabilitation of houses) or for particular villages. To work with entire geographical units makes possible to benefit from the synergies between villages. To concentrate the efforts on a geographical unit is the surest way to produce a recovering effect important enough to start self-developing revitalization dynamics.

Then, what should be the criteria to choose the geographical units in which concentrate the efforts and the priorities? A second contribution of the research was to propose a system to classify the valleys in four groups depending on the situation of the different factors considered (excellence of geographical conditions, quality of infrastructures, existing socio-economical dynamics and potential resources for development). By analysing theses factors in different valleys, the county councils could classify them as:

- High priority units (where it was proposed to concentrate efforts as they presented an important potential of revitalization)
- Secondary priority valleys (with a lower potential of development) valleys with ongoing developing dynamics (in which it was not necessary for the moment to increase the investments)
- Sinking valleys (completely abandoned or -almost and where it was not realistic to pretend reintroduce urban population and activities).

This classification system was conceived as a flexible tool, as it permits to review periodically the priorities (after five years of investments, a high priority valley can become a valley with ongoing development, a secondary priority valley can become a high priority one, or an ongoing developing unit can need some investment and be classifies as a priority one, and so on). To integrate the factor time in the conception of the policy is a key aspect.

Once established a system to establish priorities of intervention, the study proposed guidelines for such interventions:

a) the government should ensure high quality infrastructures on the selected geographical units (not only concerning the road network, but also on telecommunications and proximity to a transit system).

b) the regional and urban plans should fix limits (and almost avoid in the small high mountain villages) to the construction of new vacation houses as a measure to orient this real state demand to the rehabilitation of the already existing houses in the villages.

c) to create a program of subsidies to help the permanent population working on the primary sector (agriculture and livestock activities) to rehabilitate their dwellings. Usually these inhabitants, those who really contribute to maintain the territory working the fields and taking care of the hems, have a lower economic capacity than the temporary visitors and owners of vacation houses. When the development
of the vacation market raises the prizes the autochthon inhabitants very often can’t afford the maintenance and rehabilitation costs of their dwelling. Therefore, a subsidy program should be useful not in a general way for any owner but for this specific permanent population.

d) as a sustainable tourist sector based on the display of the natural and cultural richness of the valleys is a main revitalization factor it should be promoted. The tools explored in the cultural landscape parks on the last decade (identify the main resources of a territory, organise them in a structure that offers to the visitor an interpretation of these resources, design a legible network of routes within the valley, locate strategically small nodes of services integrated to this network...) could be very useful to elaborate plans to display the values of the valleys and increase their attractiveness.

e) to support private and civic actions oriented to the revitalization of the villages. For instance, county councils could create updated data bases of houses to rehabilitate in small villages available to real state developers or particulars interested to buy them. County councils could also drive participation processes in the villages to increase the awareness of the permanent inhabitants of the values of their own settlements and landscapes, but also to spread a culture of rehabilitation fully respectful with the environment.
In conclusion, the research on high mountain villages in the Catalan Pyrenees shows that there exist socio-economical trends that could lead to revitalization processes of these areas, that there is room for policies useful to drive such dynamics in order to avoid negative effects (like the creation of new vacation housing developments or some rehabilitation practices harmful for the landscape), and that university research can be helpful to set up the guidelines of these policies.

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DYNAMICS OF GATED COMMUNITIES, THEIR IMPACT AND CHALLENGES FOR SUSTAINABLE DEVELOPMENT: A CASE STUDY OF LAHORE, PAKISTAN

Anis ur Rahmaan and Bushra Anis

Abstract
The purpose of this study is three fold. Firstly, to provide a historical as well as an up to-date account of the temporal journey of the gated communities through various phases of human civilization. Secondly, to analyze the dynamic role played by them in bringing about social integration or otherwise in the urban fabric of developed countries as well as developing countries during primary, secondary civilizations; and also to conceptualize their anticipated role during the incipient high tech tertiary civilization. Thirdly, to study the impact and challenges of gated communities for sustainable development. The time-series analysis of the dynamics of the gated communities will be carried out with the help of both the published data about the gated communities at large, as well as a case study of the city of Lahore (Pakistan).

Keywords:
Gated communities; sustainable development; urban impacts; Lahore; Pakistan.

Introduction
Currently, the human race is passing through a transitional period of history which is composed of a differential mix of primary, secondary, and tertiary civilizations. The composition of this mix is in a state of flux and has been changing at varying rates in different countries, depending on the availability of technologic, economic and human resources in them. One of the distinguishing features of this transitory period is the accelerative speed with which the functional determinants have been and are changing in various parts of the world. Toffler has very appropriately highlighted this progressive dynamism by pointing out that "the First Wave of change – the agricultural revolution – took thousands of years to play it self out. The Second Wave – the rise of industrial civilization took merely three hundred years. It is likely that the Third Wave – the tertiary civilization – will sweep across the history and complete itself in a few decades" (Toffler, 1982, p.10). Gated communities have likewise been undergoing drastic transformations both in their functions as well as forms during the primary, secondary and tertiary civilizations. Figure 1 indicates...
the temporal journey of gated communities through various civilizations by interfacing various civilizations with the corresponding morphological transformations of the gated communities, namely, the gated cities, gated neighborhoods, and gated countries/regions. The figure highlights the fact that the outgoing era of “gated cities” has been the longest of the three eras; the era of “gated neighborhoods”, we are currently passing through for the last couple of centuries, is in various stages of evolution and decline in developing and developed countries; and the era of “gated countries/regions” is still in a transitory stage, and its future appears to be quite uncertain. The ensuing sections of this paper attempt to describe the three eras and analyze their impact and challenges for sustainable human ecosystem.

Figure 1: The Temporal Journey of Gated Communities through Various Civilizations (Source: Authors).

**The Fossilized Gated Cities of the Primary Civilization**

The “gated cities”, both in the developed as well as the developing countries, appear to be the reminiscences of the past. These communities were first developed in medieval Europe during the Primary Civilization, wherein the physical development pattern was “nodal” due to low level of urbanization (Jakobson and Prakash, 1971). “… The medieval towns fall into two groups of those that grew gradually and those that sprang into existence on a new site, with usual consequences on plan” (Abercrombie, 1959). The literature about the European walled cities, which were once developed as safe bastions by the feudal lords, ecclesiastic groups and merchant guilds, abounds the internet web-sites. These cities have now become foci of tourists’ attraction as described by one of the web-site: “Ancient walls, dry moats and their dunce-cap towers conjure up a romantic notion which is as compelling as it is baseless… We are talking about defensive structures meant to keep the invading hordes of sniveling, stinky, garbage-launching barbarians at bay; yet the medieval walled cities are quite nice and a real pleasure to walk on and around!” (Martin, website)

There also appears to be a consensus in the pertinent literature on Muslim walled cities, about the fact that “the physical pattern and organization of these cities resemble each other” (Grunebaum, 1955). The physical pattern of Muslim cities has generally been characterized by its homogenous organic fabric, relatively high residential densities, hierarchy of mosques, winding and shaded streets, and socially integrated, inward looking houses with uniform heights and parapet walls on the roof for privacy.

All these features of physical pattern are
obviously not random and can be traced to Islamic Shari’ah and climatic conditions prevalent in the hot and arid Islamic countries. Islamic Shari’ah, as rightly pointed out by Hathloul, distinguishes the “through street, the public way in which all people have right of way, from the land or cul-de-sac, which most jurists consider a private road appertaining to its surrounding properties” (Al-Hathloul, 1988). Hathloul further points out that “a notion complementary to this is that of “fīna”, an open space around or along a building, which in the conception of most Muslim jurists, is considered part of that property.

Likewise, the socially integrated housing manifests the concept of Islamic brotherhood. The cul-de-sac, the concept of fīna, the uniformity of building heights, and the parapet walls on the roofs signify the concept of privacy in Islam. Its importance is borne out by the hadith that prophet (SAW) prohibited a person from sleeping on an unscreened roof of terrace (Karim, 1938). The inward looking houses focusing on the enclosed courtyards with water fountains and green plants, apart from augmenting the family privacy, further strengthens the family solidarity.

The empirical evidence - provided by the old urban patterns Sevilla, where Ibn-e-Khaldun used to reside; Cordova, where Islamic civilization was once at its zenith; Damascus, which was the capital of the “Umayyads”; Tangiers, where Islamic history was made by Tariq Bin Ziad and written by Ibn-e-Batuta; Fez, which is known as the city of Islam; Cairo, the city of Salah Uddin Ayyubi, the hero of the wars of Crusades; Lahore and Dehli which served as the seats of the Moghals - leads to the inference that physical form follows the human functions. “The life style, the culture, the value system of the inhabitants all get deeply ingrained and fossilized in space. Physical form, unless mutated, never tells a lie!” (Anis-ur-Rahmaan and Anis, B, 1996).
Figure 2 shows the walled city in the context of Lahore metropolitan area, and the location of its gates. The walled city was constructed by the Moghal Emperor Akbar during his residence in Lahore (1584 to 1598). He also founded the palace of Lahore which, in subsequent times, was enlarged by his successors. The city walls of Akbar were fast falling into decay when Ranjit Singh, to a great extent, rebuilt them in 1812 and surrounded them by a deep broad ditch. The city wall, which was formerly 30 feet high has been reduced to a height of about 15 feet for sanitary purposes and the ditch was later on filled up and converted into a green belt by the municipality. The green belt encircles the city on every side except the north. The city is a mile and a quarter in length, and a little more than three quarters of a mile in breadth, including the citadel; the circuit being less than three miles (Latif, S. M., 1994). The access to the city is gained by thirteen gateways (figure 2); some of the gates are intact and have assumed historical significance, whereas others have already disappeared (figure 3).

Four gates are on the north side of the walled city (Roshnai Gate, Kashmiri Gate, Masti Gate, Sheranwala Gate); Three on the east side (Yakki Gate, Dehli Gate, Akbari Gate); four on the south side (Mochi Gate, Shah Almi Gate, Lahori Gate, and Mori Gate); and two on the west side (Bhatti Gate, and Taxali Gate). The nomenclature of each gate is significant of its characteristic feature, for instance, the Roshnai Gate (meaning the Gate of Light) is located between the royal mosque and the citadel. Being the principal entrance from the fort to the city, it was most frequented by the courtiers and royal servants and its quarters were profusely lighted up at night. Likewise, Kashmiri Gate face
the direction of Kashmir; the Masti Gate, being the corruption of Masjidi Gate, get the name as it leads to the Marrium Zamani mosque which has been named after the mother of Akbar; Sheranwala Gate owes it name to the fact that Ranjit Sigh kept his domesticated lions in a cage here. Similarly, Yakki Gate was named after the martyr saint who fought here against the Moghal infidels; Dehli Gate opens on the highway from Delhi to Lahore; Akbari Gate is named after Akbari Mandi which was founded by emperor Akbar; Mochi Gate is the corruption of Moti (pearl), it was named after Moti Ram, an officer of Akbar, who resided here; Shah Almi Gate was named after Shah Alam Bahadur Shah, son and successor of Aurangzeb; Lahori Gate was named after the city itself; most probably, the quarters of the city were first populated around this gate; Mori (hole) Gate is the smallest of all gates and is said to have served as refuse disposal route of the city; Bhatti Gate is called after the name of Rajput tribe which inhabited in this area in the ancient times; and finally, Taxali Gate seems to have been named as such because “Taxal (mint)” of the Muslim rulers was located in this area. Appendix 1 shows the photographs of the various gates; some of them have already disappeared, whereas others have assumed a historical significance.

Dynamics of Gated Communities in the Developed and Developing Countries during the Secondary Civilization

During the secondary civilization, due to the rising levels of technology, industrialization and the consequent heavy rural urban shift, metropolitan and aggregative physical development flourished (Jakobson and Prakash, 1971); and the communities started overflowing their gated boundaries. During this era the gated communities started to immerge as islands of gated neighborhoods on the vast metropolitan urban fabric. However, development does not appear uniformly in space. The technologic lag, the differentiated human and natural resources, and the political dissensions result in international disparities. As a consequence, the world got sharply divided into developed, developing and less developed countries. As physical form follows the socioeconomic functions, the evolution, composition and social acceptance of gated communities also underwent differentiation in various countries. This section undertakes a brief comparative analysis of the dynamics of gated communities in the USA and Lahore, Pakistan.

The gated communities have been the fastest growing form of housing in the United States, during its industrialization phase. In the last twenty years, thousands upon thousands of upper- and middle class Americans have retreated into these exclusive neighborhoods. In 2002 it was estimated that one in eight Americans will live in gated communities. In her revealing book “Behinds the Gates” Low provides an account of life inside these urban fortresses. After years of researching and interviewing families in Long Islands (New York), and San Antonio (Texas), Low provides an inside view of gated communities to help explain why people flee to these enclaves. Parents with children, young married couples, “empty nesters”, and retirees express their need for safety, their secret fears of a more ethnically diverse America, and their desire to recapture the close-knit, picket-fenced communities of their childhood. Ironically, she concluded that “the gated neighborhoods are in fact no safer than other suburbs, and many who moved there are disheartened by the insularity and restrictive rules of the community” (Low, S., 2004).
Dynamics of Gated Communities, their Impact and Challenges for Sustainable Development: A Case Study of Lahore, Pakistan

ANIS UR RAHMAAN and BUSHRA ANIS

Lahore, being the second largest city of Pakistan with a very rich historical and cultural background, is a hub of housing activity in the country. The development and spread of gated neighborhoods in Lahore has become a part of new housing schemes, specially for the people who are returning back to Pakistan from abroad; and also the people who were living in the congested parts of the city who want better physical environments, security and privacy due to increasing thefts and crime rate in the city. A survey of gated neighborhoods in Lahore was undertaken with a view to assess their physical and social environments, and to find out reasons for their popularity and the relative preferences of people in various income groups.

Lahore has approximately 40 gated neighborhoods which are inhabited, and few more are currently under construction. Out of the existing neighborhoods, 8 were selected for the survey on the basis of their socioeconomic status and location in the city. Two neighborhoods each were selected from higher income, higher middle, middle, and lower middle income groups. A probe of these neighborhoods reveals that they are on their growth path with no signs of decline. The pie charts, shown in figure 4, reveal that 26% of the families living in these neighborhoods can be classified as high income, 49% as higher middle, 18% as middle, and 7% belong to lower middle income group. The low income group of course, can not afford to have a bare house of their own.

The overall scenario of the selected neighborhoods also reveal that 12% of the housing units in these neighborhoods are villas or farm houses, 81% are semi detached town houses, and 7% are flats. The size of plot in these communities range from 1000 sq. yards (2 Kanals) or more to less than 250 sq. yards (10 Marlas). The maximum percentage (62%) of the families are living on a plot of 500 to 1000 sq. yards, 24% are living on 250 sq. yard plots, 11% are living on less than 250 sq. yard plots, and only 3% families have a plot of more than 1000 sq. yards.

Villas and semi detached houses are common in high and higher middle class with 4 to 5 bedrooms. In middle income communities almost all the town houses (96%) are semi detached. Most of them have 3 to 4 bedrooms. The lower middle income communities have only 2 bedrooms flats on less than 250 sq. yard plots. The maximum percentage (viz., 38%) of people, living in these communities, is employed by the private sector, 23% are from the...
army, 21% are businessmen, and 16% are doctors and professionals. Only 4% are landlords who usually have farm houses and big villas.

The survey also throws some light on the reasons of moving into the gated neighborhoods. 57% of the families moved in to these communities for better living and social environment, 21% for security reasons, 13% for better planning and design of the neighborhood, and 19% had other reasons, such as closeness to relatives and job. 93% of the residents expressed satisfaction with their neighbors and the security measures taken by the management of the gated communities.

Another interesting fact revealed by the survey was that if the residents of the gated neighborhood had a chance to move again, they would still like to move in a community which has better maintained gates (63%) and well integrated with the city system (32%). They also indicated that they would like to have better social environment and living conditions (63%), and would like to be nearer to their work place (37%). The rich people needed more security than the middle income groups. Although most of the residents were satisfied by the security measures taken by the management, yet about 60% told that with the increase of crime and theft in the city, the gated communities do have occasional thefts as well. Figure 5 shows the photographs of some of the typical gated communities of Lahore.

The Anticipated Journey of Gated Communities during the High Tech Tertiary Civilization in Developed and Developing Countries

The human ecosystem has not only been getting transformed at a geometric pace but its various determinants, such as people’s demography, culture, social organization, psychology, environment and technology have also been changing acceleratively at differential rates. As a consequence, some of the socioeconomic and spatial concepts are becoming outmoded, and still others are undergoing drastic transformations to suit the new realities of the high tech society. As a consequence, the evolution, growth and decline of gated communities in various countries during the tertiary civilization are expected to be highly cyclic. Figure 6 indicates the growth and decline of gated communities in developed and developing countries during the various phases of human civilization. The gated cities of the primary civilization have now become part of the history in both the developed and developing countries.
These cities are no longer gated. Their gates have either been eradicated or got eroded due to lack of maintenance; nevertheless, their masonry structures have assumed archeological and touristic importance. Over a period of time, either new functions have adapted to their traditional physical pattern or their pattern has been modified to suit the new functions.

During the industrial civilization the gated communities sprung-up sporadically in the developed countries as islands of “gated neighborhoods” all over the metropolitan fabric. The trend was followed by the developing countries at varying speeds, and is still on the increase. However, in the developed countries the rate of growth of the gated neighborhoods has not only been slowing down but lately, has also been showing signs of decline. This contention is substantiated by Low’s study, which reveals a declining trend of social acceptance of gated neighborhoods in the United States (Low, S., 2004). Besides, certain land-use control measures are also being adopted which are resulting in a decline of gated neighborhoods. For instance, the concept of Planned Unit Development (PUD) is a step towards mixed uses and socially integrated housing schemes. It is being further augmented by the concept of “inclusionary zoning” (as opposed to “exclusionary zoning”) which also promotes social integration rather than gated segregation of social and ethnic groups. Cluster zoning and cul-de-sacs are also coming in vogue (Anis-ur-Rahmaan and Anis, B., 1996). In Ketchum, Idaho (USA), “the planners are taking action to ensure that the city does not become a maze of gated neighborhoods. The Planning and Zoning Commissioners endorsed a set of policy changes that would prohibit gates on any private road and driveway that provide access to more than one single family residence (Foley, G., 2004).

Although the trend of gated neighborhoods in developed countries, like the United States, are showing signs of decline during their journey to the high tech tertiary civilization, yet there are well founded apprehensions that the developed countries, per se, are becoming gated communities (Figure 4). Friedman has described the status of developed countries during the global city era as follows: “The United States would be a gated community, with metal detectors at the front gate and a lot of people sitting in their front yards complaining about how lazy everyone else was, even though out back there was a small opening in the fence for Mexican labor and other energetic immigrants who helped to make the gated community function” (Friedman, T., 2005). Likewise, Friedman has described the Western Europe as “an assisted-living facility with an aging population lavishly attended to by Turkish nurses”.

As compared to the situation in the developed countries, the gates of most of the developing/less developed countries will almost be wide open. According to Friedman: “Latin America would be the fun part of town (the global city), the club district, where the work day does not begin until 10 p.m. and every one sleeps until mid-morning. It’s definitely a place to hang out, but in between the clubs, you do not see a lot of new businesses opening up, except on the street where Chileans live. The landlords in this neighborhood almost never reinvest their profits here, but keep them in a bank across town.” (Friedman, T., 2005)

Friedman further remarks that “India, China and East Asia would be the ‘other side of the track’. Their neighborhood is a big teeming market, made up of small shops and one room factories, inter-
dispersed with Stanley Kaplan SAT prep schools and engineering colleges. No body ever sleeps in this neighborhood, every one lives in extended families, and every one is working and saving to get to “the right side of the track”. Perhaps the only exception among the developing countries may be the Arabian Countries which Friedman has described as follows: “The Arab street would be a dark alley where outsiders fear to tread, except for few side streets called ‘Dubai, Jordan, Bahrain, Qatar, and Morocco” (Friedman, T., 2005).

Along side the tendency of “gated countries” a new phenomenon of “gated regions” is also developing. Regional cooperation for development is resulting in lifting the “country Gates”, and erecting them on the entire region. European Community is a glaring example of this. All the countries within the EU have become gateless for each other; nonetheless, if a person outside the EU wants to visit any one of the 15 counties in Europe, he has to obtain a Schengen visa. Once a person enters any one of the 15 countries, he can move around freely in any of the Schengen countries; nevertheless, to be able to obtain a Schengen visa, one must have complete insurance, proof of hotel booking and sufficient funds. GCC (Gulf Cooperation Council) region is another example of a gated region. Although gated regions do result in a better and coordinated development of the member states within the gated region, yet they adversely affect the goal of a “unified global development” by promoting regional polarization. As a result the globe is likely to be sharply divided in to “developed regions” and “depressed regions” instead of “developed” and “developing” countries.

Impact and Challenges of Gated Communities for Sustainable Development in Developed and Developing Countries

The temporal analysis of growth and decline of gated communities at the city, neighborhood, national and regional levels, during the various phases of human civilization, in developing and developed countries, carried out in the preceding sections, leads to the inference that these physical barriers have had differentiated impacts on the sustainable development of the human ecosystem during the various phases of human civilization. During the primary civilization, the cities were gated to avoid the feudal and barbarous invasions from the countryside. Nonetheless, each city functioned as single social entity as there were no internal gates in it. The physical development pattern was homogenous with uniform building heights. The hierarchy of community facilities and services were reasonably accessible to all the citizens, and the “haves” and the “have-nots” were not discriminately barricaded. The physical development pattern of walled cities has been time tested, and appears to have sustained itself during the primary civilization. A glaring example of social integration and sustainability is the walled city of Jerusalem whose gates remain open all the time. Although the walled city per se is divided into four ethnic quarters (viz., Muslim, Christian, Armenian,
and Jewish), yet, despite the ethnic tensions, there are no gates between these quarters and all the inhabitants share common shopping streets and community utilities.

There is sufficient evidence in the pertinent literature that the gated neighborhoods have adversely impacted the sustainable development of the developing as well as developed countries. They have not only brought about differentiated standards of infrastructure and community facilities in the urban areas, but have also increased socioeconomic disparities in the society. However, it is satisfying to note that some communities in the developed countries have already expressed their concern about them, and taking some redeeming and corrective steps in order to alleviate their adverse effects. Nevertheless, the situation in the developing countries is quite alarming; despite their damaging effects on the sustainable development of the human ecosystem, their number is increasing. This is resulting in a vicious circle. The higher rate of growth of gated neighborhoods in these countries is resulting in the increased deterioration of the city infrastructure, intra-city disparities, inequities in the distribution of physical and financial resources, social segregation and the discrimination, widening of the gap between the “haves” and the “have-nots”, and worsening of law and order situation. All these consequences, in turn, lead to further growth of gated neighborhoods!

The “gated countries” and “gated regions” in the developed world has the same effects on the global city as “gated neighborhoods” have in their respective countries, particularly if the countries happen to be developing or less developed! Although both the impacts are interactive, yet the former impacts the “macro level”, whereas the latter effects the “micro level”, viz., the “gated developed countries” in the context of global city are just like the “gated neighborhoods” in various developing countries. The gated developed countries also damage the infrastructure and community facilities of the global city; they also increase the international disparities by increasing the inequities in the distribution and consumption of financial and physical resources; likewise they also widen the gap between the rich and the poor nations, violate the fundamental human rights and promote the international terrorism. The projections, based on empirical data, lead to the conclusion that the number of “gated neighborhoods” in the developing countries; and the “gated countries” and “gated regions” in the developed world are going to increase in the foreseeable future. Conceptually also, most of the followers of the three great religions of scripture (who constitute about 55 % of the world population), believe in the coming of “Anti-Christ” or “Dajjal”, and the return of Christ (“Messiah” or “Moshiach” or the Prophet “Isa (AS)”. The Webster dictionary describes Antichrist as: “a great antagonist expected to fill the world with wickedness but to be conquered for ever by Christ at his second coming”.

The adverse effects of the gated communities outlined in the foregoing paragraphs call for preventive as well as curative measures at the international and the local levels. The measures at the international level should, predominantly, be resolutive and coordinative; and should ensure healthy birth of the global city without gates; whereas, the local measures would mostly be action oriented. Figure 7 highlights the implications and complexities involved in the process of formation of the global city. It comprises two highly dynamic and interacting sets of diametrically opposite variables, one facilitating and the other hindering the formation of the global city. Each
set interactively impacts the global city and in turn gets a feed back from it through a system of two back to back prismatic frameworks. The beauty of the back to back prismatic frameworks is that each of the five variables in each set is directly connected with each other, and can influence and get influenced by each other” (Anis-ur-Rahmaan, 1999).

Along with the positive influence of the facilitating determinants - such as globalization of technology, political alliances for global development, global economic restructuring and global socio-cultural diffusions - the global city will also be subjected to varying degrees of adverse effects of the counteracting deterrents such as technologic lag, political dissensions, interregional disparities and socio-cultural dilemmas and obsessions, which are destroying, weakening or delaying the formation of a desirable Global city. The evolution of a healthy global city without gates will obviously require concerted efforts for the promotion of its facilitating determinants and the alleviation of the debilitating forces. This calls for the augmentation and reorientation of the existing as well as creation of new international institutions in order to bring about the desired resolution of conflicting objectives and coordination of development activities of various nation states.

It is imperative that the resolutory and coordinating efforts at the international level are followed-up by action oriented policies at the local levels. Fortunately, some happy tidings are already appearing on the horizon. Friedman, in his best seller “The World is Flat”, contends that the world is getting flat. He has identified ten “flatteners” which are either at work or in various stages of development and incipience. The salient flatteners, cited by Friedman are the: Fall of Berlin Wall; Work Flow Software; Open-Sourcing; Outsourcing; Offshoring; Supply-Chaining; Insourcing; In-forming; and the Steroids (Friedman, T., 2005).

Figure 7: The Salient Determinants and Deterrents of the Global City (Source: Authors).

**Conclusions and Recommendations**

The journey to the tertiary civilization, which is a pre-requisite for the global city, would be different for different nations in terms of its timing, ways and means. It is a journey of hope and despair – hope for those who are prepared for it; and despair for those who will be caught unaware. Different countries would be taxying from different directions, at different speeds with different types of technological equipment in different state of preparedness to take off for the civilization of the twenty first century (Anis-ur-Rahmaan, 1999).

The review of the pertinent literature and the analysis of the dynamics of gated communities in developed as well as developing countries lead to very grave and depressing conclusions. The world has become more economically polarized both between countries and within countries. According to a UNDP report “the combined income of 358 richest people is equal
to the combined income of the poorest 45% of the world population... if the present trend continue the economic disparities between industrial and developing nations will move from inequitable to inhuman." (Schaffer, J., 1996). If preventive and proactive steps are not taken, then reactive movements and revolutions would take over to cure the human sufferings and injustices.

The journey through the three successive human civilizations appears to be an unbelievable story of science fiction. During this journey, land has lost its importance to capital, and capital to intellectual properties. As a consequence, the cultural values are getting transformed and the emphasis on physical space has been shifting to cyber space. During this drastic transition from the nodal gated cities to gated countries and gated regions, and on to the anticipated gateless global city, both the facilitative as well as the debilitative forces have been and are at work. Fortunately, there is a ray of hope on the other side of the tunnel. Although, pragmatically it appears that things will still have to go from bad to worse before they start getting better. However, yet, as mentioned earlier, the followers of all the three great religions of “scripture” believe that after the return of Messiah, peace and tranquility will prevail in a borderless world.

Doxiadis, a Greek planner/philosopher has also put forth a similar scenario about the formation of a gateless global city. He has predicted that by the end of the twenty-first century, mankind will be living in a universal city (Ecumenopolis) which will be transnational in its extent and non-racial in character. He has pointed out that “the Ecumenopolis is already beginning to take shape and if we do not intervene actively, it may take shape as a city bearing in its roots the elements of death” (Doxiades, C. A., 1968). Doxiadis further believed that “Ecumenopolis means the phase in which mankind will be able to operate as one community.”

Based on the foregoing analysis and inferences, it appears imperative that cost effective and smooth formation of a gateless global city with sustainable socioeconomic and environmental conditions will, among others, require:

a. Capitalization of the facilitative effects of the determinants of the global city as well as minimization of its deterrents. This can be achieved by restructuring the international code of conduct; and augmenting/modifying the existing international organizations as well as creating new appropriate institutions to resolve the conflicts between the member states, and bring about better coordination between them.

b. Imposition of policies to make the rich poorer, and to make the poor richer, both nationally and internationally. This can be achieved by bringing about an equitable distribution of resources and facilities; promulgating policies to enforce austerity measures by the affluent class by imposing progressive income taxes in geometric progression such as in Scandinavian Countries; and by encouraging philanthropy in the private sector by providing liberal tax exemptions.

c. Restoration of confidence in human dignity and justice; and creation of socially integrated communities without gates.

d. Imposition of proactive and preventive measures rather than expensive reactive measures.

e. Judicious utilization of recycled resources rather than wasteful consumption of meager natural resources.

f. Adaptation of “think globally and act locally (glocal)” approach.
Discouraging the tendency of gating the communities at all levels, namely, neighborhoods, countries, and the regions.

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DESIGN AND NEIGHBORHOOD SENSE OF COMMUNITY: AN INTEGRATIVE AND CROSS-CULTURALLY VALID THEORETICAL FRAMEWORK

Yasser M. Moustafa

Abstract
This paper proposes a much-needed integrative and cross-culturally valid theoretical framework for the study and better understanding of the potential impact of environmental design on neighborhood sense of community. It is specifically formulated to address the major problems impeding the progress of this area of research. These problems are first identified. The proposed framework is then outlined. Subsequently, support for the framework is provided through an analysis of the relevant theoretical and research literature.

Keywords:
Culture; environmental design, neighborhood; sense of community.

Introduction
This paper proposes a much-needed integrative and cross-culturally valid theoretical framework for the study and better understanding of the potential impact of environmental design on neighborhood sense of community. It is presented as an important initial step for further theoretical developments and as a guide for future research and design applications.

The current widespread interest in the concept of neighborhood sense of community has been primarily fueled by the revival of the assumptions that “cohesive” neighborhoods or local communities are viable and useful units for the implementation of social and economic development programs (Chaskin, 1997; Schorr, 1997; Rubin, 2000) and that, with the associated “strong” sense of community among their residents, they are important for the general well-being of the individual and the good of the family and the society as a whole (Sarason, 1974; Davidson & Cotter, 1991; Brint, 2001). Indeed, based on more than twenty years of theoretical development of the concept of psychological sense of community within the
field of community psychology (including such work as Glynn, 1981; Riger & Lavrakas, 1981; McMillan & Chavis, 1986; Hill, 1996), research has confirmed a significant positive relationship between neighborhood sense of community and psycho-social dimensions of mental health and levels of subjective well-being (Glynn, 1986; Davidson & Cotter, 1991; Pretty et al., 1996; Prezza & Costantini; 1998).

However, to date, and despite a growing general interest in the use of environmental design as a tool for the enhancement of neighborhood sense of community (Cochrun, 1994; Katz, 1994; Langdon, 1997; Talen, 1999; Hall & Porterfield, 2001), relatively few studies have actually investigated the relationship between physical characteristics of the residential environment and sense of community. And, research has been extremely slow in producing the substantive knowledge necessary for successful design applications (Talen, 2000; Vernez-Moudon, 2000). The framework proposed in this paper is thus specifically formulated to address the major problems impeding the progress of this area of research. These problems are first identified in the following section. The proposed framework is then outlined. Subsequently, support for the framework is provided through an analysis of the relevant theoretical and research literature.

Problems Impeding the Progress of Research

As previously mentioned, to date, relatively few research studies have investigated the potential impact of environmental design on psychological sense of community. These studies have looked at the impact of various characteristics of the built environment on levels of sense of community in the context of local communities defined at different scales of the residential environment, such as the town (Plas & Lewis, 1996; Kim, 2000), the neighborhood (Nasar, 1997; Wilson-Doenges, 2000), and the apartment building (Zaff & Devlin, 1998) or the college dormitory building (Hill, Shaw, & Devlin, 1999).

Some of these studies have investigated the impact of the design principles of the New Urbanism movement dedicated to the enhancement of sense of community through environmental design (Plas & Lewis, 1996; Nasar, 1997; Kim, 2000). However, these investigations have not led to conclusive findings about the effectiveness of the design principles proposed by New Urbanists (Talen, 1999; 2000). Without appropriate theoretical frameworks, the meaningful interpretation and useful discussion of the apparently contradictory findings that these studies have yielded (compare for example Nasar, 1997 and Kim, 2000) will remain extremely difficult.

Other studies that have looked at the potential impact of environmental design on the psychological sense of community have not been conducted under the umbrella of an identifiable unifying research agenda. Rather, they constitute isolated inquiries about the impact on sense of community of various specific physical characteristics of the residential environment. For example, Wilson-Doenges (2000) compared levels of sense of community among residents of gated and non-gated neighborhoods; Zaff and Devlin (1998) compared between high-rise apartment buildings and garden apartment complexes;
and Hill, Shaw, and Devlin (1999) compared between straight corridor floor design and cluster floor design.

As a whole, research that has investigated the potential impact of environmental design on sense of community has remained largely atheoretical, exploratory in nature. Indeed, studies have been conducted without the clear theoretical articulation of the possible mechanisms through which designed aspects of the environment may affect the psychological sense of community or without any purposive attempt to identify and clarify these mechanisms. Such research cannot be expected to lead to the rapid advances in the understanding of the relationship between the built environment and sense of community needed to inform the current interest in community-oriented design.

Moreover, this research has inherited the problems more generally associated with the inadequate consideration of context specificity in the theoretical development of the construct of psychological sense of community. As argued by Heller (1989) and Trickett (1996), the theoretical development of psychological sense of community within the field of community psychology has been predominantly based on a normative idealized notion of local community that implies the existence of frequent social interaction, intimate ties, and mutual concern and support among residents, as well as strong individual involvement and strong commitment and loyalty to the community (see for example Sarason, 1974; Glynn, 1981; 1986; Riger & Lavrakas, 1981; McMillan & Chavis, 1986; Buckner, 1988). It has tended to ignore a large amount of sociological literature that has demonstrated that the specific nature of local community, or local social organization, and the nature of the behavioral patterns and members’ sentiments with which it may manifest itself vary from one socio-cultural context to another. This has led to questionable measures of psychological sense of community in research as operationalizations of the construct have generally failed to take into account the specific socio-cultural context and, thus, the specific characteristics of the particular referent community with which it is associated (Hill, 1996; Trickett, 1996). In studies such as those cited here, operationalizations of the referent local community have been primarily based on the arbitrary selection of a particular scale of the residential environment (such as the neighborhood or the apartment complex) without any real attempt to verify the correspondence of the selected geographical or physical unit with an identifiable unit of social organization or local community and then to discover the specific characteristics of this local community that are relevant to the context-appropriate measurement of the psychological sense of community.

The lack of integration, referred to above, between the community sociology literature and the more recent community psychology literature is a major source of theoretical and substantive fragmentation (Heller, 1989; Skjaeveland et al., 1996; Talen, 2000). This lack of integration cannot be attributed to the rigidity of artificially delineated disciplinary boundaries alone. A number of problems that characterize the community sociology literature have certainly contributed to such lack of integration.

The community sociology literature is particularly characterized by a definitional problem.
Indeed, the definition of local community is clearly surrounded by disagreement and controversy (Warren, 1978; Chaskin, 1997; Brint, 2001). The local community is generally defined as an observable social entity, typically as a residentially based social group or unit of social organization that manifests itself and is thus observable through sustained patterns of particular social or associational behaviors (Guest & Lee, 1983; Chaskin, 1997; Brint, 2001). However, there is first disagreement about the types of behaviors and social relationships that qualify as manifestations of local community. This has led to the continuing debate in the community literature between proponents of “the loss of community” perspective, proponents of the “community saved” perspective, proponents of “the community liberated” perspective, and proponents of the view that the local community continues to be an important socio-spatial entity but can manifest itself through very different patterns of social behavior or conform to different models—such as the “urban village”, the “community of limited liability”, and the “organizationally dependent community”—depending on its socio-cultural context (see Wellman & Leighton, 1979; Guest & Lee, 1983; Crenshaw & St. John, 1989; Chaskin, 1997; Brint, 2001). There is also disagreement about the notion of “completeness”—whether or not the local community should be defined as a social entity that has a high degree of autonomy and meets all the needs and requirements of its members (O’Brien et al., 1989). There is as well disagreement about the scales of the residential environment at which local communities can exist—“the size problem” (Warren, 1978).

As a result of the lack of consensus about the definition of local community, research investigating the potential impact of environmental design on the occurrence of community behavior has evolved into a fragmented body of research, divided into disconnected areas of study, each looking at the impact of characteristics of the built environment on a different type of behavior through which the local community may manifest itself—such as informal social interaction and friendship formation (see review in Talen, 2000), participation in local formal organizations (e.g. Perkins et al., 1990; Perkins et al., 1996), the exchange of help and social support (e.g. Brown & Werner, 1985; Fleming, Baum, & Singer, 1985; Keane, 1991), and territorial behavior or other behavioral mechanisms for the maintenance of social order (e.g. Newman, 1972; Taylor et al., 1984; Perkins et al., 1993; Donnelly & Kimble, 1997). In much of this research, to side-step definition related problems, reference to the notion of local community is implicit rather than explicit. Moreover, studies have been conducted at very different scales of the residential environment—such as the street-block, the housing complex, the neighborhood, or the town—often arbitrarily defined, without agreement whether or not the same phenomena are being investigated, thus further fragmenting this body of research.

Role and Importance of Theoretical Frameworks

In the absence of explicit integrative theoretical frameworks based on clear definitions, research on the potential impact of environmental design on neighborhood sense of community has not been cumulative and has thus been extremely slow in producing the levels of understanding necessary for successful design applications (Talen, 2000; Vernez-Moudon, 2000). The
accumulation of unintegrated findings it has generated and continues to generate may actually be counterproductive (see Rapoport, 1997a).

Theoretical or conceptual frameworks are useful in that they help to think about a subject or phenomenon. And, as they establish linkages between key concepts and between distinct but complementary approaches, order, unify, and summarize existing research findings and other relevant materials, as well as identify gaps and provide direction for new research, they help create an appropriate context for the development of scientific explanatory theories (Rapoport, 1985; 2001). In turn, explanatory theories are extremely important to the progress of scientific understanding and, consequently, in the particular case of the science of environment-behavior studies, to the application of research to environmental design (Lang, 1987; Rapoport, 1997a; 2000).

The study of the potential impact of the built environment on neighborhood sense of community is thus in need of theoretical frameworks that, such as the framework proposed in this paper, (1) are based on an explicit conceptualization of local community, (2) attempt to integrate the major theoretical and disciplinary approaches, (3) attempt to synthesize existing relevant research findings, (4) clearly articulate the mechanisms through which the built environment may affect the sense of community, and (5) are intended to be valid across socio-cultural contexts.

Outline of the Proposed Framework

As diagramed in Figure 1., the framework relies first on a conceptualization of local community according to which a particular local community is characterized by three major elements: (1) a specific set of needs, wants, and interests shared by members, (2) specific appropriate or desired behavioral mechanisms through which these needs, wants, and interests are or ought to be fulfilled or pursued, and (3) a spatial or geographical base at a specific scale of the residential environment. This conceptualization of local community is intended to be integrative of the various approaches to and models of local community which dominate the ongoing debate about its nature as a socio-spatial entity and is thus proposed as a solution to the controversies and problems related to the current lack of definitional consensus. It is also intended to be valid across socio-cultural contexts. It is not based on a normative idealized notion of local community. Rather, it is based on a view of local community as a unit of local social organization the characteristics of which may vary from one socio-cultural context to another. It is thus suggested that the specific nature of the three characterizing elements of a local community is a product of its specific socio-cultural context. In any given case, a local community needs to be analyzed in its specific socio-cultural context in order to discover the specific nature of each of the three elements.

In an attempt to integrate the sociological and psychological approaches to the study of the local community and to promote the context-sensitive operationalization and measurement of sense of community, the framework also proposes explicit conceptual linkages between the construct of psychological sense of community as defined in the community psychology literature and the specific characteristics of the referent local community with which it is associated. It is suggested that
A sense of community is directly influenced by: (1) members’ perceptions about the extent or degree to which relevant needs and interests are shared and to which there is agreement about the appropriate behavioral mechanisms through which these needs and interests ought to be fulfilled or pursued – or perceived community homogeneity, (2) members’ perceptions about the actual occurrence of these behavioral mechanisms – or perceived community functioning, and (3) members’ perceptions about the actual fulfillment or satisfaction of shared needs and interests – or perceived community competence.

The framework identifies then a first mechanism through which environmental design may impact sense of community: the “instrumental role” of the built environment. This instrumental role refers to the capacity of the built environment to enable or facilitate the occurrence of culturally appropriate or desired patterns of behavior. Through this instrumental role, manipulations of characteristics of the built environment may then facilitate the occurrence of community behavioral mechanisms through which needs and interests shared by members are to be fulfilled and thus, may positively impact actual local community functioning and, consequently, actual local community competence. In turn, increased community functioning and community competence will probably reinforce perceived community functioning and perceived community competence and thus may help enhance the psychological sense of community.

Finally, the framework proposes a second mechanism through which environmental design may impact sense of community: the “symbolic role” of the built environment. This symbolic role refers to the capacity of the built environment to affect perceptions about one’s social environment and about the cultural and social characteristics of the individuals and groups of which it is composed. It is suggested that, through the symbolic role, manipulations of characteristics of the built environment, without necessarily a direct impact on behavior or on the occurrence of community behavioral mechanisms, may reinforce perceived community homogeneity, perceived community functioning, and perceived community competence and thus may help enhance the psychological sense of community. And, as supported by some research, an increased level of sense of community may, in turn, act as a catalyst for actual community functioning (see Chavis & Wandersman, 1990; Perkins et al., 1996).

As discussed by Rapoport (1985, p.256), theoretical frameworks are somewhat “arbitrary” in the sense that, for a particular subject or phenomenon, many frameworks could be formulated and that alternative frameworks may prove useful for different purposes. Yet, they are not completely arbitrary. Theoretical frameworks need to fit and unify existing evidence and superior or more useful frameworks will fit evidence better than others and will integrate more evidence than others. Thus, the following sections present an analysis of the relevant literature that was conducted to investigate the extent to which the proposed framework fits existing research evidence and integrates relevant theoretical and disciplinary perspectives as well as to provide support for its conceptual validity – that is the validity of the conceptualizations it relies on and of the conceptual linkages it proposes. This analysis is presented in four sections each addressing one of the main components of the proposed framework.
Figure 1: An Integrative and Cross-Culturally Valid Theoretical Framework (Source: Author).
The Proposed Conceptualization of Local Community

Local community is broadly conceptualized here as a residentially based unit of social organization or social group in which members – individuals or households – are united by the desire to fulfill or pursue shared needs and interests through specific behavioral mechanisms that they, in common, consider appropriate. Thus, in any given case, a local community manifests itself at a particular scale of the residential environment through the functioning of particular appropriate behavioral mechanisms through which specific needs and interests shared by members are to be fulfilled or pursued. Accordingly, a particular local community is characterized by three major elements: (1) a specific set of needs, wants, and interests shared by members; (2) specific appropriate or desired behavioral mechanisms through which these needs and interests are or ought to be fulfilled or realized; and (3) a spatial or geographical base at a scale or another of the residential environment.

Many formulations and definitions in the literature emphasize, more or less explicitly, these same three elements (e.g. Warren, 1978; Guterbock, 1990). Furthermore, the broad conceptualization proposed here appears to be compatible with a number of major theoretical sociological approaches to the study of the local community such as the functional approach (Warren, 1978), the interactional approach (Wilkinson, 1972), and the political economy approach (Bartelt et al., 1987). It is also compatible with various typologies of local communities such as those developed by Warren (1979) and Brint (2001).

The nature of the shared needs and interests that may characterize a local community has been addressed in a number of different ways in the literature. It has been addressed for example in terms of the potential functions of the local community (Warren, 1978; Hunter, 1979), in terms of dimensions of community satisfaction (Guest & Lee, 1983; White, 1985; Hummon, 1992), or in relation to basic human needs (Walmsley, 1988). This literature shows that these needs and interests may be physiological, psychological, social, and/or economic in nature; they may range from needs related to matters of subsistence to a desire for improved recreational facilities, from the need for security to an interest in the protection of property values. The literature also confirms that the specific nature of these needs and interests tends to differ from one socio-cultural context to another (Chaskin, 1997; Rapoport, 1997b). Similarly, the literature shows that the specific nature of the community characteristic behavioral mechanisms through which shared needs and interests are pursued at local levels of the residential environment covers a wide range of possibilities and tends to vary across socio-cultural contexts. For example, these mechanisms can be more formal or more informal in character (Warren, 1978; Greenberg & Rohe, 1986). They can take the form of collective action or the form of an aggregate of individual behaviors. They may rely on the involvement of any, most, or all of the community members or can be characterized by a more or less clear specialization of roles.

It is clear that the conceptualization of local community proposed here assumes or implies a certain cultural or subcultural homogeneity among members. In fact, Rapoport (1997b) actually explains the continued social importance of the local area or the...
neighborhood by the continued tendency – or even increased tendency in today’s culturally diverse urban environment – of people to geographically cluster in groups of subjective homogeneity. However, the proposed conceptualization acknowledges that two or more local communities may coexist in or share a same local area or spatial base. In such cases, each of the local communities will be defined by specific subjective criteria of homogeneity and will be characterized by a different set of needs and interests shared by its members and/or different behavioral mechanisms through which these needs and interests are to be fulfilled or pursued (e.g. Merry, 1981; Crenshaw and St. John, 1989; Frankfort-Nachmias & Palen, 1993; Hutchinson et al., 1996).

According to the proposed conceptualization, local communities do not necessarily conform to what is termed the “institutionally complete community”: a socio-spatial entity within which all or most of one’s basic needs are met and primary relationships are maintained. In other words, the needs and interests shared by members of a community and expected to be fulfilled at a local scale of the residential environment do not necessarily include needs and interests related to all aspects of life. Depending on the socio-cultural context, the satisfaction of some of these needs and interests may occur outside of the realm of the local community (O’Brien et al., 1989; Rapoport, 1997b).

The proposed conceptualization of local community also acknowledges that residents of a local area may simultaneously associate with or be members of what the literature often refers to as a number of “nesting” local communities. In particular socio-cultural contexts, some needs and interests are shared and are satisfied or pursued at a certain scale of the residential environment while other needs and interests are shared and met at a larger scale or at increasingly larger scales of the residential environment. Functioning local communities can be then identified at each of these scales and form hierarchies of nesting local communities (Suttles, 1972; Hunter, 1974; Kearns & Parkinson, 2001).

**Linking Sense of Community to Community Characteristics**

The proposed conceptual linkages between sense of community and the context-specific characteristics of the referent local community with which it is associated are suggested to correspond or contribute to the components of the construct of psychological sense of community identified in the community psychology literature, particularly those identified by McMillan & Chavis (1986) whose theoretical development of the concept is widely accepted as the most comprehensive to date (Hill, 1996).

“Perceived commonality of needs and interests” refers to the extent to which a member of a local community perceives that other community members share the needs and interests he or she expects to be fulfilled or pursued through local community functioning. “Perceived agreement about appropriate behavioral mechanisms” refers to the extent to which a member of a local community perceives that other community members agree with what he or she sees are the appropriate behavioral mechanisms through which these needs
and interests ought to be fulfilled or pursued. The proposed conceptualization of local community identifies the sharing of a particular set of needs and interests with other residents of a local area and agreement with them about the particular behavioral mechanisms through which these needs and interests ought to be fulfilled or pursued as the major criteria of local community membership. Accordingly, it is suggested that perceived commonality of needs and interests among residents of a local area and perceived agreement among them about the appropriate behavioral mechanisms to adopt correspond or contribute to the feeling of “membership” that McMillan and Chavis (1986, p. 9) identify as one of the elements of sense of community. Further, it is suggested that perceived commonality of needs and interests and perceived agreement about appropriate community behavioral mechanisms contribute to the “perception of similarity to others” that Sarason (1974, p. 157) and Glynn (1981, 1986) emphasize as an important component of psychological sense of community.

“Perceived community functioning” refers to the extent to which a member of a local community perceives that needs and interests shared by community members are to be pursued are actually occurring. It is suggested that perceived community functioning influences a member’s perception of other members’ commitment to the local community – that is their commitment to shared values and norms and their willingness to participate in the pursuit of shared needs and interests. According to Sarason (1974), McMillan and Chavis (1986), and Wilson and Baldassare (1996), such perception of members’ commitment to the community is important to the development of a sense of community. It is also suggested that perceived community functioning contributes to the “influence” component of psychological sense of community (McMillan & Chavis, 1986, p. 11) as it may impact the perception of the community’s ability to influence the behavior of its members and the perception of one’s capacity, as a member, to influence the functioning and competence of the community.

“Perceived community competence” refers to the extent to which a member of a local community perceives that needs and interests shared by community members and expected to be fulfilled or pursued through community functioning are actually being satisfied. Perceived community competence corresponds to the “fulfillment of needs” component of sense of community identified by McMillan and Chavis (1986, p. 12). In addition, community satisfaction, and community attachment, which Glynn (1981; 1986) identify as predictors of actual level of sense of community, are strongly related to the perceived fulfillment of shared needs and interests through local community functioning (see Fried, 1982; Guest & Lee, 1983; White, 1985; Chavis & Wandersman, 1990; Hummon, 1992). It is also suggested that, together, all of the proposed linkages contribute to the “shared emotional connection” component of sense of community identified by McMillan and Chavis (1986, p. 13) and contribute to and reinforce the feeling of interdependence among members of a local community and the feeling of being part of a dependable and stable structure or group which Sarason (1974, p. 157) includes in his definition of sense of community.
The Instrumental Role of the Built Environment

The instrumental role of the built environment refers to the capacity of physical characteristics of the environment to enable or promote the occurrence of behavior. It should be emphasized that the built environment does not cause or elicit behavior. It can, however, depending on its physical attributes, inhibit or enable and facilitate the occurrence of a variety of behaviors. But the built environment will only promote the occurrence of those behaviors that are considered appropriate or desired by the people involved (Rapoport, 1986, p. 166). Culture has been particularly emphasized as a major determinant of the general desirability of a particular behavior and its appropriateness in a particular setting. What people consider to be appropriate or desired behaviors in a particular setting is a function and a direct expression of their culture or more specifically of their culturally or subculturally determined values, norms, and lifestyle (Rapoport, 1990a; 2001).

The literature offers two major theoretical approaches to the instrumental role of the built environment. Each of the approaches sheds some light on the capacity of the physical environment to enable and promote the occurrence of appropriate or desired behavior by emphasizing different conceptualizations of the built environment. The two approaches are not mutually exclusive and should be seen as complementary rather than competing.

The first approach relies on a conceptualization of the built environment that emphasizes the capacity of its physical characteristics to afford opportunities for human behavior. The built environment is primarily viewed as a tool, instrument, or prop for behavior and as providing the physical context of behavior. As such, and according to its physical characteristics (including for example spatial configuration, types of enclosure, properties of materials used for fabrication and surface finishing, nature and arrangement of furniture, electric and electronic equipment, and other semi-fixed features present, illumination, air and surface temperatures, air velocity, air quality, and so on), a particular outdoor or indoor setting presents opportunities for some behaviors to take place and constraints that may hinder or prevent the occurrence of others.

The concept of “affordances” of the built environment (Gibson, 1977), particularly as adapted by Lang (1987) and further developed by Shehayeb (1995) who uses the term “functional opportunity,” is an example of theoretical formulation of this approach (see also Greeno, 1994; Zaff, 1995). Affordances of a physical setting or the potential functional opportunities for behavior that it offers are a property of its physical characteristics. However, the perception and use of these affordances or functional opportunities are to a great extent a function of the biological nature of people and of worldviews, values, norms, lifestyle, and previous experiences that are dependent on the socialization that a person goes through as part of a particular culture or subculture (Lang, 1987; Shehayeb, 1995). Utilized functional opportunities will tend to be those of the potential functional opportunities offered by a given physical setting that correspond to what is considered by users culturally appropriate or desired behavior in that particular setting.
Often implicitly rather than explicitly, most of the research on the potential impact of design on social behavior in general (see reviews in Lang, 1987; Ahrentzen, 2001) and on social behavior in the residential environment (see reviews in Michelson, 1976; Cooper-Marcus & Sarkissian, 1986; Cooper-Marcus, et al., 1998; Talen, 2000) has been based on such a conceptualization of the built environment and has thus adopted this approach to the instrumental role.

The second approach relies on a conceptualization of the built environment that emphasizes its capacity to communicate meanings. According to Rapoport (1990b), meaning is one of the central mechanisms linking people with their built environment. First, the communication of meanings provides much of the rationale for the ways it is shaped, transformed, and personalized. Second, a person’s cognitive, affective, and behavioral responses to a particular environment are greatly shaped by the meanings they extract from it and associate with it (Genereux, Ward, & Russell, 1983; Nasar, 1989; Hanyu, 1993). However, this approach has been somewhat neglected in the study of the impact of environmental design on behavior and has thus, to date, generated much less research than the first one.

Rapoport (1988; 1990b) suggests that built environments may communicate conceptually distinct types or levels of meanings including “low-level meanings” that are “everyday and instrumental meanings: mnemonic cues for identifying uses for which settings are intended and hence the social situations, expected behavior, and the like; privacy, accessibility; penetration gradients; seating arrangements; movement and way-finding; and other information which enables users to behave and act appropriately and predictably, making co-action possible” (Rapoport, 1990b, p. 221). It is through the communication of these “low-level” instrumental meanings that the built environment may more directly enable, facilitate, and promote the occurrence of what is considered appropriate or desired behavior.

It is clear that this approach, as presented by Rapoport (1990b), also emphasizes the importance of culture in the relationship between the built environment and behavior. First, what is considered appropriate or desired behavior in a particular setting is culturally specific. Second, the correspondence between these appropriate or desired behaviors and the particular instrumental meanings that need to be communicated through the built environment to elicit them is also culturally specific. Further, to be effectively communicated, these meanings have to be coded through manipulations of aspects of the built environment in the form of physical cues that targeted users have learned to look for, read, decode, and appropriately understand through a cultural socialization process. In addition, in order to effectively contribute to the instrumental role of the built environment, these cues need to be displayed with enough clarity and redundancy to be noticed, detected, and appropriately understood and should not convey conflicting messages. The required level of cue redundancy in any particular situation is also culturally specific.

The Symbolic Role of the Built Environment

The symbolic role of the built environment refers to the capacity of physical characteristics of
the environment to affect perceptions about the social environment and about the cultural and social characteristics of the individuals and groups of which it is composed. It operates through the capacity of physical aspects of the environment to express and communicate meanings – primarily middle-level meanings and, possibly, high-level meanings rather than instrumental meanings (Rapoport, 1990b).

Evidence for the direct impact that the built environment may produce on perceived local community homogeneity is provided by research that has investigated the expression and communication of identity through physical aspects of the residential environment. Indeed, this research demonstrates that people can use cues incorporated in the physical appearance of dwellings to make inferences about their occupants’ group affiliations, including affiliation to or membership in residentially based social groups, and about their cultural and social characteristics such as worldviews, values, lifestyle, social and economic status, education level, and sociability. Studies also show that the inference of such information can be made with relatively high levels of agreement and validity (Duncan et al., 1985; Sadalla et al., 1987; Sadalla & Sheets, 1993). It is evident that such inferences about the identity of neighbors can have a strong impact on one’s perception of the homogeneity of his or her local area and on one’s perceptions about the extent and degree to which needs and interests expected to be fulfilled through local community functioning are shared with other residents and about the extent to which there is agreement with other residents about the appropriate or desired behavioral mechanisms through which these needs and interests ought to be pursued. According to the proposed framework, these perceptions can contribute to the enhancement of a sense of community among the residents of a local area, which, in turn, can impact actual community functioning. In fact, a number of studies associate the expression of identity through the personalization of dwelling exteriors with increased neighborhood social cohesiveness and increased social interaction among neighbors and other manifestations of local community functioning (Becker & Coniglio, 1975; Greenbaum & Greenbaum, 1981; Brown & Werner, 1985; Werner et al., 1989).

Research appears to confirm that, as argued by Rapoport (1990b), semifixed elements such as furniture, curtains, awnings, lights, signs, plantings, and flowers and their arrangements generally play a more important role than fixed elements in the expression of identity through the physical appearance of dwellings (e.g. Greenbaum and Greenbaum, 1981; Pratt, 1982; Janz, 1992). However, some studies have demonstrated that fixed-feature elements of dwellings can also be important in the communication of aspects of identity (e.g. Cherulnik & Wilderman, 1986; Nasar, 1989; Hull, 1992; Sadalla & Sheets, 1993; Stedman, 2002). Fixed-feature elements emphasized in these studies include for example size of lot and/or dwelling, building materials, architectural style, and internal organization.

The research literature also provides evidence for the potential impact of the built environment, through its symbolic role, on perceptions of residents of a local area about the actual occurrence of behavioral mechanisms of community functioning – or perceived community functioning – and about the actual fulfillment of needs and interests – or perceived
community competence. For example, research suggests that people can use physical cues in the residential environment to make judgments about the commitment of residents of their local area to actively contribute to the maintenance of social order and, in particular, to monitor the neighborhood and confront or otherwise react against suspected criminal behavior and suspicious presence on their block or in their neighbors’ properties (Brown & Altman, 1983; Perkins et al., 1992; Brown & Bentley, 1993; Shaw & Gifford, 1994; Harris & Brown, 1996). These physical cues – referred to as symbolic barriers (Newman, 1972) or territorial markers (Brown & Altman, 1983) and often consisting of signs of upkeep, beautification, and personalization such as the planting of gardens, hedges, trees, and shrubs, the use of low fences, and the display of decorations and name signs – can contribute to the instrumental role of the built environment by defining the boundaries and indicating ownership of specific settings or territories, by communicating who is or is not welcomed and what behaviors are or are not accepted in them, and thus by facilitating appropriate behavior and promoting effective territorial functioning as a behavioral mechanism for the regulation of social interaction and the maintenance of social order (Brown, 1987; Taylor, 1988). But, at the same time, they can also contribute to the symbolic role of the built environment by directly impacting perceptions about the vigilance and the territorial commitment of residents and thus perceived local community functioning.

Studies of fear of crime in the residential environment provide another example of the symbolic role of the built environment. It is an interesting example because it suggests that the presence of certain physical cues can have a negative impact on perceived local community functioning and competence. Research shows that fear of crime is more closely related to subjective perceptions of “community disorder” – that is negative subjective perceptions of community functioning and community competence – than to objective assessments of the effectiveness of community mechanisms for the defense against crime (see Perkins & Taylor, 1996). And, increased fear of crime among residents of a street block or of a neighborhood has been linked to the presence of physical incivilities or such physical cues as litter, graffiti, vandalism, dilapidated housing, abandoned cars, and unkempt lots (Taylor et al., 1985; Perkins et al., 1990; Covington & Taylor, 1991; Perkins et al., 1992; Perkins & Taylor, 1996). Studies have also shown that the presence of other physical cues can reduce levels of neighborhood fear of crime. For example, the presence of trees and other forms of vegetation has been suggested to reduce levels of fear of crime and promote a sense of safety and a sense of community in inner-city neighborhoods (Coley et al., 1997; Kuo et al., 1998).

Research in other areas of investigation can be used to suggest additional applications of the symbolic role of the built environment. For example, studies and analyses suggest that the physical features – including, among others, size, height, scale, building materials, ornateness, architectural style, color, interior organization and decor, landscaping, and siting, – of such buildings as government buildings (Goodsell, 1993), courthouses (Greenberg, 1987; Maas et al., 2000), school buildings (Pasalar, 2001), and other public and civic buildings (see Goodsell, 1988; Rapoport, 1990b) can communicate the nature, importance, functions, and policies of
the institutions that they house as well as the worldviews and values on which the functioning of these institutions is based. It is reasonable to hypothesize then that, in local communities that rely on the operation of such institutions as mechanisms of community functioning, the architecture and the visibility – through form and/or location – of public and civic buildings can contribute to the symbolic role of the built environment and influence members’ perceptions about community functioning and community competence.

Finally, the importance of the physical clarity of the boundaries of neighborhoods emphasized in many definitions and discussions of the neighborhood as a socio-spatial entity or as a type of local community (Chaskin, 1997; Rapoport, 1997b) can be discussed in terms of the potential contribution of such clarity to the instrumental and symbolic roles of the built environment. The physical clarity of the boundaries of the geographical area associated with a local community – an area of subjective homogeneity that may be limited by the nature and requirements of the behavioral mechanisms adopted for the satisfaction of shared needs and interests – can be achieved through the presence of prominent natural or man-made physical boundaries and/or through a distinct physical character clearly distinguishing the area from its surroundings. In local communities that rely on behavioral mechanisms of community functioning that are enabled or directly facilitated by the physical clarity of area boundaries, this clarity will contribute to the instrumental role of the built environment. On the other hand, in other local communities, the clarity (or lack of clarity) of physical boundaries may not have any direct impact on mechanisms of community functioning and, thus, may not contribute to the instrumental role of the built environment, but may play an important symbolic role. Indeed, the physical clarity of the boundaries of the area associated with a local community and greater agreement among members about these boundaries has been suggested to reinforce identification with the area and the community, feelings of attachment, and a sense of group affiliation or membership (see reviews in Chaskin, 1997; Rapoport, 1997b). According to Blakely and Snyder (1998), the walls and gates of gated communities in the United States promote a sense of security – even if not really effective in reducing the incidence of crime – as well as a perception of homogeneity among residents and a uniting feeling of “us versus the outside world” and may thus help enhance a sense of community.

**Conclusion**

The analysis of the relevant literature presented above appears to show that the proposed framework satisfactorily fits a large amount of existing research evidence, to demonstrate its capacity to integrate the major theoretical and disciplinary perspectives, and to illustrate its capacity to unify and organize the vast literature related to the study of the relationship between the built environment and neighborhood sense of community.

In addition, the analysis of the literature seems to provide support for the conceptual validity of the framework. In particular, it provides support for the proposed conceptualization of local community, for the proposed conceptual linkages between the construct of psychological
sense of community and the socio-cultural characteristics of the referent local community, and for the instrumental and symbolic roles of the built environment as two mechanisms through which environmental design may impact sense of community.

Several suggestions for future research can be formulated. Of course, there is a need for research to empirically test and potentially improve the framework. For example, research may investigate the extent to which the proposed conceptualization of local community is useful in assessing and describing the nature of social organization in the residential environment in different socio-cultural contexts and the extent to which it can help identify similarities and differences across contexts. Research may also further investigate the validity of the proposed linkages between psychological sense of community and the socio-cultural characteristics of the referent local community, or the extent to which they can help predict sense of community and other related concepts such as satisfaction, attachment, and well-being. The framework promotes a context-specific operationalization of psychological sense of community and there is thus a need for the development of context-sensitive instruments for the measurement of the construct. In addition, there is a need for a more systematic investigation of the nature of the instrumental and symbolic roles of the built environment as articulated here and of the extent of their potential impacts on neighborhood sense of community, in general as well as in specific socio-cultural contexts.

The framework presented in this paper does not explicitly address the role that environmental design may play in the constructive integration of the local community in the larger society. This is certainly an interesting and worthy direction in which the framework could be expanded.

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THE FUTURE OF HOUSES: WHAT REAL-ESTATE ADS TELL ABOUT THE EVOLUTION OF SINGLE-FAMILY DWELLINGS

Gabriel Rodriguez and Daniel Siret

Abstract
This research questions the evolution of people’s preferences by analyzing 6750 real-estate ads published at three different decades (1985, 1995 and 2005) and in three distinct geographic areas of France (North, West and South). Our purpose is to establish the importance, at each time frame and location, of the different elements that compose the house in order to elaborate on the evolution and future of the house. The results show that the evolution of this type of dwelling is twofold: changes in the use of space and changes in the notion of comfort.

Keywords:
Domestic architecture; house; evolution; real-estate ads.

Introduction
The house is a complex architectural entity. It is at the same time a functional object that must respond to the needs of a family, it is a consumer product considered as an investment and an object of personal and social expression with strong symbolic meaning. Cultural values, technological innovations, political decisions and economic forces influence its development. In France, more than half of the households live in a single-family house. This type of residence represents the ideal for a vast majority of the population. But the isolated single-family house considered as “ideal home” questions the future of dwelling and its impact on sustainable development and urban sprawl. Changes in uses, comfort needs, relationship with its urban environment and building techniques prompt the evolution of the house.

The elements that are praised in this kind of dwelling are in slow but constant mutation. In the last century we have seen how changes in social and family structure as well as technological improvements have affected the way we conceive, build and use our houses. Each new
dwelling project takes the evolution one step beyond. The questions of how and were will we live are almost always asked to experts that are concerned with the production of houses and rarely to the users. These are considered as not having a broad view of the problem.

The research in the evolution of dwellings has analyzed each of these scientific subjects. For example, recent studies (SOFRES, 1994, Eleb et al, 1988, Bellanger, 2000) show that “basic comfort” (bathroom, toilet and central heating) is taken for granted and that the conception of comfort has evolved in order to include other notions as privacy, day-lighting and noise. Meanwhile, the CSTB (CSTB, 1998) is interested in how the evolution of building materials and techniques can effect the construction of houses. However, it is interesting to see that most the building systems that ware hailed as revolutionary have not made there marks while other, more low key as for example drywall, are now widely used. Guy Tapie bases his analysis on the conditions of consumption and production of the single-family house and concludes with an outline of the trends that have guided its evolution (Tapie, 2005). Our research takes the problem of the future of houses and questions the evolution of people’s preferences. We propose to study the rarely exploited semantic contents of real-estate ads as a source of information of the characteristics and qualities of the single detached house.

Real-Estate Ads

Single-family houses can be studied in several ways, as a built object but as well as the way it is perceived. People’s description of there dwelling is an important source of information. Nevertheless, to recover the discourse about there home is not an easy task. Since our research is interested in the evolution of the description of houses we are presented with several problems in order to find comparable sources of discourse that represent different time periods.

Real-estate ads constitute a particularly interesting type of discourse that is not biased by the intervention of the researcher and that is considered to be a source of “typical behavior” (Metzeltin, 1983). It allows establishing the details and characteristics of a consumer population based on information produced by a seller. Real-estate ads are a compact description of the characteristics and qualities that dwellers and real-estate agents give to a house in order to make the best sale. Its limited size suggests that only the most important elements are exposed since the pricing filter pushes sellers to weight their words and use a particular vocabulary. Thus, the ads constitute a kind of idealized description of the house. The elements mentioned and the qualities attributed to them are defined by the seller in function of the image he has of the potential buyer. In other words, the elements that form the description of a house in a real-estate ad can be considered as the expression of the representation of what the seller thinks is in demand and, by consequence, as an idealized image of the house.

Real-estate ads are also a mirror of a moment in time. The historical study of the ads can allow us to summarize the contextual characteristics of the moment of their publication (Kimberly, 2001). The description of a house can be analyzed “a posteriori” with no tampering with the fidelity of the period. The texts of the real estate ads
constitutes a source of “historic” information about the dwelling that presents the state of the stock, its characteristics and qualities at a moment in time. Therefore the diachronic study of the ads can be used to outline the evolution of the dwellings.

This research is based on a previous experience were we analyzed real-estate ads in order to identify the sensitive parameters of the single-family house (Rodriguez,, 2004). The purpose of our research is to analyze the single-family house in France during the last three decades in order to outline the evolution of the representations of dwelling modes. We propose to establish the importance, at each time frame and location, of the different elements that compose the house in order to elaborate on the evolution and future of the house. This research was funded by the Plan Urbanisme Construction Architecture (PUCA) of the Ministère des Transports, de l’Équipement, du Tourisme et de la Mer.

**Methodology**

Our study analyses real-estate ads published at three different decades (1985, 1995 and 2005) and in three distinct geographic areas of France (North, West and South). A sample of 6750 ads (750 ads per decade and location) is studied using statistical and linguistic analysis.

In order to guarantee a representative sample we collected real-estate ads published in major newspapers of three different regions of France: “Ouest-France” for the west and specifically the city of Nantes, “La Voix du Nord” for the north and the city of Lille and “La Dépêche du Midi” for the south and the city of Toulouse. The ads were collected in newspapers published at three different decades: 1985, 1995 and 2005. This period of time, spanning twenty years, encompasses a profound evolution in the collective representations of the single-family house while representing a homogenous sample.

The size of the samples was calculated in order to optimize transcription of the ads and there analysis. We proceeded by studying the lexical characteristics of a sample of 1870 ads and systematically compared them to smaller samples of random ads (from 50 to 1000 ads). The results show that a sample of 750 ads is representative (100% of significant terms and 65% of total terms) for each time period and each newspaper, resulting in a final sample of 6750 real-estate ads. The ads abound in information, but only the description of the real-estate is analyzed. The information about price, geographical location and coordinates of the seller are kept for future use.

The lexical analysis can give us an image of the representations associated with an ideal house at a moment in time. The analysis of the evolution of these events also gives an image of the evolution of the representations. The sample was analyzed using lexicographic tools developed in our laboratory since a survey of existing tools showed that they were ill suited to analyze non-literary text. The structure of the real-estate ads is complex and does not respond to traditional syntax. The abundance of acronyms also complicates the task. Our purpose is to shed a light on the lexis used, the frequency of terms, the associations (qualities assigned to the objects) and the structure of the ad (descriptive modes, order).
The analysis is done based on the notion that the description of the house in the real-estate ads can be decomposed into two sorts of elements: the objects that compose the properties and the qualities associated to these objects. For example, the text of the ad “beautiful house with 3 rooms, luminous living-room with private garden” can be characterized as: the objects “house”, “room”, “living-room” and “garden” to whom correspond the qualities “beautiful”, “3”, “luminous” and “private”.

<table>
<thead>
<tr>
<th>Objects</th>
<th>Qualities</th>
</tr>
</thead>
<tbody>
<tr>
<td>House</td>
<td>Beautiful</td>
</tr>
<tr>
<td>Rooms</td>
<td>3</td>
</tr>
<tr>
<td>Living Room</td>
<td>Luminous</td>
</tr>
<tr>
<td>Garden</td>
<td>Private</td>
</tr>
</tbody>
</table>

We propose several types of analysis: First we study the lexis in order to sort the terms used and there occurrence, second we analyze the emergence and disappearance of terms as well as the highest rates of progression, third we analyze the qualities attributed to the main objects.

**Variations Between 1985 and 2005**

Figure 1 shows the strongest mean variation (above 5%) of the objects of the real estate ads between 1985 and 2005. It is interesting to see that “room”, “total comfort” and “villa” are in decline. These objects represent forms of expression that lose their importance against new ways of describing the house. For example “villa”, which is used mostly in the south of France.
in 1985, is replaced by the more widely used “house” in 2005. The denomination “room”, as a generic way of referring to the different spaces, is abandoned in favor of more specific denominations of the rooms (living room, play room, etc.). “Total comfort” is a complex expression that we will detail in the last section.

“Bedroom”, “kitchen” and “bathroom”, which are among the objects with the largest positive mean variation between 1985 and 2005, gain in importance since the size of the house increased during this period. The houses in 2005 have more bedrooms and bathrooms than those of 1985. The importance of the equipment of the house is also suggested in the progression of the objects “kitchen equipment”, “gas heating” and “chimney”. The evolution of “terrace” and “garden” confirm the change in the use of the outside space of the house, while the emergence of “office” responds to the changes in work habits and the adoption of the home office.

Qualification of the Rooms

The main rooms are the bedroom, the living room, the kitchen and the bathroom. A number always qualifies the bedroom, with a mean of 3 or 4 bedrooms per house. The other qualities are insignificant. Our results show no significant increase in the number of rooms per house between 1985 and 2005. Instead, there is a 10% rise in number of 3 bedroom houses between 1995 and 2005.

The living room is generally qualified by its size (55,8%). It is represented in 43% of the cases by a quantifiable dimension (m²) and in 12,8% as a qualitative dimension (big, large, huge, etc...).

It is interesting to notice the emergence of the luminous and sun lighting qualities. They appear in 1995 and have a strong progression up to 3,9% in 2005. The references to the orientation of the living room are very weak in 1985 but progress to a stable state above 3% in 1995 and 2005.

The kitchen is mainly qualified (17,1%) as been “equipped” and by her size (14,5%) with many references to “big surface” (Figure 2). It is very important to notice that the notion of “open kitchen” appears in 1995 (4% of the ads) and keeps progressing in the year 2005 to attain 6%. This evolution is a direct influence of the North American model and is even called “american kitchen”. One could infer that the steady progression of this type of kitchen disposition could evolve into a generalized model. But the apparition, in the year 2005, of the quality “closed kitchen” could mean that a more traditional disposition is also well appreciated by the users.

The bathroom is qualified mostly by its number (43,2%). Our results show that almost half the houses have two or more bathrooms but there is no indication of increase between 1985 and 2005. The rise in the number of room dedicated to personal hygiene is due to an in increase in rooms with other denominations as is the case of “half bathroom” that is explained in the next section. It is important to remark that the extra bathroom is private and attached to the master bedroom.
Positive Progression

We studied the objects that had the highest degree of progression. This meaning the objects that were present in 1985 in less then 0.5% of the ads and that progressed the most in 2005 (figure 3). We see the apparition of objects that refer to the urban location of the house like “facing (open) towards”, “blind ally”, “sector” and “near conveniences”, those that refer to new types of room like “great room”, “parking” and “half bath”, as well as those that refer to the architectural element of “volume” and the material “parquet”.

Figure 2: Evolution of the Qualities Attributed to the Kitchen (Source: Authors).

Figure 3: Strongest Progression of Objects Present in Less the 1% of the Ads in 1985. (Source: Authors).
The most important references to the urban location are “facing (open) towards”, “blind ally”, “sector” and “near conveniences”. The consideration “facing towards” is always associated with the word “not” in order to exacerbate the notion that the property is secluded from the view of strangers. The location in a “blind ally” is mostly associated with “calm” in 40.1% of the cases (“blind ally, assured calm”, “in the calmness of a blind ally”), and with “private” in 7.8%. The “sector” is also frequently (31.3%) associated with “calm”. It is also “look after”, “in demand” and “desired” in 21.7% of the cases and “private” in 7.8%. These notions present tranquil and peaceful house sheltered from the nuisances and inconvenience produced by the neighbors. The house is also “near conveniences”. This category regroups all the urban services like education, commerce and transportation. It puts upfront that the house is conveniently located near key living facilities. On top of the traditional rooms, there are several spaces and functions that make their appearance like “great room”, “parking” and “half bath”.

The emergence of “great room” is not the appearance of a new type of room but more of a change in the way people use and conceive the living room. First of all it is qualified mostly by its size and is bigger than the traditional living room. Second, it is seen as a much more relaxed space were the family does several activities that go from entertaining to watching television. The “parking” is an exterior space for the car that always complements the closed garage. Its appearance responds to the increase in the number of cars per household but also to the trend identified by Bellanger (2000) that the garage is put to other uses other then to park the car (workshop, storage, etc). The emergence of “half bath” (a shower and a sink) consolidates the fact that there are more bathrooms in the houses.

The architectural reference to the volume of the house is interesting because it is at the same time an indication of a certain architectural

![Figure 4: Evolution of the Elements of Comfort and of “Total Comfort” (Source: Authors).](image)
culture and an evolution of the notion of more space. The French house has been steadily getting bigger, from 77 m² in 1978 to 105 m² in 2004. “Volume” is primarily qualified (72%) by beauty (“beautiful volume”) and in a lesser amount by a qualitative appreciation of size (11%) (big, huge, large). It is a reference to an architectural quality that is not based on a particular style as well as a way to describe a room that is larger than the mean house. “Parquet” is the only reference to a building material that presents an important increase. It is mainly associated with chimney in order to increase the standing of the social space.

The Evolution of “Comfort”

In the 50’s the government established by law that all new dwelling must have “total comfort” that consisted in an indoor WC and bathroom as well as central heating. This notion appears in our research as in constant decline and is bound to disappear (Figure 4). It has been replaced by a much more complex notion of comfort based on equipments and installations that include heating and chimney, security systems, spa installations, sprinklers, air conditioning, etc...

Conclusions

The results of our study show that there have been changes in the house. The evolution of this type of dwelling is twofold: changes in the use of space and changes in the notion of comfort.

Our results show a rise in the number of bathrooms but not an increase in the number of bedrooms. This is the reflection of the suburban house market that produces mainly 3 bedroom dwellings. The national statistical data that shows an increase in the size of the houses is not evident in our results.

The emergence of the grand room with an open kitchen and the light decline in the formal living room show a tendency towards a much more relaxed conception of the social space of the house. The traditional disposition of separate living room, dining room and kitchen is transformed into a big unified space that serves as a multiple use space for the family.

The notion of comfort evolves from “total comfort”, designating central heating, a bathroom and a toilet, to a much more complex notion based on specific equipments and installations. The users take for granted the basic elements of comfort and search for other installations and equipments that are usually associated with the notion of luxury and indulgence.

Our results allow us to outline the ideal house: it is at the same time near everything but far from everybody, it has a big beautiful luminous and sunlit living-room, a big outfitted open kitchen, several bathrooms and 3 or 4 rooms, it is comfortable because it is technically well equipped and has big volumes and parquet floors.

The ideal home is somewhere between the country house, secluded from nuisances of urbanization by a natural environment, and a city dwelling that is near all the basic needs (education, commerce and transportation). These values resemble those attributed to the suburban house. Is this due to the wide...

Gabriel Rodriguez and Daniel Siret

spread of the ideal of suburbia, the influence of commercial jargon in the real estate ads or that our sample could be composed of a majority of suburban houses? This question opens new venues for future research.

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AT HOME IN HOSPITAL?
COMPETING CONSTRUCTIONS OF HOSPITAL ENVIRONMENTS

Peter Kellett and Peter Collins

Abstract
Large institutions housed in large buildings are frequently regarded as the antithesis of personalised, small scale, domestic, home environments. However the attribute of ‘homeliness’ appears to be used more broadly to describe places where people feel a sense of attachment, control and identification.

In a large multi-disciplinary study of a hospital re-building project in northern England a range of users were interviewed to ascertain their responses to the original older buildings and later the new purpose-built hospital. We found both staff and patients retained a strong sense of affection for the older buildings and frequently used the language of home to describe their responses. In contrast, the newer buildings were generally recognised as efficient but impersonal, lacking many of the positive qualities they were familiar with. In addition some respondents suggested that despite efforts to include art projects, the new architectural language was inappropriate for healthcare, believing that small scale, ‘home-like’ environments were more conducive to health and well-being.

The authors will draw on anthropological and architectural frameworks to analyse the data which consists of extensive interview transcripts complemented by photographs. The paper aims to understand the conceptualisations which underpin the various user responses and to offer a critique of the design language of the current healthcare building programme.

Keywords:
Hospital design, conceptions of home, representations of space, design language, health.

Introduction: Competing Constructions of Hospital Space

In recent decades the social sciences have developed an increasingly dynamic conception of space and place. For example in anthropology, until the 1980s space and place tended to be represented as merely containers for ‘culture’. The ‘field’ was generally depicted as a homogeneous, unified and more or less self-contained whole. The tendency in the 21st century is to conceptualise space and place as more dynamic: as a process which does not simply contain culture but which is partially constitutive of it. This tendency is a part of a wider trend in the social sciences which has seen a turn towards social constructivism. This is especially true in treatments of space and place. For example Sack (1997) and Casey (1987, 1998) have each argued strongly for a more active role for space and place in social life.
It is now commonly accepted that place and space are in no way ‘natural’ but are contingent, dependent on the thoughts and actions of human beings going about their daily lives. No place has to be the way it is. This implies that no place can be represented in just one way - more ‘truthful’ than all alternative representations. Representations of space and place compete in the field of meaning; in different circumstances different representations may gain ascendancy. Clearly, the representation of place which becomes ‘accepted’ draws on the voices of the powerful. In the case of hospitals the default, ideological or in Bourdieu’s terms the doxical expression (Bourdieu, 1977), has tended to be underwritten by the biomedical model. This need not be the case. In this paper we hope to indicate the ways in which representations of the hospital (in the UK at least) are deeply contested. We aim to demonstrate that the hospital is polyvalent – with multiple meanings, each of which struggles to be heard.

We focus on the domestication of hospital space, on the ways in which the acute hospital is represented (amongst other things) as ‘home’. It is worth noting that several significant writers place ‘home’ firmly at the centre of any understanding of space and place. Tuan, one of the most influential writers on the subject argued that in creating space and place, at whatever scale, all human beings are endeavours to generate a certain homeliness (Tuan 1991). We will support Tuan’s view in what follows.

**Researching the Hospital**

In the north east of England a new large public hospital, the James Cook University Hospital (JCUH), was completed in 2004 on a single site based on the amalgamation of three existing smaller hospitals (Macnaughton et al 2005). It was commissioned by the local National Health Service (NHS) Hospital Trust and financed using a relatively new contractual approach - ‘PFI’ (Private Funding Initiative). The Hospital Trust is committed to delivering high quality ‘patient-centred’ care and aimed, despite the large scale of the building, to achieve a sense of intimacy for individual patients, and to encourage a sense of ownership of the hospital amongst the local community.

The hospital planning team believed that the solution to these challenges lay in high quality architectural design and the integration of public artworks into the health care environment. The project brief paid special attention to building design, therapeutic colour schemes, materials, lighting, space, and acoustics. The design features and colour schemes were intended to individualise departments within the hospital to help create a sense of intimacy and identity within the whole. Part of the budget was used to commission artwork for the hospital and a ‘Healing Arts’ Committee was set up to oversee this work, to seek further funding, and to fund artists’ residencies creating works appropriate to this hospital environment. The theme of the voyages of Captain James Cook (who was born locally) has been introduced to link the hospital with the local area and to give the hospital a sense of coherence as a single building. The James Cook theme is ‘quoted’ throughout the hospital both in large, commissioned pieces of art and in small artefacts which are displayed in glass cases along some of the corridors.

To evaluate the effectiveness of this approach a
A detailed study of the new hospital environment (and for comparison, one of the existing hospitals – the Middlesbrough General Hospital) was carried out by a multidisciplinary research team (Architecture, Anthropology, Medicine and Art) from the Universities of Durham and Newcastle upon Tyne, funded by NHS Estates, the organisation responsible for overseeing quality in NHS buildings nationally. The research objective was to evaluate the extent to which a planned approach to architecture, art and design in a major NHS Hospital has a beneficial impact on patients’ and visitors’ experience of the hospital and on patient and staff well-being.

A range of methodological approaches were employed for different parts of the research. To elicit information regarding the briefing process and explore how concepts such as ‘patient centred care’ were operationalised throughout the design and construction process, interviews were conducted with key players in the planning and design of the hospital: architects, managers, planners and senior clinicians who had advised on the design of individual departments. To facilitate comparison of responses to the contrasting environments, the study included pre and post-build phases using semi-structured interviews and a questionnaire survey with patients, visitors and staff. These were carried out in four inpatient units, six outpatient units and in selected general areas in one of the component hospitals (Middlesbrough General) as well as the new building.
We will examine what we call the ‘domestication’ of hospital spaces in the following eight sections which concentrate on different aspects of this complex process. Although the focus is on the polar types of ‘hospital’ and ‘home’, we suggest that ‘hotel’ can act as a helpful mediating category between them. Throughout the paper we draw heavily on extracts from transcripts of the interviews. We conclude by emphasising the importance of recognising the polyvalency of institutional spaces.

Competing Constructions of Hospital Space

From an extensive analysis of the project documentation it was revealing to learn about how the various decision makers and designers conceptualised their ambitions and aspirations. The language used was particularly revealing. One of the key briefing documents states that the aim of the new hospital is the:

...creation of a non-institutional and therapeutic environment in a manner which creates a cohesive and high quality image for the new hospital (MacNaughton et al, 2005: 38)

and the chief Executive stated that:

...his vision of the hospital would be a place where patients would come in and it wouldn't be like a hospital really (Clinical Director).

If not like a hospital then what would it be like? One recurrent theme which came out of the interviews with key decision makers was to try to articulate a place with particular qualities to which people could relate. In attempting to clarify this idea, reference was made to home-like qualities. A Divisional Manager stated:

...the brief really was to make things as patient positive as possible ... and, you know we actually got it right for the patients – homely.

But what do people mean when they say this? The extensive literature on home it is full of reference to place attachment, identity and status definition, processes of personalisation and connection (Dovey, 1985; Lawrence, 1987; Despres, 1991; Miller, 2001; Gullestad 1993; Tuan, 1977, 1991; Seamon, 1997; Heidegger, 1971; Bachelard, 1994; Rose, 1993; hooks, 1990; Young, 1997, etc.), which are usually focused on the domestic sphere, but can also relate to connection and identification with larger geographic areas or social groupings (eg home country, home city). Domestic dwellings would normally be regarded as the antithesis of institutional buildings and it is unusual to find the language of home used with reference to large institutions or organisations.

Unexpectedly, one of the central themes which emerged spontaneously from the responses during our interviews with (clinical) staff, patients and visitors centred on the degree to which the JCUH could be described and experienced as ‘homely’. The ways in which hospital space might be (re)constructed as ‘home’ by those who occupy the space will be the central question pursued in this paper.

‘Hospital’ Becomes ‘Home’

There is a close linkage between decoration, personalisation and attempts to achieve an environment which is commonly described as ‘homely’. The ability to be in control of the environment is a key aspect of feeling at home (Dovey, 1985), and control of the environment
includes the opportunity and potential to engage, interact and even change it. Here two porters explain how children’s work is used to decorate the wards.

And um obviously on the kids’ wards there’s all they’ve just put like all the like clowns and all over the walls. [...] I think so I think it makes it a little more like homely if anything. [another porter adds] I think it’s just that homeliness ... I think it’s important for them when they come in is to be in a good frame of mind which gives the doctor a better chance of finding out what the situation is.

Here homeliness appears to relate to a relaxed, calm frame of mind which may be supported by reassuring design elements and interaction opportunities which may remind the children of home and everyday spaces, and by implications distract them from the reality of being in an institution directly associated with pain and illness. This is clearly evident in the lively colours and engaging motives which are found throughout the children’s department in both the old and new hospitals. This echoes a similar approach taken to the décor of nurseries and schools which draw on design languages which are immediately recognisable as ‘for children’.

In explaining the appearance of the older hospital (Middlesbrough General), an information officer keeps referring to the idea of achieving homeliness:

They’ve just decorated it to look homely, really... it’s a bit tatty at the edges, but that’s ok.. I think it’s .. er.. it doesn’t look like a medical building at all, really... I think that’s the way it is now, isn’t it? They don’t tend to paint everything white anymore.. which is probably a good thing. [...] Well, homely in the sense that woodchip isn’t particularly homely..! It’s.. it’s not clinical in that sense.. it’s homely in the... you wouldn’t need to be worried if you spilt a cup of coffee on the floor! [laughs].. that’s.. er... it’s.. it’s.. comfy chairs and tables.. and there’s a coffee machine and... that kind of thing.. it’s all there, really.

This idea that ‘hospital’ could become ‘home’ almost entirely through design was a very common observation elicited from all of those interviewed. However, the extent to which this was brought off successfully at the JCUH remains debatable, as we shall see.

The Personalisation of Public Space

Many staff in the older hospitals were able to personalise their work environment. Two clerical staff in MGH explain what they have done in the context of their own office:

I suppose I’ve got my pictures and my computer and my little cuddly toy and...er... posters and things and calendars... and, er., got my little man[?] up there.. to remind me.. my inspiration!.. yeh!! [female clerical]

Yes, we all have a desk and shelving space and filing cabinets... so you can personalise that, to a certain extent. [...] I’ve got a calendar with men on it [quietly] [laughs].. in various states of undress which can’t be seen from the waiting area, I have to say.. erm.. and another calendar with cats on it.. but other than that it’s, it’s impersonal. [The other secretaries] they look at my calendars! [laughs].. I don’t think they have anything personal. [...] Some of the Consultants have pictures of family up.. and some... erm.. 1 or 2 of the secretaries have little cuddly things.. you know, things that you stand on your monitor.. but, on the whole, I think we’re probably quite... quite an impersonal bunch of people when we’re at work! [laughs] (senior secretary)

Attitudes to personalisation vary. One senior clinician explained how in the future he would
not personalise his space as in the past because of how patients might interpret the presence of personal images and objects. Interestingly this coincides with a separation of offices from consulting rooms in the new building. This means that he will no longer meet patients in his office, but in shared (hence less personal) consulting rooms.

[These family pictures] have been there for twenty years I haven’t taken them down I really should now. [...] there is a school of thought that believes doctors should not have photographs of their beaming children in their offices because the patients that are coming are patients and … it’s a reasonable argument. [...] I’ve never thought of it until a colleague told me about this about a year ago I think it is a reasonable. I wouldn’t now if I was just starting out put photographs of my lovely smiling children up.

Patients, particularly those staying for long periods, appreciate being able to personalise their spaces. Here a nurse from a trauma ward explains the limitations of the new hospital where patients space and are discouraged from putting things on the wall. This appears to be partly because of the different contractual position of the hospital, which is no longer owned by the hospital trust, but by a private, profit-making consortium. They also have limited storage space.

Yeah they personalize [the bed area] with flowers and cards, but everything is in the locker, the very small locker, and there isn’t a great deal on the table that they have their meals and drinks on, and they’re always cluttered with their own personal stuff. So everything looks cluttered cause of the small room and the space that they have to personalize, and
nothing goes on the walls. So again not enough room really.

It might be the case, however, that in dividing the hospital into wards which themselves consist of relatively small bays (usually of six beds) a kind of homeliness is created, the large scale remaining for the most part hidden behind the small-scale.

Deciding the Decor

In the older hospital decisions about décor involved the staff of the particular spaces. In some departments this has continued and staff have had an input in deciding the colours and decoration of parts of the new hospital. Here a Sister (senior nurse) explains the process.

Yeah they if we ever needed painting or anything they always asked us and we get samples to look at. We all, you know, we decide, you know, say that'll go oh I don’t want that and yeah they’re pretty good like that. [...] Oh we do because I’ve picked all the ones for the new [department] but I can’t even remember what they are now ‘cos it was that while ago! Colours and fabrics what you wanted on the walls yeah I’ve done that and it was me and my line manager … the divisional manager we had all the samples all over and does that go with that. [...] I’m going ‘no, we want it modern!’

Interesting that this person express a desire to achieve a ‘modern’ looking environment which will contrast markedly with the ‘traditional’ look of the old. An opposing interpretation is offered by a Prosthetics Manager who wishes to re-create the atmosphere of the old building. He here explains his expectations regarding the move from the old hospital to the new. He is making clear the need to ‘domesticate’ what he imagines will be a rather neutral, even unformed environment and the frustrations in not being able to do this, because of PFI-imposed restrictions.

Um ok I suppose you could say once you’ve looked at the pictures that’s it you’ve looked at them but … I don’t know if we won’t be able to personalise the building as we’ve done here. I would very much like to take [the paintings] to the new hospital… Well we’ve been told we’re not allowed to put them up in there so there isn’t really a lot of point, but I dare say they will go… It would make them feel at home.

He goes on to explain in more detail the process of negotiation involved in decorating and fitting out the new facility (at the JCUH). His description begins with the process in MGH and then he explains how the new hospital is constraining possibilities for personalisation and decoration.

Well when we decorated this place um there were about three or four managers involved and we just sort of said you know wouldn’t it be nice if we had this, this, this and this… these colours and it just goes from there. So you get wallpaper samples and colour samples um the carpet actually looked quite nice at one time before I think it’s the damp that’s gone in the concrete that’s made it that colour. [...] Hmm well it was quite nice a light grey a neutral colour and the pinks of course because it’s a ladies room I think ladies prefer pinks to blues and greens.

[and the pictures?] Well I brought a couple of them. Well they came from home and they were sort of pictures at home, where you think I’ve nowhere to put those what shall I do with them? So they were brought in here. [...] I’ve had a couple of people ask if they can have that picture of the horses. [laughter] I think rather than being in a very sort of white painted clinical environment yeah sure […] the more relaxed they are the easier our job is.

This reminds us that the construction of space is always one of negotiation and that the decision-
making process is often contentious. In this context the balance of power has shifted during the change towards PFI building. Under this a new contractual process public buildings are designed, built and owned by private consortia who then rent the buildings to the local NHS Hospital Trust. This means that the occupiers/users are no longer the owners, and the building itself becomes an investment and source of profit. The change in funding from public to private impacts directly on decision making processes at even the most basic levels as it changes people’s relationship with the building. Before it was unambiguously ‘their’ place, now it appears to belong to anonymous others. These issues of ownership (perceived as well as legal) are fundamental to the construction of space.

The Prosthetics Manager continues:
- we were allowed a little bit of autonomy in choosing the colours. [but] as for putting pictures and things up we’ve been told that we’re not allowed to put anything up on the walls at all, that we have to put um a request in if something’s to be put up on the wall and the service providers will send somebody round to put the picture up and will charge us for the privilege of doing it. […] No it’s PFI …the building is only rented ...so how that’s going to work I’ve no idea as yet.

This is echoed by a physiotherapy assistant in the same department. She emphasises the importance of making the place welcoming for patients as well homely for both staff and patients. Again this is about control of the work place by those who use it.

Well um I think on … pictures on the wall but apparently they don’t agree with that … Well so they so people’s saying…It was said that um they didn’t think it was appropriate. […] Well I think it looks nicer I mean in the corridors they’ve got plenty of pictures and things… Which looks nice, so why not in the department? […]

Maybe maybe ... once the um cracks maybe start appearing and oh we’ll hang a picture up and hide that do you think! [laughter] … It is like a second home isn’t it? It’s, I think you know people should be able to put a few pictures up and whatever. […] And make it look welcoming, and homely.

Workplace as Home: Colleagues as Extended Family

Not only the place, but colleagues themselves are reconstituted as a part of the hospital as ‘home’. This tendency is described by a Ward Sister who not only talks about the workplace as a home, but her colleagues at the MGH as an extended family:

I think the staff are very homey as well … I mean certainly I do. This is my second home. I’ve similar feelings I think about being here to my home environment. If people um criticise the ward you tend to take it very personally. I feel the staff work very much as a team and it’s almost like an extended family um in that you trust them… you put a certain level of trust and faith in the rest of the staff and in the patients that come backwards and forwards that you develop a relationship with them and it is almost like an extended family you feel very protective towards them.

The overt connection between the work place as a ‘second home’ and colleagues as extended family members is logical and consistent. It is a clear example of how the relationship between people and place, between environments and those who use them can be conceptualised as mutually interdependent. In the case of home, Dovey (1985:34) defines this relationship as ‘as an emotionally based and meaningful relationship between dwellers and dwelling places’. What we see here is the domestication of what we would otherwise regard as institutional space.
This appears to be possible as the people treat colleagues as family in which values such as team, trust, faith and protectiveness are reinforced and celebrated. Through this process environments with home-like qualities are created and sustained.

This raises one of the key challenges of this research project. Not only were the buildings changing but because of the amalgamation of the three constituent hospitals and the changing contractual position, many work practices and organisational structures were inevitably changed too. With the move to the new building the ‘emotional relationship’ between the users and the spaces needs to be re-formed in different circumstances. In some places it appears to be seriously fractured, but we may conjecture that with time new relationships and patterns of engagement will develop. Our study was done shortly before and after the move, and the interviews were full of nostalgia towards the ‘lost home’ of the older hospital.

‘Public/Private, Work/Home’

For patients, as well as staff, the ability to understand hospital in terms of home, to see public space as private is central to their sense of well-being in hospital. For some patients the close positive correlation between the approach of the staff and the appearance/characteristics of the building has been changed by the new hospital building. A female chemotherapy patient describes the response of her mother in

![Figure 3: Sitting Area on Main Corridor, James Cook University Hospital (Source: Authors).](image-url)
law who regularly accompanies her to the new hospital.

She said, when we came to this one, it's different to the other area, she said it's more plain, even said the words 'clinical, more clinical than the old place'. Because as soon as she went in the old one, she thought, oh this is friendly.

Interviewer: So the friendliness wasn’t just to do with the people then?

Oh, no. It felt more... What words would you use to describe? It felt more welcoming really. I mean, like I say, loads of times, the girls [secretaries, nurses etc] haven’t changed, it’s nothing to do with them, it’s just the, because even the mother in law and John says, the girls haven’t changed.

As we noted earlier, there can be no homogeneity in people’s perceptions of hospital space. For some the JCUH is, quite simply, ‘cold and clinical’; whereas it is ‘homely’ for others. It depends partly, of course, on the ward in which they are placed. The wife of a patient in the new trauma ward was much more positive in her assessment. She refers to homely qualities in the new building:

In the ward they were very homely. Very homely. But everywhere you went in the hospital, there were very nice people. Very nice surroundings. Interviewer: You said you felt at home. In what sense? Was that largely to do with the people? Everything really. It was relaxing really. It wasn’t like a hospital. It was relaxing. [...] There were pictures on the walls. Art and plants in the corridors. Chairs all the way up the corridors. So if a patient got tired they could sit down. ...But they weren’t like ordinary chairs.
They were comfortable like two-seater sofas.

This raises the question regarding the extent to which individuals are predisposed to conceive of the JCUH as ‘home’. A similar positive response was elicited from the mother of a patient, who explains how the new hospital is such an improvement on the old, precisely because it felt less like a hospital.

And I was interested to see the range of artwork and prints and styles and things along the walls so...*I felt it very homely, welcoming, friendly, less like a hospital.* [...] It didn’t smell like a hospital and it didn’t look like a hospital. I felt I was somewhere welcoming and helpful....Take your worries away.

As expected, patients varied in their responses. Here a female chemotherapy day patient describes the new building as clinical and is very critical of the absence of daylight in a quiet room.

Yeah, really. I think they could’ve thought more about. I suppose the décor could have, it’s very clinical, very white. I suppose you can’t put wallpaper in, can you?. It’s quite small, no windows and if you shut the door, it’s very claustrophobic. I came in with my husband and we came out again, because it was just...like you’re in a coffin before you’re in one. Yeah. I just can’t get my head around that there’s no window.

This patient appears to be counterpoising the ‘clinical’ with the ‘homely’ and clearly perceives the former in negative terms. A similar point is made by another patient who explains how she feels uncomfortable with the scale of the new building, again drawing on her previous experience as a point of comparison:

*I think it’s more comfortable going into Middlesbrough General as a visitor than it is [James Cook]. Uh I think it’s cold in there isn’t it. [...] I don’t know I just I always felt quite at home in Middlesbrough General, bit scary [James Cook]. ...It’s just so big it’s just ...I can’t explain what it is it’s too big.... The corridors are so wide and so long and it’s you walk a mile down the corridor to get to a little ward and then you go to another ward at the other end of the hospital you’ve got that walk again. ... It’s just so so big.*

Scale is an important marker among our respondents. As alluded to above, the ‘homely’ is associated with the ‘small’, small buildings, small and simply designed wards, small work teams. A senior clinician/divisional manager appears to be aware of these sentiments:

*Um it’s seen as the General being small friendly, bit old fashioned quite a few people are a bit worried about the high-tech at James Cook*

**Patient Control of Environment**

It is recognised that the ability to control aspects of your situation is a key factor in patient comfort and levels of satisfaction, and certainly a characteristic of home environments. Here an elderly male patient explains how in the Middlesbrough General Hospital (MGH) he is able to control the lighting and temperature:

Sometimes you get in here and it can be so bright and you just wanted a you’re tired and you just wanted to rest your eyes sort of thing and it’s nice to be able to switch these off ... and then you’ve just got that these side lights which give a more muted sort of thing ... and it’s really nice to be able to have either the sun shining in ... and some and like this, this person who’s sitting here ...Has switched it off and it makes a tremendous difference to the temperature in the room. The amount of sun that’s shining in it really does the temperature in the room can really soar with the sun and a lot of people.

I opened a window over there this morning it’s nice. [...] It’s lovely to be able to have the windows open
slightly and sort of adjust your fresh air...um because you're here for quite a while.

This is possible also for patients in the new hospital.

When we did actually open the windows to get the fresh air in, you know, especially in the morning you want to let the fresh air in. [...] Yes. There was easy access to opening and closing up the windows. Obviously there's no way I can adjust the temperatures. (male patient, mid 40s)

And there was a little bit of light on the ceiling for staff to walk in and check you in the night and they wouldn't have to disturb you. [...] Yes. I thought it was very well thought through. [...] Yes, you could [control it]. Yes. Very easily. There was like a buzzer you could ring for help or assistance. The television, the speakers, earphones, you could listen to a radio or TV through the earphones and things like that. You had all that controlling and the nightlight, you controlled that. [and the windows?] Yes. They could be opened. Yes. (male patient trauma ward).

These are encouraging responses. Although there are aspects of control which must inevitably be controlled institutionally, it appears that at this scale the designers have been able to create responsive environments which allows many patients to retain control of their own places, thereby re-creating some of the conditions of home.

‘Hotel’: Between Home and Hospital

A number of respondents have already remarked that the imagery and atmosphere of the James Cook does not conform to traditional expectations of a hospital. This was the stated intention of the key decision makers, but they were less explicit in defining a new ‘non-institutional’ environment. It is therefore illuminating to examine the responses of the different users. One particular building type – the hotel - reoccurred frequently and perhaps we may regard it as a mediating category, being an institutional building which shares many overlapping qualities (and functions) of home. This is certainly true with regard to control over environments, where we may regard the ‘hotel’ as an intermediate category between home and hospital. Many people compared the new hospital to other building types, partly because of its visual appearance, but a few used other senses to comment on the changed environment. For example the mother of a patient contrasts the new hospital with one of the older hospitals:

It smelled like a hospital ... The James Cook doesn’t. I don’t think. The corridors are light and airy. Cream coloured walls. Nice green areas. I just think it's like I've gone to a hotel rather than a hospital.

This observation is also reinforced by perceive changes in organisational culture implied by the new building. The parent of disabled teenager commented:

Well it’s a work place you know it’s a lot more it’s a fac- it’s a you know a people factory a lot more isn’t it.

This idea is expanded in the comments (made prior to the move) of a female clerical worker, who also raises the issue how people will adjust to the new place. Will increasing familiarity lead to more positive responses and a greater sense of ownership?

The other one’s a bit intimidating.. it’s massive and.. and.. you can’t get parked. [...] I remember it being built.. and we used to call it ‘the chicken factory’.. cos it looked like a factory.. metal rigs... and it’s just got bigger and bigger ...since then.. and I think
people find that a bit intimidating.. it’s very difficult for people that have worked here for a long time.. have got used to it and are familiar and all that.. even if it is a bit tatty and grubby at the edges... and it’s also difficult for patients that’ve been coming here for, you know, decades or.. and it’s more difficult for them to change.. I think for people that are coming.. to use the service first.. I’m not.. not quite sure how they’ll react.. erm.. it’ll be normal for them, won’t it, so..? .. it’s still very... I don’t know it’s.. it’s like.. like the Metro Centre [very large shopping mall].. but upside-down and jiggled up, isn’t it, really!! You can’t find anything [laughs]..!! and they have fabulous maps everywhere, don’t they?.. and great big signs advertising everything and you still get manage to get lost in the Metro Centre, don’t you?!.. this is like that except.. a hundred times worse, really.. and you’re ill! [laughs]

This reference to shopping malls was made by a number of respondents and others suggested that a hotel reception area was a more accurate analogy:

I did, I thought [the globe] was nice. That was outside the glass, the whole glass entrance. I thought it was quite impressive. It was almost like you were going into some sort of fancy ... As I say it felt more like going into a hotel reception than it did going into a hospital. (Mother of child patient).

A clerical officer relates this to her experience of another local hospital:
I went to North Tees my sister was in there a couple of weeks ago and you walk in I thought this is lovely like a four star hotel and it was. [...] Oh yes four star environment [...] cos there were carpets on the floor there were uh goldfish.

For a male patient, the new James Cook building is more like an art gallery or airport, and he does not believe this appropriate:

It’s a hospital, it’s not an art gallery. [...] Have the art gallery part of it where it needs to be, where you’re actually going to be sitting. How are you going to see it lying in a hospital bed? [...] I tell you the first time I actually went down and looked at the place. It looked like one of these new designer airports. [...] If you showed me a photo of that atrium inside, I would’ve said modern art gallery, airport. The last thing on my mind is hospital. [...] I’ve talked to people who said they hate it because, like older people, it’s too much. I don’t like that. It looks brilliant as a piece of art. It’s not there as a piece of art. It’s more like going to airports all over the world. Breathtaking when you get inside of them, but just a way, a means of making it look good.

Perhaps the most revealing part of the same interview is when he describes how the new building suggests different codes of behaviour. He is unsure about the behaviour which might be appropriate in the new space. This is the very opposite of an environment in which people feel ‘at home’ and sense they are in control.

Why are they there? This area, the biggest area, the atrium as you walk in, it’s got some sort of plaque or something saying it’s some sort of communal meeting area for discussions of this, that and the other. If it’s a meeting place, yes, but the only people who are actually going to meet there are actually reps. We actually saw people sitting there eating their lunches.... Just eating sandwiches. It’s not a place to eat a sandwich. Who are these areas designed for? Are they designed for visitors or staff or inpatients? There’s no clarification, anything, you know, are you allowed to eat sandwiches?

Interviewer: Do you think you need permission? Yeah, that’s the sort of thing because you’re looking at, it’s all leather seating. You think to yourself, oh this cost a fortune these seats, and if I come here as a visitor you’re thinking, oh I can’t get in because it’s another 10-15 minutes before open time. Right? If I sit in these seats is a big security guard going to come and go at me, ‘Get off there, it’s for staff.’
Conclusions

The construction of space is complex. Although buildings as physical entities may apparently remain static, the spaces within are in a continual process of change, negotiation and contestation. Meanings are constructed and re-constructed by individuals and groups to reflect and reinforce wide-ranging values within broader society. We have seen how the response of individuals to the new hospital has varied considerably. This raises a question regarding the extent to which individuals are predisposed to conceive of the new hospital as ‘home’. There is certainly a tendency for interviewees to draw attention to the ways in which the hospital is more or less like home. It would seem clear that for patients ‘home’ should provide the model on which hospitals are based. The extent to which this is possible will vary with circumstances. For instance, the JCUH was conceived of and built as a flagship hospital with the ambition to represent the global aspirations of Middlesbrough and perhaps the area of Teesside more generally. The hospital is large (over 1000 beds) and struggles for the most part to transform itself into ‘the homely’. For instance, consultants are far more likely to draw attention to the ‘high tech’ medical facilities which facilitate the more successful and rapid treatment of patients.

Bourdieu’s work (1977) on social capital reminds us of the role of class in articulating distinctions, and in this context it appears that social class may be a significant variable in the construction of space. Particular design languages are identified, appropriated and legitimated by different social classes in distinctive ways. For example, the contrast between the friendliness of the old with the perceived impersonal nature of the new is interpreted in these terms by a clerical assistant (prior to the move) who suggests that the new hospital is more ‘upmarket’. This is clearly suggestive of class distinction:

Erm.. this would have to be like a personal opinion… I think that this [older] hospital… is not as impersonal and… I feel as if … we have more time with the patients… I think, although it’s an old building, it’s big and it’s spacious... and you can find somewhere to sit, if you do want to sit on your own… there is always somewhere where you can sort of find a corner to sit in and.. you know.. get away from it if you want to or.. you know.. go and join in, you know, wherever. From my experience of only going over to James Cook... it’s just seems that there’s so many people there and it’s so big and impersonal.... everyone seems to be dashing about and the places seem.. although the décor with the paintings and what have you are, you know, very upmarket .. it all looks very nice.. but it does seem as if.. it’s impersonal.. I don’t know, there’s nothing.. it doesn’t seem to have … friendliness.

Although the issue of class is clearly relevant it is beyond the scope of this study. This paper has aimed to demonstrate that the ‘hospital’ is polyvalent with multiple meanings, each of which struggles to be heard. At the centre of this battle of contested meanings is the uneasy relationship that exists between ‘home’ and ‘hospital’. It is unlikely that such tensions will be easily resolved. In practical terms, we would want to draw attention to the naivety of some planners and managers who assume that they can predict the way in which hospital space will be interpreted by users. This naivety should, in our view, be replaced by a humble inclination to accept the inevitability of diverse responses and simultaneously recognise the value of ‘home’ as an important signifier and base-line environment against which other, more public, environments are compared and evaluated.
References


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DEVELOPMENT OF AN ENVIRONMENTAL RATING TOOL FOR BUILDINGS THROUGH A NEW KIND OF DIALOGUE BETWEEN STAKEHOLDERS AND RESEARCHERS

Mauritz Glaumann, Åsa Svenfelt, Tove Malmqvist, Göran Finnveden, and Ola Eriksson

Abstract
Buildings need to be more environmentally benign since the building sector is responsible for about 40% of all energy and material use in Sweden. For this reason a unique cooperation between companies, municipalities and the Government called “Building-Living and Property Management for the future”, in short “The Building Living Dialogue” has going on since 2003. The project focuses on: a) healthy indoor environment, b) efficient use of energy, and c) efficient resource management. In accordance with the dialogue targets, two research projects were initiated aiming at developing an Environmental rating tool taking into accounts both building sector requirements and expectations and national and international research findings. This paper describes the first phase in the development work where stake-holders and researchers cooperate. It includes results from inventories and based on this experience discusses procedures for developing assessment tools and what the desirable features of a broadly accepted building rating tool could be.

Keywords:
Environmental rating; buildings; stakeholder collaboration; environmental indicators; environmental assessment tools.

Introduction
The Swedish building sector is responsible for about 40% of all energy and material use in Sweden, caus-ing different types of environmental problems (Ecocycle Council, 2001). In addition, as many as 600 000 to 900 000 people in Sweden live in dwellings with an indoor climate that has a negative effect on human health and wellbeing (Norlén & Andersson, 1993). In Sweden, the roadmap to environmental sus-tainability, of which the built environment is a vital part, comprises 16 National Environmental Quality Objectives which have been adopted by the Swedish Parliament and are to be achieved within a generation (Environmental Objectives Council, 2005). One of these targets, ‘A Good Built Environment’, states that

Cities, towns and other built-up areas must provide a good, healthy living environment and contribute to good regional and global environment. Natural and cultural assets must be protected and devel-oped. Buildings and amenities must be located and designed in accordance with sound environmental...
principles and in such a way as to promote sustainable management of land, water and other resources.’ (Environmental Objectives Council, 2006).

To face the sustainability challenges of the sector, major stakeholders in the Swedish building and property sector, including the Swedish government, municipalities and companies, have entered The Building Dialogue, embracing a number of commitments for each participant (Building, Living and Property Management for the Future, 2009). One of these is to ensure that all new buildings and 30% of existing buildings should be assessed with respect to health and environmental performance before 2010 (Building, Living and Property Management for the Future, 2003).

A general and broadly accepted tool for rating of environmental performance is expected to have a large impact on management, retrofit and new designs of buildings. In accordance with the commitments, two research & development projects were initiated with the aim of developing such a rating tool, applicable to both residential buildings and offices. Since a wide range of stakeholders are involved, an underlying expectation is that the proposed tool should utilise different types of current and future incentives, for instance tax reductions, subsidies, etc. to stimulate environmental improvements. This paper presents working procedures and results from the first phase of one of the research projects mentioned.

**Objective and Outline**

The objective of the research project is to develop a system for environmental rating of buildings, taking into account building sector requirements and expectations as well as national and international research findings. The rating tool shall encompass the indoor environment, efficient use of energy, efficient resource management and avoiding hazardous substances.

This paper presents, discusses and draws conclusions from the first research phase of the project, which consisted of literature studies, interviews and questionnaires. An inventory of current bills, legislation and policy targets is presented in the first chapter, together with the findings of an interview study with key informants representing authorities, sector companies and potential incentive providers. An inventory of national and international tools for environmental assessment of buildings was carried out and is presented in the following chapter. These studies form the basis for an understanding of the local context in which the rating tool should be implemented. The discussion focuses on conclusions drawn from these inventories (seen from three different points of views - that of society, the sector and the scientific community). The extent to which they are in harmony or contradictory is examined. Finally some key features and elements of the anticipated rating tool, drawn from the dialogue with the stakeholders, are presented.

**Method**

The rating tool is being developed by researchers in collaboration with a group of companies and municipalities who support the work practically and financially. They participate in seminars and interviews and will test modules of the rating tool during the development process.
There are a number of features that should be considered when choosing the research approach. Firstly, the aim is to tackle and suggest a solution for a ‘real-world problem’. Secondly, there is a normative purpose, as the tool should be used to improve the environmental performance of buildings. Thirdly, the problem area is complex, since the tool will cover a wide range of environmental and health aspects. Scientific knowledge from many fields needs to be collated and analysed in order to extract the most important aspects to be considered in the tool. However, since the aim is also to achieve broad acceptance by the sector stakeholders, people’s views and opinions need to be considered, which in turn increases the complexity.

In studying and working with similar problems and projects, a traditional, disciplinary research approach has often proved ineffective. Instead, it is argued that a transdisciplinary approach is necessary when dealing with real-world topics, human activity systems and normative and complex issues. In addition, the local context is highlighted as being important and the research process may commonly be action-orientated (Gibbons et al., 1994; Checkland, 1999; Lawrence, 2004). A transdisciplinary approach involves researchers from different disciplines working together to get a mutual understanding of the problems involved. In addition, when stakeholders from outside the academic world are participating, this calls for a practice-orientated solution to the problems (Gibbons et al., 1994; Lawrence 2004).

The project team consists of a group of researchers with different backgrounds, as well as an implementation leader whose main role is to coordinate and communicate with all the participating stakeholders. More than 20 different companies and municipalities are participating in the project. They represent property owners, municipalities, developers, small and large construction companies, material suppliers, sector organisations, etc. The project team will consult with these stakeholders in all phases of the project. This is important since it produces an iterative process in which concepts, ideas and suggestions are debated continuously and therefore lays the ground for acceptance of any tool eventually proposed by the project team. Thus, the possibilities for a practical application in the future will increase.

**Interviews and workshop**

As one of the first steps taken opinions and requests from stakeholders were gathered. Business stakeholders, mainly involved in construction, maintenance and management, were involved in the process through workshops and were interviewed by telephone. In-depth interviews were carried out with stakeholders in government, insurance and banking companies. These three actors were identified in a previous report on environmental rating of buildings as potential providers of economic incentives (Building, Living and Property Management for the Future, 2003).

During one workshop in 2005, around 60 representatives of companies in the construction and maintenance sector and relevant authorities expressed their expectations and opinions about the development of an Environmental rating tool for buildings. A report from the seminar is available in Swedish (www.byggabodialogen.se).
Business stakeholders were interviewed in 14 structured interviews, with a questionnaire sent out by e-mail before the interview, and the interviews lasted for 30-60 min. Notes were taken during the interview. Examples of questions asked were: What is your interest in an Environmental rating tool, what are the driving forces for joining a rating tool, what kind of parameters should be included from your perspective, are there intrinsic values for classifying a building, will incentives be necessary?

In addition, seven in-depth semi-structured interviews were made with stakeholders with the potential to provide incentives, hereafter referred to as incentive stakeholders (2 persons at two banks, 3 persons at two insurance companies, 1 official at the Ministry of Sustainable Development, 3 officials at the Ministry of Finance and 1 economic political advisor at the Swedish parliament). The interviews lasted for about one hour and notes were taken.

Results from the interviews and the workshop will be more explained and discussed in a separate article by Åsa Svenfelt, KTH.

**Investigations of tools**

To improve our knowledge of existing tools, an inventory was made of Swedish and international tools. It was naturally much easier to obtain information about Swedish tools. Through the snowball approach, some 37 Swedish tools were identified. The term ‘tool’ was in this case very widely interpreted and included tools that purely dealt with energy or building materials or indoor environment, etc. A questionnaire was sent out to all these 37 in order to collect information on use, kind of buildings, purpose, phase, software, input data needed, structure of tool, impact category, existing database, etc. and 27 answers were received. Reasons for not answering were: that the tool was obsolete, it was a variant of another tool, it had been integrated into something else, etc. Only three tools had the life cycle perspective included in some form.

International tools were sought via the Internet and sources like CRISP (2001), IEA Annex 31 (2001), Building Energy Software Tools Directory (2006) and Building Environmental Improvement Links (2006). From these different sources, 13 tools were selected for a more thorough description and analysis. The basis for selection was e.g. inclusion of a life cycle perspective and the level of sophistication. It was expected that more could be learned from the comprehensive tools. These altogether 40 tools were then classified according to their main focus into the following categories (Table 1):

The majority of Swedish tools dealt with energy, resources and indoor environment and the assessments were made through criteria. The tools dealing with choice of building material were mainly based on banning certain hazardous substances. The international tools were more comprehensive.
Results

Expectations of the tool

All stakeholders interviewed had few opinions about what the Environmental rating tool should cover in terms of environmental or indoor problems/qualities. The two bank interviewees considered soil contamination a risk and believed that the bank would benefit from the inclusion of such aspects into the tool. Furthermore, the opinion at both banks was that maintenance costs should be included since they are important for property valuation. For one insurance company interviewee, precautionary measures to avoid fire and water damage were important since such damage is comprehensive and resource-demanding. The other insurance company interviewee emphasised choice of building material as important, primarily because destruction of materials with hazardous substances is expensive and avoiding them would reduce risk for the insurance company. The Ministry of Sustainable Development interviewee cited energy use and that the tool should cover both fixed performance characteristics and more dynamic behaviour-related characteristics.

Many comments were on a general level and often concerned the usefulness of the tool and its relation to other tools. For most of the business stakeholders interviewed, it was important that the tool should be easy to use, simple in its layout and at the same time based on scientific knowledge. Positive characteristics in the view of business stakeholder were for example transparency, comprehensibility and flexibility. Further LCA inclusion, environmental information about building materials, independent management and third part verification were viewed as positive. Negative aspects mentioned were expert dependent, costly and complicated and not covering all kinds of buildings.

Driving forces for environmental rating

All interviewees believed that economic or other incentives were not a prerequisite for willingness to classify buildings, but incentives would speed up the process. Previously discussed incentives (Building, Living and Property Management for the Future, 2003), i.e. tax reductions and better conditions for insurance and financing, were mentioned. Tax reductions were considered important for private property owners and reduced insurance fees were mentioned by several interviewees, while conditions for funding were mentioned by only a few. Other

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Table 1: Number of Different Types of Environmental Assessment Tools Inventoried (Source: Authors).
possible incentives or driving forces mentioned were e.g. lower fees from supervisory authorities, longer intervals between compulsory controls, subsidies for environmental investments and environmental taxes on hazardous substances/emissions. Incentives proposed by authority stakeholders (Ministry of Sustainable Development) included exemption from legislative tools, although this would be difficult as there is just minor regulation for these purposes, mainly mandatory control of ventilation. It is difficult to justify why environmental performance would give an advantage over other issues, e.g. adjustments for the disabled. Public procurement was also emphasised as an important incentive.

Business stakeholders identified several driving forces for joining an Environmental rating tool. Market expectations were considered important in a long-term perspective. Several interviewees foresaw an upcoming focus on environmental performance of buildings at purchasing/leasing events. Public property owners stated that environmental performance was considered important in their sphere and there was a political pressure to deal with this issue. The interviewees also cited demands from authorities as a driving force and believed that it is better to be prepared and to participate than to be forced by legislation. The implementation of the European Parliament Directive (2002/91/EC) on the energy performance of buildings was mentioned by practically all business stakeholders as an important driving force. Several intrinsic values of environmental classification were anticipated, e.g.:

- Improved knowledge about the building
- Support in purchasing, selling and leasing (function as environmental product declaration)
- Improved security for users (providing information and improving indoor environment)
- Improved market price for buildings of better environmental rating
- Decreased maintenance costs

Potential for incentives

Most of the incentive stakeholders expressed an interest in an Environmental rating tool. Both bank employees anticipated that a rating could influence the valuation of a property. If it were to include aspects important for the bank from a risk perspective, such as need for soil remediation or risk of water damage, it would provide important information about the state of the building and could be included in the assessment process. The interviewees at the insurance companies also saw some benefits of a rating tool. However, at one company the interviewees did not think that a rating tool would prove useful for the insurance business, mainly because insurance risks were not believed to be related to environmental load or quality. The other insurance company had a different perspective and regarded the major damage risks (fire and water damage) as environmental risks, since repairing those damages demands resources and affects the environment severely.

At the Ministry of Sustainable Development, the interviewee regarded an Environmental rating tool as potentially beneficial from an environmental policy perspective, as it could stimulate development of new environmentally benign products and contribute to the fulfilment of the National Environmental Quality Objectives – depending on the extent to which the tool is in line with those objectives. Furthermore, a development where policy tools supported
environmentally beneficial behaviour was regarded as positive and an environmental rating connected to tax reductions could be an important step in that direction. In the current property tax system, environmentally beneficial measures such as installing energy-efficient windows or a heat pump increase the assessed value of the property and hence increase the owner’s property tax burden.

The interviewees at the Ministry of Finance were positive towards a rating tool, but not towards providing tax incentives/reductions for buildings of better environmental performance. The main reason was that the property tax system is not suitable for governance. The interviewees argued that all attempts to influence the assessed value of a property would fail because adjusting/reducing the assessed value (in order to reduce the property tax) would increase the market value of the property, which in turn would increase the assessed value, and in the end increase the property tax. The alternative, according to the interviewees, would be selective taxes on environmentally detrimental materials. The interviewee at the Swedish parliament raised objections to this approach and argued that selective taxes only deal with the materials used, not how they are used. Furthermore, this interviewee argued that the real problem with using the property tax system for the purpose of supporting environmental performance of buildings is that the principle of market value as the basis for taxation would have to be abandoned. This principle should be abandoned for higher purposes if necessary, but a stronger political will would be required in order to achieve this.

Another possibility for supporting environmental performance of buildings would be subsidies for environmental investment. Such policy tools are already in use in Sweden. The interviewee at the Swedish parliament argued that these measures are not as efficient as a decreased property tax since there are difficulties in communicating the motives for increased taxes for environmental investments even if the money spent is paid back somewhere down the line through subsidies.

Banks could theoretically provide two kinds of incentives; lower interest rates and longer repayment periods. But none of the interviewees at the two banks identified any possibilities to provide incentives for environmentally classified buildings at the moment. If it was possible to ensure that a building of a superior environmental rating was also managed better than normally, the rating could influence the bank’s risk assessment positively. However, the risk assessment only constitutes a small part of the total assessment of the value of the property. If environmental performance of buildings were more appreciated in society, buildings of better environmental performance would be more in demand and hence more expensive. In such a situation, an Environmental rating tool could be important in credit rating too.

At one of the insurance companies there seemed to be a potential for providing incentives for buildings of better environmental performance. Lower fees for insurances and discounts on the excess would be possible, but only if it could be shown that buildings with better rating also have less damages. The other insurance company saw no cause for providing incentives for rating, since the company insures against damage that is not environmental. The situation would be altered if environmental
load implied eco-nomic consequences for the company, which it currently does not.

**Characteristics of assessment tools**

Typical for most tools is that they are developed or intended as commercial products. The scientific background is seldom presented or documented. Therefore the system boundaries are not discussed and the choices made not defended. The topics assessed also differ from tool to tool. A general prob-lem is that weighting systems, which are generally applied, are of different kinds. The procedure of de-fining the necessary set of weightings is seldom shown. Statements such as ‘weights are based on expert views’ are common, but the experts concerned and the basis on which they have established their weighting are not presented. These features make results from different tools almost impossible to com-pare. The commercial interests make shortcomings and methodology discussion less popular. A conclu-sion is that more scienti-fi c examinations of methodologies and debate about possible approaches and result presentations are urgently needed. Since many companies have invested much money and la-bour in different individual tools, it is important that they at least to some extent can use their experience or databases in a new common rating tool.

In the type A category, i.e. containing energy, resource use and indoor environment, there are 9 Swed-ish and 11 foreign tools. Among the Swedish tools the two which are developed in the public domain includes life cycle assessment (LCA) and apply well described weighting systems. Six tools are consult products used commercially. The last one is a criteria tool for single family houses launched by the Nor-dic Ecolabel (2009). Most of the foreign tools were deliberately chosen because they included LCA. Some of them as BREEAM (2009), CASBEE (2009) and LEED (2009) are more or less dominating their na-tional markets.

There is an abundance of energy tools, type B, ranging from very sophisticated as IDA (2009), to simple interactive tools on the web. Type C concerns indoor environment. In Sweden there are at least three tools to investigate and classify indoor environment in existing buildings. There are a number of tools to simplify choice of building materials without hazardous substances, type C. They are ranging from envi-ronment product declarations to ban lists, product databases and a priority guide launched by The Swedish Chemicals Agency.

**Discussion**

**Design of an assessment tool for existing buildings**

The first question is what areas to include in an assessment tool for existing buildings. Should this be based on what is in focus at the moment, on sector or national or goals, on environmental impacts from individual buildings or the building sector, on commonly assessed problems or predicted problems in the future, etc.? On a general basis, it is sensible to argue that problems related to emissions and resource depletion associated with energy and materials use and possible negative impact on the building users’ health should be included in an assessment tool. The main environmental building problems are found in these areas.

Going from the systems perspective to selection of specific indicators within each area is difficult for several reasons. Dose-response effects are rarely enough well known. The consequences
of choosing materials and constructions are often poorly known. Searching for hazardous materials in existing buildings take time and is costly, etc.

In this work we will use two basic approaches for selection of assessment issues. One is based on identification of the most important environmental problems and the other on identification of established political goals and commitments made by the sector. The latter include the commitments made by the sector and the government within the dialogue project Building, Living and Property Management in the Future. These commitments are of interest since one of the aims of our project is to develop a rating tool that can be used within this commitment. Furthermore we look at the National environmental quality objectives and including their sub goals, which reflect stable societal goals in the environmental arena.

For assessment of specific issues indicators are often used. An indicator is a quantitative, qualitative or descriptive measure that - when periodically evaluated and monitored - shows the direction of change (ISO 14050). Indicators are used in the absence of precise measures and knowledge or when it is too costly to make more accurate evaluations, hence their frequent use for environmental assessments. However, indicators can naturally be more or less accurate, or show one aspect of a problem that is multidimensional, etc. So, choosing indicators is always a compromise between theoretical and practical demands. To improve this process, we suggest that the following subset of theoretical and practical aspects is considered:

- **Theoretical aspects**
  - Validity (to what extent is the problem measured?)
  - Accuracy (how accurately is the problem measured?)
  - Repeatability (do repeated measurements produce the same result?)

- **Practical aspects**
  - Influence (to what extent can the manager influence the indicator?)
  - Intelligibility (how easy is it to communicate the indicator?)
  - Cost (how costly is it to collect data needed for calculations?)

The problem oriented approach involves the following step by step work:

- Listing the problems related to the use of a building within the areas emissions, resource depletion and health
- Prioritising among these problems based on severity and extent of each problem
- Listing all possible indicators related to the selected problems which alone or in combination can describe the problems that should be assessed
- Assessing these indicators with reference to their theoretical and practical significance including costs (see below)
- Making a preliminary selection of indicators for the tool according to the previous point
- Testing the selected indicators on real buildings
- Reviewing costs and practical aspects before the final selection of indicators.

Some notions about assessment tools The problem of how to design a building with a specified environmental performance often
arises. At the design stage the building cannot be evaluated, only the risk for failures in the completed building based on drawings and descriptions can be assessed. An assessment tool for an existing building is seldom suitable as a tool for design. To be efficient, a separate design assessment tool must be developed which is adapted to the design process and based on efforts to avoid the problems that an assessment of the future existing building tries to measure.

Calculation of environmental impacts due to use of energy and materials has to be normalised to make comparisons between different buildings possible. The most common basis for normalisation is per m² floor area, for example MJ/m². However, the unit m² has severe drawbacks. In life cycle assessment, products should be compared with reference to their environmental load per functional unit. The aim is to facilitate the possibility to choose the product that gives the least environmental impact for a given service. To apply this view to buildings the service of each building category must be defined. This is not as difficult as it sounds, as every building is designed for a special purpose, i.e. residential buildings are designed for a specific number of residents, offices for a specific number of working places, schools for a specific number of pupils and teachers, etc. For this reason it seems more logical to use for instance MJ/user or MJ/person and hour as a measure for comparison of energy use. Using m² means that buildings with large areas are favoured compared with buildings for the same purpose with less floor area. This is the opposite of what is intended, since the small building with the same construction often uses less energy.

Many assessment tools only consider the environmental performance of a building, but some also assess potential, e.g. the ability to adapt to a new use, another energy source, etc. This is of course to encourage adaptability in general, given that this is favourable from an environmental point of view. However this facility might soon be obsolete because of demand for changes that cannot be foreseen today. The stimulus to create adaptable buildings is mainly relevant at the design stage where a choice is at hand. Some tools also favour processes like environmental education, documentation and following up procedures etc. This might improve the environmental performance of a building but it is most uncertain. When aggregating scores for performance, potentials and processes the result becomes very ambiguous.

There is a clear demarcation line between pure additive systems and hierarchical systems with weightings. The additive systems, where points are gained according to criteria for each issue and then added to an overall score, suffer from the different value of different scores. In various areas it is normally possible to assemble different amounts of scores. This amount should reflect the different significance of the areas judged by someone or a group. For example energy use is generally judged as more important than other areas, but the question is, how much more important? There is no answer to this question unless a specific method to assess the significance is used. Since one score is the smallest unit, many areas give just one score even if there are obvious differences in their environmental significance.

On the other hand, hierarchical systems with several levels tend to give other kinds of bias.
When a basic assessment score is multiplied with different weightings for each level, differences are generally levelled out and many buildings appear similar. Another problem with the hierarchical systems is that when a certain indicator is not applicable for one building, it becomes difficult to compare it with other buildings. Whether this aspect is set at zero or at a mean value, the result will be biased. The fewer hierarchical levels a tool uses, the more transparent is the result.

For every assessment a scale is needed. To establish this at least two points have to be defined. One may be zero and the other some kind of reference point, e.g. representing a typical value for a stock of buildings, a statistical value (mean, median, mean + std, etc.) or an environmental goal level (national, sector, goal, etc.). Since the statistical reference is the most neutral, it is preferred but sufficient data are often lacking. Consequently many tools use a mixture of references. For transparency, a single principle for choice of reference would be appreciated.

If zero is not chosen as one endpoint of the assessment scale, for instance because no building will reach even the vicinity of a zero impact, another point has to be chosen. Two options are for example to choose BAT (best available technology) as another reference point or the performance of a specific building that has a good reputation of being an example of a ‘green building’. It is obvious that both these options are very subjective. In the first case the choice is not based on environmental evaluation but on an opinion of what is good technology for the environment. Many new green buildings show numerous examples of such valuations. Some tools do not use a linear scale since the better the performance is the more difficult is it to make further improvements a building.

Result presentations and communication

It is natural to partly communicate results with diagrams, e.g. in two or three dimensions as found in common computer programs like Excel and Access. However, assessment results normally consist normally of independent values. That makes it preferable not to connect them with lines in a diagram, since this might give an impression of a continuum and thus sometimes create a temptation to interpolate. Even if it is obvious that interpolation is impossible, it is clearer if discrete values are shown independently.

Pictures and patterns have the advantage of being easier to comprehend and remember than figures. For this reason it has become popular to make presentations in a polar diagram (also called spider, radar and rose diagrams) with coloured or striped areas in between. In this context, however, pictures also have some drawbacks. Apart from it being inappropriate to fill in the space between discrete values from a general point of view, the impact of the image depends not only on the scores but also on the order in which they are put (see example in Fig. 1). Further disadvantages are that if some of the main indicators are missing, the figure cannot be completed and used for comparison. Further, if an indicator is to be added or subtracted in the future, the previous memorised patterns are no longer valid for comparisons.

All assessment tools use computer programs for data handling and presentation, but the intelligibility and transparency differ greatly. A comprehensive content should still be simple to
handle and results should be easy to understand. A hierarchical tool design at least to some extent resolves the intelligibility problem. For laymen, who only are interested in summarised results, the upper part of the hierarchy might be enough to look at, while building or system specialists are able to spot causes and decisions built in to the tool on the lower levels.

Some Swedish tools are quite narrow, focusing on e.g. the content of hazardous substances in building materials. In some of the international tools examined, much more resources have been spent on the tool, resulting in a very comprehensive content that can be difficult to grasp. No common consensus exists about content and methodology for an Environmental Rating Tool, which means that results from different tools are mostly impossible to compare.

Most tools have been developed during a long time period where alterations and additions have been successively included, therefore a systematic approach is often difficult to identify. An attempt to define a systematic approach for development of assessment tools is presented here, including proposals for the theoretical and practical properties to be considered when selecting environmental indicators.

Conclusions

Interviews with business and incentive stakeholders revealed that a building rating tool should be flexible regarding use by different stakeholders, transparent regarding choices built into the tool, include life cycle considerations, be easy to access and relatively cheap to use. It might include questionnaires for building users. The tool should be administered by an independent party and need little manpower to maintain.

An inventory of existing tools revealed that there is a wide flora of tools with very different contents and outcomes, developed mainly by building consultants and used as commercial projects, sometimes on a non-profit basis. Most tools do not include life cycle considerations.

Some of the elements generally included in assessment tools and critical for the outcome include normalisation, indicator types, aggregation of results and assessment scales. Normalisation is needed for comparison of buildings with different size and content. In line with LCA (Life Cycle Assessment) the normalisation basis should be closely related to the service a building offers, e.g. the number of users the building is designed for, rather than the floor area. There are differences between assessing performance (e.g. energy demand), procedures (e.g. using an environmental management system) and potentials (e.g. individual monitoring of temperature and air flow). Most tools include such large amounts of elements that one or a few final scores have to be presented to be able to overview the result.
This requires an aggregation, but many existing tools lack a systematic weighting approach. Since weighting has a profound impact on the final result it is most important to describe how the weighting is made. Finally the choice of assessment scale and graphic presentation is very important for communication of results.

Since the building sector is so large and contains so many players with different interests, there are many more or less obvious contradictory demands on an assessment tool. Commercial companies want a private tool that is not transparent for competitors; building purchasers and academics want open and transparent tools facilitating comparative studies and evaluations; manufacturers want to make products with superior properties by adding chemicals they are not ready to reveal; consumers want to avoid exposure to hazardous substances. Finally, at least in Sweden, environmental improvements most likely mean an increased market value and subsequently higher property tax, counteracting improvements.

The number of assessment tools to some extent reflects a real need for different tools focusing on different aspects and answering different questions. Thus the need for many tools will continue – and for improved tools, since even the most successful existing examples only have a market penetration of one or a few percent, perhaps because there is insufficient incentive for owners and managers to classify their buildings or because the cost is too high.

Environmental assessment of buildings is a fairly new area of research and development, making it difficult to define the characteristics of a good rating tool. In a new field of research without established theoretical practices, the field is open for entrepreneurs and there is a flora of different methods with secret ingredients on the market today. It is characteristic that the first successful rating tool on the market, BREEAM, was developed by a consultant on commission from BRE (Building Research Establishment, UK).

We believe that there is a need for further development of assessment tools and that the scientific community needs to be more involved, both in developing better tools and in exploring the circumstances in which assessment and rating tools can be successfully implemented and used. From an environmental point of view the most important thing might be to introduce a limited but solid system of continuous learning and improvement rather than look for the best tool available, because this will never be found in a field of continuous change in knowledge and opinions. The market can probably only absorb a few things at a time. The research needs to guarantee the solidity of the factual content.

References


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THE SIGNIFICANCE OF CLIMATE FOR THE USE OF URBAN OUTDOOR SPACES: SOME RESULTS FROM CASE STUDIES IN TWO NORDIC CITIES.

Ulla Westerberg

Abstract
The aim of the research presented in this paper has been to investigate habits and attitudes related to climate and outdoor activity, and to discuss the significance of climate in relation to a social and physical environment that becomes more and more urban. The context is the Nordic city and the Nordic climate and weather. Some results from a survey and field studies in urban public spaces in two cities are presented, i.e. results from mailed questionnaires on habits and attitudes related to climate and weather, on-site interviews on perceived climate and environment, observed activities and climate measurements. The everyday routines of urban life include very little time outdoors, but it varies much by season and weather. The demands for comfort in general rise, and they imply a climatically pleasant environment. The importance of small-scale building and green qualities increases by latitude.

Keywords:
public spaces; urban microclimate; outdoor activity; culture; climate; behaviour.

Introduction: Aim and Scope
Urban life is increasingly spent indoors, habituating people to the indoor comfort. Many formerly outdoor public functions, from all kinds of markets to sport arenas, are being built in and climatically and otherwise controlled. Air-conditioning these huge volumes is energy-consuming, and thus contributing to global warming. In a cold climate indoor spaces support social activity but discourage outdoor activity. Many people, however, believe that it is healthy to be outdoors, probably more so in a cold climate, where more effort is required to adjust the activity to the outdoor conditions. The outdoor environment then provides the climate and space for physically active activities. Moreover psychological research points at the restoring effects of “nature” and outdoor activities.

The aim of the research described in this paper is to investigate habits and attitudes related to climate and outdoor activity, and to discuss the significance of climate in relation to a social and physical environment that becomes more and more urban.
The climatic differences within the Nordic countries are rather big. Are these differences reflected in habits and attitudes to climate and outdoor staying, or are they neutralised by the influences of a global urban life? Season and weather are often obstacles to outdoor staying, especially in a cold climate. It is assumed that cold and otherwise “bad” weather is more negative for typically urban outdoor activities, due to a low level of physical activity.

Field studies have been carried out in urban spaces in the centres of two Swedish cities with different climate and of different size, Göteborg and Luleå. They include a survey in each of the cities and climate measurements, on-site interviews and observations. They are carried out within a multidisciplinary project, Urban Climate Spaces (www.hig.se/tb/by/forskning/urbanklimat.html). An additional aim with this paper is to combine results from the different methods used in this project.

Climate in this paper refers to climate and weather with roughly the same content as in the weather forecast - temperature, wind, clearness of the sky, rain. Weather denotes climate during a shorter time period, such as a certain situation, whereas climate is the characteristic weather over a longer time. Climate, however, is a general concept that can be used in all spatial and temporal scales. The urban microclimate denotes the climate near the ground, which varies within meters and minutes, such as between sunlight and shade, wind shelter and exposure. The climatic differences e.g. between the Swedish cities of Luleå and Göteborg refer to the differences on the macro level, such as the typical seasonal differences in temperature, wind and precipitation. It is called local or meso-climate.

Climate and Culture

The significance of climate for social development has been the target for imaginative speculation as well as systematic research for centuries. In “L’esprit des lois” Montesquieu (1757) put together and analysed an imposing amount of data on the climate and social system of different countries upon which he built his famous climate doctrine. The research on climate and culture expanded at the time of the big geographic explorations at the end of the 19th century. The geographer Huntington (1935), one of the front persons, drew maps of what he called climatic energy, that were based on a number of indicators on civilisation on the one hand and climate data on the other. This line of research was by and by stamped as racism, chauvinism and determinism. The massive critique seems to have put an end to the grand climatic theories, (Westerberg 1994, Storch & Stehr, 1997). Yet many of the statements of the climate doctrines have survived as beliefs and prejudices, such as the strengthening effect of a hard climate or the Nordic climate that makes people pensive and planning.

Many of the statements of the climate doctrines have survived as beliefs and prejudices, such as the strengthening effect of a hard climate or the Nordic climate that makes people pensive and planning. People from the Nordic countries are reputed to maintain a special relation to nature (Åke Daun 1989). Nature is a broad concept that includes the outdoor climate in contrast to the man-made indoor climate. Tage Wiklund (1995) argues that deep down there is a Nordic character, which is manifest in the comparatively sparsely populated and green
Nordic city, with suburbs that are not turned towards the centre but towards the surrounding nature. Wiklund penetrates a number of different possible explanations to the Nordic nature orientation, e.g. the Swedish legal right to enter private land, the Nordic mythology, and naturally the “nature”. The forest, according to Wiklund, has played a special part as a space of freedom for the northerner. The southerner finds the freedom in the city. Wiklund’s reference is the city of southern Europe. The Nordic climate is mentioned as a cause of difference, but it is not given much elaboration.

Today humans are independent of climate in the micro scale but influence it beyond control in the macro scale. The all overshadowing problem is climate change. This problem has to be approached also from a cultural perspective, according to Stehr and Storch (1995). Their argument is that the geographical and cultural differences in the way people conceive climate and weather must be taken into account in the communication between scientists and laymen. We believe that a geographical/cultural perspective is important also in planning and urbanisation simply because planning is a global business and the climate is specific for the region or the place. Climate change at pedestrian level can be controlled to the extent it is caused by the form and spacing of the buildings.

Weather, Microclimate and Outdoor Activity

Around 1970 architects and planners began to worry about the decreasing number of grown-up people using the outdoor housing environment in the new suburbs. Several field studies were carried out to find out why. The decrease was a natural consequence of the rapidly improved housing standard. People preferred the private indoor comfort. Shortcomings in the physical outdoor environment, however, were also assumed to be an explanation. At least the physical shortcomings were something that could be amended in planning. Gösta Carleström (1968) observed outdoor activities with an automatic camera and found that the weather was decisive for the number of people being registered. Pia Björklid (1974) observed children’s outdoor activities. The results showed that the degree of physical activity decreased almost linearly with the air temperature. Modern city-planning was soon blamed for making the worst of our cold climate: large buildings with vast barren spaces in between created windy and thermally uncomfortable conditions in the outdoor areas.

Jan Gehl (1971) presented a simple theory on how the microclimate influences social life in urban areas: People adapt their level of physical activity to the ambient thermal conditions. An attractive social environment needs other people, preferably sitting or moving slowly. When people are walking fast the result is too few people present at the same time to create an attractive social environment. A social environment, according to Gehl, must therefore have physical qualities that invite people to slow down, such as a favourable microclimate. If these qualities are absent people just do what they have to do, e.g. they take the shortest non-stop way from home to work. Jan Gehl introduced the concept of necessary and optional activities. There is no distinct line between what is necessary and what is optional, and the same activity, such as walking,
can be necessary or optional, and optional activities are not necessarily characterised by a low physical activity. Necessary activities, as seen from a societal point of view, which may be slightly different from the individual’s point of view, always have priority in urban design. Gehl’s emphasis on optional activities as being social and more vulnerable should be seen in this context – these activities simply need special attention.

Gehl concentrates on the social dimension of urban life for which contact with other people is the main goal. A physical environment with comfortable climate that does not require much adjustment is an important means to achieve this goal. Many Swedish researchers during the 1980:ies and 1990:ies (e.g. Berglund 1996) have concentrated on the other dimension of the urban outdoor staying that has to do with sports and walks, getting fresh air and contact with the natural element, which are physical activities that adapt to weather and season. In short they rather address the physical dimension of the outdoor environment. The importance of natural elements is also supported in extensive psychological research, pointing to nature’s positive impact on health and well-being, (e.g. Kaplan 1983, Ulrich 2001, Grahn & Stigsdotter 2003). Also the current debate on obesity and immobility provides arguments for the idea of a physical environment that stimulates physical activity, such as a cold climate. One simply moves faster if it is cold without thinking of it. But it is a problem if the cold climate makes people remain indoors.

In our survey and on-site interviews the social dimensions and the physical dimensions of the urban outdoor activities are used as endpoints in a scale of urbanity that has been used to characterise attitudes and habits in relation to climate and outdoor staying. We have applied Gehl’s concepts necessary and optional to categorise urban outdoor activity.

**Human Biometeorology**

Various comfort indices that model and predict the thermal interaction between the human body and its surrounding environment have been developed (e.g. Steadman 1979, Höppe 1999). Over the years their global ambitions have been criticised. Most indices are based on theories of the human heat balance and do not take social or cultural aspects into account. Nikolopoulou and Steemers (2003) show that only 50 % of the variance between objective and subjective comfort evaluations can be explained by the physical and physiological conditions. They suggest other factors that could influence the tolerance interval for thermal comfort, such as experience, expectations, sense of control, naturalness of the environment and need for stimulation.

John Zacharias et al (1999) have observed activities and measured the climate in a number of plazas in Montreal. Their studies strikingly demonstrate the combined effect of solar access and temperature for the use of the places. Interviews and climate measurements have been carried out similarly in public spaces in five European cities in a recently concluded project funded by the European Union. The result of the comparisons shows that the conditions for thermal comfort vary with climate and culture. People adapt to the climate they are used to (Nikolopoulou 2005). A comparison between urban spaces in Sweden and Japan...
The Significance of Climate for the Use of Urban Outdoor Spaces:
Some Results from Case Studies in Two Nordic Cities.

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made as part of the Urban Climate Spaces project (Knez & Thorsson, 2005), arrives in the same conclusion.

The methods used in the above climate/behaviour field studies are similar to the methods used in our case studies. This paper, however, focuses on weather and season rather than the microclimate and on use and perception in general rather than conditions for thermal comfort.

Methods

The field work has been carried out during more than two years and with different methods. An overview is given here. Each of the methods used is further described in connection with the presentation of results.

Mailed questionnaire survey

The project started with a survey in each of the two cities of Göteborg and Luleå in Sweden. Most importantly it included questions on a number of urban spaces among which a few would be selected for further case studies, as described below. The questions discussed in this paper concern habits and attitudes related to climate and outdoor staying. Apart from standard questions on age and sex, home and household, the survey also included questions on the place where the interview person grew up, i.e. about its climate and urbanity. There was plenty of space for spontaneous comments in the survey, and this opportunity was used by 20% of the interview persons.

Questionnaires were mailed to a random sample of 600 people living in the city centres. 600 people working in the city centre, 200 of which had various degrees of outdoor work, were also included since we believed that out-door work compared to indoor work would give a person a different relation to the outdoors. The overall response rate was over 60% in both cities.

The survey was followed up by some 15 telephone interviews in each city. Thus the attitude questions were clarified and the questions on outdoor leisure activities could be elaborated in more detail. The results of the telephone interviews are used in the same way as the survey comments, i.e. as explanations and illustrations in the discussion of the survey results.

Case studies in urban spaces – climate measurement, interviews and observations

Four outdoor spaces in the city centre of Göteborg and three indoor spaces in the city centre of Luleå were selected for case studies. Climate measurements, interviews and observations were made between 11 and 15 during five days in each of the four seasons. Interviews were also made in one indoor public space in each city. The five days were chosen within a 10 day period so as to be “normal” with respect to season and yet varying with respect to weather.

Wind, temperature, humidity and radiation were measured in one point at 2 m, chosen so as to be representative for where most people moved and also for the microclimate of the space. (Whether this point is representative can be discussed at length, but it does not much affect the results described here.) Human activities – sitting, standing, strolling, walking fast, and whether people were talking, eating, reading, etc. – were systematically observed every 20 minutes. 30 - 40 very short structured interviews, on-site interviews, were made with people in
each space each day. The interviewers were instructed to try to make a representative selection of interview persons with respect to age, sex and activity. During the cold periods and in the less frequented spaces practically everyone that passed was interviewed. When there were many people around, sitting, standing and passing, a representative selection was clearly more difficult to accomplish.

The two cities and the selected urban spaces

Göteborg is much larger than Luleå, and in that sense a much more urban city. Göteborg, the second largest Swedish city, has a population of half a million, which is almost 10 times bigger than Luleå’s 70 000, which is a medium size of a Swedish city. Both cities are regional centres, with migrants from surrounding smaller places and countryside. The same kind of administrative, commercial and cultural amenities can be found and one can live the same kind of urban life in Göteborg as in Luleå, but the scale makes a big qualitative difference. Urban life in Göteborg has the anonymity of the big city and Luleå the “Gemeinschaft” of the small city. “Nature” in terms of natural settings is accordingly much more accessible for people living in the city centre of Luleå than for those in the city centre of Göteborg.

The climatic differences are large. Seasonal and diurnal variations generally increase with the proximity to the poles. In Luleå, 66° N, winter lasts for half a year compared to barely two months in Göteborg, 58° N, figure 2. Winter means that the diurnal average temperature is below freezing and that the days are very short, several hours shorter in Luleå compared to Göteborg. Göteborg is situated on the windy west coast, but the city centre has a more sheltered position on a river a few km upstream. Luleå in the least windy part of Sweden is situated on a narrow elevated peninsula surrounded by a large water table and thus exposed to winds in all directions.

The selection of spaces was made with respect to expected microclimate and function. We wanted the spaces to be climatically different, i.e. exposed to or sheltered from sunshine and windiness. Secondly we wanted them to be so frequently visited that there would be enough people to interview and observe. Thirdly we wanted the spaces to be well known and like places that could be found in any Nordic city. For comparison we would have liked spaces with similar functions and different climate. Such spaces, however, were not to be found.

The spaces selected in Göteborg first of all include the huge traditional ceremonial square, the Big square. Within a radius of 500 m are the sheltered historic Small square with a café (outdoors when the weather permits) and artisan shops, the lush Green park, and the windy River-side plaza by the river. These spaces we assumed to be different, and they were assessed as different in terms of microclimate and visual qualities in the survey. A large Indoor shopping area of covered streets was chosen as an indoor reference. Only the on-site interviews were conducted there.

We tried to find similar spaces in Luleå. The long quay of the former harbour facing south, the Sea-side walk, has many similarities with the River-side plaza in Göteborg. It is very exposed to the winds and it is situated in the periphery of the city centre. We chose the City park which is bigger and more open space than the Green park in Göteborg. Lunch activities are arranged there all year round which attracts many people. We chose a Pedestrian street crossing,
which constitutes the very centre of the city. The Pedestrian street runs along the ridge of the peninsula and is notorious for its windiness. Shopping is an intimate indoor shopping centre in several storeys entered from the Pedestrian street crossing. It is the first Swedish shopping centre in Sweden, designed for the cold climate by the famous architect Ralph Erskine in the 1960ies. Its character is much different from the large indoor shopping centre in Göteborg.

Data from all spaces are used in analyses on an aggregate level that are presented here. Six of the spaces are presented individually, figure 1 and 3.
The Significance of Climate for the Use of Urban Outdoor Spaces: Some Results from Case Studies in Two Nordic Cities.

ULLA WESTERBERG

The weather during the case studies
The daily mean temperature during the case studies is presented in figure 3. It also shows a mean clearness index, which indicates the cloudiness or the clearness of the sky. The wind speed was rather moderate during the whole case study period ranging from 1 to 8 m in the gusts at the height of 2 m.

In Göteborg the winter weather was a little colder but the spring weather on the other hand much warmer than usual. The Luleå the weather on the whole was warmer. Rainy days had to be excluded for technical and other reasons, and in this way some more windy days were excluded.

Results
Attitudes to climate and outdoor staying
A number of attitude questions were asked in the survey, followed by a “summarising” attitude question on urbanity: "How much of a city-person or an open-air person are you?" The question was supplemented with the explanation that a city-person is attracted to the street-life, the shops, the entertainments of the city, whereas an open-air person is attracted to natural places, the sea, and the woods.

Almost half of the interview persons in Luleå as in Göteborg, however, stated that they were equally much of a city-person and an open-air-person, i.e. they marked 3 on the 5-graded scale. In Göteborg the city-persons outnumbered the open-air-persons. In Luleå the situation was reversed, i.e. the open-air-persons outnumbered the city-persons.

Over 80 interview persons in each city has commented on this question, and the background to their answers was also discussed in the telephone interviews. Open-air persons refer to leisure activities such as fishing and hunting in Luleå or the sea in general in Göteborg. City persons mention the cafés, theatres, shops, etc. Age is an important factor. Younger people rather refer to the life they would like to live, whereas older people refer to the life they actually live, for instance living in or outside the city centre.

Differences in city/open-air-orientation between groups of people are indicated in Figure 1. Attitudes to climate and outdoor staying are assumed to depend on earlier experiences as well as the present situation. The relative difference between the average values with reference to childhood environment, degree of outdoor work and sample is roughly the same in the two cities.

The working in the city centre samples include a majority of people living outside the city centres. The answers may vary due to situation and individual assessments scales and contribute to the big variance of the results. The results shown are significant. There are also interesting age and gender differences, which are not accounted for here.

From the results of a number of attitude questions preceding the urbanity question, (questions which are not presented in detail here,) we found that city-persons, in comparison to open-air-persons, to a greater extent think that outdoor staying needs fine weather. City-persons care less for autumn and winter, and they do not like darkness and snow. Open-air-persons, in comparison to city-persons, to a greater extent say that they follow the weather forecast, want to get out of the city when the
The telephone interviews underline that open-air persons in Luleå seem to have a special relation to the cold and harsh aspects of weather and season. Many of them seem to turn them into a positive challenge. A few claimed that they enjoyed going out in “bad” weather, and they maintained that it never got really dark during the winter because of the snow.

Another survey question concerned the time that was usually spent outdoors. From Statistics Sweden’s diary investigation (2000/2001) one can roughly estimate an average time spent indoors. Compared to this it can be assumed that people in the survey have over-estimated the outdoor time, possibly because of wishful thinking. People working outdoors reported much longer time spent outdoors. It was strongly correlated to the time they worked outdoors. This is self-evident for workdays, but it was also true for work-free days. Over 80% of those working outdoors more than two hours a day claimed that they used to spend more than two hours outdoors on a work-free day compared to 40% of the indoor working interview persons. The difference between open-air persons and city-persons was much smaller. It was the same on work-days and shorter for city-persons than for open-air persons on work-free days.

City-persons reported more frequent visits to urban entertainment, such as cinemas, cafés, and restaurants. Open-air persons more frequently used the outdoor environment around their houses or they went somewhere else, i.e. often outside the city.

The influence of season and weather on outdoor activity

The questions in the on-site interviews mainly concerned subjective assessments of the weather and the place: “What do you think about the weather today?” and “How do you find this place right now?” Here the analysis is made with respect to the urbanity and activity of the interview persons. The urbanity question was the same as in the survey. The distribution of the answers very well reflected the survey differences between the cities, i.e. half of the answers were “I am equally much of both” and a majority out of the other half were city-persons in Göteborg and open-air persons in Luleå. The activity question was inspired by Gehl (1971): “What is the most important purpose for
your being here?” with the endpoints “I am on my way home, to work, some other place” and “I am here to enjoy the street-life, taking a walk, getting some fresh air ....”. A majority of the interview persons answered in either of the end-point categories. The last category was somewhat larger in Luleå. The labels necessary and optional are used here in want of concepts that would suit the formulated endpoints better.

Significant correlation was found between both urbanity and activity and general weather assessments along the scale good - bad weather for outdoor staying and between both urbanity and activity and place assessments along the scale ugly – beautiful. City-persons and persons engaged in a necessary activity do not find the weather as quite as good as the open-air persons in engaged in optional activity. The differences were bigger along the activity than the urbanity dimension, but still rather small.

Urbanity and activity did not influence the perception of more specified aspects of climate and weather. The assessments of the weather and the microclimate of the place on the scales cold – warm and calm – windy did not differ with respect to urbanity nor activity.

Figure 3. Observed activity and weather during twenty days in the River-side plaza and the Big square in Göteborg, the left column, and in the Sea-side walk and the Pedestrian street in Luleå, the right column. The diagrams show daily means between 11 and 15 hours. The days, grouped according to season, are ordered with respect to the temperature and not with respect to the date. The bars indicate observed number of people sitting, standing and passing. The clearness index measures the clearness of the sky, i.e. the net radiation in relation to the theoretical maximum radiation. (Source: Author).
More people are out to “get some fresh air” in Luleå than in Göteborg, in the peripheral spaces in both cities, i.e. the Sea-side walk and the River-side plaza, and more people in summer than in winter. The seasonal differences are small at the Sea-side walk and the River-side plaza. They are very clearly spaces for optional visits all year round.

Interestingly the situation is reversed for the large indoor shopping area in Göteborg. In the summer compared to the winter a larger proportion of people actually go there, perhaps not to get fresh air, but for the pleasure of meeting other people. The indoor space is a warm alternative to the outdoor space.

Observed activities, exemplified in figure 3, confirm the differences between the cities, spaces and seasons concerning the necessary/optional activities of the spaces, (sitting and standing signifying a more optional activity). There is a significant correlation between the observed number of people and the weather and season. Figure 3 also indicates a big variance, depending on all the other reasons to be in a place at a certain time. The two most extreme observations have been eliminated, i.e. when 180 people were passing in the Riverside plaza and a day of a special event that attracted crowds of people in the Big square. Such events are as random as the weather and the smaller ones are included, thus contributing to the variance. The time of the day, however, has a regularly varying influence. In figure 3 the results are averaged for days, each bar including 11 observations. During four hours the weather (sunshine and windiness) may change considerably. The temperature varies slowly. The clearness of the sky may change from one minute to the other. Yet there is a correlation not only between observed activity and temperature but also between observed activity and clearness index. The wind normally varies very much, and no correlation was found between the wind speed and the observed number of people.

The average number of people increased almost 10 times from winter to summer in the Riverside plaza and the Sea-side walk. It increased three times in the Big square and the Pedestrian street. When the temperature is below zero almost everybody observed is passing the places. A person standing or sitting down for a quarter of an hour is 15 times more likely to be observed than a person who is just passing, assuming this takes a minute. What really increases the number of observed persons therefore are those sitting and standing. The seasonal differences in the number of persons visiting the spaces, not considering the time they stay, therefore is not as big as the bars indicate.

**Concluding Summary**

In the survey and on-site interviews attitudes and habits related to climate and outdoor activity have been measured on a scale with city-person and open-air person as endpoints. City-persons, by the definition given in the question, are attracted to the busy street-life and open-air persons are attracted a natural environment. The survey showed that open-air persons compared to city-persons spent more time outdoors, but in their housing environment and outside the city. They were more positive to autumn and winter, snow and darkness. Telephone interviews indicated that open-air persons especially in Luleå could turn the adverse events of the weather into a positive challenge, in fact illustrating Montesquieu’s
climate doctrine.

Half of the interview persons in both cities consider themselves as equally much of city persons and open-air persons. Along this dimension the differences between different groups in the same city were larger than differences between the same groups in the different cities, e.g. the differences between people with indoor work and outdoor work in the same city were larger than the differences between people who lived in the different city centres. The process of urbanisation means that outdoor work disappears. It is moving indoors as do many leisure activities. People move from the countryside where their open-air attitudes and habits in many cases are reported to originate. A conclusion is that the open-air orientation is declining along with urbanisation.

The same city-person/open-air question was asked in the on-site interviews. There was no difference in the reported time spent outdoors or spent in the place before the interview. There was no difference in the perception of the weather in terms of warm and cold, calm and windy. Open-air persons, however, were slightly more positive to the current weather with respect to outdoor staying. An explanation is that the sensations of comfort are instantaneous whereas assessments in terms of good or bad weather demand some thought and references in terms of attitudes and habits.

Activity was investigated with respect to the main reason for being outdoors. People in optional activity, just out for a walk or to get some fresh air, were a little more positive to the weather. Optional activities were more frequent in the peripheral places than in the central. Weather and season made a great difference. The optional activities in the outdoor places decreased significantly from summer to winter. In the big Indoor shopping area in Göteborg the optional activities increased as the outdoor temperature decreased. The social life moved indoors when the chance was given.

Observations were made only in the outdoor spaces. The observed number of people increased considerably when the air temperature was above zero. In the peripheral places of both cities the observed number of people in the central places increased almost three times from winter to summer, and in the peripheral places it increased almost 10 times. The differences in the number of people passing the places was not as big since people would pass quickly in the winter and walk slowly or sit down in the summer, i.e. engaged in the typical urban activity of flaneuring and watching other people.

We have not been able to show that attitudes and habits related to climate and outdoor staying influence the use and perception of urban spaces in the city centres. The same weather conditions influence the use and perception in the same way in the same kind of places in both cities. In Luleå winter lasts for 6 months and in Göteborg it last for two months. This makes the big difference. The attitudes and habits may be important for outdoor staying, but obviously more for outdoor staying in a natural environment and outside the city centre. We have shown that a cold climate, like in Luleå, makes urban outdoor life more difficult. The slow rhythm of urban strolling does not go very well with a cold climate. Access to a natural environment, as in Luleå, is therefore
The Significance of Climate for the Use of Urban Outdoor Spaces: Some Results from Case Studies in Two Nordic Cities.

ULLA WESTERBERG

more important, and typical open-air attitudes are of good help in overcoming the long dark and cold winters.

Outdoor cafés grow up along the central paths in Luleå as well as in Göteborg. A favourable microclimate in terms of access to the sun and shelter from the wind is a prerequisite for this. Solar access and wind shelter depend on the scale and the building density of the city centres. According to Swedish criteria for assessing solar access in outdoor housing environments the distances between buildings need to be almost twice as large in the north compared to the south of Sweden to provide comparable solar access (Westerberg & Glaumann 1990). The same criteria would apply for any outdoor space for typically urban activities of a low level of physical activity. Buildings and vegetation reduce the wind, but high-rise buildings often create problems. The traditionally green and sparsely built-up Nordic cities are therefore well suited to the climate. The importance of these green and small-scale qualities increases by latitude.

There are plenty of reasons to support outdoor staying in the urban environment. Outdoor activities, especially in a cold climate, encourage healthy physical activity, and as pointed out by Gehl (1971) long ago, people are in themselves an attraction. Their presence is a prerequisite for a functioning public outdoor environment. But to maintain a public social urban environment it is also important to meet the requirements of the city oriented attitudes and habits which have proved to be susceptible to the unpleasantness of climate and weather. After all half of the interview persons in both cities think that the social and natural dimensions are equally important in urban life.

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ARCHITECTURAL CORRELATION ANALYSIS OF THE HAMMĀMS OF CHERCHELL, ALGERIA: LINEAR VS AGGREGATE SPACE IN THE TRADITIONAL BATH

Youcef Chennaoui

Abstract
The architecture of traditional historic cities in Algeria has specific spatial and constructive characteristics despite the influence of the Andalusian-Ottoman style. In the case of Cherchell (a historic city 100kms west of Algiers), the architectural elements interpret these architectural references. These elements exist in a complex archaeological, historic and cultural fabric based on architectural and urban analogies, reminders and references. The paper focuses on the typological study of the historic hammāms of Cherchell. It is aimed to analyse the diverse correlations between specific urban amenities and the residential fabric framed within the spatial organization, proportional modulation and structural modes. In this paper, the spatial organisation of the public baths of Cherchell is identified. It is a nodal spiral organization developed around the hot room. It follows the Ottoman spatial prototype of Algiers hammāms. However, the specific characteristic of Cherchell baths is in their constructive system for the roofing covering the central space of the hot room. The roofing consists of an octagonal dome, where the transition to the large square of the hot room is covered by trusses supporting tiled roofing, inspired by the domestic Cherchell architecture of that era.

Keywords:
Hammām, correlation; plan/proportion/structure; Linear/Aggregate..

Historical Background on Cherchell
Cherchell is a small harbour city located 100 kms on the Mediterranean west coast of Algiers, along the feet of the hills, and has its history stretching back to the 5th century B.C when it was populated by the Phoenician. Named IOL capital of the Berber kingdom, it was renamed to Caesarea under the Roman empire. In 1300, Arabs took control of it and was baptised Cherchell (El Bakri, 1965, El Idrissi, 1968).

The history of Cherchell during the Arab era could be divided into two distinct periods:
- A period of crisis and stratum that lasts till the fall of the 15th century.
- A second one of a relative renaissance with the coincidence of the arrival of Andalusians and then Ottomans. (Dufourq, 1966)

The notable elements of the urban structure in the middle of the 16th century, denote the integration and the renovation of the roman structures, as it will be mentioned in the next section.
The role of the archaeological remains in the urban development of the medina of Cherchell

The present form of the medina of Cherchell derives from the superposition and the stratification of various constituents from previous structures. They are in fact, systems of conformations, patterns of utilisation of soil and urbanism orders of different urban cultures, which all together or separately, have contributed to the constitution of the medina of Cherchell. Hence, there is a need to mention the permanent urban grid with its road network and the utilisation of ancient materials found in previous built structures.

The urban fabric

The forms of mutation of the components of the roman city in the present urban fabric became evident, thanks to the analysis of the patterns of the constitution of the built parts made by the historical centre before the French colonisation. This work has been carried out through the detailed confrontation of cadastral and archaeological plans of the city. Thus, the constitution of the specific fabric is indeed based on an analysis that has dealt with the following aspects: modularity, dimensions and orientation of land plots.

The character and the specificity of the ancient urban grid directed the urban and architectural structures of the medina of Cherchell since the early medieval period and throughout successive eras (Benseddik & Potter, 1993). This fact has lead to the evidence of the survival of many pre-existing structures, which guided the development of the medina. As a result the following aspects can be noted as follow:

- The permanence of the Roman urban grid, and its consequences on the “morphogenesis” of the medina with its orthogonal urban land plots and road network.
- The permanence in the Arab urban fabric of the ancient urban grid guided by a basic pattern called: Actus Quadrata of 120 roman yards, i.e. 35.52 meters x 35.52 meters. (Chennaoui, 2002).
- The survival of the ancient structural substratum conformed in the superior levels of Arab urban fabric. It has been implemented by numerical acquisition of Roman lands subdivisions by giving sizes to plots of lands, such as: 18 meters x 18 meters, 12 meters x 18 meters, 12 meters x 16 meters.
Typology and structure of built forms
The second form of transformation of the components of the Roman city in the medina of Cherchell, has also been put into evidence by the recognition of many pre-existing structures. In this aspect, we can note the following:

- The analysis of the morphogenesis of the urban fabric confirmed by the high-shaped walls, witnessed of the superposition of structures as often seen with Arab walls are directly built above ancient walls (Ballu, 1922).
- The reuse of ancient materials in ulterior constructions. Thus, the proximity of these materials in abundance, has determined the choice of the site since the medieval era.
- The impact of the Roman hydraulic structures on the Moorish Andalusian houses and in certain public amenities such as hammāms (Chennaoui, 2002).

Wells represent another form of an ancient hydraulic element survival, as investigated by the archaeologists in Cherchell. Their edges are often made of monolithic stones over passing 1m in diameter. These wells are different according to their flow and their level even though they have the same level of water.

From a regular city to an organic medina
Comparative studies carried out on 16th century coastal cities of the Maghreb, led to recognise the existence of non-built spaces, contained between the seashore and the first urban districts of the medina. In the case of Cherchell, the gradual disappearance of the side fringe of a non-built space has become a solution integrated to the system of defence but also a will of location in land slopes (level of 30 meters). This was due, firstly to assure the gravity of the water direction, supplying all traditional houses built during the Arab-Islamic period, and secondly because of the high-rise and colossal roman buildings (temples, theatres and thermae) which were located in this area; hence providing Arab constructions with on-site local materials.

The urban layout has determined the structure of the medina of Cherchell by spatial divisions of activities and their sites according to their nature and impact such as noisy, dirty; i.e. workshops of blacksmiths and locksmiths districts, and areas of tanning which were supplied by this source of underground water of the thermae at the West (Chennaoui.Y, 2002). Topography plans played an important role in the delimitation of suburbs: high city of dwelling suburbs and workshops, low city of suburbs and barracks, and power (military fortress) and many mausoleums. In this field, the characteristics of the Islamic medina, such as: division of the city on several suburbs according to their ethnic or religious status or economical role, i.e. the workshops networks scattered the long of the streets were maintained in the case of Cherchell. There is also many public squares, free spaces that were usually invested by a coranic school (Zaouia) or a mausoleum.

As a result of this, the medina of Cherchell was defined by two systems of conformation: the permanence of ancient urban grid and the organic pattern of the Islamic city. Several patterns of different urban cultures have contributed together to the constitution of the specific urbanity of the medina of Cherchell, as it evolved from Roman to Arab-Islamic urbanisation (Wirth, 2000).
The influence of Andalusian culture on Cherchell domestic architecture

The evolution of the domestic architecture (houses) of Cherchell was carried out through gradual historic and cultural evolution. This architecture is the result of renewed experiments and influences spread out through successive eras. Initially the contribution of the Moorish-Andalusian culture was identified in the design of Cherchell houses, dictated by some recall and analogical criteria. This influence was confirmed thanks to a comparative analysis with Granada and Cordoba domestic architecture. Andalusian refugees, who moved to Cherchell in 1496, came from these two cities. The comparison led to identify the following common characteristics:

- The four slopes of the roof are directed towards the courtyard.
- The “Skiffa” is a straight entering hall, not bended.
- Generally, a well occupies the centre of the courtyard. If it dries, an orange/lemon tree or a jasmine plant replaces it.
- The constant existence of a home garden, irrigated by a well or a tank.
- The stairs places itself in the courtyard to serve the top floor.

Since the 16th century, their transcription in the domestic architecture of the medina of Cherchell was based upon well-defined principles, which were: local knowledge criteria, analogical criteria and referential criteria.

The Historic Hammams of Cherchell

A-Public Baths

Hammam Sidi Younès

The hammam was named after the funeral mausoleum of a saint called “Sidi Younes”. It is located on a small street called Aoudai St (formerly known as Palmier street), accessible...
from Sidi-Brahem street (ex-la Fontaine street), which is off the main axis going down from the Gate of Miliana towards Ain Ksiba quarter.

Nowadays, and with the expansion of the urban fabric, it is harder to differentiate and appreciate the external form of the building from its immediate surroundings as they are melting increasingly on the hammam structure. It can only be noticeable through its entrance door. However, the entrance has undergone several modifications as it appears from the use of modern industrial tiles and badly cut stucco.

The entrance corridor constitutes what is called locally « the skifa». It leads to the disrobing or changing room. The client uses this room for changing clothes and to rest after bathing. The disrobing room has kept its architectural elements without any major changes. Seven massive columns topped by stone capitals define the central square space, surrounded by three elevated side galleries. The fourth side is the intermediate room. The ceiling and roof have been changed. However, from the investigation carried on the local architectural style, the study suggests that the galleries were covered by wooden truces supporting round tiles. The central square space was covered with a slightly raised wooden flag structure composed by four trusses, and based on a drum carried by the central arches of the galleries. The client then transits from this room to the intermediate room located on the fourth side of the central square. The bather stays for a while in the transit room, in order to prepare and adapt to the rising temperatures before bathing in the hot room, which also contains small private rooms for washing. These rooms are organised in a linear structure adopting a quadrangular plan. The intermediate space is a long narrow rectangular room, called “Bin Al-Bibane” (meaning in English: between doors). The hot room, in the shape of a square, is covered by an octagonal shaped (8 segments) dome supported by pendants at the corners. All along the central space of the hot room, there are side spaces (galleries) covered by barrel vaults. At each corner of the square, two arches cover the corners of the hot room, relying on the pillars supporting the central dome.
The local construction techniques used in building the traditional hammams is another important aspect. This technique consists of covering the central space of the hot room by an octagonal segmented dome made of bricks. Hence the transition to the large spatial square of the same hot room is achieved thanks to the use of timber framed trusses covered by roof tiles. This traditional construction technique was used in some religious amenities (i.e. mausoleums) in Nasrid Granada (1232-1492) as shown in figure 7.

This characteristic of the mixed roof (brick made domes surrounded by wooden trusses supporting roof tiles) of the hammams of Cherchell is the result of the combination of local techniques and skills with the constructive innovations brought by the refugees who came from Andalusia.

Figure 7 1. View on the dome of hammam of Sidi Younès in Cherchell. (Author, 2002). 2. Ideal restitution of the Islamic heritage (Ermita de San Sebastián, 2003).

**Hammam El- Seghir**

Hammam el-Seghir, means the small hammam in Arabic. It is located on the archaeological zone of the Roman city, and has two facades as it occupies an angular land plot. Thus the hammam is easily noticeable from the street. The hammam faces houses which were built on the remains of the antic thermae of the city centre. The date of its construction is not accurate. However, it can be situated as being built in the 16th century, as for the complex it belongs to. It is part of the urban complex of the main mosque of the city centre, also called the 100 columns mosque or the great mosque, which was built by the son of the consul-judge of Granada (Spain) Abu Iyad el-Andalussi in 1573 (Figure 8). More restoration and maintenance work occurred through the Andalusian-Ottoman period (1496-1840).

The only original remain of the structure, which kept its authentic features, is the entrance door of the owner house, located at the first floor of the building. The main entrance to the hammam opens on the great mosque street, actually called “rue des frères Nadia”.

The hammam has undergone changes on its structure. A vertical extension took place on the upper terrace. Small room-cells were built around the dome covering the hot room. They were built following the constructive system used in the 19th century consisting of metal beams and a vaulted floor. The same spatial organization was kept inside with the same rooms and functions. A quadrangular layout is adopted in this hammam as it is the case in Sidi-Younes bath. The transition from the reception hall- disrobing room to the hot room is done through an intermediate room, which offers a course of benched circulation (for intimacy reasons), as it is located at the northeast corner of the building. The reception hall consists of two elevated side galleries, arranged on two opposite sides. The original ceiling has disappeared. However, it is assumed that this room was covered by wooden trusses covered by curved tiles. The hot room of slightly elongated rectangular space is covered by a dome deck.
Private Hammams

Hammam of Souilamas house

This private bath of the Souilamas residence became a public bath after the independence of Algeria in 1962. It is known as hammam Souilamas. Together with the large house and a public oven or furnace “koucha”, the bath was the property of a rich noble family, the Souilamas. It is located close to hammam el-Seghir. The large urban complex, composed of the large residence, the public oven and the bath, open on a straight small street, which leads towards the main mosque of Cherchell. It is suggested that the whole complex was built by the end of the 18th century, in the Andalusian-Ottoman era. It belongs to the “extra-muros” area of the city, which was urbanized during the first extension of the medina by the end of the 17th century (figure 4).

Hammam Souilamas, a small private hammam, has been expanded by adding an extra room, which used to belong to the large residence. This extension was intended to facilitate the use of the bath by a larger number of clientele, since it became a public bathhouse. Hence more spatial changes occurred during the extension. The link between the hammam and the house is made through a small staircase externally adjacent to the hot room. Furthermore, the study confirms that the spatial link used to exist at the ground level through a corridor which has been transformed to toilets cabinet. An additional space at the entrance has been made in order to create the skifa, from which a stairwell leads to the first floor where the reception has been transformed into shower rooms. The same stairwell leads also to the intermediate and hot rooms. These two rooms are located between the first and the ground floor on a half-level, thus enabling the heat of the oven to steam through this hypocaust system. Transition between the former reception room and the hot room is through a course of bent circulation. The hot room is square, and covered by an octagonal dome with eight segments. This large residence has undergone several expansions and changes that have succeeded until the early 20th century. This had an impact on the architectural features of the monument by the introduction of new building techniques dating from the 19th century such as the use of steel structures and vaults.
Hammam of Youcef Khodja house

This small private hammam built in the 17th century, and commonly known as hammam Youcef Khodja was only used by the family of Youcef Khodja and their close relatives and friends. It is part of the large house of the family, which also comprises the residence and the public bakery oven “koucha”. This residence was located in the military defense area of the medina. The bath is located in the grand mosque neighbourhood. It has been used as accommodation after the expansion of the medina by the end of the 17th century. The structures of the house and the hammam disappeared in 1994, when a reconstruction project was launched.

This small private hammam was extended by converting the space of a room in the house, using it as an undressing room. Access to the hammam is directly from the courtyard. A circular space was provided at the northeast corner of the reception area, to make the intermediate room. The intermediate and hot rooms lie at the street level. However, the level of the oven was lowered by four steps, to allow the steam resulting from the oven heat...
to go through a hatch cut into the chimney. This hypocaust system was used to heat the hammam. The hot room is of a square shape, covered by an octagonal brick made dome.

**Architectural Correlation Analysis: Hammam / House**

The study of the typology of traditional hammams in Cherchell was conducted in order to analyze the various correlations that ranged from the public and specialized buildings with the residential domestic architecture in terms of spatial organization, proportional modulations and structural mode. The definition of such established architectural between specialized public facilities and residential buildings helped the understanding of the function and “urbanity” of the bath with the housing element, which is the basic reproducible urban entity. It is these correlations that carry the evolutionary process of the traditional architecture of Cherchell.

The concept of modularity aggregate the architectural typology of the hammam, and implies that its spaces and spatial composition are the result of a congruence of a direct linear pathway characterizing the circulation paths found in the house; skifa-court-house, with the opposite type. This latter one is based on a circular type organised around the hot room; the main space of the hammam. It is the structural analysis of the relationship between different components of the house and the hammam which tends to define them (figure 12).

The evolution of the relationship between modules of linear and aggregate spaces is configured through a sum of characters that form the architectural organization of the hammam of Cherchell. One of the illustration of the relationship is in the notion of covering a large and high ceiling space as it is the case in the hot room, which remained dependent on the technical characteristics of the construction materials used; i.e. the materials used is the core of cedar tree, with a maximum length of 2.40 meters.

This study sets as an initial hypothesis that the spatial organization of traditional hammams of Cherchell is a central spiral organization around the hot room. The dome appeared in the traditional architecture of Cherchell hammams to solve humidity and condensation caused problems. Moreover, coverage areas deeper than the 2.4 metres crossing on the usual dimensions of tree trunks, took place later on, during the French colonial period, by the introduction of another constructive semi prefabricated system French colonial period. Thus, the paper advocates that this is the same tree trunk which had been used in the implementation of the dome, as a mast pivoted to its conference to achieve its various circular bases. The 2.40 meters trunk of the cedar tree

![Diagram: Linear circuit (house) versus circular circuit (hammam)](image)
has become the core module, giving the central area of the hot room, the relative proportions, which appeared in harmonious dimensional reports, between the masonry dome and timber roofs.

In addition to this first type of correlation: technological correlation; on the notion of covering the hot room central area by a dome, the study developed an investigation on the initial way of covering the reception room of hammam Sidi Younès. The area of the hot room is connoted by a maximum of nodal centrality. This type of centrality means “a consequence of a growth process that can be regular or organic in form. It embodies a convergence of a set element to a point. Thus, the intermediary aspect of the reception hall connoted here by a nodal intermediary. This has guided the use of a skylight with four different slopes from the hot room dome, and which is no longer appropriate to exist in this case. However, the linear nature of the gallery forming the corridor of the skifa, restricted to the simple movement or articulation of space, here is connoted by an anti-nodal character -Figure 14-(Caniggia, G and Maffei, G.L, 1987).

Figure 14: Technological aspects of modular growth correlation in linear space vs. aggregate space (Source: Author et al, 2001).

The notion of the size of the volumes in hammams and homes of Cherchell, is taking shape as appropriate, for the prevalence or not of the dome above the skyline of the roofs of the surrounding houses according to quantities and volume proportions. In the case of “public” hammams, the height of the dome is twice the height of the house floor (Hammam Sidi Younès). This double proportion in height gives the hammam an identifiable volume (dome) even though, surrounded by the houses fabric.

Figure 15: Spatial aspects of the modular growth correlation in linear space vs. aggregate space (Source: Author et al, 2001).
For the “private” hammams of large residences, the height of the dome is only half the height of a house floor (hammam Souilammas). This proportion conceals the view of the dome within the surrounding houses rooftops (figure 15).

Furthermore, the modular growth of the linear space between the house and the aggregate of the hammam follows a dimensional logic, which is dependent on the construction system. The spatial module of hammam Youcef Khodja derives from the module of the spatial unit of the house. However, the depth of the reception area of the hammam equals to the half of the module. Hence, it provides equal heights for the furnace/oven and the hammam. However, the aggregate space of the hammam takes a two nesting areas around the chimney of the furnace to facilitate heating for both buildings (figure 16).

**Conclusion**

The analysis developed in this study allowed defining the typologies of the traditional baths of Cherchell and their architectural and urban characteristics. Further study must understand the contexts of emergence and development of the architecture of Maghreb hammam. These studies would highlight similarities and differences with hammams from other geographical regions. Thus, beyond the historiographical work on some historical phases of the dynasties of the Maghreb and Islamic Spain inherent to the field of theory and or history architecture. Finally, these monuments of water, which have been perpetuated in Mediterranean culture and history, have to be preserved. In the case of Cherchell, they are important heritage buildings. Furthermore, they present ingenious technical and spatial features, which identify them with the local architectural variations, beyond the general affinities they share with the model of the Islamic hammam.

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Architectural Correlation Analysis of the Hammams of Cherchell (Algeria)

Linear vs Aggregate Space in the Traditional Bath

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THE MEDIEVAL AND OTTOMAN HAMMAMS OF ALGERIA; ELEMENTS FOR A HISTORICAL STUDY OF BATHS ARCHITECTURE IN NORTH AFRICA

Nabila Cherif-Seffadj

Abstract
Algerian medinas (Islamic cities) have several traditional public baths (hammams). However, these hammams are the least known in the Maghreb countries. The first French archaeological surveys carried out on Islamic monuments and sites in Algeria, have found few historic baths in medieval towns. All along the highlands route, from Algiers (capital city of Algeria located in the North) to Tlemcen (city in the Western part of Algeria), these structures are found in all the cities founded after the Islamic religion expanded in the Western North Africa. These buildings are often associated to large mosques. In architectural history, these baths illustrate original spatial and organizational compositions under form proportions, methods of construction, ornamental elements and the technical skills of their builders. The ancient traditions of bathing interpreted in this building type are an undeniable legacy. They are present through architectural typology and technical implementation reflecting the important architectural heritage of the great Roman cities in Algeria. Furthermore, these traditions and buildings evolved through different eras. Master builders, who left Andalusia to seek refuge in the Maghreb countries, added the construction and ornamentation skills and techniques brought from Muslim Spain, while the Ottomans contribution in the history of many urban cities is important. Hence, the dual appellation of the hammam as “Moorish bath” and “Turkish bath” in Algeria is the perfect illustration of the evolution of bath architecture in Algeria.

Keywords:
Algeria; bath; water; Ottoman; Medieval.

Context and Historical Background
In the fields of Islamic architectural history and archaeology, the majority of research works are devoted to mosques and palaces that constitute the major monuments and the expression of power in the Islamic city. However, rare are the research and studies on the traditional hammams; a typical building of the Islamic city “medina”, and often annexed to the mosque. The existence of these specific structures is mentioned in several studies and travellers accounts on the Islamic medina, but their studies are rather scarce and rare. Where they exist, they generally give an overall architectural description and fail to study and analyze the technical aspects and mechanisms that allow the functioning of the baths, such as water and heating systems. These studies are
not of equal importance across the Muslim world. Indeed, if the knowledge of baths in the Levant countries (i.e. Egypt and Syria) is provided by numerous studies, it remains fragmented and lacks synthesizing. In contrast, baths of the Maghreb countries and especially Algeria are less known. Existing documentation mainly relates to Andalusian baths documented mainly and continuously by the data provided by archaeological excavations.

To the contrary of other countries in the Maghreb, Hammams of Algeria have not been surveyed nor investigated. There are however a few types known in the medieval towns proved by the first archaeological surveys and studies on French monuments and Muslim sites in Algeria. Studies of G. Marçais on Tlemcen and its region at the time of the Abdelwaddid, Ziyyanid and Mérinid dynasties (XIVe-XVe siècles) provide some guidance on these buildings such as hammam Sabbâghîn, Dâr hammam al-Sultan and hammam Sidî Bû Madyan in Al-‘Ubbâd (Marçais, 1903:161-169 and Marçais, 1950:70-71). Similarly we note that references to baths are sometimes made in statements and reports in the French excavations conducted in the early nineteenth century in the cities of Tahart (8th-9th centuries), Agadir (late 8th century), Ashir (10th-11th centuries) and the Qalâ of Banû Hammad (11th century) (Mattaoui, 1989; Golvin, 1962). Other medieval baths undoubtedly exist in other cities of Algeria, but they are not known, and researchers exploring the history and topography of these cities discover them accidently during site exploration and excavation.

For the Ottoman period, data is mainly available on Algiers baths, with several historical sources supported by the still existing architectural remains found in the old city or the “Casbah”. The political, social and economic importance of the city of Algiers, grow dramatically in the 16th century. This helped the preservation of the majority of its urban fabric including public baths and some major elements of the hydraulic system. The history of Algiers baths, like the majority of buildings in the city, is located between the 15th and the 19th century. This period, marked by the inclusion of the city to the Ottoman Empire, is characterized by a growing population and commercial importance. This important growth led to major urban and architectural activities.

However, Algerian baths, from the Medieval or Ottoman eras, provide little information for epigraphy and archaeology. Scriptures and markings are usually absent. Hence, the precise dating and chronology, since their foundation to their abandonment are particularly difficult to establish. Their foundation and evolution through different time periods are related to the evolution of the city and the neighbourhood where they are located, or at most to the mosque they were annexed to, as this building usually holds accurately known dates of construction or redesign.

The chronological distinction between Medieval (8th to 15th century) and Ottoman baths (16th to 19th century) coincided with the distinction between two main types of baths, at the architectural and spatial organisation levels. The two main typologies are:

- Baths with straight linear extended plan (Andalusian type)
- Baths with compact centralized-radiant plan (Ottoman type)
The architectural culture of Algeria, from the 8th century to early 19th century, was indeed developed under the influence of two major artistic movements, opposed geographically in the Mediterranean basin, and which reflect the history of major urban cities. The first came from the West, is largely dominated by the culture of al-Andalus (Andalussia) until the 15th century. The second came from the East, and conveyed by the Ottoman Empire from the 16th to the beginning of the 19th century. These two cultural sources were grafted to the local traditions completed with the contribution of Roman antiquity in the design and construction of public baths.

This chronological division does not limit the influence of Andalusian architecture and culture to the 15th century only. Baths built during the Ottoman era and thereafter, were still influenced by Andalusian architecture. Indeed, in the case of Algiers, recent studies show that the contribution of Andalusia in the field of construction is an undeniable fact that relates Algiers epigraphic sources from the Ottoman period (Colin, 1901:35-42). The influx of this community expelled from Spain in the beginning of the 17th century, corresponds to the period of urban growth of the city. Its architectural framework and hydraulic system were developed at that period (Misoum, 1993 and 2003). European authors from that period attribute the construction of one of the largest aqueducts in the city to an Andalusian (Dan, 1649, V2:91); Usta Musa who at that time and according to Ottoman records was the fountains-master. During the Ottoman era, the “Fountains-institution” was the administration managing of all water related structures including baths (Devoulx, 1868: 278).

Usta Musa and his sons Ali and Ibrahim, who are also known in epigraphic sources have, as pointed out by Andre Raymond, formed a dynasty of architects “that marked the major projects of the city in the 17th century” (Raymond, 1985: 53).

The Medieval Bath (between the 8th and 15th centuries)

Hammam Tahart is the only medieval hammam found. It emerged in 1989 during excavations in the Rostomid city of Tahert (761-901). However no surveys have been found concerning this structure. Three other baths, regarded as the oldest structures of this type in Algeria were found and are still in ruins. They represent the first witnesses of the great Islamic cities founded in Algeria and the Maghreb. The first bath Agadir was found near the mosque of the same name, near a gate called Bab al-Hammam (Marcais, 1903 and Bell, 1913: 470). The second bath, located in the city of Achir, the Zirid capital in the middle of the 10th century, was unearthed by Cpt. Rodet in 1908 (Rodet, 1908:86-104). The third and most important bath is found in the south wing of the palace of Qasr al-Bahr, probably built between the 11th and the middle of the 12th century. It is one of the most imposing structures in the town of the Hammadites “Qal’a Bani Hammad” (Golvin, 1962: 25-33).

In Tlemcen and its suburbs, and in Nedroma, some old baths still exist. They illustrate the architecture of baths in the western regions of Algeria during the early middle Ages. The first, very famous and is well known in the literature under the name of hammam al-Sabbâghîn (dyers bath). Old people of Tlemcen name it as hammam Sidi Ahmad al-Hasan Ban Ghumari. It
rises in the north-east of the city of Tlemcen, on a narrow street between Mascara Street and Ibn Khaldoun Street (Marcais, 1954). Although no document would allow the accurate dating of the building, Georges Marçais registered its founding in the late 11th century or 12th century, by comparison with similar baths architecture built in Andalusia in the same period (Marcais, 1954). A second bath built in the 12th century is located in the city of Nedroma (80 km from Tlemcen). It is called Hammam al-Bali (old bath). The name indicates that it is the oldest of its kind in the city. Its construction dates back either to the reign of the Almoravid Sultan “Yusuf “, who is the founder of the adjacent mosque, or to the reign of Abd al-Wadid, who rebuilt its minaret and converted several buildings adjacent to the city (Bourouiba, 1983).

Two other baths are located in the town of Al-Ubbâd (town located about ten miles on the hills above Tlemcen, known as Sidi Bû Madyan). The Sidi Bû-Midian bath, located in the eastern side of the mosque of the same name and adjacent to large public latrines and the bath of Dar al-sultan built within a large palace next to the necropolis of Sidi Bû-Madyan. For Georges Marçais, there is every reason to consider these two contemporary baths, part of the Sidi Bu Madyan complex. The construction of the complex began during the reign of the Merinid sultans between 1339 -construction date of the Mosque of Abul Hasan Ai- and 1370-construction date of the Qubba of the saint Sidi Bû Madyan by Yaghmurasan Ban Ziyân (Marcais, 1950).

According to their architecture and their spatial functionality, medieval hammams can be subdivided into two groups:

- The first group, which includes the Qalá, Sidi Bû Madyan and Dar al-Sultan baths (Figures 2, 3 and 4) is characterized by the development of the plan along an axis on which the three parts of the hammam are organised; the cold room (bit al-Barda), the warm room (bit al-waste) and the hot room (bit al-skhûna). In this scheme,
apart from the disrobing room which differ by its introverted architecture characterized by a central space of double height surrounded by a gallery, the cold, warm and hot rooms, shows a simple design, without any concern of monumental order. The rooms surrounding the central space are of rectangular shapes, arranged parallel to each other and covered with barrel vaults. These rooms, and especially the warm and hot rooms, have in common lateral annexes that give them a tripartite organization.

- The second group, exemplified by the Sabaghine and Al-Bali baths and also the partially reconstituted Agadir bath (Figures 1, 5 and 6), is characterized by a composition developed along two orthogonal axes. The first axis brings together the “unheated” parts of the bath (the disrobing and the cold room), and the second axis articulating the “heated” spaces (the warm and the hot room). In this type of bath, the warm room is the centre of the composition and the bath. It dominates the whole structure by its dimensions and its architecture; characterized by a central space surrounded by portico composed galleries and ornate by a water-basin in its centre.
The Ottoman Baths of Algiers

Between the 16th and 19th century, several sources cited the large number of baths that were operating in the city of Algiers. But the majority of them do not give precise figures on these buildings, and also do not mention neither their location nor recount their history (Haedo, 1870). To the contrary, it is in the Ottoman administrative archives, which are kept in Algiers and in Aix-en Provence (France), that administrative and legal documents provide light on the urban history of Algiers and its buildings.

The two sets of documents known as “Bayt al-Mal and Baylîk (treasury and central administration of the state) and” Mahâkim al-Shar’iyya (legal courts) provide extensive information in the city; on its structure, urban setting and the management of its buildings.

They contain numerous documents referring to the public baths, which provide their location in the city, and their history through urban and socio-economic status.

Investigations of these funds, supported and cross-checked with information from the manuscript by A. Devoulx, written between 1840 and 1870, made it possible to find forty baths, which entries range from the second half of the 16th century to the early 19th century (Ben Hamouche et Belkadi, 2003). The investigated Ottoman archives show that in 1830, and at the time of the French occupation of the city, the number of these buildings was 31, and twenty-four of them (or almost three-quarters) were demolished during the early decades of the French colonisation. The minutes and reports from 1833 on the work of the French Military Engineering show that this destruction was the result of successive
redevelopment and layout of the roads which often gave access to the public baths and fountains, but also to the total destruction of whole neighbourhoods.

Only nine baths were located according to the historic sources following the on-site investigation and fieldwork; of which three have collapsed or are in an advanced state of decay. Five other structures were kept in good condition. These are the baths of Sidi Ramdan (Pre-Ottoman and probably 10-11th century as for the mosque of the same name), Hasan Basha Sidna (1550), Sirkâdî (mid 17th century), al -Fwîta (mid-17th century) and Sidi ‘Abd Allah (end 18th century). (Figures 7, 8, 9, 10 and11). The sixth bath has totally disappeared today. However its survey drawings are kept at les Archives du Génie Militaire de Vincennes (France). It is called Hammam al-Yahud or al-Hammam Buza (circa. 1194 AH / 1780 AD). It was the bath used by the Jewish community of the city of Algiers at that time (Figure 12).

Figure 7: Hammam Sîdî Ramdan in Algiers (Cherif-Seffadj. N, 1996).

Figure 8: Hammam Hasan Bâshâ Sîdnâ in Algiers (Cherif-Seffadj. N, 1996).
In terms of urban organization and its relationship to the public spaces, the Ottoman archive documents, particularly the establishment of Waqf, often mention the existence of premises adjacent to the public baths of the city. It is in many cases a home on the second floor of the bath called locally “‘ulwî” or sometimes even a big house. It was generally housing the manager of the bath as shown in the bath of Sidi ‘Abd Allah.

Public ovens (Khusha) or stores (makhzan) adjacent to the boiler and used to store the fuel constitute the other main annexes of the bath. The oven (furnace)-bath association, which no trace remains today in the few preserved baths of the city, was perhaps due to the common use of a heating system between two or three structures. Such a device still exists indeed in the bath inside the Beys Palace in the citadel (Seffadj N., 1991).

Several baths were also associated with one, two and sometimes several shops (Hwanit). The historic documents do not specify the reasons for this association. However, and through the

Figure 9: Hammam Sirkâdjî in Algiers (Cherif-Seffadj. N, 1996).

Figure 10: Hammam Al-Fwîta in Algiers (Cherif-Seffadj. N, 1996).
analysis of the accounting records found in the Ottoman archives, revenues of the stores that were attached to the hammam contributed to the functioning and maintenance of the bath and the pious foundation or public utility (waqf) to which they were often alienated by virtue of their high profitability.

All dependencies of the bath open onto the street leading to the hammam. They include the building of the bath itself, from which only the door or at most that of the entrance vestibule constitute its lonely visible facade on the street. Seen from outside, the baths of Algiers could be confused with any other house in the medina.

Examination of the architecture of the remaining historic baths of the city is not sufficient to establish a study of their architectural typology, but it nevertheless allows identifying some of their organizational and functional characteristics.

Apart from Sidi Ramdan bath, which has a different architecture, the dominant spatial organization characterizing the baths is the existence of two distinct zones of different temperatures:
- The cold zone: composed of the disrobing/rest room, which provides a space for the clients to change clothes and to rest after bathing.
- The heated zone: composed of the warm room (bit al-waste) and the hot room (bit al-skhûna).

Except hammam al-Yahud where the disrobing room has complicated spatial arrangements (Figure 12), This room generally consists of a central space with double height ceiling covered by a “shabbak” or timber roof. It is always preceded by the entrance vestibule, the skîfa. It is surrounded by elevated galleries and designed as sitting lounges (djalsa).

The freshness and the relaxing feeling provided by the ambience in this space inspired its appellations as “bit al-q’âd” and “bit al-Barda” (literally “rest-room” and “cold-room”). The keeper accommodation develops on the upper floor of the central space patio. As it is presented, the rest room has the appearance of the ground floor of Algiers house, where its most common designation is “wast al-dar” or the central courtyard (Seffadj, Z., 1995: 162-179; Missoum, 2003: 204-220). As in most Algiers houses, the decoration is concentrated in this major room. It is made of ceramic motifs and varied colours, covering all the bases of the wall, as well as in the form of diverse arches, columns and capitals.

Inside the heated zone, The warm room is characterized by a modest and invariable architecture. With small dimensions, and its elongated rectangular shape, it is usually supporting a barrel vault as a cover. Hence, it is often reduced to the presence of latrines (knif or shishma) which gives it a mere transitional space feeling. From the thermal point of view, it ensures the balance of temperature between the changing/rest room and the hot room. The latter has a central spatial organization. The central space is designed with a massive marble platform (al-rkhâma) in the middle. Al-Rkhama is used for massages. Around the central space, there is one or two private rooms (bwîtât), in a kind of alcoves with marble basins fitted up (swâridj). The hot room is characterized by its square shape, its important dimensions and its octagonal dome pierced by small openings of geometric shapes (lamlâwi).
The dome as a major expression in the architecture of hot rooms looks even more monumental sometimes, as it is the case in the Hammam al-Búza and Hammam Sidi ‘Abd Allah (see figures 11 and 12). In these baths, it is indeed supported by four columns marking perfectly the central space of the room and covering al-Rkhama.

![Figure 11: Hammam Sidi Abd Allah à Alger (Cherif-Seffadj. N, 1996).](image1)

The bwîtât, usually two or three are distinguished in their architecture by domes or cross-vaults. They generate by their arrangement, a symmetrical composition of the furnace. In most cases, they surround al-barma (the hot water tank) that communicates with the furnace through an open niche. These monumental provisions are absent from hammam Sidi Ramdan (Figure 7). In fact, and apart from the changing room that has undergone recent refurbishments, the bath itself consists of three successive rooms instead of two observed in other hammams. The difference is the existence of a cold room located between the warm room and the changing room.

The bath has also elongated, straight, and parallel vaulted rooms. They are simple in order and of the same dimensions. They have a tripartite division, strengthened in the warm room by two side bwitat, surrounding the barma. All these characteristics exist in the Algerian baths of the medieval towns of Agadir, Achir, Qalâ of Banu Hammad, Tlemcen, Sidi Bûmadyan and Nedroma. The history of this bath in the city of Algiers dates back to the pre-Ottoman period and confirms its affiliation to the architecture of Algérian medieval baths.

The name of hammam Sidi Ramdan relates to the nearby mosque. The history of the latter has never been established with accuracy. However, and according to Devoulx, the founding of the mosque dates back before the arrival of the Ottomans in Algiers. Whereas, the oldest title of the property indicates a very old building dating back to the year 959AH / 1551-52AD (Devoulx, 1870: 172). Its earlier establishment is also suggested by its location near the Zirid citadelle “Al-Qasba al-Qadima
"... and the district housing the tombs of Berber rulers (Qbûr ULAD al-sultan) dated in the 10th century. Sidi Ramdan bath associated with the mosque and the Berber Qasba is mentioned in the manuscript of Husin Ban Radjab written in 1704. This manuscript indicates that the building existed in 925AH / 1519AD, to the time of the sovereign Ishaq Bash, who was sent to Algiers by Sultan Bayazid Khan (Delphin, 1922: 219). This confirms the presence of hammam Sidi Ramdan in the city at the beginning of the Ottoman period and confirms its foundation prior to the arrival of the Turks.

Technicalities of the Heating and Water Systems

Algerian baths from the medieval era and Algiers bath from the Ottoman era used the same heating system and water piping devices. They do not seem to have varied from the 10th century until the Ottoman period. They remained in the ancient tradition, no doubt perpetuated by the Andalusian master-builders in all cities of Algeria. These techniques and devices remain in operating conditions, ensuring the functioning of the hammams in Algiers. Investigating Algiers hammams allows the observation of similarities with the medieval bath described in the historic sources and travellers' accounts.

The water distribution system, heating and steam devices are housed at the rear of the hammam building and are accessible through the furnace entrance (see figures 13-14). They consist of a system of two communicating tanks arranged one beside the other. This device is similar to that observed in the baths of Damascus and Andalusia (Ecochard-Le Coeur, 1942: 27-29). From this perspective, Algiers baths have not deviated from this principle of using a double tanks boiler system and have not reproduced the single tank boiler used in all Ottoman baths, as observed by Edmon Pauty in two Moroccan baths from the Merinid period (mid-14th century); Hammâm Tal’a in Salé et Hammâm al-‘Alû in Rabat Ammam’ Alû (Pauty, 1944: 215-225).
In the heating system using two tanks, the biggest one plays the role of a water storage tank. It receives water from the outside to circulate it to the basins of the hot room through copper pipes. A portion of this water is discharged into the second tank, of smaller size, plays the role of the boiler since it was fixed over the heat-point (fire) located inside the oven/furnace. It contains boiling water, which is conducted to the hot water basins through pipes that file along with that of the cold water. The production of steam is provided by the evaporation of water from the boiler which communicates with the oven through an opening arranged above the basin. The low height of this area prevents the steam from escaping vertically, and from the cooling down. Hence it allows the steam to spread in the hot room without losing its density. The hot water that flows in the basins continuously spreads on the floor and also contributes to the production of steam.

The system of heating in the medieval and Ottoman baths of Algiers, which is similar in all respects to that of the Andalusian and Moroccan baths does not extend beyond the hot room. The flow of hot air under the floor is only a principle; the hypocaust system, that is found in the majority of baths in the Islamic world with the exception of Damascus baths built before the 12th century, in which hypocausts were extended to benefit of a chimney expanding under the warm and hot rooms. This device is also used in the bath of the royal palace of Comares in the Alhambra in Granada, which has the monumentality of the warm room as it is the case in the baths of Damascus. Such architectural provisions for the warm room (larger dimensions) have probably prompted the designers of this structure to extend the heating system under the ground of the warm room. However, and even though some warm rooms have large dimensions, which is an unusual aspect in Islamic baths, they do not always have an extension of the heating tunnels. This fact has been evidenced by the examples in hammam al-Sabaghine in Tlemcen, and hammam Al-Bali in Nedroma; where drawing chimneys are embedded in the common wall between the furnace and the warm room, thereby reducing under-floor heating.

In the majority of Algerian baths, and similarly to the ancient Roman Baths, the floor of the hot room uses hypocaust tunnels to circulate the steam coming from the furnace. It is covered with slabs of shale coated with marble. The heat from the flames drawn through the hypocaust spreads over the surface with an efficient circulation thanks to the two chimneys arranged on the opposite side of the hot room. The chimney located in the walls of the furnace also contributes to spreading the heat using their position in the common wall with the warm room. In fact they ensure an average temperature for this room.

**Conclusion**

The study of the architecture of Algerian baths, under the framework of the general baths development in the Islamic world confirms the existence of inspiration and derivation from the Andalusian and Ottoman bathing cultures. Effectively, the Andalusian bath models seem to be predominant until the 15th century, while the Ottoman models are predominant from the 16th to the 19th century. Two architectural typologies and spatial organizations are found in the medieval baths of Algeria. The straight
mono-axial elongated layout and the compact dual-axial layout correspond to the baths of Andalusia. They have in common the existence of a cold room which represents the ancient frigidarium. All of these baths are characterized by a simple design marked by the parallel linear positioning of the elongated rooms, and covered with barrel vaults.

The second type represented in the Algerian medieval baths of the warm room has monumental dimensions, compared to the baths of the first type. This room is the central space of the hammam. It has a square shape, whose centre consists of a patio bordered by two or three arches on each side. The columns defining the central square support an octagonal dome, while the galleries are covered with barrel vaults and sometimes cross vaults.

In terms of architecture, baths of Algiers were rather modest compared to the monumental structures built in the Levant (i.e. Turkey, Egypt and Syria). The lack of any exterior architectural treatment specific to these buildings is due to the fact that they are most often integrated into a set of dependencies on the street (store, warehouse, public oven), or arranged within a set of housing units at ground floor level.

Algiers baths, as of for the Ottoman baths of Turkey, contain only one transit room between the hot room and the changing room. The cold room existed only in the medieval baths. Hence the hot room becomes dominant in both its size and its architectural style. This is one of the major differences between Eastern baths (Greek and Byzantine) and Western baths, which have their roots in the practice of ancient Greek and Roman baths. The entrance vestibule, the changing and rest room of an Algiers bath is the perfect reflection of the Algiers courtyard houses, with its colonnaded galleries. Similarly it can be easily noticeable that the entrance hall of the bath is in the same configuration as the skifa of a house, a buffer space between the public space of the street and the interior private spaces. But all these analogies with oriental baths do not disguise the own typologies and characteristics of Algiers baths.

References


A SUSTAINABLE APPROACH FOR URBAN INTEGRATION OF HAMMĀM SAMĀRAH IN THE HISTORIC CITY OF GAZA

Nihad Almughany, Mohammad El-Wazir, Farid Al-Qeeq & Hosam Dawood

Abstract
Throughout historical ages, Gaza has been viewed amongst the most important cities of Palestine. The historic centre of Gaza is among the most important sites in the city as it bustles with business activities and is the place of major historic sites, and cultural and architectural legacy in the region. The city of Gaza used to have several public baths which were built to meet the hygiene and health needs of the local inhabitants. Furthermore, they played an important social role as gathering places for socio-cultural events, parties and meetings. It is most unfortunate that a large number of these baths have disappeared, apart from the Samarah bath in Al-Zaitoun neighbourhood at the heart of the old city. Hence, the preservation of this unique genuine heritage building is of high importance. This paper attempts to establish key scenarios to integrate the hammām into the Old City urban fabric. The study is based on the hypothesis stating that a sustainable approach can be achieved by associating the hammām to its urban context. Thus, the hammām will constitute an important part of a touristic tour including the main urban entities composing the old City: Al-Omari Mosque, Qisaria Market, Pasha Palace and Khan Al-Zait. Three main scenarios will be proposed, analyzed and explored. The study concludes by suggesting an appropriate scenario for the adaptive re-use of the building, in order to preserve the hammam.

Keywords:
Hammam / Public bath, the old city of Gaza; architectural conservation, urban heritage.

Introduction
Heritage is considered as one of the constituents that preserve cultural and national identity of a community. Preserving the architectural heritage of our community is an important endeavour. Culturally, historic buildings remind us of our roots and add depth and character to the built environment by providing a unique identity for the urban structure of a city. Historic buildings deliver unique styles and technical innovations, highlighting ongoing creativity and ingenuity, as well as reminding communities of their distinctive lifestyles from the past. The conservation and restoration of historic buildings and sites will increase awareness about the city great assets, and encourage the utilisation of ancient architectural elements in contemporary architecture to be responsive to cultural heritage. Awareness of cultural heritage would help preserve and achieve a balanced environment which reflects both past originality and actual modernity.
Architecture is viewed as one of the basic landmarks of humanity because of its distinguished material, emotional and human existence. Therefore, the conservation of the historic Samarah bath is of high importance for the city of Gaza. Samarah hammam is considered as a heritage building and an urban landmark characterised by a specific architecture and a disappearing urban function. The research carried out on hammam Samarah is based on a systematic study of the existing status of the structure, in order to provide an assessment of the present situation of the bath’s different aspects according to the proposed methodology which aims to develop an advanced analysis of the functionality of the building. It offers alternatives which would help preserve this historic structure as one of the most important buildings in the Gaza Strip. In identifies the damages incurred therein and finally draws guidelines to ensure a sound methodological documentation of the bath and the application of practical solutions in the preservation process by including adaptive re-use scenarios.

Background

Historical development of the Old Town of Gaza:

Gaza was founded during the Canaanite age (3000 B.C.), and has a long history and ancient civilization. As a Canaanite city, Gaza is considered as one of the oldest cities in the world at large as described by many historians. Gaza was said to mean strong, treasures or stores. Persians called it (Hazato), while the Arabs called it (Gaza of Hashem) after Hashem bin abd Manaf, grandfather of the prophet (PBUH) who died on his return from Syria. His tomb is in the mosque named after him Said Hashim Mosque in Al-Daraj old neighbourhood. The oldest known inhabitants of Gaza were the Canaanites, thereafter the Palestinians (Al-Mubaid, 1995). Old Gaza was built on a hill 45 m higher than sea level. When the city grew, buildings extended north, east and south (Al-Aref, 1943). Old Gaza is divided into two parts: the eastern part which includes Al-Shijaiya neighbourhood named after “Shujauddin Othman bin Alkan Al-Kurdi” who met martyrdom there during the crusades wars. The western part includes the walled old town with its old quarters Al-Tuffah, Al-Zaitoun and Al-Darj (Al-Dabagh, 1996).

Due to its strategic position between Asia and Africa, Gaza was a prosperous trade centre, located on the ancient coastal road linking Egypt to Palestine and beyond. Gaza was built and continuously developed to become a transit place where the traders can rest before continuing travelling to Asia and Africa (Skaik, 1980). Throughout historical ages, Gaza has been viewed amongst the most important cities of Palestine. It underwent many historical changes during the various ages. The historical centre of Gaza city is amongst the most important sites in the city and accounts over four hundreds historic buildings. Given the increase in the population and various activities during the Ayyubid era, the core of the old city expanded beyond the limits of the surrounding wall, thereby forming the four known old neighbourhoods of Gaza city: The Tuffah (Apple), The Zaitoun (Olives), Al-Shuja’iyya (Braves) and Al-Daraj (Steps) (Dawod, 2005).

Today, Gaza strip is still the location of several
historical sites in spite of the aggressive demolition processes of its architectural heritage and history. These sites are mainly located in the central historic part of Gaza city (Al-Mubaid, 1987). Mosques, churches, public buildings and private residential houses constitute the main historic buildings. However the majority of historical sites in Gaza are residential areas composed of houses built during the Ottoman period with an age ranging from 100 to 400 years. Only a small number of these houses are still in use while many others have been either misused or deserted. Aggression, demolition, misuse, the neglect of historical buildings, and the lack of awareness of the general public and local authorities constitute the main dangers threatening this heritage. It is believed that, if this situation remains for few more years, many historical buildings and sites will totally disappear, and thus will be wiped from what is left in the history of Gaza. Therefore, all efforts should be combined to save the remaining architectural heritage and to leave it in the best situation for the next generations.

The old city of Gaza used to accommodate several baths spread throughout its quarters. The traditional bath had the double role of hygienic and entertainment space, which reflects a lavish style of social life as the Muslim scholar Ibn Khaldoun looked at it being a criterion of the welfare of a city.

Figure 1: Aerial photo of Gaza City showing the old town (limits in red lines) and Samarah Bath (red spot) (Source: Authors).
The list of the existing and vanished baths of Gaza is as follow:
• Al-Askar (troops) Bath, located to the west of Al-Omari Mosque - (vanished).
• Al-Pasha Bath: The Pasha private bath, located at the end of the Bosta (post) road. The Pasha used to commute between the palace, the mosque (Al-Sa’ada Mosque) and the bath – (vanished).
• Al-Suwaihi Bath in Al-Shujai’ya quarter- (vanished).
• Al-Suk Bath neighboring Qisaria market– (vanished).
• Samarah Bath: The only remaining bath in Gaza and is located directly behind Khan Al-Zait at the southern side (presently South of Abu Rahma commercial building).

The bath features differ according to the nature of its end users who could be military troops or city inhabitants. They are mainly public amenities, located within the urban complexes, which are usually composed of housing buildings, markets, inns and agencies such as the Suk (market) bath or Samarah bath, while a small number of these baths were very private such as that of the Pasha.

Description of the socio-economic and demographic distribution of the neighbouring region
Samarah Bath is located in the historic Al-Zaitoun Quarter which is considered one of the busiest and overpopulated areas of the city.

<table>
<thead>
<tr>
<th>Area name</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Gaza</td>
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</tr>
<tr>
<td>Gaza</td>
<td>492621</td>
</tr>
<tr>
<td>Deir Al-Balah</td>
<td>202707</td>
</tr>
<tr>
<td>Khan Younis</td>
<td>271787</td>
</tr>
<tr>
<td>Rafah</td>
<td>166701</td>
</tr>
</tbody>
</table>

Table 1: Gaza Strip Population in 2004 according to Areas. Source: Palestinian Information Center(2005).
It is apparent from the table 1, that Gaza City district with a population nearing half a million person is the largest populated area in the city, it is neighbouring Samarah bath. The rate of the urban population in Gaza strip amounts to 63.7% of the total population while rural inhabitants rate amounts to 5.1%, and refugee camps (relatively urban) rate amounts to 31.2%. In addition, the population increasing rate in Gaza Strip reaches approximately 3.2%.

Another important aspect the demographic conditions in Gaza is the age structure. Gaza Strip population is mainly young, as the rate of individuals in the category of 0-14 (years) amounted to 49.1% in mid 2005, and 48.3% are between 15-64 years, while only 2.6% of the total are over 65 years of age.

**Tangible and intangible architectural legacy**

Architectural and urban heritage has recently turned into an important issue preoccupying all governments and local communities, particularly in Arab countries. Furthermore, a modern theory in architecture has recently emerged, and which emphasizes the role of contemporary architecture to link memory with history and revive the sense of place.

There used to be several public baths in Gaza city. In addition to their health and hygiene roles, they offered spaces for social gatherings and events. As a sign of their they were social integration in the neighbourhood, baths used to close their doors as a way of showing respect in cases of death in the locality. It is most unfortunate that nothing of these baths has remained except the Samarah bath in Al-Zaitoun neighborhood at the heart of the old city constituting an important part of the architectural fabric comprising the Great Omari Mosque, Qisaria Market, Ahmadia Zawia, Pasha Palace and Khan Al-Zait, as well as the Greek Orthodox Church which was built in 425 A.D (MOG, 1996).

Figure 4: Qisaria Market(eastern entrance)- the old city of Gaza (Source: Authors).
Local competent authorities and the bath

The bath is a privately managed by its owners. There are other official and unofficial parties which are still concerned with the bath such as the Municipality of Gaza and the Ministry of Tourism and Antiquities. Furthermore, there are rules and ethics for taking care of this bath which could be wrapped up in the following (Al-Qeeq & Al-Wazir, 2007):

- There are laws emphasizing the necessity to preserve and protect heritage buildings -like Samarah bath- as an important cultural antiquity.
- The present bath plays a central and important role in the city and performs an important function being the only remaining washing facility in old Gaza.
- Governmental institutions such as the Ministry of Tourism and Gaza Municipality focus the necessity to activate antiquities as tourist attractions to revitalize the concept of entertainment-cultural tourism in the area.
- The necessity of keeping the historic bath as one of the most important historical, architectural
and cultural landmarks in Gaza Strip in respect of its specific traditional architecture.

The ministry of tourism and the municipality support this kind of projects for its importance and vitality in providing public services to the neighbourhood population in specific and the inhabitants of Gaza and the province in general.

Existing Situation

Architectural development of the Samarah Bath

There is no accurate dating indicating the exact date of founding the Samarah Bath. However, it is estimated that the building goes back to the early period of the advent of Islam to Gaza, but was later completely demolished and underwent many operations including reconstruction and later on, revival. It was revived by Alamuddin Sonqor Ibn Abdullah, a Mamluk prince as the name was mentioned several times on stone scripts found in many places in the city of Gaza. By analyzing the historical scripts found on a marble stone at the Bath’s entrance leading to the lounges before the Caldarium, it reads as follows:

“This blessed bath was set up, revived and constructed by poor worshipper of Allah, Almighty, the Ayyubid brother Sonqor bin Abdullah Al-Muayyedi, Guard of the Veil in the guarded Gaza, Allah may support his supporters in the year “550” Five Hundred and fifty, Allah may forgive him.” It can be noticed that the text attributes the process of setting up, revival and construction to Al-Muayyedi. This does not bear the meaning of the beginning of foundation since revival means improvement and development of something already in existence, a thing which is most likely.

The text of stone scripts carry a date going back to the year 550 Hijri. This does need verification because the date coincides with the destruction of Gaza at the hands of Crusaders, who entered the city, retreated and then occupied it once again. Therefore, there are some reservations that the act of bath revival could have taken place at this date. The stone tile which carried the script of the revival and construction date does not indicate the full construction of the bath but could only point to parts of that. Apart from that, the study of whether the tile is original and genuine or has been moved from another building is crucial. The date might be 550 or 750 Hijri, but the latter is more likely if we consider that Sonqor is the same Sonqor mentioned in other places. Certain historians view that the real reviver of the bath was “Oweis Pasha” who, during the Ottoman rule, gave it as a present to his wife of Al-Radwan family – a governing family during the Ottoman Empire. Another marble stone was found, which it is believed, was placed in the water supply at the western part of the bath. According to the bath landlords, the water supply was destroyed in the early sixties as a result of demolishing parts of the western façade which was turned into textile shops. This stone carried the script: “In the name of Allah, most merciful, most compassionate: This blessed bowl has been constructed seeking the satisfaction of Generous Allah by Al-Muqqir Al-Shamsi Emir Sonqor Ibn Abdullah Al-Muayyedi, Guard of the Veil in the guarded Gaza, May Allah support his supporters, Peace be upon Mohammed.”

In addition to the aforesaid, it is noticeable that the bath is approximately two meters lower
A Sustainable Approach for Urban Integration of Hammām Samārah in the Historic City of Gaza

NIHAD ALMUGHANY, MOHAMMAD EL-WAZIR, FARID AL-QEEQ and HOSAM DAWOOD

Plan

Like its Roman and Byzantine predecessors, Islamic baths were composed of three main rooms or spaces which are the disrobing (changing) room, the first room (intermediate), and the caldarium (hot room). The hammam uses a hypocaust heating system and accommodates other secondary spaces (Lam’ie, S., and Bases of Architectural Design in the Islamic ages).

The entrance is usually in the form of L-shaped corridor. It leads to the disrobing room. The space is designed for changing clothes and waiting before and after bathing. Bathers usually talks and socialize therein, while drinks and smoking pipes (argela) are served. In Samarah bath, the disrobing space comprises of a square hall in the midst of which stands a pentagonal marble fountain. Two patios (iwan) open towards the main changing room space and their floor is
one step higher than that of the central space. The ceiling is covered by a dome pierced and decorated with coloured glass bulbs, and is topped with a smaller dome. In the Northern side of the disrobing space, there is a door with a horse shoe arch. It leads to the toilets in one side, and in the other side to the first room which is an empty space for sitting before and after bathing in the hot room. This space is for the bather to adapt to the heat inside the hot room or caldarium. It is a rectangular lounge with a raised floor.

The first room is covered with a half-circle parallel vault with glass bulbs openings. The equivalent space in Roman baths is called the tipedarium. At the far end of the first room, there is a small door opening, which leads to the caldarium which is a rectangular space with two private small rooms one of them has the hot plunge pool (maghtas).

The rectangular caldarium in which people bathe is covered by a huge shallow dome of average height, with openings pierced by coloured glass bulbs. This space resembles to the Caldarium in the Roman baths. As used in most of Arab baths, the Samarah Bath does not have the Roman so-called Frigidarium which consists of rooms with cold water to be used after the hot bath. The method of heating is similar to that used in Roman baths by using the steam resulting from heating the water. The so called Hypocaustum by the Romans (fire house) exists in the South Western part of Samarah bath. Water is heated in a copper pot over an oven, and flows to the bathing places in pipes, while smoke resulting from combustion is pulled out through special chimneys.

Analysis of the plan
The plan of the Samarah bath shows that it is oriented towards inward and keeps privacy. The height of spaces is different according to the difference in functions. The bath is uniquely distinguished from others built during past Islamic ages by the fact that the take off space comprised only two lounges instead of three or four as present in the Cairene hammam al-
Tambali (12th Hijri Century / 18th Century A.D).

Management and maintenance activities
Regular maintenance of the bath depends on the operational cost as owners carry out periodical maintenance work depending on financial circumstances and resources. The maintenance mainly consists of construction items in the bath such as internal plastered fronts, repairing water supply piping, sewage networks, whitewashing, fixtures maintenance and floor repairs to suit their use and within the available financial resources. It should be indicated that maintenance activities are undertaken according to an annual program when business is low in receiving visitors of the bath during the summer season or the month of fasting “Ramadhan”, and consequently time would be then suitable for carrying out required maintenance operations without neither affecting the users convenience and nor the hammam usage. The nature for which the bath is used as well as the constant high humidity in the internal spaces due to the nature of usage cause fast corrosion of the traditional layer of plaster of the internal fronts which prompts regular maintenance in traditional plaster to preserve the original material of the stones.

Main Scenarios of Future Conceptions

Challenges facing the sustainable usage of the hammam

Decision-making trends:
The investigation carried out in this study, shows that the hammam stakeholders such as the hammam owners and the relevant competent authorities are strongly willing to see the bath properly protected and preserved against the causes of wearing out and extinction. In fact, there is a trend showing the desire to increase and improve the efficiency of the bath as a public service provider for local inhabitants, and to improve its services. There is a strong keenness shown by the bath owners and the competent authorities to revive the architectural and social character of this facility and activate its role as a link with the community.

Challenges of sustainability:
The hammam owners exerted great efforts in the cause of its preservation all along the past period through the good use, preservation of its facilities, and protection against all types of outwear that may cause damage to it. They
contacted the parties concerned with the protection and renovation of the historical buildings and succeeded in renovating parts of the bath at several stages.

Stage 1: Restoration of the main spaces of the changing room (the southern lounge and the eastern lounge of the bath) was accomplished through the Heritage Architecture Renovation Centre (previously Architectural Renovation Unit) thanks to a generous donation from the Quakers foundation, Palestinian Youth Service Program and in cooperation with the bath owners.

Stage 2: Restoration of the middle space of the changing room, intermediate room, internal corridors, toilets, insulation of the ceilings, the fire room, logs store, heating pots and the chimney was accomplished. Among the most important aspects of a sustainable future for the hammam is the necessity to renovate the remaining parts of the bath together with maintaining the already renovated parts, as five years have already passed since the last restoration work was completed.

Stage 3: Restoration work needs to be carried out on the bathing spaces (hot room), sinks, and internal walls, which suffered intense damages. The need for an immediate and quick restoration is important for the survival of the hammam.

Main Scenarios for the Integration of Samrah Bath in the Urban Fabric of the Old City

Because of its incomparability and its socio-historical importance, the conservation of Samarah bath has to include two complementary themes. The first one is the preservation and maintenance of the bath itself, and the second is the integration of the bath in the old city’s urban fabric through different types of interventions. The following are some of the interventions that aim to the preservation of the bath and its integration in the old city.

The development of a traditional tourist circuit: Hammam Samarah is located in the centre of the old city of Gaza and intermediates some of the most important and well lasting historic buildings in the area such as Porforius Orthodox church, Kateb Wilaya mosque, Al Omary Great mosque, Al Qissarea gold bazaar and Al Basha palace. These historic buildings are separated by scattered and alien urban entities that affect the original character of the historic area and its buildings. The proposed project is to create a traditional route (about 400 m long) inside the old city that paths through the mentioned historic buildings with the Hammam as a central focal point. The route could be created by the establishment of information points and souvenir shops adjacent to each historic building, traditional elements and streetscape that characterizes the route from other parts of the area. Finally, elaborate a tourist map and brochure for the historic quarter in general and the touristic route in particular. The discovery path could be a domain for local cultural and social activities. Moreover, Samarah bath will play a major role in such activities and celebrations. The project could be implemented with a wide variety of local participation and without any restrictions or frustrations facing its execution, implementation or maintenance.
The proposed project aims to develop the nearby roads by changing the physical character into an original genuine one through the upgrade of roads pavements using traditional patterns, and enriching the area with traditional streetscape like lighting units, seats, souvenir shops and other elements to attract more people. The project aims to encourage property owners to refurbish their shops to serve the route activities and to match with the new conception of the urban spaces.

Development of the adjacent land plot; the Zemo property

Zemo property is about 100m² piece of land adjacent to the hammam. It has an attractive setting, particularly in the Eastern part of the hammam. To the north of the site is Abu Rahma office block, a five storey building which replaced Khan El-Zeit, one of the most prominent historic buildings in Gaza and destroyed in the middle of the last century. Providing the proposal does not prejudice the comprehensive development of this adjacent land, this area is of significant landscape and visual amenity and is of historical and landscape importance and value to the Samarah bath. It can also be considered as an area of townscape character which is designated around the historic core of the Old City of Gaza. Temporary structures such as souvenir kiosks, and landscape elements will only be permitted, provided the scale, layout and detailed design of the development are compatible with the scale and character of the hammam and the neighbourhood. Land development proposals for will be assessed in
in accordance with Gaza Municipality Planning Policy and other relevant policies contained within the Specific Plan. Property development proposals may be subject to phasing in accordance with the implementation of the municipal infrastructure works.

This proposal is designated to protect the heritage buildings and their surroundings. In addition, the adjacent buildings facades and important entrances need protection. The design of development proposals within this site should protect the original characteristics of the area, in terms of scale, form, materials and style. The characteristic built form displayed in the proposal can also help inform developers in preparing development proposals elsewhere in the Old City to reinforce local identity. The external finishes and detailing, such as traditional windows and colour, should create a homogeneous surrounding, linking structures of varying ages and architectural styles. The use of traditional architectural elements can give the site a distinct and specific urban feel.

The restoration and adaptive reuse of the hammam
The project proposes to support students from secondary schools and others to visit the hammam to help increase general public awareness of the Palestinian community towards cultural heritage as a major step of its conservation. Exhibitions inside the Hammam (within the entrance hall and disrobing room) will be held for the craftworks and awareness products (e.g. signs, brochures, booklets, photographs, etc.). This project can improve the skills of those who are considered as good candidates to become professional craftsmen.

Raising public awareness for cultural heritage may include the development of new web resources by providing means of remote engagement with the cultural heritage. These may range from simple image-rich web sites to sophisticated three-dimensional virtual reality...
visualizations, including sound and lighting effects. Such sites can foster collaboration between computer scientists and cultural heritage professionals to work on these areas. It can also be used to virtually reunite parts that have been dispersed. For example, a virtual reconstruction of the bath and the surrounding area can provide a complete vision of the urban fabric of the Old City. It is one of the best examples to improve access to and understanding of cultural heritage. It provides excellent frameworks for improving access to Gaza architectural heritage.

**Revival of traditional craftworks**
Gaza as other old towns in the area used to be famous for its traditional handicrafts that played a role in both physical and socio-economic life of its citizens. The famous handicrafts in Gaza are pottery, glass, bamboo, embroidery and textile. Other handicrafts were also used in construction such as woodworks, copper, iron, gypsum and other construction materials. The invasion of modern materials and techniques has caused the vanishing of handicrafts and the ending of profession succession from father to son, except for few cases in which there are rare artisans who still hardly fight to keep the handicrafts alive.

The proposed project aims not only to the revival of traditional handicrafts in Gaza, but also to encourage their use in buildings and social life in the city. It includes the establishment of work spaces in the land plot adjacent to the hammam and alongside the access routes. The work spaces are for artisans to produce products and to train interested trainees to follow up the production and development of the handicrafts. Periodical exhibitions for the products could take place in the main hall of the hammam.

**Conclusion**
It could be concluded that Samarah bath is of a vital importance at regional, national and local levels. It has an influencing cultural, social, architectural and historic importance. Therefore, the conservation of the bath is an urgent matter. It should be classified as a high priority action at both national and local levels decision-makers agenda. The conservation of the bath should include not only the maintenance and preservation of its spaces, structure and systems, but also includes the responsible integration of the bath in the old city’s urban fabric through a group of interventions as stated in the proposed scenario. The interventions will help revive the original character of the old city of Gaza, activate the social, cultural and economic activities and overpower Samarah bath as a central space for the proposed scenario.

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A CONCEPTUAL FRAMEWORK FOR SUSTAINABLE URBANISATION IN FUTURE CHINA

Zbigniew Bromberek

Abstract
Rapid urbanisation of China is a phenomenon putting huge pressure on the society, environment and services in the existing cities. The growth of large regional centres is usually seen as an unwelcome but unavoidable both source and result of the Chinese urbanisation. The paper disputes this ‘unavoidability’ claim. The reasons for the present day urbanisation and concurrent ‘de-ruralisation’ processes in China are outlined. Opportunities arising from IT-age technologies as life style-generating agents are presented. They are matched with the corresponding characteristics of the rural setting. The paper examines a possibility of urbanisation based on the existing village networks. A brief presentation of various possible social and economic benefits, derived from the village urbanisation, follows. The offered solution could adequately address issues of accommodation and job provision without losing energy expenditure and sustainable use of scarce resources from its focus. Environmental benefits stemming from this different approach to problems of development are then discussed. The paper is concluded with an attempt to predict whether (if at all) and to what extent the proposal of the urban village is a feasible alternative to the current trends in the most populous country in the world.

Keywords:
Urbanisation; ESD; low-impact countryside development; China.

Introduction: Urbanization of the Past
China was a predominantly rural nation throughout almost entire its history. For a very long time it had one of the lowest rates of urbanisation in Asia (Heilig, 1999). At the end of 2006, the countryside was still a home a home to about 56% of China’s population—around 737 million people (Encyclopaedia Britannica, 1991; Shen, 1997; Urbanization in China, 2008). China also enjoys the longest continuous development of all surviving ancient cultures in the world (Rich and Wallace-Hadrill, 1991). Over the millennia, Chinese villages and towns were built and re-built to create networks (Figure 1) reflecting political, economic and social needs of the nation. Local bureaucracies, in a fashion unique in the world, worked towards achieving maximum efficiencies in the areas in their care (Zumdofer, 1989; Fei, 1975; compare Tuan, 1968). The traditional ‘central place’ (a term coined by Walter Christaller for standard market towns, as quoted in Skinner, 1964) preserved the
ecology of its supporting hinterland. Resource consumption and overall environmental impact of such settlements were relatively much smaller than those of any large city of today. They have also enjoyed enviable social coherence (Rich and Wallace-Hadrill, 1991; Hillier, 2008).

Figure 1: A model of the Chinese standard marketing area as a stable spatial system, together with other possible models of intermediate marketing areas (based on Skinner, 1964 and Zurndorfer, 1989).

The first change to that arrangement came with the social revolution of 1949 (Heilig, 1999) when China’s socio-economic system was converted overnight from feudal to communist. The economy became driven by inflexible ideology and local needs as well as conditions were dismissed as unimportant. This was particularly evident at the time of the Great Leap Forward 1958-60. Then, the Cultural Revolution 1966–76 brought to the village millions of urban youths and a ‘program breakdown’ of the traditional values (Encyclopaedia Britannica, 1991).

Yet, changes to the countryside in China during the last half-century were not as dramatic as those observed in the city. Living standards have not changed much and remain very low. At the end of 1996, there were 19 per cent of villages still inaccessible by road (Pang, 1997).

More than 50 per cent of countryside houses have no permanent heating—even in Northern China where temperatures in winter can drop to −30°C. Generally, there is very limited infrastructure (including roads, electricity and sewage) in small towns and villages, few schools or health services, and potable water is often of dubious quality (Shen, 1997). There are few jobs, as the countryside is overpopulated (Heilig, 1999; Encyclopaedia Britannica, 1991; Yang, 1996). Chinese peasants have many good reasons to migrate. (Figure 2).

A number of studies have tried to identify why people migrate and have come up with a variety of answers generally subsumed under the push–and–pull hypothesis. This suggests that people migrate from rural areas to the cities because of one of two general causes: overpopulation and environmental deterioration in the rural areas (the push factor), or the allurement or the attraction of the city (the pull factor or the so-called ‘bright light theory’) (Mabogunje, 1970).

The situation of the Chinese countryside described above clearly constitutes a ‘push factor’ in terms of the ‘pull–push hypothesis’ (Hillier, 2008; Herberle, 1938) believed to offer a still valid explanation to the migratory behaviour (Heilig, 1999; Shen, 1997; Mabogunje, 1970; compare Wolpert, 1965) The massive migration from rural areas to urban centres started soon after regulations in this regard were relaxed in the early 1980s. However, not until 1997 they were allowed to change the place of their residence permanently. With this limitation being now removed, cities started to swell (Shen, 1997; Urbanization in China, 2008; Li, 1997).
Urbanization of the Present

In most general terms, urbanisation is a process of concentrating the country’s population in a limited number of its urban centres (compare Encyclopaedia Britannica, 1991). There are many ways to urbanize a country. Very few countries enjoyed a harmonious growth based on developing numerous townships spread evenly throughout the countryside. In most instances, a few major centres attracted a vast majority of the migrating population. In break with its ancient traditions, China belongs today to the latter category (Urbanization in China, 2008; Li, 1997).

The current scale of urbanisation in China is staggering. The official figures for 1997 gave urban population at 28 per cent of the total, concentrated in 666 cities and 17,000 larger and around 50,000 smaller towns (Shen, 1997; Pang, 1997). In the following ten years, the urban population has increased by some 370 million. This includes around 65 cities, which have more than 1,000,000 inhabitants. Janice Perlman, president of the expert organization Mega-Cities project based in New York, believes that large urban entities are a natural result of the modern development (Nordland, 1996). World Bank and other international aid agencies are in a process of shifting their focus from rural areas to mega-cities and other large urban centres (Shen, 1997). At the “Cities’ Summit” conference, held in 1996 in Istanbul, the trend was opposed by most Asian governments (Nordland, 1996). It seems that China has finally given in. In 1997 new pro-migratory regulations were introduced (Yang, 1996). Initially, it has been easier to obtain residence permit in smaller towns and a few selected larger cities (Urbanization in China, 2008; Li, 1997). It is expected that the regulations
will become a norm applicable to each city in China. Large cities, which at present attract mostly young males going there to work and then returning to their villages, will increase their pulling power.

Modernization and urbanisation are the terms most frequently used to define China’s undergoing development. However, one must be concerned about the method, chosen to give those terms a meaning. The reason to be concerned is that modernization and urbanisation seem to be miscarried as a pursuit of an image rather than a sincere attempt to find an original solution to problems created by a very unique mix of China’s geo-political and socio-economic situations.

The most obvious result of uncontrolled urbanisation in China is an increasing density in urban centres. Most Chinese cities record densities of well over 1000 people per hectare (Hook, 1997). This is twice as much as it is believed to be an upper limit for an acceptable and manageable density. At this level, city services, infrastructure, health care and other indices of living standards must suffer from overload. City living is not only about having a flat of a decent size. It is also about access to schools, medical facilities and recreation areas. It is about transportation infrastructure and adequate fire protection. It is about response time in emergencies. The increased density will hinder access to the amenities and provision of the services (compare Cao, 1997). All large urban entities outstrip carrying capacity of their respective environments (Shen, 1997; Watts, 2006; Zhao, 1997).

Chinese cities ‘go high’ as the number of urban towers increases by day. There are high-rise buildings containing offices, and high-rise apartment blocks, hotels, banks and even high-rise factories. In just five years, from 1992 to 1997, Shanghai has built 220 such buildings with at least 20 of them about 200 meters tall. A survey carried out early in 1997 in Beijing counted 29,389 high-rise residential buildings (Cao, 1997). From professionals and laypersons alike one could hear “We must build high because it is how you build a modern city”. There have also been tall structures built in the West. They still are being built, which does not mean that it is not a mistake—a professional error by architects, city planners and relevant authorities (Watts, 2006; Knevitt, 1985). Over thirty years ago, Peter Blake, a well-known American architectural critic, said that:

[i]t is outrageous that towers more than a hundred stories high are being built at a time when no honest engineer and no honest architect, anywhere on earth, can say for certain what these structures will do to the environment—in terms of monumental congestion of services [...], in terms of wind currents at sidewalk level, in terms of surrounding water tables, in terms of fire hazards, in terms of various sorts of interior traumata, in terms of despoiling the neighborhoods, in terms of visually polluting the skylines of our cities, and in terms of endangering the lives of those within or without, through conceivable structural and related failures (Blake, 1977). (Figure 3). While incidents regarding the environmental damage go (as yet) unnoticed, reports of accidents following the structural failures are visibly on the rise (compare Zhao, 1997).

Then comes the need for transportation within and without such huge urban settlements. In today’s China, ownership of cars is at a level of
1.3 per 100 families. Respective bike ownership is around 200 (Hook, 1997). Yet, it is difficult to find a ‘parking’ place for a bicycle both in front of one’s house and anywhere in the city centre. A ‘motor city’ is a city of a low population density.

In countries like Australia, where cars were the dominant mode of transportation for fifty-odd years, there is, on average, more than one car per household. The resulting ‘urban sprawl’ is as big a problem in the cities ‘Down Under’ as it has been, for even longer, in the United States. Chinese cities are not designed for cars, and the ongoing increase in population density is not going to help. However, “there are warning signs that China is about to dismantle its bicycle and rail-dominated transport system in favor of a supposedly more ‘modern’ system based on private automobile ownership.”(Hook, 1997).

Any attempt to build a ‘Western style’ city in China is bound to result in enormous costs. There will be social cost to the communities: living in high-rise apartment blocks isolates and alienates individuals, it impedes the normal social development of children, prevents natural functioning of the units of social importance—the family and the neighbourhood (Knevitt, 1985; Blake, 1977). There will be environmental cost: pollution levels in numerous Chinese cities exceed norms adopted internationally. Quality of life will suffer. In the opinion of sociologist Fei Xiao-tong, expressed after his visit to Jiang-su in a letter to the editor of the China Daily on November 20, 1996, “Resources are voraciously consumed. The (physical) environment has been seriously damaged, and the social environment compromised.” Processes of urbanisation have strong impacts on the elements of the atmosphere, the geosphere, the hydrosphere.
and the biosphere. Basing its development on large cities, China will increase its need for transportation. At the end of this year, there will be 1.25 million kilometres of roads in that country, including some 10,000 kilometres of expressways (Pang, 1997). This makes 13,000 square kilometres of land covered with concrete and bitumen, and used for not much more than moving from point A to point B.

Chinese experts have already noticed the negative impact, which the country’s development—proceeding in the current direction—makes on the country. Increased use of energy, pressure on services, irrational and wasteful use of land and regional disparity are to be soon addressed (Shen, 1997). Nevertheless, one has an impression that the enormous potential, which China has at its command, has not been fully utilized if not—misdirected. Most projections assume that China’s population will increase to 1.48 billion but also that nearly all this growth will occur during the next 20 years (Heilig, 1999). China is entering a critical period in its history when decisions about the physical and spatial form of the built environment can have far-reaching social and environmental outcomes (Hillier, 2008).

A (Low-Impact) Urbanisation of the Future

The above discussion must have convinced the reader that neither the village nor the city offer a kind of environment, which would satisfy needs of an individual without compromising national prerogatives and vice versa. Nevertheless, there are a number of solutions available. One of them suggests returning to the path developed by the Chinese in their ancient past. It would be necessary to emphasize a few points.

Firstly, it appears that the social life has a relatively greater importance to the Chinese than to the Western people. Lives in China are organized around closely knit ties with other family members, relatives and neighbours (Skinner, 1964). Hence community size will make a vital difference. As V. Papanek pointed out, with our objective a benign, neighbourly way of life, rich in interconnections and cultural stimuli, we can say that ‘face-to-face’ communities will consist of 400 to 1000 people (the ideal is around 500), ‘common neighbourhoods’ will accommodate roughly 5000 to 10,000 residents (or 10 to 20 face-to-face communities), and the ‘ideal city’ will house about 50,000 souls (or 10 to 20 common neighbourhoods). Special functional reasons may decrease city size to 20,000 or increase it to 120,000—beyond that lies social chaos (Papanek, 1995).

Secondly, it is widely accepted that the ‘car-reliant’ culture destroys neighbourhood identity and builds mental and physical barriers that separate us from our concern for the environment we live in and the people who live in it. Let us recall Peter Blake again: Ideal Cities, it seems clear, are pedestrian cities: dense concentrations of people and of many varied activities, including good schools, good jobs, and good fun, which will make most mechanical transportation systems rather unnecessary (Blake, 1977).

In urban areas, bikes’ flexibility enables door-to-door travel; they are space-efficient,
‘greener’ and often quicker than other modes of transportation for distances of 8 kilometres or less. It seems that all transportation needs can be well served by a network of exclusive bus and non-motorized vehicle lanes. In the long run, planned investments into light rail and subways should help to solve congestion problems in high-density areas. The Chinese bicycle also could use a technology upgrade: lighter weight and more gears. The same goes for the non-motorized truck fleet. The three-wheeled trishaw could be upgraded with lighter, stronger material, new aerodynamic designs, increased number of gears and various forms of electric or biogas motor assistance (Hook, 1997).

Thirdly, the Chinese see themselves as part of nature. Preservation of the natural environment is deeply embedded in Chinese system of values (Tuan, 1968). Their beliefs have always supported a settlement by helping the ecology of the hinterland. It was preserved by consciously integrating it into the processes of the biosphere with the intent of maintaining the optimum for human purposes. It is as sustainable an approach as it can be. Sustainable cities are about balance within human society as much as they are about balance between humans and nature (Downton, 1999). Arguably, this is easier achievable in a small settlement than in a mega-city, which is ‘self-destructive’ in that respect.

Taking the above into account, it appears that the new lifestyle and required improvement of living conditions could be based on the existing network of ‘de-populating’ villages. They would have to be retrofitted with modern amenities and high-standard infrastructure. They should also be re-designed to offer higher densities, (Figure 4).

Figure 4: Traditional residential buildings in Gao-you, Jiang-su Province have offered high density living comparable with modern-day expectations but better suited to Chinese lifestyles and social fabric (Source: Author).
It is true that China largely lacks modern equipment and technologies and what is available is not suitable for ‘modern’ buildings. However, for low-rise buildings, they are adequate. Moreover, the tradition does not have to be so much ‘out of date’ since builders in the West turn to traditional technologies as more efficient and effective way to build. What definitely requires improvement is not equipment or technology but quality. Quality assurance and strict budget/timetable adherence are basic ingredients of success in the modern building industry. This is usually being achieved in two ways: either through competition or through closely scrutinized artisanship. While the former belongs to the economies of scale, the latter is typical for smaller projects.

Obviously, high-rise apartment blocks are not required when one wants to achieve the desired population densities. The British architect Peter Land, following his research into low-rise high-density housing, demonstrated that densities of 500 people per hectare (NB such densities were common in antiquity) could be achieved in urban situations using only two-storey patio houses with individual gardens. He has also built a high-density town quarter in Lima, Peru sweeping away disbelief among housing officials worldwide (Blake, 1977). Similar densities have been achieved in low and medium-rise estate of Lillington Gardens in Pimlico, southwest London by architects Darbourne and Darke (Knevitt, 1985).

“The scarcity of land for development necessitates the intensification of the use of available land to accommodate future needs.” One should find this argument insufficient. China’s average population density is less than that of most European countries. The requirement of concentrating urban development in areas with easy access to sea and navigable rivers has lost its validity. The world of the future is the world of competitive air transportation and services offered by the way of electronic media (von Weizsacker, Lovins and Lovins, 1997). In attempt to cut operating costs “[employers] are increasingly adopting technology that allows employees to collaborate face-to-face without boarding a plane [since it] can raise productivity by cutting travel time and making more frequent, focused meetings possible” (Masuike, 2008).

The advanced videoconferencing technology becomes the fastest growing segment of the information technology industry. Polycom, Cisco Systems and Hewlett-Packard have lead the way but many others develop in this rapidly growing market.

Today’s technology enables working from home in many occupations, as well as holding long distance business meetings through video-conferencing facilities. It does not matter where your office is, it does not matter where you live. This is the future. Alternatively, one could think about use for wastelands in China. Large land reserves have been identified for various uses if only infrastructure and capital investment were provided (Heilig, 1999). New settlements can be built there for the professionals of the times to come. Settlements designed for a new style of living: settlements developed for enhancement of neighbourhoods, towns with or without mechanical means of transportation, cities where the time lost to commuting could be equal to that required for walking from one’s own living-room to a studio a few steps away and under the same roof. Proximity to urbanized areas would also improve economic viability of
nearby farms.

Some steps leading in that direction have already been taken by the Chinese government. Since 1991, 90 million of surplus rural labour has been directed to 50,000 small towns; 1.6 trillion yuan has been spent since 1999 on infrastructure: roads, bridges, dams, pipelines. It has been a part of on-going ‘Go West’ government strategy to combine social and economic development with the country’s urbanisation process and address inequalities between the rich eastern provinces and the poor interior. Urbanization of small towns and villages is seemingly more cost-effective and brings better results quicker (Yang, 1996; Watts, 2006).

**Conclusion**

Current development of the urban environment in China visibly does not cope with modern life style requirements and aspirations of the Chinese. A number of undesirable phenomena associated with urbanisation processes in China call for urgent research to find a solution, which would be both country and culture-specific. Revival of community values and anticipated trends in business practices demand and support an idea of the future development based on decentralized population—whether in new or existing settlements. This idea has a fair chance of offering a sustainable platform, on which quality of life can be improved for many more people at much less cost to the environment.

It is high time to thoroughly investigate the problem of urbanisation in China. In the author’s opinion, planners should start thinking about the future rather than the present. Some processes are difficult to stop without government support. However, the People’s Republic of China is in a unique situation where macro-scale processes still can be planned and carried out in an orderly manner due to State intervention. Unlike in countries with rampant free-market economies, land speculation and particularism driven by ambitions of the few can be curbed. The interest of the many can be properly protected. This interest would be best served if one followed F.L. Wright’s urban axiom: “Decentralize and reintegrate”. It is equally difficult to predict social impacts of the proposed ‘rural urbanisation’ and impacts stemming from the current development trends (Hillier, 2008). Quite certain is that the ‘urban village’ has a chance to continue what has been inherent in the Chinese culture while the large city makes a clear break with the past and reaches out to the world in a very globalised manner.

The proposed countryside-based urbanisation has several distinct advantages:
1. It stops displacement of large groups of population;
2. It maintains the existing social fabric, family ties as well as relatives and friends interdependencies;
3. It offers employment opportunities locally this way addressing the ‘overpopulation’ issues;
4. It creates local markets for agricultural produce this way releasing potential of ‘agricultural reserve’ areas;
5. It lifts living standards in the most disadvantaged in this regard parts of the country;
6. It helps to make the spread of modernization more uniform bringing life styles closer;
7. It makes much less environmental impacts then urbanisation based on large cities;
8. It continues the ancient culture and
The most significant drawback of the proposed model is that, at the required substantial level of capital investment, there is a fairly high level of uncertainty as to the desired outcome. This kind of outcome, however, can be expected with virtually every model in spatial–social development prediction.

If the question were whether it is possible to live urban life in a village, the answer would have to be a firm ‘Yes’. ‘Urbanization’ of the village is possible, and at the same time providing a more humane environment, better suited to endemic Chinese needs. Situation in China verges on the extreme but the offered solution’s application is universal. Fritjof Capra once pointed out that the Chinese ideogram for crisis, ‘wei-ji’, is composed of two interlocked characters. One is danger and the other is opportunity. Thus, the beauty of a crisis is that it holds within its image inherent change. The Chinese I Ching, or Book of Changes, demonstrates that existence is a cyclic movement where the process of breakdown is also the moment of breakthrough. Disintegration becomes renewal.

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URBAN MALAYS’ USER-BEHAVIOUR AND PERSPECTIVE ON PRIVACY AND SPATIAL ORGANIZATION OF HOUSING

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Abstract
The fundamental form of Malay traditional housing is to accommodate their occupant daily needs and also to provide better congruence between human behaviour and culture as compared to the modern housing. Majority of modern housing today are mass-produced and inhabitants have little choice but to adapt and change their lifestyle within the ‘given environment’ regardless of their behavioural needs and cultural background. In traditional Malay houses, the spaces are more flexible especially in the main house (rumah ibu) where most family activities took place. Separation of space in the traditional Malay house is minimal because their concern is more towards communal intimacy, and this was demonstrated in the serambi (verandah) located in front of the house where guests especially the males were entertained during social and religious functions. Using scheduled-structured questions and graphic aid during the in-depth interviews, this research found that due to the influence of modern link house layout, an interesting pattern from the perspective of urban Malays with regards to privacy concept and Malay culture emerged. Most of the respondents agreed with the re-introduction of the serambi concept in modern housing as a transition zone for informal entertaining, and it has the potential to be a social interaction space for the immediate neighbourhood. Based on the comments given six house plans were generated and respondents were asked to identify an ideal plan which they feel can fulfilled their privacy needs.

Keywords:
Urban Malay; spatial organization; link house; privacy; culture.

Introduction
A house is not only a physical space in which people live, but also a space where social interactions and rituals take place (Ozaki, 2001). It played an important role in which people can assert a sense of mastery and control over their environment and a significant factor in their well-being and self-esteem (Rapoport, 1976). A good housing development should not only take into account the physical aspects of design but also be sensitive to human needs (Lee, et al., 2004).

Abd. Ghani (2004) highlighted that while most people agreed that they need all the relevant modern facilities to have a better living environment, they also cited that the most important elements which could also enhance the living environment of their homes
are security, privacy and quietness. However this is not the case experienced by majority of the urban Malaysian population, where the only houses they could afford is normally homogeneous in the type of terrace housing. These types of houses are normally mass-produced and adopted from the British housing design and typology. One of the weaknesses of this type of housing design are lacking in social and cultural considerations including privacy needed by its occupants (Ahmad Hariza and Zaiton, 2008).

This is because culture is not seen to be an important element in designing mass housing for the market as compared to policy and economic issues. Abu Gazzeh (1996) emphasized that the element of culturally suitable features housing is an important element because the use of space is not isomorphic among cultures. Each culture has different specific variables that will influence its’ space. Therefore, housing provision should not only aim at merely providing affordable shelters but 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 lifestyles of the target populations (Salama, 2006).

However, since the houses offered were without consideration to the local culture, many have little choice but to adapt their lifestyle within the ‘given environment’. Thus, this paper therefore will emphasize on the importance of privacy as one of the cultural elements needed to enhance the living environment of those who lived in terrace housing.

The Concept of Privacy

The concept of privacy is usually seen from Western perspectives as privacy is considered an important aspect in their everyday lives. The concept of privacy and degrees of privacy also varies between cultures as the Western concept of privacy is different from its Eastern counterpart. A classic Western interpretation on privacy is by Hall (1959), which stated that privacy is about the control of personal space. This statement described how important personal space vis-à-vis personal privacy to the Western views.

An early theory formulated by Westin (1967) who delineated four (4) types of privacy which is solitude, intimacy, anonymity and reserve. Intimacy with family or familial privacy is translated as being alone with one’s family members with the exclusion of others (Pedersen, 1997). It is also closely related to a spirit of happy intimacy within the family and comforting security as privacy of family is protected (Ozaki, 2001). In other words, Ozaki summed up that physical proximity is a symbol of the closeness of family, and the space inside the house belongs only to the family members.

The Eastern perspectives on privacy differ from the West as the Eastern culture values the privacy of the family as a unit and overriding the importance of individual privacy. Interestingly in some Eastern cultures there is no specific word for privacy. In Japanese culture for example, the idea of private spheres that are independent of the group is not acceptable, for the sense of individual privacy exists only weakly (Doi, 1971). The Arab was found to prefer living in large spaces for family congregation and avoid partitions because they do no like to be alone
Malays Perspective on Privacy

The traditional Malays placed more importance on communal intimacy rather than personal intimacy as the concepts of sharing and cooperation is fundamental to the Malay culture and to their lifestyle (Yahya, 1998). The design of the traditional Malay house has also been dictated by the social mores of the Malays which were influenced by Islam, such as the provision of a private space for womenfolk and a public space for entertaining male guests during functions because the Malay house is always considered a unit of a larger community in the village (Gurupiah & Ra’alah, 1998).

Based on Islamic teachings, the Malays were particularly concerned about inter-relationship or social interaction between the family especially female family members and outsiders (non-muhrim). Thus, the separation of space for men and women during religious or social functions were a symbolic way of controlling the socialization process. On the other hand the Malays were not particular about intra-relationship or interaction within the family which were always maintained to be close as the Malays were known to be a close-knit society. The family is considered as an extended unit of family members consisting of grandparents, children and grandchildren, all living under one roof.

The Malays were also firm adherent of various customs and etiquettes, especially those that were not contrary to the teachings of Islam. One custom that linked directly to Islam and adhered by the Malays was the practice of forbidding uncontrolled socialization among marriageable men and women (Abd. Halim & Wan Hashim, 1997). In order to accommodate this practice, Malay houses were built with specific portions or sections to house the men and women separately (see figure 1, which shows the layout of a traditional long-roofed Malay house).

This is the beauty of the Malay house because when religious or cultural functions were ongoing, the modesty of the women folks was protected within the confines of the main house (rumah ibu). Segregation of space also meant that the main house was only to be used by family members in their daily activities such as sleeping, praying, eating, family conversation and so on. Thus, familial privacy is maintained inside even when guests were entertained in the verandah area (serambi).

In traditional Malay house, serambi (verandah) is used by the men folks for siestas or conversing (fig. 1 showing a picture of typical traditional Malay House and figure 2 showing the layout plan of a traditional Malay house showing the location of serambi and others types of spaces in a traditional Malay house)). By referring to figure 2, it can be seen that, for the traditional house in Malaysia, the privacy gradient begins at the most public space which is the anjung (entrance porch), increasing in level to the transition space or semi-public space which is the serambi (reception area) and finally into the most private domain, the rumah ibu (main house). The serambi acts a stop-over zone to mediate between the public space and the more private space. The other semi-private spaces such as the dapur (kitchen) and selang (courtyard) are entered only by family members from the side entrance. During family
In present day Malaysia, the concept of familial privacy which was an important architectural element in traditional Malay house has long been omitted from link house design. However, Tajuddin (2003) stated that the design for most of the house available in the market especially terrace housing in Malaysia do not consider familial privacy because it is not seen as an important element. Perhaps this was done deliberately by the designing architects due to several reasons such as spatial constraints, restrictive construction laws of the country, cost-cutting exercise by the clients, adhering to design brief by profit-oriented clients, difference of opinion from the clients or simply it is not the norm to have a transition zone in the modern housing layout anymore as cultural values evolved.

Salama and Alshuwaikhat (2006), said that many architects, engineers, and developers looked at design, environmental quality and affordable as exclusive and are looked at in isolation. Many of these groups tend to believe that once the goal of providing quality design and once the goal of incorporating environmental and social concerns enters the discussion, it is generally assumed that the cost will increase and this will burdened the people. They later suggested...
that in order to provide a better housing to the people there is a need to look into all the issues among them are the engineering issues, humane issues, behavioural and cultural issues and urban and landscape issues.

Therefore, this paper will be concentrating on one of the important issues suggested by Salama and Alshuwaikhat (2006) that is the behavioral and cultural issues. It will look into the influence and importance of privacy concept in the spatial organization of modern housing layout from the user-behavioural perspective of urban Malays, and whether their needs are met. The focus is specifically on the Malays because this study wishes to identify any changes in their behavioural perspectives on cultural values and privacy concept in relation to space due to change in lifestyle. The views of present Malays who live in modern housing might differ from the Malays of the past who lived in traditional houses. The built environment, religious beliefs, way of living, educational background, social status, etc. might be the key influences in their altered perspectives.

Methodology
This study was more of qualitative in nature as it emphasized on natural settings where the objects of inquiry were not removed from the venues that surrounded them in everyday life (Groat & Wang, 2002). The focus was interpreting the information gathered and making sense of its meaning.

Thus, the research strategy taken for this study was field work and the 'field' was represented by selected newly occupied typical double storey link houses (lot sizes ranges from 20'x70' to 22'x75') in Shah Alam, the capital of Selangor as one of the state in Malaysia. Selangor was selected because it consistently recorded the highest overall sales performance of newly launched residential units in Malaysia. The houses are targeted at the middle-class income groups which comprised mostly of white-collar workers. The specific ethnic-group is the Malays as this study were to investigate their perception towards privacy and Malay culture. Thus, Shah Alam is demographically ideal as 70% of the population is Malays (www.mbsa.gov.my).

The houses are fairly new, built and occupied in the last two years, approximately from the year 2004 to the year 2005. In the residential property sub-sector, the link houses spearheaded the residential property market by contributing 47.4% of the sub-sector transactions volume. Link house was chosen because of the close arrangement of building which might affect privacy among its occupants and also because it is the most popular type of houses demanded by the general population in the urban area.

The type of sampling used for this study was purposeful non-random sampling of respondents in newly occupied housing projects. Purposeful non-random sampling focuses on selecting information-rich cases for in-depth study and the cases picked meet the specific or distinctive criteria outlined by the researcher (Patton, 1990). For this study, thirty (30) respondents were involved which was 10% of the 300 households in the area of study. The justification of using 10% of known population is based on Wengraf’s suggestion (2001).

The research design was inclined towards multi-tactics qualitative study which involved...
scheduled-structured questionnaires for the in-depth interviews with Malay link house dwellers. They were asked to comment on the spaces in their house, their satisfaction on the house layout as well as their perspective on privacy concept and Malay culture and their adaptation process which they adapted to the given environment. The concept of serambi as a transition zone was also asked in the interview as an indicator of whether it is appropriate to be integrated in modern housing. Graphic aid in the form of house layout plan (a copy of the house layout plan were requested from the residents) in the form of SPA (Sales and Purchase Agreement) drawings was used as a guide throughout the course of the study.

From observation it was found that there are six different types of house layout plan involved in the study. Based on the feedback received during the interviews, spatial analyses on the respondents’ original and upgraded house plans were conducted (see appendix 1 for the six upgraded house layout plans. The only upgraded involves in this case is the additional of a reception area or serambi). Respondents were later asked to identify one house layout from the six which they considered as their most preferable layout in terms of best fulfilling their privacy and cultural needs.

Analysis of Data from In-Depth Interviews

In terms of privacy concept, respondents stated that they wish for more privacy from neighbours. However, due to close proximity to each other which is the common feature of link houses and thus the problem of visual, noise, smell and privacy intrusion is unavoidable. In addition, the female family members specifically wished for more visual privacy from adjacent neighbours because as Moslem women they have to take care about the aurat from non-muhrim. As the back of the house is too close to the neighbours, they can see each other directly and it is sometimes inconvenient.

On the concept of intimacy with family/familial privacy where one can be alone with one’s family members with the exclusion of others, respondents said that presence of guests affect family activities and privacy of family especially if the guests are unexpected. They also stated that it is important to have space separation for entertaining guest or having social gatherings and this could be achieved through thoughtful space articulation during designed process. The Malays preferred bigger kitchen as the ladies will usually stay at the kitchen area to help with the cooking and food preparation.

In terms of the concept of familial privacy in Malay houses, there are respondents who stated that privacy from visitor especially male guests is more important as compared to privacy between family members. There are also residents who feel that privacy from guests is important but privacy within the family is important too as each family member needed their own privacy. Traditionally, majority of the Malays stressed more on inter-relationship and less on intra-relationship. However, there should be a balance between the two types of relationships and it is important to maintain privacy between family members especially between male and female children who have reached puberty.

In terms of spatial consideration, they agreed with the idea of a reception area or an intermediate zone to entertain guests through the concept of
serambi in modern housing. They believed that, the reception area can acts as an extended living area for informal entertaining for both adults and children. By having this extended living area with the concept of serambi or reception area as a border space or a buffer zone can also help solve the problem of visual intrusion from neighbours. The respondents also concurred that there are lack of privacy in the modern houses found in the market especially when the serambi concept are no longer integrated in the design layout in front of the houses, and where reception area and the living rooms were combined.

The respondents also stated that, it is difficult to achieve privacy during social or religious function especially downstairs. Other comments were that the living and dining spaces are quite exposed to view and the kitchen is small and cramped. There is also no second entrance to the house, therefore family members can only go in and out of the house through the front entrance. If there are male guests in front, it is quite difficult and awkward especially for the female family members (in terms of modesty) to go in and out at that particular time.

In terms of personal privacy, most of the respondents cited that it is important to have their own space such as their own bedroom. Even their children want their own bedrooms and not shared with their parents. An increased sense of personal privacy among modern Malays can be detected due to influence of the layout of the house where there are proper rooms complete with lock and key mechanism.

All of the respondents said they have to adapt their lifestyle in present houses as they have no choice. The houses are ready made and they have to accept what has been bought. Should they be given a choice, they would prefer the spaces to be designed with their input in it. Nearly all of the respondents interviewed said they will adjust or change the features of their house through renovation or refurbishing. There are important spaces in the house from cultural point of view which needed careful consideration from the architects during design stage, as per commented by the house owners. These include the size and location of kitchen, location and design of staircase, location and size of bathroom as well as proper segregation of spaces in the house. This will help the respondents to practice their lifestyle within the spaces of their house in a more comfortable and convenient manner.

From the above responses, it can be derived that intimacy with family or familial privacy is important to the modern Malays. Majority of the respondents appreciate quality time with their family in the house and thus privacy from outsiders has to be taken into consideration too. It is suggested in this study that the concept of serambi, common in traditional Malay house could help solve the problem of privacy of family from being disturbed in the house proper. In modern link house, the concept can be incorporated as a reception area where it could be an informal entertainment and conversation space, as well as an area for the children to play with their friends. It also can double up as an extended space for family relaxation in the evening when it gets too hot and humid in the house. With a few lazy chairs, a coffee table, fans and plants, this space has the potential to develop into a social interaction area for the immediate neighbourhood.
Ideal Link House Layout

In the spatial analyses of respondents’ house plans, six (6) common respondents’ house plans which was upgraded with the addition of a reception area were presented to the respondents. Then, the respondents were asked to pick their most preferable layout in terms of best fulfilling their privacy and cultural needs. It was found out that, more than half of the respondents (16 out of 30) choose one single plan as the plan that might be able to fulfill most of their privacy and cultural needs (upgraded house Plan C, see appendix 3 which shows the upgraded plan C). The reasons given for choosing this plan is that they found the reception area introduced can be used as chatting space, the separation between living room and dining room is clear, the kitchen is quite big and hidden, the staircase is also hidden and provides privacy and lastly the family hall is quite spacious for family to relax informally.

The second most chosen plan is plan F (see appendix 6 for upgraded plan F), where 11 out 30 choose this plan. They believed that it could fulfill their privacy and cultural needs. The reasons given for choosing this plan are the main entrance door cannot be directly viewed from the driveway and road, staircase is quite hidden and therefore it can give privacy to the occupants to access it, the kitchen, master bedroom and other bedrooms are quite spacious and the family hall is also big for family activities. Based on the comments given from the two plans an ideal house layout plan is drawn as shown in figure 3 and figure 4.

In this plan, the location of the main entrance has been changed to the right, thus there is no direct view from the driveway into the house and privacy of the family is further enhanced. The reception area serves as an informal entertaining and conversation space with neighbours and friends; and it can also be used as an indoor-outdoor family relaxation space. The position of staircase has been slightly adjusted but is still hidden; thus the dining and kitchen becomes more spacious which is more fitting or suitable for Malay occupants. The size of the living, dining room and kitchen are approximately the same and almost perfectly squared; thus the general layout of the ground floor is more balanced now.

The family hall upstairs has become more spacious and therefore more comfortable for the family to have more quality family time together. There is a spacious attached bathroom for bedrooms 2 and 3 on the first floor. Both bedrooms are square shaped and of almost equal size, thus it is easier to arrange furniture. The master bedroom door swings to the left, which provides more privacy to the parents as the inside of the room cannot be seen directly from the family hall if the door is slightly ajar. The bathroom door opens directly to an ample space for a walk-in closet, which provides convenience and privacy to the occupants to change clothes after bathing.

The layout is seen as perfectly fulfilling the privacy and cultural needs of the respondents, which is the main goal of this study. Therefore, this study wished to propose this layout as one of the ideal house plans for standard link house typology and to be considered as a prototype for future housing development.
Conclusion

The house is a reflection of self and in this study the house represents the built environment. The built environment can be seen as a behaviour setting – a setting for human activities. Behaviour settings may be neutral or inhibiting; and a behaviour setting may be facilitating to the extent of acting as a catalyst or releasing latent behaviour, but cannot however determine or generate activities. What can be concurred is that the built environment can best be seen as a setting for behaviour and it affects behaviour without determining it. People do behave and act differently in different behaviour settings because they want to match or make congruent their behaviours appropriate to the setting as defined by culture and social norms.

The built environment can be seen in a number of different ways, such as spatial organization which is its most important and significant characteristic and the most useful for comparison at fundamental level. Space appears to be a more fundamental property of the built environment than form, materials, and the like. Thus in this study, spaces in the house can be seen as the setting for behaviours, and behaviours are influenced by factors such as cultural values, religious allegiance, privacy needs, social customs and economic background.

By considering the perspectives of house buyers in terms of their behavioural needs, cultural background and social customs in the design process, better homes can be designed and built for future house owners. The advantages for this consideration include the process of adaptation to the given environment is faster
and more satisfying. Adjustment to the homes in terms of renovation will be minor or not a priority any more, thus there will be less hassle and grievances between neighbours in terms of noise violations.

With the introduction of the reception area as a transition zone, social interaction with non-family members were more defined which depends on the type of guests and occasion. The family members have more choice to regulate their privacy and with whom they want to interact within this space. Thus, privacy for the family becomes more intact in the house proper as the reception area also enhance visual distraction. The reception can be used as an internal-external space for the family to relax together and escape the hot and humid weather in the evenings. When the layout of the house is designed sensitively, important space to the Malays such as the kitchen is more towards an agreeable size and location. With the staircase hidden, privacy is maintained even when guests are around and this is especially significant for the female family members.

Finally, a pre-occupancy evaluation conducted by architects and property developers on future house buyers regarding alternative design schemes would be a good step in achieving homes that catered to the needs of the occupants. The concept of community architecture which involves participation of potential house buyers and user input in the design process is one great step towards achieving compliant homes.

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ANALYSIS OF CLIMATIC AND SOCIAL PERFORMANCES OF LOW COST TERRACE HOUSING (LCTH): INTRODUCING THE AFFORDABLE QUALITY HOUSING (AQH) CONCEPT IN MALAYSIA

Noor Hanita Abdul Majid

Abstract
Low cost terrace housing (LCTH) is the most common form and popular typology of public housing in Malaysia. The provision of the houses is deemed to be the most suitable to fulfil the needs to house low income families, and also as an alternative to high rise low cost housing. Since the implementation of these housing types, development on the layout and sizes of the house has taken place to provide for better living conditions. Literature review on the current LCTH suggested that there are deficiencies in fulfilling the requirements to provide quality and affordable housing for the low income families. This paper presents the scenario of the LCTH design based on secondary findings by researchers on housing in Malaysia. The secondary data provided the grounds for the proposal of affordable and quality housing (AQH) to handle the problems that occurred at the LCTH. Both social and climatic considerations are included in the AQH, addressing issues on privacy, segregation of genders and community interaction; along with thermal comfort and natural ventilation. Decisions on the AQH are carefully extracted from a comparison analysis in the view to improve the current conditions. In order to verify some of the decisions on climatic design strategies, simulation results are presented. The results indicated that the design decisions have managed to improve on the natural ventilation conditions at the low cost houses. With reservations on the social conditions that are yet to be tested at the actual houses, the AQH has proven to be a step forward towards the provision of a better living environment.

Keywords:
Low cost housing; affordable quality housing; social and climatic consideration; natural ventilation.

Introduction
As the most common form and popular typology of public housing in Malaysia, the low cost terrace housing (LCTH) has been highly researched and received many attentive reports regarding its achievements and deficiencies. The Ministry of Housing and Local Government of Malaysia has outlined this category of housing with recommendation of a ceiling selling price, household income of the target group, built up area and minimum design standards for the housing to be constructed. The houses are targeted to be sold at a price of up to RM 25,000 to a target group with a household income not exceeding RM 750. The houses are built with minimum design standards that specifies built up area of 550-600 sq feet.
with two (2) bedrooms, a living room, a kitchen and a bathroom. This standard has since been changed to meet the current economic situation in the country and also react to the needs of the people. New Straits Times (dated 24th Apr 2001) has also reported that the current notion has moved towards a better and higher quality of houses for people. This reporting is in line with the Eighth Malaysian Plan that gives priority to the provision of adequate, affordable and quality houses, particularly for low and lower medium cost houses. Hence, the ideas of affordable quality housing (AQH) that improve on the current standards provided in the LCTH have been explored.

Affordable Quality Housing (AQH)

Affordable Quality Housing Research presents an opportunity to bring the issues of affordability and the importance of proper housing into the broader public and nation context. This research tackled on issues of providing quality housing at affordable cost. The research also aims to propose housing designs that provides thermal comfort by way of natural ventilation through new planning layout and design. Besides fulfilling the basic needs of shelter, that is protection from the natural elements i.e. sun and wind, the AQH is also aimed to provide for physiological and psychological needs of human being.

Affordable Quality Housing is planned as housing development at affordable price. Affordability here is seen through the relationship between income and effective demand of a commodity. Affordability can also be defined as the ability or potential of a person to buy a house. Rose (2002) states that people can only own a house at an affordable price if it will only take an amount of 30% of the overall house hold income. In Malaysia, a person is eligible to buy a low cost house if the household are earning less than RM 2500 a month. With this amount of income, house buyers are expected to afford paying around RM 700 for a house per month. That amount can be considered too high for some household especially for those with a much lower income or a bigger household. Ibrahim Wahab, et al (1993) in his paper reported that a research done in Pulau Pinang revealed that around 72% of the respondent with a monthly income between RM 200 – RM 800 were not able to pay a monthly instalment of more than RM 200. However, it is hard to justify the market, value and cost of total development to balance it with the affordability and needs of the people. Therefore AQH needs to meet the demand of providing affordable houses at the stage of purchase and consequently the running or maintenance cost, and quality houses that answers to the comfort needs of the targeted income group.

Deriving to the AQH Design

Affordable quality housing design is supported by the incorporation of environmental friendly concepts expressed by the climatic and social factors. Basically, the environmental friendly concepts for AQH are developed based on literature reviews and secondary data collected by numerous researches done on the LCTH. The formulation of the AQH will be described in detail in the following sections. In order to justify the AQH design, comparative analysis will be made with the LCTH for both climatic and social factors. The qualitative comparisons are shown in a table format for both climatic and social
Environmental Friendly Concepts for AQH

Incorporation of environmental friendly concepts is the key factor in the formulation of Affordable Quality Housing (AQH) design. The environmental friendly concepts are viewed from the perspectives of climate and socio-culture that is seen as important contributors to affordable and quality housing in Malaysia. The application of these two factors are discussed and presented in the form of design strategies. Implementing these design strategies in the design of AQH is imperative to improve on the deficiency in the LCTH designs. AQH is a broad concept that incorporates various architectural and engineering approaches in the provision of housing. Design approaches in both fields are important in gearing towards the provision of houses that are both affordable and habitable for the people. The notion of affordable housing can be linked to cost effective housing that practices reduced material and energy usage. In turn, reduced energy consumption in the houses can be related to environmental friendly concepts that include the economical usage of energy derived from the resources from the natural environment.

As mentioned earlier, the design of affordable housing should take the right directions and necessary steps from the conception of the ideas through the design decisions and construction. In the conception of ideas, the architects and engineers have to consider the human and physical factors in the planning of the spaces. The design decisions should be based both on the socio-cultural factors along with the physical solutions such as materials and systems choices. These steps are to provide habitable houses that are environmentally friendly, healthy and efficient in the use of energy and resources Noor Hanita (2004a).

The Climatic Considerations

Fundamentally, the design of affordable quality housing should consider and take advantage of the hot humid climate. As discussed earlier, adhering to the requirements of buildings in the hot humid conditions will contribute not only to the comfort of inhabitants but also to the issues of affordability. The housing development today has depended on the aid of technology to create a comfortable living condition Abdul Majid (1995). Fans or air conditioning is highly used to cool the internal spaces of houses in Malaysia. Even though the hot humid climate permitted for natural ventilation and daylighting applications all year long, the houses still relied heavily on mechanical ventilation and artificial lighting. This is due to the negligence by various parties involved in the provision and construction of the houses which main concerns are on profit making in the delivery of houses for the public. The incurrence of high bills has to be taken seriously as this affect especially those with a lower income or those who live in low cost housing development.

The AQH looks into providing a design solution that suits the hot humid climate of Malaysia. Generally, the climate in Malaysia is characterized by high temperatures and humidity but with very low wind conditions. Malaysia is located in the tropical hot humid
climate that is characterized by uniform temperature, high humidity and copious rainfall. Malaysian Meteorological Department stated that the annual temperature variation is approximately 2° C and ranges from 21° to 32° Celsius. The humidity ranges from 70% to 100% (at an average of 80%) while the annual rainfall is high at approximately 2,500mm (100 inches). Hence, buildings in this region need to be equipped with suitable architectural solutions, i.e. building designs that take into considerations the external as well as internal environments for optimum comfort of the inhabitants.

The considerations of external and internal environments are important towards achieving optimal positioning for the building. Building orientation has a direct bearing on the heat gain and penetration of sunlight into the houses that will in turn cause discomfort for the inhabitants. The orientation of buildings is a compromise to achieve the most favourable sun shading and allowance for cross ventilation for buildings. Basically, rectangular shape is recommended for buildings in this region with the shorter sides directed towards the East and West. This step will minimize building envelope’s exposure to the east and west sides where sun radiation has the most impacts. The fenestrations should be located on the longer facades of the buildings (North and South) and the application of sun shading devices are encouraged. Apart from maximizing shading effect, orientation of building may be an attempt to catch prevailing breezes. Hyde (2000) propagated that the effect of air movement in buildings will contribute towards the provision of sufficient quality and quantity of air for activities, and personal cooling for the inhabitants. Commonly the terraced or linked houses in Malaysia are mainly designed as naturally ventilated buildings. Therefore the design of the houses should be supporting the natural ventilation processes for natural cooling and ventilation comfort of the inhabitants.

The existing designs of LCTH fulfil the Uniform Building by Law (UBBL 1984) requirements in terms of provision of natural ventilation, i.e. fenestration area should be 10% of the size of a given room (Hui, 1998). Unfortunately, the air speed in Malaysia is very low and that resulted to poor indoor ventilation. Ninety-nine percent (99%) of the time, the speed inside the house is under the rate required and eighty-six percent (86%) of the time, the speed is below 0.25 m/s (Hui, 1998). This happens due to poor design solutions in inducing the wind to be utilised as passive means of ventilation. A similar study conducted also found that in low cost walk-up flats as well as two storey low cost terrace houses, the reading of the airflow meter shows that the air velocity is below 0.3 m/s. The research found that ninety-five percent (95%) of the inhabitants used active ventilation especially fans in their living and bedrooms in order to create air movement for comfort cooling, and seventy-three percent (73%) of them use active ventilation for 24 hours. This is in line with findings by Abdul Malik (2004) that suggests the possibility of achieving thermal comfort conditions with assistance of airflow. In another study, Abdul Razak (2003) proposed that the ideal velocity to achieve inside the houses is 1.0 m/s or minimum of velocities between 0.25-1.0 m/s. Hence, the previous discussions showed that proper ventilation strategies and solutions are fundamental to improve the current thermal conditions of the LCTH.

To achieve total thermal comfort conditions at
naturally ventilated buildings is rather difficult. The average yearly data for Malaysia suggests that conditions are outside the thermal comfort zones recommended by many researchers. Webb (1959) and (1960) suggests that thermal conditions in the hot humid tropics can be achieved if temperature is up to 28.9°C; the humidity is 70% with an ideal velocity of 0.2m/s. A study in a thermal chamber on Malaysian by Abdul Malik (1993) also suggests that the comfort temperature acceptable for thermal comfort is between 25.5°C to 28°C. Even though the temperature conditions are similar to the comfort temperatures suggested earlier by Webb (1959 and 1960), Abdul Malik (1993) did not include the wind effect to his comfort studies. Based on the suggestions forwarded by the mentioned research works, investigations are conducted to gather the parameters that effect thermal comfort conditions in terrace houses.

Table 1 shows the field data gathered by a number of researchers on the current model of terrace houses. The data collected at different

<table>
<thead>
<tr>
<th>Researcher</th>
<th>Air Temperature°C</th>
<th>(%) Relative Humidity</th>
<th>Air Velocity (m/s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harimi 2006</td>
<td>Outdoor 22.5-36.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indoor 26.3-31.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abdul Malik 1999</td>
<td>Indoor 26-32</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Azni et. al. 2004 and Sri Wahyuni 2003</td>
<td>Indoor 27-31.5</td>
<td></td>
<td>0-0.14</td>
</tr>
<tr>
<td>Noor Hanita</td>
<td>Indoor 27-30</td>
<td>72-82</td>
<td></td>
</tr>
<tr>
<td>Overall</td>
<td>Lowest reading 26.3</td>
<td>Lowest reading 72</td>
<td>Lowest reading 0</td>
</tr>
<tr>
<td></td>
<td>Highest reading 32</td>
<td>Highest reading 82</td>
<td>Highest reading 0.14</td>
</tr>
</tbody>
</table>

Table 1: Field Data Collected by Researchers on Terrace Houses, Source: Noor Hanita (2007).
of openings only at the front and rear facades have resulted to inadequate lighting levels for visual comfort in carrying out daily activities inside the houses.

The AQH intends to look into providing the best layout that responds to the given climatic conditions of the hot humid climate of Malaysia. The secondary data gained from other researchers become the background of the proposed AQH design. It is hoped that this attempt will help in enhancing the thermal comfort conditions, reducing the energy costs, assisting possibilities for daylighting and encouraging desired air flow through suitable ventilation. This can be achieved through optimum architectural designs and suitable provisions to address the climatic factors.

**The Social Considerations for AQH**

In the context of the Habitat Agenda, Malaysia is committed to building social and physical infrastructure such as housing and social facilities (Ong, 2001). On this note the housing development is focused towards providing houses that promotes the social agenda of a healthy community. Interactions between neighbours should be promoted through the planning and layout of housing. The design of common terrace or link housing units in Malaysia should support and enhance interactions between the residents. By sharing common spaces arranged linearly, possibilities of interactions are increased, i.e. arrangement of entrance and living areas at the frontage of houses. However, in actual living conditions the interactions are limited by the inclusion of the car porch in front of the living areas. This hinders the possibilities of effective social interactions between the residents and the passers-by.

Mohd Tajuddin and Ghofar (2003) promoted and stressed on the importance of walking culture in a housing community to enhance interactions between residents. Introducing walking routes and providing public amenities in a housing development should be a vital contributor in achieving the essential interactions among residents in a given neighbourhood. The interactions between the residents and the community can be enhanced by having longer façade for each housing units and re-positioning of the car porch in the AQH neighbourhood.

The family patterns and structure also have significant effect on the design and planning of the internal spaces in the housing units. The provision of housing in Malaysia has the requirement of a minimum of three bedroom units. This attempt was based on the social requirements of separations between parents and children, and among children of different genders. The specification imposed on housing units is deemed to be important to curb social problems that started in homes. A housing environment that is not supportive of the family activities and lifestyles will cause the inhabitants i.e. children to spend time outside the home Norhazlinah (1995) and Nurizan (2000). Apart from the number of bedrooms, the basic requirements are living, dining, kitchen and bathrooms of suitable sizes. A research by Zaiton (2000) discusses regulations of privacy by the residents of LCTH in relation to the layout and the activities at houses that have minimum standards at a built-up area of 500-600 sq. ft. (45-56 sq m). The mentioned researches revealed that the provisions of adequate and conducive spaces in the public housing are important to support and encourage healthy family interactions and activities. Based on
these findings the AQH design has included the provisions to cater for the family patterns and culture of the people through adequate number of rooms and suitable sizes to conduct the daily activities.

The designs of terrace or linked houses are generic for Malaysian families regardless of their religion or norms. The low cost housing is designed to accommodate the basic needs of a family and may not fulfill the needs of a specific religion. For example, the needs of gender segregation during social functions have not been the outlining criteria in the design of internal spaces of the public low cost housing. Even though traditionally this factor has been accommodated in the traditional house form of the Malay (Lim, 1987), for possible reasons due to considerations on cost and space constraints, some of the important religious and norm criteria are not met. This can be noted in the lack of priority given to meet the needs of privacy for Muslim ladies in the house in the presence of visitors. Open layout without partition walls allows for visual access from living area (public/male domain) to the kitchen area (female domain) where in this instance the women folks need to cover themselves according to the Islamic prescription. The design of fenestration at the houses may also affect the privacy requirements. The decisions for observing privacy needs may contrast the requirements of the climate where the privacy require for an enclosed space while the hot humid climate calls for generous openings to facilitate natural ventilation. The designers need to decide how to strike a balance between the two requirements.

The AQH needs to incorporate the recommendations to achieve better social conditions inside and between the housing units. Issues of adequate number and sizes of rooms should be met for the comfort, privacy and requirements of the people.

**Comparative Analysis of LCTH versus AQH**

The external and internal environment should support the climatic and socio-culture requirements to achieve the environmental friendly concepts. Hence, the AQH should adhere to requirements of climatic factors that include geographical locations, solar shading, orientation, natural cooling and ventilation, and socio-cultural factors that include neighbourhood quality, family patterns/structure, daily activities, religions and norms. Table 2 discusses the comparative analysis of the social and climatic factors between LCTH and the proposed AQH design. It also highlighted the modifications and incorporations of design strategies to improve the current design of LCTH.

**Performance of the AQH**

Both socio-cultural and climatic factors should be balanced in order to achieve successful design for the AQH. As suggested by Salmon (1999), a well-designed building in the hot humid climate should take advantage of the climate and designed to encourage interaction with the environment without compromising one’s privacy. Based on the discussions on the application of environmental friendly concepts the AQH design was planned. Figure 1 (a-b) shows the AQH with the passive strategies incorporated into the design.
Analysis of Climatic and Social Performances of Low Cost Terrace Housing (LCTH): Introducing the Affordable Quality Housing (AQH) Concept in Malaysia

<table>
<thead>
<tr>
<th>CLIMATIC</th>
<th>Low Cost Terrace Housing (LCTH)</th>
<th>Affordable Quality Housing (AQH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy Use</td>
<td>Rely heavily on fan cooling, electrical lighting and air-conditioning due to deep layout and narrow frontage layout planning for LCTH.</td>
<td>Minimize energy usage through passive design strategies that allow for cross ventilation through a wider frontage layout planning</td>
</tr>
<tr>
<td>Cross Ventilation and Daylighting</td>
<td>Minimal openings limited indoor and outdoor contact and allowance for natural ventilation and day lighting.</td>
<td>Wider frontage (9 meter) maximizes the potential for cross ventilation and natural daylighting to the AQH.</td>
</tr>
<tr>
<td>Sun-Shading</td>
<td>Minimal overhangs above opening (approximately 300-600mm) where the interior spaces are exposed to sun penetration.</td>
<td>The house orientation should take into consideration of the sun path. The layout of the houses is elongated on the east-west axis (up to 22° from the E-W axis) to minimise exposure to direct sunlight.</td>
</tr>
<tr>
<td>SOCIAL</td>
<td>Layout are not designed according to the inhabitant culture core. The number of rooms does not provide privacy and separation for family members. The existing houses have two (2) or three (3) bedrooms and one (1) bathroom. Sequence of spaces does not provide privacy to the family members especially during the presence of guests. Narrow frontage limit interaction to the outside due to the shorter perimeter facing the neighbours.</td>
<td>Consideration of social domain i.e. public, semi public and private in space planning. Adequate number of rooms to meet current guidelines and requirements. Provisions of three (3) bedrooms and two (2) bathrooms for AQH. Provisions of privacy through the articulation of the spaces where there is proper segregation between public, semi-public and private domains. Wider frontage allow for greater interaction. Spaces are designed for conducive utilization. At the same time the wider frontage can be the alternative car park for owner or visitor.</td>
</tr>
</tbody>
</table>

Table 2: Comparison of Social and Climatic Considerations in Low Cost Housing and Affordable Quality Housing (Source: Author).
Verifications of the Climatic Concepts of AQH through CFD Simulations

The effectiveness of the climatic strategies as part of the environmental friendly concept implemented on the AQH is yet to be tested. The theories adopted for the passive design strategies are based on the results of previous researchers and vernacular approaches in the vernacular design of the hot humid climate Noor Hanita (2002 and 2004b). Hence, the CFD simulation is the tool to compare the performance of the LCTH to the AQH. The LCTH and AQH are simulated in a three row layout with two wind directions at 0° and 45° angles. The simulation results are shown in both numerical analyses; where wind profiles are taken at 1.5m and 4.5m heights. The numerical results show the horizontal distribution of averaged internal air velocities and horizontal deviation with reference to the preferred air velocity (Table 3 and 4). Overall the numerical results indicate that the average internal air velocity is higher in the AQH with lower deviation percentage from the recommended 1m/s air velocities.

<table>
<thead>
<tr>
<th>Model</th>
<th>ROW</th>
<th>Range of Internal Air Velocity</th>
<th>% Deviation 1.0 m/s preferred Air Velocity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM</td>
<td>Row 1</td>
<td>0.14 to 0.19</td>
<td>-86 to –81</td>
</tr>
<tr>
<td></td>
<td>Row 2</td>
<td>0.05 to 0.17</td>
<td>-95 to –83</td>
</tr>
<tr>
<td></td>
<td>Row 3</td>
<td>0.01 to 0.13</td>
<td>-90 to –87</td>
</tr>
<tr>
<td>AQH</td>
<td>Row 1</td>
<td>0.39 to 0.50</td>
<td>-61 to –50</td>
</tr>
<tr>
<td></td>
<td>Row 2</td>
<td>0.14 to 0.21</td>
<td>-86 to –79</td>
</tr>
<tr>
<td></td>
<td>Row 3</td>
<td>0.41 to 0.53</td>
<td>-59 to –47</td>
</tr>
</tbody>
</table>

Table 3: Average Internal Air Velocity and the Percentage of Deviation for EM and PM (0° Wind Direction) (Source: Author).

LCTH indicate a low average internal air velocity at both wind directions. The results are similar to field test results with the range between 0.01 to 0.19 m/s at all rows at the 0° wind direction. However, at 45° wind direction, the average internal air velocities are higher at 0.06 to 0.27m/s. However, these figures are still weak and do not reached the 1m/s limit for thermal comfort. The deviation from 1m/s ranged
between 73-94%. The AQH shows higher figures at both 0° and 45° wind directions. The average internal air velocities at 0° are 0.39 to 0.50m/s with a percentage of deviation 50% to 61% from 1.0m/s. At 45°, the average internal air velocity for the AQH ranges between 0.03-0.70m/s with a deviation as low as 30% at row 3.

<table>
<thead>
<tr>
<th>Model</th>
<th>ROW</th>
<th>Range of Internal Air Velocity</th>
<th>% Deviation 1.0 m/s preferred Air Velocity (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EM</td>
<td>Row 1</td>
<td>0.07 to 0.14</td>
<td>-93 to -66</td>
</tr>
<tr>
<td></td>
<td>Row 2</td>
<td>0.04 to 0.27</td>
<td>-96 to -73</td>
</tr>
<tr>
<td></td>
<td>Row 3</td>
<td>0.06 to 0.16</td>
<td>-94 to -84</td>
</tr>
<tr>
<td>AQH</td>
<td>Row 1</td>
<td>0.18 to 0.44</td>
<td>-82 to -56</td>
</tr>
<tr>
<td></td>
<td>Row 2</td>
<td>0.03 to 0.19</td>
<td>-97 to -81</td>
</tr>
<tr>
<td></td>
<td>Row 3</td>
<td>0.23 to 0.70</td>
<td>-77 to -30</td>
</tr>
</tbody>
</table>

Table 4: Averaged Internal Air Velocity and the Percentage of Deviation for EM and PM(45° Wind Direction) (Source: Author).

Overall, there are better performances of airflow in the AQH design that indicates an improvement to climatic design performances of the LCTH. However this preliminary attempt is still in the research and testing process. Modifications maybe required in altering the designs that were proposed solely based on literature review. Further research is planned to refine the design of the AQH to achieve the targeted indoor environmental conditions.

**Conclusions**

The foregoing discussions suggested that the application of the climatic and socio-cultural considerations in housing planning and spatial designs supports the environmental friendly concepts. The design of AQH based on these concepts shall indeed contribute towards cost and energy savings in the long run as much as it contributes to the household comfort and social well being of the people. The proposed new approaches towards Affordable Quality Housing suggested some measures to address some prevailing problems of the existing housing, in particular LCTH. The AQH could be the solution to enhance the thermal comfort conditions, reduce energy costs, and encourage the use of daylighting and natural ventilation. The CFD simulations indicate positive results that can be that basis of further improvement on the AQH design. The provisions of adequate and conducive spaces at the AQH would also support and encourage healthy family interactions and activities. It is hoped that this proposal will mark a beginning to new varieties of designs in catering for the needs of social and climatic issues in housing design. It is important to note that these considerations are indispensable part of realising affordable quality housing in Malaysia.

“It is a vision that every single house of future Malaysian will be able to live in a comfortable housing and environment.”

**Acknowledgement**

The CFD simulation data (Table 3 and 4) is taken from the research done by Nurulashikin Md Taib, supervised by Abdul Razak Sapian and the author.

**References**

Analysis of Climatic and Social Performances of Low Cost Terrace Housing (LCTH): Introducing the Affordable Quality Housing (AQH) Concept in Malaysia

Universiti Sains, Pulau Pinang, Malaysia.


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Abstract
Sustainable development is one of the great challenges of 21st century for various disciplines including city and regional planning. Studies showed that city plans fail to promote sustainable development, design professionals have limited understanding of sustainability issues, and curriculums in design education schools do not put the necessary emphasis on sustainability concepts. However, no study has tested whether planning students’ have a different perception and understanding of sustainable development than other students. Thus, this study aims to understand attitudes of planning students towards sustainable development and compare planning students’ and other students’ knowledge about sustainable development. Data were collected by means of questionnaires, which asked questions about perception and attitudes towards sustainable development, source of information to improve sustainability knowledge, and level of knowledge for general, legal and architectural aspects of sustainability. One hundred ten volunteers (79 planning students, 31 general students) participated in the study. Results showed that students thought that very little sustainable practice appears to be undertaken. Although, planning students thought that the sensitivity to sustainability determines an important percentage of their final grades in a studio project, they reported not using many of the sustainability principles in studios. In addition, planning students reported that they improve their understanding of sustainable development via classes, scientific articles and books. On the other hand, other students reported that they rely on visual and written media to improve their understanding of sustainable development. Despite those differences in sources of information, results showed that, planning students’ level of knowledge (for general, legal and architectural aspects of sustainability) was not different than that of other students. In conclusion, although this study has some methodological drawbacks it is important in highlighting the necessity for a better look to planning education.

Keywords:
Sustainability; sustainable development; planning education; education; sustainable design.

Introduction
Sustainable development is one of the great challenges of 21st century for various disciplines including architecture, landscape planning, and city and regional planning. When it was recognized that the values, attitudes, and tools that led the production of present built environment have been causing environmental depletion over the years (Salama, 2002), planners
have acknowledged the need for better understanding of sustainable development.

In 1987, the World Commission on Environment and Development (WCED) popularized the concept of sustainable development, and defined the concept as ‘the development that meets the needs of present generation without compromising the ability of future generations to meet their own needs’ (WCED, 1987). Over the past two decades, the concept, with emphasis on physical environment, has been addressed by researchers, educators and practitioners, who are specialized in city and regional planning. Yet, the fact about the failure of neighborhoods and cities in adopting sustainable development is undeniable.

It is theoretically possible for city plans to foster sustainable development. However, in practice, city plans fail to promote sustainable development (Berke & Conroy, 2002; Manta & Berke, 1998). Berke & Conroy (2002) compared two groups of 30 plans for applying sustainability principles. The plans that explicitly used the concept of sustainable development for plan preparation were assigned to one group and the plans that did not use this concept for plan preparation were assigned to another group. Six principles were defined as concepts of sustainable development; harmony with nature, livable built environments, place based economy, equity, polluters pay and responsible regionalism. Results showed that explicit inclusion of sustainability concept for plan preparation did not effect how extensively sustainability principles are used in actual plans.

Franz (1998) summarized the research on sustainable development to list a number of factors that may explain the lack of sustainable development practice:

“In terms of architectural practice, Thomas et al. (1996) identify high cost, poor consumer demand, lack of community interest and government regulations, low interest and restricted knowledge as the main barriers to sustainable practice. Other writers highlight additional reasons including: the lack of integration of sustainable practices in the design process as a whole (Branch, 1993); and the lack of weight and rigor afforded to environmental factors, the lack of records of cases of sustainable practice, the lack of timely and relevant information, tools that have not been developed with design constraints in mind, insensitive designers, and lack of knowledge with sustainability issues as basic tenets (McDonald & Brown, 1995).” (Franz, 1998:.453- 454).

Franz (1998) also conducted an interview with practicing architects and designers to identify why sustainable design practices are not common. Lack of incentives in the design studio, absence of a restricted public policy, lack of knowledge on the part of the designer, poor availability of information were some of the items that were pointed by the participants of that study. Similarly, Cotgrave and Alkhaddar (2006) argued that the nature and structure of higher education, academic indifference and approach to teaching and assessment, the curriculum, student backgrounds, and lack of communication between industry and academia are the main barriers preventing inclusion of environmental content in the curriculum. According to Hayles and Holdsworth (2008) educator’s knowledge and time, students’ interest, financial resources and crowded curriculum are the main barriers.

Acknowledging the importance of all possible barriers to sustainable practice, this study focuses on the ‘lack of knowledge for sustainable development’, because we believe
people’s attitudes and behaviors towards sustainability could be altered and some of the barriers of sustainable development could be removed with better knowledge. For example, with better knowledge planners may influence decision makers to develop better government regulations which requires integration of sustainability principles into the whole design process.

One study investigated the professional architects’ and designers’ attitudes toward sustainability and found that the professionals’ have limited understanding of sustainability issues (Franz, 1998). The lack of knowledge among design professionals could be attributable to the insufficiency of design education in encouraging students to engage with sustainable development issues. Considering the fact that today’s design graduates are tomorrow’s design professionals, it is necessary for design educators to ensure that design students are aware of sustainability issues before graduation. Academic community have been addressing sustainability issues in research for a long time, but do they integrate the notion of sustainability in teaching practice?

Salama (2002) investigated whether architectural programs are structured with a focus to meet the objectives of sustainable development. He analyzed the curriculum of eight architectural schools in Egypt, Ethiopia, Nigeria, Syria, and Turkey, in order to understand the status of courses related to the components of sustainability in African and Middle Eastern architectural schools. He found that;

‘the words sustainability, sustainable development, green design, ecological design, sustainable design practices did not appear at all in any of the course titles or course descriptions of any school’ (Salama, 2002:55).

This finding remains the same when fourteen schools of architecture in eight Arab countries; including Bahrain, Egypt, Kingdom of Saudi Arabia, Kuwait, Lebanon, Oman, Syria, and United Arab Emirates, were investigated (Salama, 2005, 2007). Iball (2003) conducted a similar study on Schools of Architecture, Landscape Architecture, Planning and Surveying in United Kingdom and reported similar findings. All these findings pointed that curriculums in some architecture schools of Middle East, Africa and Europe do not put the necessary emphasis on sustainability concepts. Given the unsustainable situation of the current built environments throughout the world, there is no reason to think that the findings would be different in architectural, landscape planning, and city and regional planning schools of other countries in Middle East, Africa, Europe, Northern America or Asia.

In order to empower city and regional planners to create healthy and pleasant life for the citizens and for the ecological cycle, it is necessary to increase their level of environmental sustainability literacy during education, before they enter the profession. A number of studies have sought to explore a new way of teaching sustainability in various design programs (Hayles & Holdsworth, 2008; Douvlou, 2006; Salama, 2008; Cotgrave & Alkhaddar, 2006; Jucker 2002 ).

In brief, although studies provide empirical evidence that city plans fail to promote sustainable development (Berke & Conroy, 2002; Manta & Berke, 1998), design professionals have limited understanding of sustainability issues (Franz, 1998), curriculums in design
education schools do not put enough emphasis on sustainability concepts (Salama, 2002, 2005, 2007; Iball, 2003), there is no empirical study testing the level of planning students knowledge for sustainable development. Thus, this study aims compare planning students' and other students' level of knowledge for sustainable development and attitudes towards sustainability.

Method

Description of the Questionnaire

A questionnaire was developed (1) to investigate planning students' perception and attitudes towards sustainable development and (2) to compare planning students' and other students' source of information to improve sustainability knowledge, perception of sustainable development practice, level of knowledge for general, legal and architectural aspects of sustainable development.

For perception and attitudes towards sustainable development two questions were asked. First question asked students to rate how much sustainable development sensitivity influences final studio grades using a hundred-point scale. Second question focused on the sustainability principles used in design studio projects. Students were presented twelve items, then they were asked to pick the items they often use in their studio projects. Ten of these items were selected from the concepts discussed in the sustainability literature; (1) equity, (2) air quality, (3) solar gain, (4) orientation of building, (5) energy efficiency, (6) accessibility, (7) waste management, (8) quality of life, (9) resource preservation, and (10) harmony with nature, and two fake items were added to the list; (11) technology and (12) amount of commercial activity, to challenge and deceive students' answers.

For the source of knowledge about sustainability, students were presented six sources: (1) classes, (2) visual media, (3) written press media (newspapers), (4) scientific articles, and (5) scientific books, (6) others (students were allowed to specify a different source than the ones given). Then they were asked to pick the sources they use to improve their understanding of sustainability.

For perception of sustainable development practice, students were asked to rate how much they think the current planning practice puts emphasis on sustainable development using a hundred point scale.

For the level of general knowledge about sustainability, students were asked to give true or false answers to eight statements related to existing pre-judgments. Half of these statements were true and the other half was wrong.

For the level of knowledge for legal aspects about sustainability, students were asked whether they have any information about a national environmental law (2872 Environmental Law).

For the level of knowledge for architectural aspects about sustainability, students were presented ten items and they were asked to pick the ones they think determines an architectural project’s success on sustainability. Among ten items, half of them were selected from the related literature; (1) pollution rate, (2) energy use, (3) material use, (4) reuse of water, and (5) passive design, and the other half were fake ones; (1) view, (2) value, (3) size, (4)
modern style, and (5) technology, to challenge and deceive students’ answers.

**Participants**

One hundred ten volunteers participated in the study. Seventy nine of them (male = 41%, female = 59%; ages: mean = 21.85, SD = 1.96, minimum = 18, maximum = 28 years) were undergraduate planning students in the Department of City & Regional Planning at Dokuz Eylul University. Students were equally distributed among the classes (first, second, third and fourth year classes). Thirty one students (male = 58%, female = 42%; ages mean = 21.32, SD = 2.04, minimum = 17, maximum = 25 years) were studying in a department other than city and regional planning and also other design programs such as architecture and landscape planning. About 85% of those students were pursing a university degree (first year = 32%, second year = 10%, third year = 19%, forth year = 23%) in departments such as medicine and engineering. Only 13% of them were recent college graduates and a few of them (3%) were high school graduates.

City and Regional Planning students were informed about the study in the university cafeteria. Students from other departments were recruited from university dormitories and cafeterias. The volunteers who were not studying in the university but encountered in these areas were interviewed as well. Participants completed the survey in 5-7 minutes.

**Results**

**Planning Students’ Perception and Attitudes towards Sustainable Development**

Results showed that sustainable development was considered by planning students to be an important factor effecting their studio grades. However, the principles of sustainable development were reported to be underused in design studios.

The planning students’ ratings about the effect of sustainability concern on studio grades showed that, sustainability principles were not perceived as the most important determinant of studio grades, but they had a sizable effect, which can not be ignored. On average, students’ ratings varied between 30% to 40% (Table 1).

<table>
<thead>
<tr>
<th></th>
<th>Mean %</th>
<th>SD %</th>
<th>Min-Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st yr. n=20</td>
<td>38.4</td>
<td>26.3</td>
<td>4-100</td>
</tr>
<tr>
<td>2nd yr. n=20</td>
<td>42.5</td>
<td>30.8</td>
<td>5-100</td>
</tr>
<tr>
<td>3rd yr. n=20</td>
<td>29.2</td>
<td>24.6</td>
<td>5-80</td>
</tr>
<tr>
<td>4th yr. n=20</td>
<td>33.5</td>
<td>25.1</td>
<td>4-70</td>
</tr>
<tr>
<td>All Students n=79</td>
<td>36.0</td>
<td>26.8</td>
<td>0-100</td>
</tr>
</tbody>
</table>

Table 1: The Mean Percentage of the Effect of Sustainability Principles on Studio Grades (Source: Authors).

Recall, planning students were asked about which of the ten sustainability items, and two fake items, they use in studio projects. Results showed that, most students cared to think about harmony with nature (77%), and resource preservation (68%) in design studios. However, less than half of the students reported the use of equity (28%), air quality (32%), solar gain (33%), orientation of building (40%), and energy efficiency (40%) in design studios. Interestingly, although technology was included in the list as a fake item (the literature review did not provide information about how technology can be integrated in sustainable development) about
half of the participants (46%) reported that they use technology during studio projects to foster sustainable development.

<table>
<thead>
<tr>
<th>Sustainability Principles</th>
<th>% Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of Commercial Activity (fake Item)</td>
<td>15.2</td>
</tr>
<tr>
<td>Equity</td>
<td>27.8</td>
</tr>
<tr>
<td>Air Quality</td>
<td>31</td>
</tr>
<tr>
<td>Solar Gain</td>
<td>32.9</td>
</tr>
<tr>
<td>Orientation of Building</td>
<td>40.5</td>
</tr>
<tr>
<td>Energy Efficiency</td>
<td>40.5</td>
</tr>
<tr>
<td>Technology (fake item)</td>
<td>45.6</td>
</tr>
<tr>
<td>Accessibility</td>
<td>53.2</td>
</tr>
<tr>
<td>Waste Management</td>
<td>57.0</td>
</tr>
<tr>
<td>Quality of Life</td>
<td>58.2</td>
</tr>
<tr>
<td>Resource Preservation</td>
<td>68.4</td>
</tr>
<tr>
<td>Harmony with Nature</td>
<td>77.2</td>
</tr>
</tbody>
</table>

Table 2: Percentage of participants reporting the use of each item (Source: Authors).

Comparison of Planning Students’ and Other Students’ Sources of Information

Results showed that planning students and other students differed in the sources they used to improve their understanding of sustainable development (Figure 1). For planning students, the most preferred sources of information were classes (76%), scientific articles (35%) and scientific books (35%). On the other hand, for other students visual (42%) and written (35%) media were the most preferred sources of information. The difference between planning students’ and other students’ sources of information achieved statistical significance for classes ($\chi^2 = 32.9$, df = 1, $p < 0.01$), scientific books ($\chi^2 = 11.9$, df = 1, $p < 0.01$), scientific articles ($\chi^2 = 5.5$, df = 1, $p < 0.05$), and visual media ($\chi^2 = 6.2$, df = 1, $p < 0.05$). When participants were asked to indicate other sources they used, about fifteen percent of planning students and other students reported using internet to improve their understanding of sustainable development.

![Figure 1: The Use of Various Sources of Information by Planning Students and Other Students (Source: Authors).](image-url)

Given the high percentage of planning students who reported to gain sustainable development information from classes (76%), we wonder if the curriculum of the investigated planning program is unique and puts more emphasis onto sustainable development issues than as suggested by Salama (2002, 2005, 2007) and Iball (2003). Following those studies the proportion of courses in which the words ‘sustainability’, ‘sustainable development’, ‘green design’, ‘ecological design’, ‘sustainable design practices’ appears were investigated. Results showed that the undergraduate program of Dokuz Eylul University City and Regional Planning Program is not quite different than the schools investigated by Salama and Iball (Table...
3. Considering course titles, the program did not put much emphasis on sustainability related courses. A student has to take 71 courses (20 + 16 + 16 + 12 + 7) before graduation and only one compulsory course and two elective courses were devoted to sustainability issues. These findings may indicate that although there is not enough courses solely devoted to sustainable development issues, the concept is probably integrated and discussed in other courses in the curriculum.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Total Course Number, Total Credits</th>
<th>Course Titles Including Sustainability Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st year compulsory courses</td>
<td>20 courses, 62 credits</td>
<td></td>
</tr>
<tr>
<td>2nd year compulsory courses</td>
<td>16 courses, 56 credits</td>
<td>City Ecology (2 credits)</td>
</tr>
<tr>
<td>3rd year compulsory courses</td>
<td>16 courses, 56 credits</td>
<td></td>
</tr>
<tr>
<td>4th year compulsory courses</td>
<td>12 courses, 48 credits</td>
<td></td>
</tr>
<tr>
<td>3rd and 4th year elective courses</td>
<td>39 courses, 78 credits*</td>
<td>Environmental Impact Analysis (2 credits) Environmental Consciousness (2 credits)</td>
</tr>
</tbody>
</table>

* A student has to choose 7 courses (14 credits) among the available elective courses.

Table 3: Distribution of courses related to sustainability by years. (Source: Authors).

**Comparison of Planning Students’ and Other Students’ Level of General Knowledge**

When students were asked to give true or false answers to eight statements related to existing pre-judgments, planning students and other students were about equally successful. Planning students’ average correct answers (mean = 5.47, SD = 1.29) were not statistically different than that of other students’ (mean = 4.97, SD = 2.18) (t = 1.49, df = 108, p>0.05).

Figure 2 shows the percentage of participants giving correct answer to each statement. Note, half of the statements were true and the other half were wrong. True statements were indicated with (t), and wrong statements were indicated with (w) in the figure. For five statements, higher percentage of planning students gave correct answers compared to other students. However, for the remaining three statements, responses of other students outperformed the responses of planning students.

**Comparison of Planning Students’ and Other Students’ Level of Knowledge for Legal Aspects**

Students were asked whether they have any information about a national environmental law (2872 Environmental Law). Results showed that both groups of students were not knowledgeable about the legal aspects. 90% of the general students and 72% of the planning students’ ratings about the effect of sustainability sensitivity on current planning practice showed that, both groups of students thought that current planning practice does not put much emphasis on the issue. On average, planning students thought that current planning practice put 19% emphasis on sustainable development, while other students thought that they put about 29% emphasis on the issue.
students reported that they do not have any information about the law.

**Comparison of Planning Students’ and Other Students’ Level of Knowledge for Architectural Aspects**

Students were presented ten items and were asked to pick the ones they think determines an architectural project’s success on sustainability. Literature suggests that a sustainable architectural project should concern for five items: (1) pollution rate, (2) energy use, (3) material use, (4) reuse of water, and (5) passive design to achieve sustainable development. Five fake items; (1) view, (2) value, (3) size, (4) modern style, and (5) technology, were added to challenge and deceive students’ answers. Planning students’ average correct answers (mean = 6.35, SD = 1.62) were not statistically different than that of general students’ (mean = 5.71, SD = 2.13) (t = 1.71, df = 108, p>0.05).

Figure 3 shows that, for six items (pollution rate, energy use, reuse of water, view, value, and technology) higher percentage of planning students correctly judge if the item is related to architectural project’s success on sustainability or not. However, for the other three items (material use, passive design and size) other students outperformed planning students. Interestingly, although passive design is an
important concept that should be considered to achieve sustainable architecture, only 13% of planning students and 19% of other students correctly picked passive design as a determinant of success in achieving sustainable architecture.

**Conclusions**

This study investigated planning students' perception and attitudes towards sustainable development and compared planning students' and other students' sources of information, perception of current planning practice's sensitivity to sustainable development, and level of knowledge for general, legal and architectural aspects of sustainable development.

Results showed that, the planning students thought that the sensitivity to sustainability determines an important percentage of their final grades in a studio project. Yet, they reported not using many of the sustainability principles in studios. Similarly both planning students and other students acknowledged the fact that very little sustainable practice appears to be undertaken. As expected, sources of information to improve sustainability literacy differed for planning students and other students. Planning students generally learn sustainability from classes, scientific books and articles, and general students learn it from visual media and written press. One interesting result is that, although planning students claimed that the topic is discussed in classes, and they often read scientific articles and books about sustainability, their level of knowledge, measured by a questioner with true or false questions and open ended questions, was not different than that of other students. Both groups of students accepted that they are not informed about the specific national environmental law. Moreover, other students gave as much correct answer as

![Figure 3: The percentage of participants correctly judging if the item is related to architectural sustainability or not (Source: Authors).](image-url)
did planning students for the questions measuring the knowledge for general and architectural aspects of sustainable development.

As other empirical studies, this study has some methodological limitations about the questionnaire and the sample. Yet, it provides insights into the understanding of current planning students’ level of knowledge for sustainable development and bring forth some interesting future research areas. There were four limitations related to the experimental set up and the characteristics of the subject group. First, the participants’ level of knowledge for sustainability was measured with a set of questions. The questioner was developed by the authors of this study, since the literature did not provide such an example. However, the validity of the questioner to measure sustainability knowledge was not tested. Subsequent work may test the validity of this questioner or find better and broader measures of sustainability knowledge. For example future studies may focus on students’ studio projects and evaluate the extent they focus on sustainable development. Second, this study was conducted in one planning school. However, the findings may be specific to the investigated planning school. A useful extension of this study may conduct similar investigations in other planning schools and analyze the correlations between sustainability emphasis in curriculum and students’ knowledge for sustainable development. Third, the target population of this study was planning students in Western Turkey. Whether the results of the present study will apply to other design schools; such as architecture and landscape planning, and to other cultures remains to be seen. More work needs to be done to test the generalization of the results to other cultures and other professions. Fourth, this study was focused on students. Future studies may focus on professionals.

As a concluding remark, the present study calls for a better look to planning education. Planning students’ lack of knowledge for sustainable development may indicate that either the planning curriculum does not put enough emphasis to sustainable development or academics teaching planning do not integrate the concept in various courses and address this issue as much as it could be. Although discussing how planning education should be restructured to contribute to a more sustainable future is beyond the scope of this study, we believe it is, nonetheless, necessary to provide suggestions on how planning education could be changed to foster the creation of sustainable environments. Integrating a multidisciplinary approach; providing a broad base of knowledge considering the economic, environmental, social and cultural aspects of sustainability; encouraging students to understand the interrelationship between people and physical environment; increasing the number of courses that are devoted to understanding of sustainability issues; supporting and encouraging academic community to have a broader sustainability perspective and to become more involved in teaching about sustainable development; achieving accreditation between planning programs to enable future planners to create livable and sustainable environments are discussed by previous studies as ways of improving education towards a better understanding of sustainable development (Franz, 1998; Al-Hassan & Dudek, 2008; Salama, 2002; Salingaros & Masden, 2008; Haynes & Holdsworth, 2008; Jucker, 2002). Without a doubt, for sustainable development planners have to be talented and this talent has to come from knowledge.
Planning Education and Sustainable Development: Students’ Perception and Knowledge- A Case from Turkey

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References


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A CONCEPTUAL UNDERSTANDING FOR TEACHING THE HISTORY OF ISLAMIC ARCHITECTURE: AN IRANIAN (PERSIAN) PERSPECTIVE

Rafooneh Mokhtarshahi Sani

Abstract
It has been a relatively long time since the inception of industrialization, as a result of which the architecture of the Muslim cultures has been faced with serious challenges. The rapid speed of modernization did not give the traditional architecture of these regions a chance to adapt to the changes. During recent years, however, great efforts have been made in dedication to the revival of cultural values, especially in respect of the education of young architects in these countries. It appears that the main place for responding to the quest for nourishing from regional values is in universities and mainly in the history/Islamic architecture lectures.

The history lesson has often been discussed as being a particularly useful tool in respect of the issue of designing new buildings, which can meet the contemporary needs of today. In view of that, various methods and great efforts have been devoted to improving the teaching of the history of architecture. In the case of the teaching of Islamic architecture, focusing on the architectural background, such as the socio-cultural factors and investigating in regional values is a more or less appropriate way of linking the past with the present.

Islamic architecture, which covers a considerable part of the globe, has frequently been viewed as homogeneous architecture. On the other hand, there are some other scholars, who, by emphasizing the diversities of this architecture, have demonstrated some doubt even as to the use of the term Islamic architecture. Between these two extremes, in this paper it is argued that the subject of Islamic architecture should be seen and taught with respect to the existing various interpretations, as well as with consideration of the fact that all these diverse expressions only wish to express one thing: the Islamic view. A deep understanding of Islamic architecture in relation to regional values will enable students to think comparatively. As an example of such understanding of Islamic architecture, the Safavid architecture of Iran (16th-18th) has been analyzed. The focus of this analysis is to give an overview of the architectural background and the reasons for the creation of traditional architecture during this period. The paper aims to offer a wider view of the history of Islamic architecture; to see it as more than just the development of orders, forms, and materials.

Keywords:
History lesson; Islamic architecture; Safavid architecture; architectural education.

Introduction
Architecture in almost all developing countries, including Muslim cultures, has been undergoing a transformation and change in contemporary
time. The conversion from traditionalism to modernism has created various challenges in all economical, cultural, and social aspects of life as well as in the architectural expression in these countries. Most of the modern Muslim architects who are looking for an expression of regional and cultural values in their modern designs, mostly limit themselves to just repeating traditional forms and/or orders.

A major part of this challenge, however, comes from inappropriate education and can, accordingly, be solved by offering a more imaginative and appropriate education. The quest for returning to original values as well as identifying an acceptable and appropriate way of adapting to modern time, contemporary design highlights the importance of history and tradition. History is, in fact, an integral part of the identity of any contemporary culture. The history lesson and its influence on the formation of our contemporary architecture, however, has often been underestimated in the schools of architecture.

In the case of the architecture of Muslim cultures, several forms and symbols have been introduced as general Islamic architectural characteristics. For instance, the dome and minaret are strong symbols of Islamic architecture, as is the use of the integrated courtyard, the Ivan, or other decorations. It is true that these forms are symbols of the architecture of Muslim cultures, but perhaps the more important question which our students should be able to answer, is why these forms appeared, should these forms or symbols apply in the same way to contemporary architecture? If these traditional forms and symbols should change in respect of today’s demands, expectations or needs, according to which criteria should these changes take place? On the other hand, the creation and development of traditional Islamic architecture was based on a particular perspective and philosophy, of which today’s students and the architects of the future are almost ignorant.

The teaching of History appears to be the best, if not the only way in which students can be supported to reply to those questions. Students should be able to think about and interpret traditional Islamic architecture. Such a deep understanding will inspire students in their future professional life and in their designing abilities. Accordingly, in this paper various thoughts and ideas regarding the history of architecture and especially Islamic architecture have been reviewed. As an inductive analysis of the literature and writings on the subject, the study tends to explore the new ways of teaching Islamic architecture. Focusing on the architectural background, such as the social and cultural factors and raising questions in respect of the process of development in traditional architecture, have been argued as being the most suitable ways of teaching the history of Islamic architecture. As an example to testify to this, the Islamic architecture of Iran during the Safavid period has been analyzed. The Safavid architecture, particularly in that of the public buildings, has been evaluated in the study, which was based on four influential factors: ‘identity’, ‘political power’, ‘symbolism’, and ‘religious belief’. This evaluation aims to achieve a combination of research and practice, history and theory.

Review of Theoretical Discourse
According to Mohammed Arkoun (1997), Spiro
Kostof (1986), Haider Gulzar (1986) and John Habraken (2006) the best source of providing a correct understanding of traditional architecture and cultural issues to the architecture students, is the history lesson. In studying history, as Habraken (2006) states, students will learn what fundamental images and ambitions have guided us in the past and may guide us in future.

It is clear that studying the history of architecture is not limited to memorizing the dates, names and architects of famous buildings. In fact, the mission of the history lesson as well as other related courses in the study of architecture is to prepare students for the real designs and the practical world. One way of achieving this according to Robert Harrison (1996), is to define the subject of history as: ‘thinking comparatively’; ‘The past’ should not be seen to mean something over and done with, inert, static, and finished, he says. Later Harrison (1996) claims libraries as the main place for learning history should be interesting places too:

“I recently sat in on a student review in which a library represented the past, a video hall the present and a laboratory the future. The library was a tomb, as some libraries are, ‘where there was nothing new’. This was based on a misconception about libraries, as places where you go to check facts, which matches a student’s misapprehension about the stuff of history”.

To think comparatively and to bring the history lesson to life, as Spiro Kostof (1986) points out, architectural history courses must stress the social, cultural, and ecological factors that gave rise to specific architectural forms, rather than treating these forms as a purely plastic art. Haider Gulzar (1986) also makes a similar statement when he says, “Theory is interwoven with practice and belief with action. In education, contents and method are inseparable. The best pedagogy is rooted in the arena of life. An education that does not enhance the art of living is only training for routine tasks or fruitless sophistry. The studio would be extended to the city and the city brought into the classroom.”

David Dunster (1996) believes that emphasizing ‘Architecture Theory’ in the history lesson can be a good way to show the students how an idea is created, developed and then transformed into the architectural form. He categorizes the history of architecture teaching into two groups: the survey courses and the in-depth specialism. Dunster (1996) claims that these two types of courses establish, rather precisely, the limits of architectural history, which here models itself upon the parent – Art History, itself the progeny of the discipline that only evolved, in the form that we know it, during the 19th century- History. According to him, there is a possible third type of course- that which looks at current architecture, and this may well connect back into what he argues constitutes the threat to history proper – courses in interpretation, or, as they prefer to be called, Architectural Theory.

On the other hand, Adam Hardy (1996) emphasizes that: ‘understanding characteristic kinds of form, space, and color is an important focus of history teaching. As he states: “One kind of architectural history aims to show how to see, how to experience, different kinds of architecture; or, to put it another way, to understand their different kinds of order, their characteristic kinds of form, space and color. Such an approach aims, in looking at a
particular work of architecture, to know its parts and how they are arranged together, and to contemplate the whole.”

Later he makes it clear that perhaps this kind of history is ‘appropriate mainly to the art parts of architecture, to the monumental more than the vernacular’. Nevertheless, since this type of history teaching has come close to getting ‘under the skin’ of designers in the past, he believes it is likely to give students an understanding of and inspiration for design.

Iain Borden (1996:143) also believes that demonstrating the ‘process of creating buildings’ might be an appropriate way of teaching history. According to him, architectural history has reached a point where, in many ways, it can successfully account for how and why buildings are built in the first place, and why they take their particular form. Borden (1996:137) states: “We should not present architecture as an autonomous activity, which can be appreciated only by being fully-immersed in its ways or by watching respectively from afar, but as something capable of being inserted and understood in wider comprehension of cultural production. This can of course be done by showing the economic, social and political contexts of architecture... We therefore need not just to place architecture as an historical subject within various historical contexts, but also engage in the inter-disciplinary debates centered on different theorizations of the cultural.”

**Islamic Architecture and History Lesson**

Teaching Islamic architecture might be done by using any of those methods, which have been so far discussed. It can be taught as Adam Hardy (1996:187) states by ‘understanding characteristic kinds of form, space, and color’ and/or by stressing the social, cultural, and ecological factors as Spiro Kostof (1986) believes and/or by demonstrating the ‘process of creating buildings’ according to Iain Borden (1996:143). However, notwithstanding taking all these useful and practical factors and points into consideration, there is a further step, which requires to be taken too, due to the nature of Islam and Islamic architecture.

The term ‘Islamic architecture’, which applies to the traditional architecture of Muslim countries, is a diverse architecture. The interpretation of Islam itself also differs amongst the various Muslim cultures. Religious beliefs generally have different meanings for various cultures. This reality in Islam is even more apparent because it is a social religion, which offers guidance and advice for everyday life. Consequently, in each region, the interpretation of Islam has been influenced by other factors such as culture, socio-economical factors, political powers, other religions, etc. For instance, it is well known that Islam is opposed to nationalism. In Iran, nevertheless, Islam or rather the Iranian interpretation of Islam, known as Shiism, has acted as a foundation for Iranian nationalism.

As the expression of Islam varies in different societies, it can also change within the same society. For example, Islam does not have the same manifestation for contemporary Turkish or Egyptian people as it did in previous centuries. Therefore, in referring to Islamic cultures and their architecture, it is better to consider the interpretations and expressions of the religion and the various cultures rather than just considering the Islamic religion as a purist singular religion.
Since these expressions are different from country to country and from region to region, we are dealing with complex manifestations in architecture and culture. On the other hand, this multiplicity of manifestations does not deny the real fact of sharing the characteristics of being Muslim. In other words, it is better to look at Islamic cultures as a large puzzle, in which although the pieces are different from each other, together they make a single image.

In addition, understanding diverse Islamic cultures and investigating traditional architecture is better done through the use of tools and/or ways, which are related to this tradition and culture. As a Muslim scholar and architect Ismail Serageldin (1990:45) by explaining the differences between Islamic and non-Islamic cultures, observed that we may not have a correct understanding of Islamic architecture and culture unless we use an insider tool/method: “...I can describe the reality we live in this room by taking a yardstick, which is a very useful tool, and by measuring the size, the length, the height and describing all the curves in this room. It is a description of the reality, but does not include the temperature or the humidity of the room. Neither of these would be captured by a yardstick. It does not mean that the yardstick is not accurate but that we need other tools...”

Iranian sociologist Ali Shariati (1981) also believes that using original insider sources are as important as using well-known outsiders’ ideas. The use of such sources will provide a correct understanding of the original culture and Islamic architecture. As an example of such Islamic architecture understanding and teaching, the Safavid architecture of Iran has been analyzed in the following section using mainly original sources and by investigating the influential factors in the formation of architecture during this period.

**Iranian Islamic Architecture during the Safavid Period**

According to Iranian history, it appears that since the arrival of Islam, although the Iranian population is a composition of different ethnic groups, during the Safavid period (16th-18th), an Iranian dynasty could have control over almost all the Iranian territory as it stands today. In fact, the Safavid period is significantly important in defining Iranian religious belief, language, and culture. Safavid architecture also has been one of the most important types of Islamic architecture in Iran.

Safavid architecture is not only important in Iranian architectural history, but it is also one of the most distinguished types of Islamic architecture. John D. Hoag (1977, In Alsace? 1997: 447) describes the Safavids in Iran, in the Ottoman Empire, and in Moghul India, as the three great innovators in Islamic architectural development. Hoag claims that these three empires differed from all previous Islamic regimes because: “...each had developed a certain self-consciousness, a kind of national self-awareness similar to the contemporary evolution which from the culturally rather homogenous lands of the Middle Ages created the varied European nations we know today. Each of the three adapted the architectural forms, ornament, and materials locally available and made of them a unique and wholly individual style while devising highly original solutions for the age-old problems of the mosque, the residential..."
Safavid architecture and its famous historical buildings although are quite well known, has been rarely discussed in respect of why such forms and order have been used in this architecture (Fig 1, 2, 3, 4). In other words, the architectural background, as well as the influence of socio-cultural factors has often been somewhat neglected in studying and teaching this traditional architecture.

One of the major differences between this Iranian dynasty and that of the other Muslim rulers is in their ‘religious belief’ and their interpretation of Islam. Historically, Iran has been known as one of the most important parts of Islamic world. The interpretation of Islam, however, in Iran has differed from other Muslim countries since the Safavid period. During this period, Twelver Shiism was chosen as the official religion of Iran. This transformation from the Sunni to the Shiite form of the Muslim religion has had long lasting effects on Iranian society, culture, and architecture. As in modern times, many religious beliefs and traditions are comparable with this period.

There is no evidence, however, to show that Shiism was the original religion of the Safavid kings, although this form was chosen and introduced by them as the state religion of Iran. In fact, the Safavid dynasty had its origins in a long established Sufi order, which had flourished in Azerbaijan since the early 14th century. Clifford E. Bosworth (1996:279) describes the origin of the Safavids as:
“...The family [Safavids] headed a Sufi order, the Safawiyya, based on Ardebil in Azerbayjan, originally orthodox Sunni in complexion, but in the mid-fifteenth century the leader of the order, Shaykh Junayd, embarked on a campaign for the material power in addition to spiritual authority. In the atmosphere of heterodoxy and Shi’i sympathies among the Turkmen of Anatolia and Azerbaijan, the Safawiyya gradually became Shi’i in emphasis...”

There are some testimonies, even, which show Shah Ismail I, the founder of the Safavid dynasty was not a strict Muslim. As A.H. Morton (In Morgan, 1999:22-23), states “the behavior of Ismail and his court was highly unorthodox in any Islamic terms right up to the end of the reign”. As a noticeable example, he quotes the court’s attitude towards alcohol: “wine was indulged in among the Qizilbash in the reign of Ismail, not shamefacedly and in private as an illegal vice, but openly and with enthusiasm as part of public rituals”. This therefore, raises the question as to why Shiism was introduced as the official religion of Iran during the Safavid period.
In fact, most historians like, for example, David Morgan (1999:22-23) describe this involuntary conversion to Shiism as for reasons of state, a kind of ‘political calculation’ and a ‘sense of identity’:

“...The line of argument goes that the advantage of Shiism, in the eyes of shah Ismail and his advisers, was not that it was necessarily true, but that it served to differentiate Persia from the Ottoman Empire, to provide the new Safavid state, whose people perhaps lacked a sufficiently nineteenth-century concept of national feeling, with a sense of a distinct and coherent identity: Shiism = Persia...”

Thus, during this period, ‘religion’, and ‘power’ were integrated with other in order to create a new Islamic empire. As a result, it can probably be concluded that the Safavid leaders established the foundation of today’s Iranian ‘identity’. As American historian Nikki Keddie (1998) states, they were acknowledged in this role because they were able to establish a common religion, and they were also able to unify a large area, which more or less constitutes the Iran of today.

Choosing religion as a unifying factor, however, was a smart way in respect of dealing with the variety of ethnicities and cultures in the then, as now, Iranian society. Iran is a large country with various ethnicities, cultures, and sub-cultures, such as Fars, Turkie, Lor, Baloch, Kord etc. This variation still exists. As a result of choosing the Shiite form of religious belief and Farsi as the official language, different social groups came together to create a nation and support this new empire.

During this period, some legends were even created in order to marry Persian royalties to Islam. The famous one that ordinary people still believe in, is the legend that (Imam) Husayn, the martyred son of (Imam) Ali had married the captive Sassanian princess, Shahrbunu, the ‘Lady of the Land’. Through such stories, and many other attempts, Iranian Safavid royalty tried to tie themselves to the religion of Shiism. As Persian kings, had themselves formerly been attached to the Zoroastrian religion.

It appears, therefore, that the three factors of ‘identity’, ‘power’, and ‘religious belief’ were important in the Safavid culture. It was also necessary that the architecture of this period should also reflect those influential factors since architecture has been known to represent and express the language of cultures. In fact, the architecture of public buildings during the Safavid period particularly expressed those aforementioned influential factors.

However, these factors did not hold the same level of importance from building to building. For example, in the architecture of palaces ‘power’ was usually the strongest factor. Such as Aliqapu palace—the most important ceremonial palace of the Safavids—was constructed in a style similar to that of pre-Islamic Persian palaces (Fig 5). The use of the flat roof and the thin, tall columns on the veranda is reminiscent of the Persian palaces in Persepolis, whilst, in the architecture of for instance, mosques ‘religious belief’ was much more important than other factors. For example, Lotfollah mosque, which was built in front of Aliqapu palace, has a different design approach. This mosque with its single dome on top of a long horizontal skyline expresses a calm and peaceful character (Fig 6). The small-scaled public buildings such as local mosques, small baths, private gardens
and so on, had less to do with political power in comparison to monumental buildings (Fig 7, 8). Therefore, it depends from which perspective and in respect of which type of building, the architecture of this period is studied.

Overall, the Safavid architecture in Iran as a distinguished part of Islamic architecture contains some special characteristics, which make it different from other types. Those characteristics were based on the influential socio-cultural factors of this period. In as far as, the Safavids are known as the founders of Iran cultural identity, the architecture of contemporary times should also reflect some of these original cultural values. However, the way in which the architectural characteristics of this period might be reused depends on the approach to and interpretation of the architecture of this period by the designer.

Figure 5: Aliqapu palace, Safavid period, Isfahan, (Source: http://archnet.org).

Figure 6: Lottfollah Mosque, Safavid period, Isfahan, (Source: Mohammad Sadeh).

Figure 7: Pigeon Tower, Safavid period, Isfahan, (Source: http://archnet.org).
Conclusion

There is no architecture, which has been designed or created overnight or by the acts, will or thought of just one person. In fact, architecture represents the story of life, in which the anonymous characters are just as important as the rulers and even the architects themselves. The development and progression of architecture depends on the socio-cultural, economical, environmental and many other factors at the time. For example, in answer to the question: ‘what is architecture?’ states: “… Is it the vast collection of the various buildings which have been built to please the varying taste of the various lords of mankind? I think not. No, I know that architecture is life; or at least it is life itself taking form and therefore it is the truest record of life as it was lived in the world yesterday, as it is lived today or ever will be lived. So architecture I know to be a Great Spirit.
... Architecture is that great living creative spirit which from generation to generation, from age to age, proceeds, persists, creates, according to the nature of man, and his circumstances as they change. That is really architecture...” (Lloyd Wright, In Brooks Pfeiffer & Nordland 1988:7)

To study and learn architecture, particularly the history of architecture, then, it is very necessary to pay attention to the architectural backgrounds and the influencing factors. Studying the history of architecture should be a thoughtful process, which is accompanied by understanding and interpretations. Teaching the history of architecture in this way as Iain Borden (1996:144-145) states, gives students new things to think about and new ways in which to think about them. Borden claims that asking architectural students to think about a number of different interpretations, even contradictory interpretations, “…turns history into something that is not so much to be learned as to be thought about and puzzled over; it renders architectural history active, not passive…”

This type of history teaching is even more necessary for the study and interpretation of Islamic architecture, since it has often been viewed as a homogeneous architecture. The term Islamic architecture has been used to describe the traditional architecture of many regions, from Indonesia and China in the east to Morocco and Spain in the west. The interpretation of Islam and Islamic architecture over such a large territory has been heavily influenced by local cultures and other regional factors. However, it does not mean that there is doubt about using the term 'Islamic architecture' as some scholars, claims.

Between these two extremes, however, it appears that Islamic architecture contains some shared values, popular forms, functions, and symbols. It also expresses regional and local characteristics, which differs among various Muslim cultures. Introducing Islamic architecture in history lesson, therefore, should be based on such diverse interpretations as well as focusing on the architectural background and taking into account those factors which influence the formation of the built environment. As a result of such understanding, insight and awareness it is possible to bring the spirit of Islamic architecture into the history lesson.

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THE IMPORTANCE OF GREEN SPACE: TOWARDS A QUALITY LIVING ENVIRONMENT IN URBAN AREAS

Dzarul Hardy Azwar and Izham Ghani

Abstract
This paper considers the preference of residents, living in urban areas with low to high percentage of greenery coverage in correlation with the household income. This paper would serve as a background study to investigate the resident's view on the "quality" of their residential streets and their residential areas. It would be focused on what the residents consider as the important factors that make a "high quality" residential street environment and what are the important factors in creating a "good" place to live. The study proposed to be undertaken in Kuala Lumpur, the national capital city of Malaysia at four selected residential district ranging from underprivileged to affluent neighborhood areas. Samplings would be based on gender, age, ethnicity, education and occupation to identify any significant differences present between the groups, in order to determine the issues that could be taken into account for future provision, planning and management. This study would explore the resident's attitude towards street trees and residential gardens as part of the urban green space environment towards their conceptions of urban quality of life in the selected neighborhood residential areas.

Keywords
Green space; urban area; residents; quality of life; landscape.

Introduction
Do the characteristics of trees, gardens, parks and green areas imply anything important to people? Are people dependent on these design elements? One hypothesis has shown the links between preferred physical environments and desired activities. However the links have been very hard to find. Rossman and Ulehla (1977) studied the connection between outdoor environment and experience. They found higher preferences for wilderness when nature experiences, adventure, breaking away from hectic life, and enjoying wildlife and flora were required (Grahn, 1985).

In the modern landscape, street trees are a common element in towns and cities (Figure 1). As there is little evidence that trees were a significant part of the urban landscape prior to the eighteenth century, tree lined streets appeared to be a relatively recent phenomenon (Zube, 1971). The origin of the street tree has several sources, but was primarily influenced by French Baroque garden design and the English romantic landscape movement (Pitt et al., 1979).
As an urban design technique, applied by Haussmann in Paris in the mid-1800’s and emulated in many cities, street tree plantings have been used to enhance vistas and to unify the city visually. The use of tree-lined residential streets was further reinforced by the romantic suburbs of the late nineteenth and early twentieth century (Pitt et al., 1979).

As cities became more densely populated and the countryside turns out to be less accessible, the use of street trees became more common. In many instances, street trees became the urban dweller’s primary association with a natural element within the urban environment (Figure 2).

**Kuala Lumpur, the Proposed Site**

The study proposed to be undertaken in Kuala Lumpur, the national capital of Malaysia. Kuala Lumpur is the largest Metropolitan Region in the country which being the premier city and the capital of a nation with a highly trade oriented economy that aspires to be fully developed by the year 2020.

Kuala Lumpur lies midway along the West Coast of Peninsular Malaysia. It represents the heartbeat of Malaysia which is divided into Peninsular Malaysia (West Coast) and East Malaysia, serving as its cultural, commercial and transportation centre. It all began in the 19th century when a group of tin prospectors came to settle around the convergence of the Klang and Gombak River. This marked the foundation of Kuala Lumpur and its share of growth and setbacks to become metropolitan centre of today.

With a population of over 1.3 million, Kuala Lumpur is by far the largest city in Malaysia. Malays, Chinese and Indians compose the main races among others in this multicultural backdrop. This ethnic diversity has shaped the city over the years and is clearly seen in the various cultural customs and religious beliefs, as well as languages, cuisines and architecture.

Better known as KL to the locals, the city is a heady mix of history and culture intertwined with mushrooming skyscrapers and office towers (Figure 3). In so far as Kuala Lumpur is the capital of the nation, its economic catchments encompass the entire country.
The present range of human activities in the city, its infrastructure and buildings, its parks and monuments, its spectrum of social, spiritual, recreational and entertainment facilities, and its concentration of governmental and non-governmental institutions are manifestation of the city’s function as the capital of the nation. Kuala Lumpur is the best example of a city that has managed to preserve the best of its cultural heritage and combine it with modern conveniences to alter a wholly unique experience to the visitors.

Urban Green Space Provision and Local Government Policy

Green spaces are increasingly being recognized as having a range of positive benefits in the regeneration programme and deprived areas by enhancing people quality of life, transforming the environment, and attracting inward investment (DTLR, 2001).

Becoming a world-class living environment is one of the development visions of Kuala Lumpur. It encompasses all the ingredients that make up a world-class living environment.
such as good and adequate quality housing, accessible and high quality facilities, healthy and safe environment so that those working in the city together with their families can enjoy the best possible standard of living (CHKL, 2003). To achieve a world-class status, it is incumbent on Kuala Lumpur to provide a high quality of life for its population, both in terms of the facilities that the city can offer and in the creation of a framework within which all residents can have equitable access to its facilities (Figure 4).

The Kuala Lumpur Structure Plan 1984 formulated general policies related to landscape, townscape and conservation, which were generally appropriate (CHKL, 2003). The vision and goals for Kuala Lumpur have been formulated with the aim of creating a sustainable city which City Hall Kuala Lumpur (CHKL) shall ensure that the planning of the city shall strike a balance between physical, economic, social and environmental development.

The Quality of Life Survey 1998 in CHKL 2003 measured the satisfaction level of Kuala Lumpur’s residents with respect to a number of specific facilities and services. There was generally a high level of dissatisfaction with respect to the road maintenance, bus services, street cleaning services, garbage disposal, landscaping and recreational facilities. A subsequent perception survey carried out by the Economic Planning
Unit (EPU) has confirmed the findings. It further revealed a high level of dissatisfaction in respect of accessibility to cultural and recreational facilities and the low level of social interaction and integration in the City (CHKL, 2003).

This is where the urban green space provision came into the picture when government guidelines and policies strived for an urban design programme and projects to address both the functional and aesthetic aspects of the city’s built environment. A continuous network of open spaces was envisaged that it would link the major open spaces together by means of a network of smaller open spaces together with river and drain reserves. In addition to providing more landscaped open spaces, the city has also successfully implemented a programme of tree planting along major roads.

A part from the larger scale metropolitan parks and forestry reserves, there are some plazas and smaller parks such as Merdeka Square and the Kuala Lumpur City Centre Park (Figure 5) that played as major contributors to the amenity of the city. However, there are still many areas in the city where there is lack of such spaces especially within the City Centre and urban areas. The CHKL; UD5 policies and guidelines state that the treatment of roads and their frontages could include, amongst other devices, the theming of green spaces, planting, hard landscape, street furniture and signage (CHKL, 2003).

Figure 4: Example of Kuala Lumpur’s park facility (Source: Authors).
In Great Britain, the involvement of the community in planning, designing and managing parks and green spaces is prescribed, to ensure that needs and aspirations are fulfilled. The Urban Green Spaces Task Force, UK rate safety appearance as being alongside a key criterion for the provision of better quality spaces. Reducing crime and the fear of crime, is the theme that runs through Government policy, legislation in the form of the Crime and Disorder Act 1998, and planning guidance. The PPG 17 consultation draft (DETR, 2001) state the Government’s vision for an urban renaissance to be the provision of “a high-quality urban environment that is attractive, clean and safe”.

**Trees, Streets and Spaces**

Baines (2000) wrote that the relationship between trees and people is a complex one. Tree lovers appreciate the sound of birds, the seasonal display of blossom, fruit and changing leaf color and the splendor of trees that rise above the rooftops. However, many people in our urban society perceive trees as a problem, as a cause of poor health, difficult neighbors and damaged property. By seizing on issues that are already of great public concern and demonstrating the many relevant benefits that trees and woods in towns can bring, it should be possible to recast trees as part of the solution to urban living, attracting many more resources to add to those already linked to trees and timber growing.

In most of the built up of British cities, the buildings covered less than half of the land in which the urban green space dominates. The legacy of Victorian parks and avenues brings maturity and relatively safe environment for the people.
Domestic gardens offer privacy, security and the opportunity for individuality. The living mosaic of urban green space is essential to the livability of towns and cities (Figure 6). It provides a soft and sheltered setting for the buildings and in addition, it is now being recognized as highly functional (Jones, 2003).

Even the speculative developers of the 18th and 19th centuries recognized the need for breathing space in towns (Benatsky, 1978). Trees are particularly good at filtering out pollution, providing clean air for the betterment of public health. The World Health Organization (WHO) now defines health not only in term of disease prevention, but also in term of environmental quality. Even in the 21st century, a walk through the park, the sound of spring birdsong or the sight of autumn leaves will make most people feel good; in addition to the urban forest providing a natural contrast to the harshness of buildings and the noise and grime of busy traffic (Jones, 2001).

Jones (2003) emphasized that green spaces in towns provide most of the porous patches in a sea of otherwise impervious roads and roofs, so they play an increasingly important role in local flood defence. Sustainable urban drainage calls for many shallower holding ponds and filtering reed beds in the urban landscape, while the canopy of the urban forest has been shown to play a significant role in slowing down the rate at which a rainstorm falls to earth (Figure 7).

Figure 6: An urban green space in London (Source: Authors).
Shelter and shade reduce the heating and cooling cost of buildings. With increasing focus on efficient energy use in UK, the fact that a sheltering belt of urban woodland can cut energy costs by up to ten percent, makes a commitment to a more strategic approach to green space planning well worthwhile (Heisler, 1986).

Accessible green space and a close proximity to nature have been shown to provide a significant cure to the pressure and stress of modern urban living. As little as three or four minutes in the company of trees and natural surroundings can be enough to provide measurable stress relief (Ulrich, et al. 1991). Hospital patients with a view of trees can suffer pain more easily and recover more rapidly, while commuters with a route to work through natural greenery will generally arrive less stressed, and work more effectively (Ulrich, 1984).

Figure 7: An aerial view of a new town development in Penang, Malaysia within the proximity of an urban forest (Source: Authors).
Jones, 2001 stated that according to Dr Anthony Frew from Southampton University there is a proven link between poor air quality and heart and lung disease which makes life miserable for many people, with the elderly suffering more than most. The fine sooty particles and nitrogen oxide gases from burning fuel oil and gases are the root of the problem. Trees trap the dust and carbon particles while absorbing the harmful gases, in which tree leaves have a surface area as much as 12 times greater than the ground they overshadow (Figure 8).

**Parks and Gardens as an Urban Green Space Issue**

According to the City Hall Kuala Lumpur policies and proposal guidelines, urban space, nodes, plazas and pocket parks are important in providing identity, structure and landscape amenity to the city. Some spaces such as pocket parks are passive in nature and provide breathing spaces in the city while others such as plazas can be more dynamic and mark major nodal activity areas where there is a confluence of people. Additional parks and plazas will be created in areas where there is a
deficiency and likely to be developed as stated in the policies, UD 11 through City Hall of Kuala Lumpur’s policies and guidelines (CHKL, 2003).

Parks and open spaces are again being recognized as an important element in people’s quality of life and is increasingly accepted as a contributor to the sustainability of British towns and cities (Gordon and Shirley, 2003). However, parks and open spaces provision is a classic example of the public finance problem of knowing, defining and managing costs without being able to access and define values. By late 1980s it was recognized that there was a problem which led to a number of research projects, policies and other initiatives that underlined a more sophisticated approach in protecting and designing urban green space.

MORI Social Research Institute has carried out a study in 2001 as part of its development of quality of life performance indicators that measured economic, social and environmental well-being and showed the trends for public parks over the last 15 years are more or less static. This is happening in the face of constant or failing budgets and increasing pressures on parks services. The types of priorities that the people identified are consistent across various areas. The big challenge facing park provision is that the information on the service was regarded as among the worst for any other public services (Duffy, 2003).

The article in The Daily Telegraph, United Kingdom entitled “Gardens are vanishing in the drive for more parking” (4 November 2002), stated that front gardens are being removed in towns and cities at an ever-increasing rate to provide residents a private parking space outside their properties. Estate agents claimed that the value of homes increases with parking space which also made them more saleable (Littlewood, 2003).

Britain local authorities would easily give permission for the removal of gardens and charge each residence approximately £800 (London) to provide kerb crossings. Residents seemed willing not only to pay this amount but also around £2000 for the garden to be cleared and paved. They felt that this was well worth the cost for the service.

In Malaysia, the Tree Preservation Order (TPO) under the government planning authority only charged RM2000 for a single tree to be chopped down provided it falls under the allowed measurement and specifications. However, in reality most developers would gladly clear the whole site rather than spending for new trees as replacement.

Littlewood (2003) stressed that if the future of roads and streets in urban areas is to be wall to wall tarmac, it will not result in an attractive or desirable environment and it is doubtful whether it will enhance the property values overall. The loss of vegetation and tree cover will greatly contribute to an increase in temperatures and enhance the “heat island effect” of town and cities. By paving over the whole of the front garden there will be an increase in surface water, which could also result in the existing drainage system being unable to cope with more run-offs.

Leccese (1999) wrote on Lawrence Halprin’s most expensive urban park by the square foot of its era (USD 1.7 million in 1970s), Skyline Park in downtown Denver, USA which is now in dilemma whether to be repaired or replaced due to an
estimated 80 percent of the trees are diseased or damaged in addition to the hard landscape materials which weathered poorly in Denver’s freeze and thaw winter climate. This has resulted in this beautifully structured urban park becoming hosts for skateboarders, runaway teens, the homeless, and people reputed to be drug dealers, which turned the public to perceive the park as unsafe and stays away.

Birnbaum (2003) reviewed one of the pioneer and popular US landscape architect’s works, Dan Killey at NCB Plaza in Tampa, USA which has been awarded the National Medal of Arts in 1998 for its masterpiece, but now become a victim of zero maintenance, heaved pavers and overgrown crape myrtles that are queuing up for demolition (Figure 9). The award winning park has left out the importance of landscape management which is now turned the park into an unpleasant, dark place where there is no natural light penetrating the crape-myrtle canopy. The lawn is not receiving adequate sunlight and suffering in areas where most of the fountains are not running. Vandalism has taken hold on the place where the precast grid is tilted, creating unsightly and unsafe condition. The Plaza now resembles a modern ruin and amazingly, it is only 20 years old.

Environmental Aesthetics and Landscape Preferences

Landscape studies bring together two main fields of work, that of human perception and the assessment of landscapes. Berleyne (1971) studied on how people judge the aspect of beauty and identified a correlation that exists between levels of arousal and hedonic tone. She concluded that people exhibit a preference for a medium level of stimulation with a positive hedonic tone which empirical evidence supports Berleyne’s theory in respect of complexity, showing a curvilinear relationship that translates into a preference for moderately complex environs.

Kaplan and Kaplan (1982) used statistical analysis of environmental preferences to identify the key factors stimulating preference for one landscape over another. The “Environmental Content” related to the presence of natural elements in a scene; “Spatial Configuration” considers the variables of coherence, legibility, complexity and mystery. The finding of this research identified the importance to humans on the need to be able to understand and function within an environment, that is, to be able to read the landscape and to see within it the necessary attributes to survive and thrive.
preferences into five general factors, namely; the respondents characteristics (age, gender, ethnicity, etc.); how the respondents connect with the landscape (perceived uses, prior knowledge, etc.); the content and context of the landscape; the research medium used (on-site, photographic, computer generated); and the scope of, and means with which, any response is elicited and recorded.

Fines (1968) highlighted the need to distinguish between aesthetic and personal preferences. Subjects may focus on the attractiveness of parks, but equally may present their personal preferences on the basis of perceived opportunities that a particular landscape offers or denies.

The Need for Greenery Connection
Simply viewing the natural landscape is enough to elicit notable responses in humans. At the basic level of health and well-being it has been found that views of natural scenes can

Figure 10: Introduction of trees and shrub planting as part of Singapore’s urban design approach (Source: Authors).
improve the recovery rates of patients (Ulrich, 1984). Lower rates of sickness were recorded for prisoners who had sight of nature and children from kindergarten set in a natural landscape had higher attendance levels than their counterparts in an urban kindergarten without such access (Grahn et al., 1997).

Other studies have demonstrated the reduced stress levels afforded in the workplace, by views of green areas (Leather et al., 1998) and by greenery in the city (Barker, 1997). The introduction of trees and grass into previously unplanted built environment (Figure 10) has been shown to improve both preference ratings and the public’s perception of safety (Kuo et al., 1998). Kaplan (1983) found that a simple knowledge that “natural areas” and “good places for taking walks” were nearby was sufficient enough to promote higher levels of resident satisfaction, even if such areas were not directly visible from the respondents’ dwelling.

Rhode and Kendle (1994) emphasized that there is a basic need in humans to make contact with nature in the course of their normal daily lives. Kellert and Wilson (1993) goes further, developing the proposal that the needs and benefits described above are linked to a fundamental evolutionary relationship between man and nature. He argued that expressions of “preference” are simply the manifestation of a deep-seated dependency on nature to address our cravings for aesthetic, intellectual, cognitive and spiritual meaning and satisfaction.

Galindo and Rodriguez (2000) studied affected responses to landscapes and identified a strong correlation between aesthetic values and the feelings invoked in the participants by the landscapes, with particularly strong connection for the feelings: “comfortable” and “excitement”, followed by “tranquility”, “boredom”, “distress”, and “safety”.

**Accessibility, Security and Safety of Urban Green Spaces**

Burgess, et al. (1988) expressed the view that “wilderness” areas should be adjacent with the social spaces and dwellings so that they provided the opportunity for adventure but in an arrangement that would be perceived as being comfortable and safe. She also found that people living in urban areas desired a diverse range of natural areas, near to where they lived, that could offer a variety of activities (Figure 11). Schaumann et al. (1987) found that favorable preferences expressed by residents in Seattle were diminished as the location of open natural wildlife habitats drew closer to their homes.

Functionality and accessibility are key consideration in the design and layout of urban green space. It is something of inconsistency that “nature areas” need careful design, planning and management in order to make them both interesting and accessible to the user. The invitation to use such spaces needs to be explicitly made and supported with appropriate site stewardship and supervision (Luymes and Tamminga, 1995).

Natural elements within urban settings have been shown to increase concerns about safety and potential crime, especially where they are perceived to present opportunities for criminals to hide or lie in wait (Fisher and Nasar, 1992). Bell (1998) explored how fear influences women’s
access and use of public areas, restricting the span of hours during which women go out and reducing the range of spaces that they access.

**Quality in Urban Green Space Context**

Oxford Advanced Learner’s Dictionary of Current English (2000) defines quality as the standard of comparison to other things either good or bad; a high standard - i.e. the aim to provide quality at reasonable price; thing that is part of a person’s character - i.e. personal qualities such as honesty and generosity; a feature of – i.e. especially one that makes it different from others.

The word quality in everyday use has three common uses; that which makes things what it is; grade of goodness - i.e. to be qualified on a scale; excellent - i.e. goodness in a high degree. Barber (1993) quotes a British Standard definition; the totality of features and characteristic of a product or service that bear on its ability to satisfy stated or implied needs.

Quality must therefore represent a shared vision that meaningfully links the two spheres of influence after establishing needs and possibilities. In other words, quality needs to be tied down as a concept that people can relate to in their everyday lives and it is this form of practicality that brings the quality debate in full circle and highlights the need to define how

![Figure 11: The Kuala Lumpur City Center Park is accessible both to public and nearby residents (Source: Authors).](image-url)
consumers perceive quality (Johanssen, 2002 cited in Green, 2003).

There are two clearly identifiable concepts to examine when attempting to measure quality in urban green space context; functional quality and sensory quality (Green, 2003). Functional quality – i.e. Is the grass cut to a height appropriate for its intended use? Is there any absence of litter, graffiti, etc.? If toilets are provided, are they clean and regularly inspected? Quality in these instances is readily defined; it may for example be seen as no litter or no graffiti. Sensory quality is more difficult as it deals with the five basic stimulation senses which are vision, hearing, smell, touch and taste. Studies in United Kingdom, Improving Public Parks and Open spaces (DTLR 2002), Green Spaces Better Places (DTLR 2002), The Value of Urban Design (CABE 2001), and Public Park Assessment (DTLR 2001) have all examined to some extent the attitudes of users and non-users of urban green space to functional elements within such space.

Green space and landscape aesthetics as an academic discipline might be regarded as relatively new, although people have made judgments about how pleasing their surroundings are from time immemorial. The current and newer focus on public landscapes demands a new way of looking at the issues. A negative view sees the “entrenchment of private affluence and public squalor” as inevitable (Porteous, 1982). Sadler and Carlson (1982) underline the need for discussion “on the role that expert opinion and public preference should play in the determination of aesthetic values”. They also express the belief that “visual or sensory pleasure...constitutes a baseline for an aesthetically acceptable environment”. Environmental or landscape assessment is very much a part of the movement to incorporate measurement of aesthetic values into the overall picture of how we interpret, plan and develop landscapes.

**Conclusion**

Across the literature as a whole, this study is expected to show the link between green space provision such as trees in streets and residential gardens and its influence on the resident’s attitude towards their notion of urban quality. The intended survey would show an interest of green space preference in the study area and the results would provide evidence whether the importance of green space have a significant impact on the preference for trees in streets or residential gardens in urban life.

Statistical analysis would reveal significant trends between respondent’s gender, ethnicity, age group, education level and occupation against the identified preferences for green space whether in least affluent area or even in the most affluent residential district. Balanced and unbiased information with wider range of sampling is needed to better predict the residents’ attitudes towards street trees and residential gardens.

The study would also emphasize on whether green space provision is identified as one of the significant factors in the selection of “desirable” urban residential living areas. It would also provide some indications and information whether the existence of other interesting factors such as cultural, gender related and inspirational differences could also influence
the selection process. Previous researches often suggest that green space is often desired to improve the quality of life for urban dwellers but then again the human preference is subjective and requires careful interpretation in research.

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The Importance of Green Space:
Towards a Quality Living Environment in Urban Areas.

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CITIES, CULTURAL DIVERSITY, AND DESIGN PEDAGOGY
ENHANCING “PEOPLE-ENVIRONMENTS” PARADIGM IN EDUCATION
Symposium organized jointly by IAPS Culture and Space and Education Networks

20th IAPS Conference: Urban Diversities, Biosphere and well-being
Rome, Italy 28th July-1st August 2008

Hülya Turgut Yıldız, Ashraf M. Salama, and Peter Kellett

Symposium Abstract
Recent years have witnessed dramatic changes in the socio-physical environments of cities suggesting the presence of multiple diversities. This is exemplified by changes in the structure of contemporary societies, the emergence of informal settlements, housing problems, large structure and new building types, and the deterioration of the built heritage, while the complexity of the built environment is continuously increasing. With these changes demands for new types of knowledge and their application in design pedagogy are clearly on the rise.

The theme of this symposium is introduced as recognition of ties that have not been of concern for long to the mainstream design research. Therefore, the symposium addresses ways in which ‘people-environments’ paradigm can be enhanced in design pedagogy where the theme of cities and cultural diversity is explored through different paradigmatic approaches.

In this symposium, eight provocative and diverse papers are presented to shed light on the dialectic relationship between culture, diversity, and pedagogy. These are of

S. Mazumdar on What’s Culture Got To Do With Design Pedagogy;
A. Abdel-Hadi and T. Rashed on Influence of Cultural-Environment Diversity on Conceptual Output;
A.M. Salama on Pedagogical Tools for Integrating ‘People-Environments’ Paradigm in Lecture based Courses in Architecture;
H.T. Yıldız, G. İnalhan, and S. Y. Tok on Using Traditional and Historical Cities in Architectural Design Education;
A. S. Deviren on Understanding Place through Design Studio Studies;
J. W. Robinson on Travel Pedagogy for International Study of Housing and Urbanism;
D. K. Shehayeb and N. H. Sherif on Shaping Young Architects’ Minds: Wearing the E-B Glasses; and
A. Eyüce on Learning from Istanbul.

Representing different regions, the papers offer an exposition of philosophies and discourses, cases and experiments, and programs and approaches as voices that call for integrating ‘people-environments’ paradigm into teaching practices in an effective and efficient manner.

Keywords
Cultural diversity, cities, design pedagogy.

WHAT’S CULTURE GOT TO DO WITH DESIGN PEDAGOGY?
Sanjoy Mazumdar

Cities have been multicultural for a long time, but they have been becoming more so with
globalization and migration of people. Ethnic, racial, religious and other aspects of cities have received some scholarly attention. Yet, even though scholars have made a strong case for the need to teach cultural aspects to design students, planning and design education, including even the ‘people-environments’ paradigm have not fully incorporated cultural aspects into pedagogy. In some instances, when designing for another culture, some have examined the architectural, urban design, and planning forms as well as the art of that culture. This approach does not, however, seek to understand the reasons why a culture has chosen a particular element, form, or art and therefore can be superficial and lead to erroneous understanding and design. Most professional design and planning education programs do not provide adequate time to explore and teach all pertinent issues related to culture-design relationships. The literature indicates that deep understanding of the culture-design relationship is necessary.

Teaching cultural aspects can be done using a variety of techniques proposed. These include games and simulations – where role playing can be used to bring attention to cultural matters; library saturation – which involves in-depth library research; cultural encounter and experience – reflecting on experiences of encountering and living in another culture; naturalistic field research - going to the field, observing, participating, interviewing, seeking to understand culture-physical environment relations; ethnography – abridged or unabridged search for learning the culture; exploring cultural concepts – seeking information on specific cultural concepts, such as world view, traditions, customs, etc.; questioning embedded design values – interrogating how values permeate design; design programming – obtaining cultural physical requirements; and design problem solving - by designing for a community. Some of these techniques are more effective than others.

“Cultural design” is a term we can use to indicate design that conscientiously attempts to make design suitable to the culture of the occupants. The various forms this can take can be categorized as follows. They are “culture congruent” if they harmonize well with the culture. They can be “culturally appropriate”, leading to a good fit with the culture. And they can be “culture supportive”, thereby enabling the culture in its views, norms and practices. And designs can be all three. Although these terms are used interchangeably and are close, they convey different approaches to design with respect to culture. If all three cannot be incorporated, an objective can be to produce at least culture supportive designs.

Introducing this complex subject, teaching its various components, and helping design students understand the need to incorporate cultural requirements is not easy, especially when time is short and there is little support in the curriculum. Some issues then become more salient. These include engaging the students with the thirst for “cultural imagination” (imagining being a member of the culture) and “cultural creativity” (being creative within the culture’s realm), imparting the need to know “cultural design” modes, understanding the repercussions and costs of not addressing “cultural needs” (the various requirements of the culture), and recognizing the importance and relevance of deep and thorough “cultural study” (involving learning the specifics of the
This presentation will describe one model of pedagogy utilizing design for a cultural client based on first hand in-depth “naturalistic field research” employing architectural and cultural analyses to understand the culture-design relationship. Emphasized are developing interest in the user’s culture, comprehending what is important, learning how cultures develop differing modes, preferences, and attachments for particular designs, figuring out what range of designs would be appropriate for that culture, and finally proposing a supportive, appropriate, congruent design based on cultural creativity.

INFLUENCE OF CULTURAL-ENVIRONMENT DIVERSITY ON CONCEPTUAL OUTPUT
Aleya Abdel-Hadi and Tarek Rashed

Interior design is a problem solving process based on creativity. Uncertainty, uniqueness and conflicts are typical characteristics of the design problem solving process. This paper tests the hypothesis: ‘culture-environment diversity affects the students’ conceptual design output’. Based on a belief that “problem solving is” (not) “the only important dimension of creative productivity” (Treffinger & Selby 2004), and that other dimensions cope better with change such as ‘parallel thinking’ (De Bono 1995), a new teaching experiment was given to graduation students at the beginning of the academic year, which “addressed the cognitive operation of the mental process in the blend mental space” (Turner & Fauconnier 1995). It consisted of a design studio integration of artwork and space design simultaneously, an exercise of translating a 2D artwork - each student selects from one of the three schools of paintings (abstract, surrealism or cubism) - into a 3D landscape model. The aims were to increase students’ perception of the built environment and to train them to use sources of inspiration unrelated to the problem they are required to solve.

The purpose of this paper is to present the students different cognitive performances that are embedded within their socio-cultural context, as manifested in their project’s outcomes. An important dimension of such performance is perception; a perception cannot be a mere physical, objective experience, it is created through our interpretation of what is observed, it is individual and cultural as well. Each student’s perception of landscape stems out of his experiences, memories, feelings and activities, and his interpretation of it is cultural, connected with meanings and sign systems (Tuohino & Pitkanen 2003). Elements forming the landscape composition in turn bear cultural meanings deeply rooted from heritage and traditions. The predominance of one or more element is a translation of historical and/or cultural context. The overall output is the image the student wants to convey.

The methodology used to obtain the result of this hypothesis relied on classification of the outcomes according to similarity, relating them to results obtained from in-depth structured interviews with some open ended questions with the students (80) that dealt with their socio-cultural background: the main physical features they recall from their daily route (home-college-home), the most impressive books they read, the sites they visit mostly online, the TV programs they prefer, the leisure place(s) they favor, the most vivid excursion(s) they made lately.
in Cairo, in Egypt and abroad, in all that what were the most attractive traits, features or places they recalled. Such questions were used to trigger students’ perceptual images and their frame of reference. Data analysis revealed that landscape was experienced and interpreted in many different ways: nature, cultural activities, ideology/symbol, history/myths, location and aesthetics, with an influence of the cultural-environment context on the perception-interpretation processes. Further implications of this study were that some interpretations seemed to have been affected by reference groups: peers and staff.

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PEDAGOGICAL TOOLS FOR INTEGRATING ‘PEOPLE-ENVIRONMENTS’ PARADIGM IN LECTURE BASED COURSES IN ARCHITECTURE Ashraf M. Salama

Collaboration between socio-behavioral scientists and architects took place in many architecture schools world-wide since the early eighties. However, an embarrassing situation was the difference in the modes of thinking and the tools and techniques that each group utilizes in inquiry and investigation. On the one hand, socio-behavioral scientists utilize systematic analytical methods. In their investigation, questions are formed in a logical and rational manner and then responses are used as an intellectual basis for building theories. On the other hand, architects deal with design problems that cannot be confronted in such a purely linear manner, since design choices, by nature, exemplify subjective preferences. The dilemma is that the language and terminology that socio-behavioral scientists use makes understanding difficult for students of architecture since they may have had an introductory course in culture or sociology before enrollment in an undergraduate architectural program. Scholars argue that it is this non-visual aspect of socio-behavioral literature that blocks students from incorporating knowledge acquired into a set of design priorities. Architecture students are trained to understand visual fragments about built environments and to make formal decisions by studying visual evidence. Typically, such fragments shape a student’s understanding of the built environment. Concomitantly, social science literature and integrating it into the educational process of architecture is oversimplified because it does not provide these visual fragments. In turn, traditional teaching practice implements positivistic philosophical positions, neglecting viable alternative positions (Mazumdar, 1993). Although positivistic positions may enable students to establish long term attachments to international professional values, they distance students from local populations and potential users of the built environment, their behavioral attitudes and cultural backgrounds,
and the physical context within which they conduct their activities.

Recent research on pedagogy indicates that the attention span of the average adult during a lecture is 8 to 10 minutes. Since most lectures are at least 50 minutes and some lectures are scheduled for up to two hours, there is a serious mismatch between our ability as educators to lecture nonstop and our students' ability to learn. Although some students learn best by listening, others have difficulty but find it easier to learn in more active learning environments (Salama, 2006). Arguing for a fresh look at theory-lecture based courses in architecture and how 'people-environments' paradigm is introduced in lecture based courses in architecture, this paper outlines the implementation of a number of 'in-class and out-of-class' tools utilized as exercises that foster active learning in classroom settings. The exercises involve individual work and class discussion. They range from 10 minutes to the whole class session and address issues that examine and translate students understanding of the topics introduced, including relating culture to architecture, recognizing building types, developing responses to different environmental settings, and understanding building images.

The results of conducting these exercises corroborate that ‘people-environments’ paradigm can be introduced through active learning which invigorated students understanding of the topics, sensitized them into the understanding of course objectives, while creating excitement in the classroom. In light of these results, the paper introduces a set of recommendations that call for the need to incorporate visual aspects into classroom instruction in lecture-based courses in architecture, especially when discussing issues related to socio-behavioral knowledge. Students feedback on this experiment reveals that checklists and survey tools for relating cultural and socio-behavioural factors to the built environment helped them recognize what to look for in the building, understand relationships between different factors, while comprehending the impact of one factor over others. Based on findings and results of implementing these tools, a number of concluding remarks are introduced to highlight the need for integrating ‘people-environment paradigms’ into lecture based courses through experiential learning mechanisms.

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IMPORATANCE OF ‘PLACE’: USING TRADITIONAL AND HISTORICAL CITIES IN ARCHITECTURAL DESIGN EDUCATION
Hülya Turgut Yıldız, Göksenin İnalhan, and Selay Yurtkuran Tok

The importance of ‘place’ concept and different urban identities in architectural design is indisputable. As a subject of design, research and education; historical and traditional environment in a different scale are also researchable and teachable subject in architectural education. On the basis of these
arguments, tutors from two universities organized design workshops which were concerned with understanding the relationship between different scales of environmental settings (spatial settings, settlement patterns, built form) and socio-cultural factors.

Workshops are educational tools developed to facilitate an understanding of different strategies for defining and exploring design problems, generating new ideas and making decisions towards solving them in a short period of time. It is evident that they help sharpen students’ perception and accordingly design skills. As teachers and designers we know that skills learned by doing—visualization, hands-on manipulation, and modeling—are not easily forgotten. “Continuity, Change, and transformation” was the theme of the Workshop. These concepts are fundamental issues to be discussed for the historical and traditional part of cities. Rapid change in living conditions and the contradictions between global and local cultures create new paradigms and new dimensions about culture-space interactions. The internationalization of cities came into conflict with so-called “traditional” values, and in the confrontation, continuity with the past was broken and livable cities were destroyed. The essential humanity and the sense of place characteristic of traditional urban environments continue to be replaced by culturally and environmentally anonymous or irrelevant forms (Warfield, 2001).

At this point, the study area of the workshop was chosen as the city of Edirne and Trilye. Edirne is a characteristic Ottoman city, which are the best instances of Ottoman architecture. Trilye is a traditional town that is living from the Ancient Greek era. The architectural, natural, cultural values which form these cities, the sensitivity and awareness of the people of Edirne and Trilye were the factors, which influence the selection of those cities as the area of study. The program sets out to examine architectural form / space / culture relationship and aims to work on providing spatial continuity of a historical and traditional environment in a design process. The existing architectural and urban language will be studied both in the abstract and through practical application in design schemes. A field analysis will be carried out for understanding the basic rules, grammar and the vocabulary of traditional environment. It is expected that students will be able to read the architectural and urban language and to discuss solutions with new approaches for historical and traditional environment.

The design workshop was organized with the purpose of:
- Enhancing students’ cultural understanding through analyzing the socio-cultural and spatial characteristics and values, changing in time
- Being able to read architectural language of historical and traditional environment
- Encouraging students to analyze a traditional environment
- Developing design strategies to generate new ideas and solutions for a traditional environment
- Understanding issues of scale: encouraging students to think about from urban to neighborhood scale.

The results of the workshop demonstrate how students’ interest in exchanging ideas and their willingness of working both individually and in collaboration with others in a learning environment that encouraged their curiosity
changed their attitudes towards vernacular settings. The learning process was as important as the final products in this project. This learning process was driven here by the concept of working in teams or groups. By conducting a one-week workshop in a city which has a vernacular character, both students and instructors experienced how a design problem which may seem to anyone as a complex one might become a didactic design tool in a well-organized process. During the design workshop students studied the existing architectural and urban language both in the abstract and through practical application in design schemes. Each student carried out a field analysis to understand the basic rules, grammar and the vocabulary of traditional environment, explored the problems of their settings and discussed solutions with new approaches for historical and traditional environment.

UNDERSTANDING PLACE THROUGH DESIGN
STUDIO STUDIES
A.Senem Deviren

To meet the desires of today’s consumer society, architectural, landscape and urban design professions are less focusing on making buildings to dwell and places to live in. They are being subordinated by fashionable image and object production which creates reciprocal alienation between people and environments. As Bogner indicates, much of architecture today follows its own rationale outside of human needs, or else, serves the interest and growing imperatives of consumerism, which frequently propagates superficial and seductive embellishment and the meaningless application of meaningful forms wherein banality or speculative false reality is a substitute for real experience (Botond, 1985). That kind of design approaches produce deterministic environments-non-places-of which through their experience people become mere consumers and passive observers. Conversely to the deterministic environments, places are open to change and are in change; they offer and require active participation of living beings for their occurrence and evolution. Taking place as the primary concern of design is a challenging and intricate task. However, taking this challenge in the design studio is offering explorative ways towards understanding the fundamentals of placemaking as a necessity to achieve the task of designing “people-environments”. Definitions of place are not pragmatic instruments that can be used for form giving to design works, nor are philosophical statements that can shadow realities of built work. Here, the main question on place is how its components can be conceptualized to form a body of knowledge that can creatively inform and generate design (Deviren et al, 2001).

This paper discusses ways through which the knowledge on place and the components of place can inform design processes, while, in parallel, describes a series of experimental design studio studies, conducted in different cultural contexts that explore the fundamentals of placemaking. This required approaching the fact of place with a beginner’s mind to understand the nature of it. As Maser describes, a beginner, unfettered by the rules of having to be something special, sees only what the answers might be and knows not what they should be. The one who thinks himself as an expert, on the other hand, is bounded by the rules that govern being an expert. Such a person considers himself or herself as something special, the one who
knows the “correct” answers should be, yet is too often blind to what other answers might be. The beginner is free to explore and to discover while the self-appointed expert grows rigid in a self-created prison (Maser, 1996). Therefore, there were two main critical tasks of the studies common to all the design studios: the first was centered around a question that focused on how students can be informed in a way that can help them to become critical and creative designers who can differentiate the nature of architectural, landscape and urban designs than that of object design; the second was to introduce students to contextual thinking that would help them to explore the nature of places through site and spatial structure integrations.

The primary educational objectives in all design studies were as follows: (a) to introduce students with contextual thinking in order to motivate them to deal with architectural, landscape and urban design problems that are naturally place specific, (b) to develop a consciousness on relations between an architectural, landscape and urban design proposal and it setting in real world context by simulative design exercises, (c) to involve students in a creative thinking process that would help them to deal with complex, uncertain and sometimes contradictory nature of architectural, landscape and urban problems, (d) to increase experience in programming by giving a flexible program that can be develop by students during design process, (e) to evoke ecological sensitivity and awareness. Students were required to work with physical models which were formed with considerable effort and involvement, and played a key role as the simulation of the real world site conditions and characteristics. They have been evolved by active participation of students during the design process and used as dynamic interfaces for communicating design knowledge in the studio to re-think on place as central fact of people-environments.

Bibliography

TRAVEL PEDAGOGY FOR INTERNATIONAL STUDY OF HOUSING AND URBANISM
Julia Williams Robinson

In the United States we have a crisis in affordable housing of which one significant factor is poor planning. In the Netherlands, by contrast, there is effective planning for housing of all kinds as well as a history of innovative design. The pedagogy described in this paper involves the use of travel as a way to explore the way another country, specifically the Netherlands, has dealt with problems. The trip described here, Innovative Housing and Urbanism exposes University students as well as professionals to the Dutch approach to planning, demonstrating an alternative way to address housing and urban development.

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The pedagogy involves not only visiting sites of significant design (using public transportation and bicycle), but also engaging trip participants
in seminars with Dutch design professionals, developers and other experts. Furthermore students complete a variety of assignments designed to analyze the Dutch response and to apply that understanding in addressing designs for the home environment.

The approach taken in the 3-week trip is to focus on a different issue each week: (1) Land, water and transportation, (2) Planning and development, (3) Architecture and Urbanism. All field trips, except one, use public, bicycle and pedestrian transportation. Dutch experts from academia and professional practice guide the trips. Students document their findings in sketchbooks that are critiqued weekly and in a paper that examines one or two issues from the following list: At the end of each week students participate in a charette that applies accumulatively the knowledge learned in the Netherlands to a familiar site in Minneapolis.

The first week exposes students to the fundamental physical characteristics of the country that affect its planning and design culture: (a.) much of the country being in a delta below sea level, (b.) the density that results from land being a scarce commodity and also the subsequent valuing of open land and access to it, (c.) the effectiveness of public transportation with a dense population and small geographic distribution and the history of bicycling as a mode of transportation in part due to the flatness of the terrain. Field trips to the Beemster, Noordoostpolder and Flevoland including Almere, explore the history of creating land from the sea and of constructing new urban areas from scratch with an emphasis on the planning required for such actions. That same week, we also visit a suburban area (Leidsche Rijn) that represents the current, VINEX approach to planning where a large new housing area is created from existing open land.

The second week we examine housing and urbanism from the perspective of planning and development. This is when design professionals and developers join the group of University students. During this week the field trips are augmented by evening seminars with Dutch design professionals and developers involved in the sites visited which offers an opportunity for the students to witness and the professionals to participate in an exchange of ideas between the Dutch and the Americans. This is especially pertinent because the Dutch are decreasing government involvement in development and increasing their use of market-based approaches, whereas the Americans are experienced with market approaches and interested to learn more about government participation and the Dutch housing corporations.

The final week students' field trips focus on the relation between housing design and urban design, exploring how the different sites being studied (Amsterdam East Docklands, Leidsche Rijn in Utrecht, and Almere) create urban patterns using building typology, building section and materials, among other things. The students complete their paper and return home.

Travel provides the chance for students to see real places that are designed to make clear urban patterns, to experience the ease of travel in a well-designed transportation system, and to talk with experts who have participated in the design of the environments being studied. As a result students appreciate the positive and
negative aspects of Dutch design, understand the complexity of the Dutch culture which supports these ideas, and appreciate the difficulties and opportunities in attempting to translate Dutch ideas about housing and urbanism to the United States context.

**SHAPING YOUNG ARCHITECTS’ MINDS: WEARING THE E-B GLASSES**

*Dina K. Shehayeb and Nagwa H. Sherif*

Introducing People-Environment paradigm, as often termed Environment-Behavior Studies EBS, to young architects and urban designers should be through mainstreaming it in their cluster of regular courses. E-B Studies can be useful, not only in defining design problems, understanding existing phenomena, formulating design objectives, and preparing an architectural program, but also in actual design, by integrating EB concepts and research into design studio teaching: into design thinking.

This paper will describe how Environment – Behavior Studies can be used effectively in architectural education by integrating EB concepts and research into design studio teaching, through what is called a “thematic design studios/projects” instead of “complexity design projects”. This can be implemented in several ways, starting from programming to POE, to simulation techniques, as suggested in the new Architectural program at the American University in Cairo (AUC) in Egypt.

On the other hand, field work practice, analysis and critical thinking skills can also be integrated by complementing a Substantive E-B course with a Design Methodology course where students learn about simplified research methods and techniques, the formulation of behaviour-based design guidelines, and the integration of research in the iterative design / evaluation process. Such skills involve: 1) questionnaire design and how to conduct it; 2) unobtrusive observation techniques; 3) descriptive statistical analysis; 4) annotated behaviour mapping and analysis; and finally 5) development of space program sheets for an activity setting. This expertise helps young architects conduct there habitual pre-design project investigation in a more systematic way, yielding more useful results and insights into the design problem at hand.

In a multi-cultural metropolis like Cairo, understanding cultural diversity and the different ways each sub-cultural group seeks to fulfill their human needs is often overlooked by architects and planners. Students exposure to sub-cultural lifestyles different than their own, and learning to discern the latent functions of different building types and urban settings through field visits and one-week training experience was also implemented. Training in the popular district of Bab El-Sheireyya will be presented where students were involved in: 1) understanding the activity systems of a neighborhood; 2) behavioral mapping of representative segments; 3) conducting pedestrian and vehicular counts; 4) photographic survey of festive events, and 5) interviews to compliment unobserved data. Assessing the perceived value of “living” heritage settings was also the subject of student training in the HAMMAM project during winter break. This training included conducting participant observation and interviews with clients and staff about the use patterns, and the perceived value of the traditional public bath, the hammam, in Egypt.
As a result of these diverse teaching methods architecture students learn about the significance of unraveling latent functions of a setting rather than addressing only the manifest functions that are the basis of most mainstream architectural parameters of function. The presentation will include the presence, in person, of four recently graduated architects who can recount their experience of these teaching and training methods.

LEARNING FROM ISTANBUL
Ahmet Eyüce

Throughout its long past of nearly 3500 years Istanbul has always been a cradle for coexistence of various cultures each of which reflecting itself in the physical environment as built forms with diversified peculiarities. Residential quarters, sacred buildings like mosques, churches & synagogues, schools and hospitals of Muslim, Christian and Jewish communities have always been a source of morphological richness in the urban fabric. These buildings are mostly situated side by side and sometimes in the form of large building complexes bringing to the urban fabric of the city an extra richness of spatial structure. Although natural factors like Bosphorous, Golden Horn and three-dimensional topography upon which the city has evolved have their impacts in the urban character of the city culture reflects itself as the main determinant in the formation and evolution of the built environment. Likewise all transformations are a result of cultural changes. Cultural richness signifies diversified ways of looking & seeing from different points with angles.

Like most world cities Istanbul is, at present, subject to rapid transformations due to an ever increasing complexity of the built environment. This transformations emanating form the changes of the societal structures and the need for new building types are coupled with deterioration of the built heritage. While physical deterioration and even decay can be coped with attempts of restoration and preservation, functionally obsolete and derelict premises require considerable degree of renovation work. In this connection besides the many attempts made for restoration and maintenance of historical monuments obsolete and most of them derelict, industrial premises like old factories and shipyards have recently been converted for contemporary utilizations like cultural centers, university buildings and museums several other buildings are being converted and some others are in the phase of planning and design to be adopted for other uses.

This paper will address itself to the issue of new uses for functionally obsolete but historically valuable buildings and its application to the design pedagogy as an emerging problem of the city. Industrial buildings with their large covered floor areas and unobstructed large spans and considerable floor heights, offers wide variety of functional re-utilization possibilities. Some of these conversions that are completed and successfully put to use are as follows:

- Feshane-i Amire: A 19th century Ottoman hat and fabric factory situated on the coast of Golden Horn has been converted is a cultural center.
- Darphane-i Amire: The Imperial Artillery within the Topkapi Palace Complex had been turned into a cultural center to host the Habitat. Today, the complex is occasionally being used as a venue for various cultural events and
exhibitions.
- Rahmi Koç Museum: the historical shipyard of Hasköy banks of Golden Horn has been transformed into a design museum of “Transport, History & Communications” by a very successful restoration project the anchor-casting workshop within the vicinity has also been restored into a museum.
- Kadir Has University: Old cigarette factory located in Cibali on the coast of Golden Horn. This industrial building has been converted to function as a University building.
- Bahçeşehir University Buildings: A defunct warehouse and an old social club have been converted to function as a university complex. This building is situated at the Bosphorous in Beşiktaş.
This is yet another excellent resource book on community participation methods that has over 200 citations in academic research work. In his Book Community Participation methods in Design and Planning Henry Sanoff presents a ground breaking guide to community design and participation, a discipline under increasing demand from all sides and all those concerned with design and planning each for his/her own purpose and in fact in his/her own stipulations. Sanoff draws upon his leading international experience and those of his colleagues and previous students worldwide to provide indisputable tools and techniques for bringing community members into the design process constructively.

Sanoff’s Community Participation methods in Design and Planning addresses the fact that all over the world there is increasing demand from all sides for more local involvement in the planning and management of the environment. He argues that it is widely recognised that this is the only way that people will get the surroundings they want, and if they do get it they will know how to sustain it. Sanoff employs methods and techniques of users participation...
that he believes is now seen as the best way of ensuring that communities become safer, stronger, wealthier and more sustainable.

Sanoff affirms that community participation lies right at the heart of sustainable development. Sustainable communities will take different forms from place to place, but one thing that none of them will be able to do without is a broad and deep level of community participation. On the other hand he asserts community participation as a vehicle through which we can hope to re-engage people with their community and with society to create healthier and safer places for the people to live in.

Starting by defining participation on different levels Sanoff explains clearly its categories, principles, rewards, values and consequences. In the first chapter he considers the other side of this argument and states ‘there is a danger that the entire process turns out to reflect the aphorism that a camel is a horse designed by committee. Everything is likely to end up with a compromise.’ He then frankly take up the fact that people can be reasonable, in light of the information presented to them in a way that help them see how the overall scheme fits into their own vision. One should note his criticism when he then states, “In fact, the camel is an apt metaphor, as it is a unique animal capable of accommodating severe climatic conditions as a result of its unique design.”

He follows these arguments by answering questions like how should it be done? How can local people – wherever they live – best involve themselves in the complexities of architecture, planning and urban design? How can professional’s best build on local knowledge and resources? In his book he presents a wide range of methods that has been pioneered in different countries. The case studies presented include new ways of people interacting, new types of event, new types of organisation, new services, participatory games and new support frameworks.

Community Participation Methods in Design and Planning is divided into five chapters that features: * Fifteen case studies chronicling community design projects around the world * Coverage of educational facilities, housing, and urban and rural environments * Design Games-a proven, culture-neutral approach to educating participants in their design options and the consequences of their choices * Proven techniques for fostering community participation in the design process * Checklists, worksheets, questionnaires, and other valuable tools. The chapters from 3 to 5 depict examples based on Sanoff’s experience as an architectural design consultant to the Adam Group Architects, as a consultant to public agencies and volunteer group in Japan and Australia, and for three decades as Director of the Community Development Group (CDG) at the School of Design, North Carolina State University.

Chapter 1, ‘Participation Purposes’, examines community participation from a historical perspective and discusses differing viewpoints. It asserts who should participate and on what basis does participation takes place, the stages and categories of participation, and the values and consequences of participation. Chapter 2, ‘Participation Methods’, avows that participation in community issues lay serious demands and responsibilities on participants, and requires skilled professional assistance. The chapter discusses the strategic planning,
goal setting and visioning processes that needs to take place during participation processes. It examines and analyzes processes and techniques drawn from the experiences of a variety of professional designers, planners and researchers. It examines some successful models drawn in the United States and abroad.

‘Participation in Educational Facilities’ Chapter 3 starts with a conspicuous quote for ‘Sir Denys Lasdun, “Process of Continual Cooperation”, the Times (London), June 1961.’ This chapter presents six different case studies with different valuable participation processes and techniques varying between charrette processes, self assessment, focus groups, game simulation, group interaction and others. The chapter concludes with the value of Design Games, namely School Participatory games, and how it helps in establishing a dialogue between teachers, students, parents, administrators, and designers in the process of creating a new school or renovating an existing one. Chapter 4, ‘Participation in Housing’, emphasises the crucial role participation plays in housing projects, and addresses the issue that when people are in control over decisions of their housing, the process and product will enhance their social well being. The chapter examines participatory housing examples from all over the world, and ends with a very interesting part on Housing games and model making in house games.

‘Participation in Urban and Rural Environments’, Chapter 5 the last chapter of this book which is full of wealthy examples and case studies from all over the world of participation in urban and rural environments. Sanoff draws upon examples from America and abroad that have demonstrated that it is possible to build housing that people want to live in, to give people a sense of pride and reinforce their identity with their local community, to build needed social facilities, and to develop neighbourhoods and small towns that enrich people’s lives by being responsive to their needs and aspirations. The chapter commences with the fact that traditional approaches to urban and neighbourhood development were based on the master planning model, whereby policies and action strategies were linked to physical information, such as land use and building condition. This was recently replaced by a goal placed planning model, in which policies and actions are derived from social as well as physical information (e.g., client-user goals, census data, and demographic factors). I very much agree with this approach and do hope that today designers and planners all over the world assents this approach. In this chapter Sanoff compares planning of big cities to small towns and the large differences between the two approaches. He relates the current interest in small towns to be associated with a concern for what are believed to be more manageable scales of human activity. He then discusses the SWOT Analysis- strengths, weakness, opportunities, and threats- within a community, and identifies the information needed in a neighbourhood or small town planning process to be categorized as physical, social or economic. He takes it from there to examining some of the successful participation housing projects in America, Australia and abroad. Sanoff come to a closing stage of this chapter and his very useful, worthy of note book with some significant urban participatory games.

The only thing that can be taken against this
Book Review: Community Participation Methods in Design and Planning by Henry Sanoff

AMIRA Elnokaly

book is the quality of the images which are sometimes too small to be readable or to easily identify its texts. Though, this deficiency has not hindered the fact that it is still an excellent guide that provides a solid ground for community design and participation.

This book provides an overview of new methods of community participation and planning. It is aimed at everyone concerned with the built environment. Jargon is avoided and material is well analysed and presented in a universally applicable, how-to-do-it style. Whether you are a resident wanting to improve the place where you live, a policy maker interested in improving general practice, or a designer, development professional working on a specific project, you should quickly be able to find what you need.

Undoubtedly, the methods of community participation described in the book can each be effective in their own right. But it is when they are combined together creatively that community planning becomes a truly powerful force for positive and sustainable change. Community Design is a design and planning management theory whereby the community or client is actively involved and brought into the design process. This book examines community participation, providing case studies that illustrate how each principle and method is applied and executed. Community Participation Methods in Design and Planning by Henry Sanoff is an indispensable working resource for urban designers and planners, architects, and landscape architects. It is also an excellent resource for policy makers or students of those disciplines.

Henry Sanoff

Henry Sanoff received a Bachelor of Architecture in 1957 and a Master of Architecture in 1962 from Pratt Institute, New York. He came to the College of Design, North Carolina State University in 1966 from the University of California, Berkeley, where he was an Assistant Professor from 1963. A member of the Academy of Outstanding Teachers, award winner as Alumni Distinguished Graduate Professor, and a recipient of the Alexander Quarles Holladay Medal of Excellence, Sanoff has been a visiting professor at more than 85 institutions in the USA and abroad including Australia, Egypt, Brazil, South Africa, Denmark and Mexico. He won many awards including the Statue of Victory World Culture Prize for Letters, Arts, and Science; awards from Progressive Architecture Design Awards Program; and the Award of Honor, and Distinguished Service Award from the Environmental Design Research Association. He received the Sigma Iota Rho Award for Distinguished International Service and the NCSU Outstanding Extension Service Award. Sanoff is the USA editor of the International Journal of Design Studies, a member of the Editorial Board of the Journal of Architecture and Planning Research, and the Istanbul Technical University, Journal of Architecture, Planning and Design. Sanoff is widely published and well known for his many books—including Community Participation in Design and Planning (Wiley, 2000) and Creating Environments for Young Children (NEA, 1995) among others. Many of his works have been translated into Korean, Japanese, Spanish, Polish and Portuguese languages. He is the principal founder of the Environmental Design Research Association (EDRA). He can be contacted at hsanoff@bellsouth.net
Urban RESET

Urban reality constantly requires fundamentally new spatial arrangements in order to face ever emerging challenges. Many of the urbanistic forms imprinted in contemporary cities have been shaped by the needs and constraints of the industrial period. Although they have been focal points of urban life at the time they were built today they have lost the functions and abilities they once had. They could be
urban RESET
Disclosing the immanent potentials of urban spaces

JÖRG SEIFERT

described as voids – although they still cannot be missed due to their sheer dimensions.

At the same time there is growing evidence that such remnants of the past are being reread in innovative ways, for example within projects such as the Toni-Areal in Zurich or the Île-de-Nantes in Nantes. Both refrain from knee-jerk tabula rasa-strategies; instead they investigate the options offered by the existing urban texture and foster its continuous transformation. In these processes architectural creativity plays a key role. It explores existing structures from unconventional perspectives and reinterprets them in the context of current challenges – mostly together with stakeholders from other backgrounds. In reshaping urban spaces, reprogramming buildings and revising the logics of urbanistic predeterminations, architecture is able to reveal the hidden potentials of existing structures and to reorient everyday urban life: In this sense architecture provokes an urban RESET.

Architectural or urban design interventions powerful enough to cause an urban RESET differ fundamentally from “critical reconstruction” or the revitalization of urban brownfield sites. They rather suggest an independent category of creativity: a type of conceptual design practice, which has the potential to generate lasting effects at city level. The specific abilities of this kind of urban design interventions make it worthwhile examining the design and conceptual processes involved on multiple levels. In urban RESET there seem to be three constitutive and interdependent elements: RECONSIDER means a novel mode of reflecting the urban structure, its typologies and open spaces – entirely independent of previous functional limitations. RELAUNCHING is the conceptual reinterpretation and the physical inscription of the new reading. REINTEGRATION finally reconnects the altered space with the urban context through built elements on different scales and innovative ways of activating previously untapped potentials.

The conference urban RESET at the HafenCity University Hamburg intends to bring various topics indicating an urban RESET together. It aims at launching a cross-disciplinary debate on procedures and strategies necessary to retrieve the immanent potentials of large-scale urban structures using case studies as a starting point. Our Call for Papers addresses architects, urban designers and urban planners, historians, social and cultural scientists as well as political scientists and economists. Contributions may focus on single objects, compare multiple interventions or concentrate on specific aspects of urban RESET. These results will explore how urban design potentially can open novel fields of options and opportunities within the existing urban reality.

The results of this conference will be documented in a publication or possibly in a special issue of ARCH+ journal. Abstracts for contributions (max. 1,500 characters) may be submitted with a CV (approx. 300 characters) until May 5, 2009 to: reset@metropolitanculture.net or alternatively to

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