

Architecture of the Everyday: a Design Response for the Gaza Strip, Palestine

Salem Yousuf Al Qudwa

School of Architecture

Faculty of Technology, Design and Environment

Oxford Brookes University

A thesis submitted in partial fulfilment of the requirements of
Oxford Brookes University for the award of Doctor of Philosophy

Oxford, June 2020

Contents

Abstract	5
1 Introduction	7
1.1 Background	7
1.2 Research Aims and Objectives	11
1.3 Research Questions	12
1.4 Expected Outcomes of the Research Project	13
1.5 Research Design and Methodology	14
1.6 Original Contribution to Knowledge	15
1.7 The Structure of the Thesis	18
2 The Gaza Context	21
2.1 Introduction	21
2.2 Beneath the Layers of Gaza	21
2.3 Political Processes that have Shaped the Gaza Strip	24
2.4 The Impact of the Blockade	27
2.5 Attacks on the Gaza Strip	31
2.6 Everyday Life from Gaza: Energy and Water	33
2.7 Gaza's Urban Fabric: the Unstable and the Unpredictable	37
2.8 Housing Shortage in the Gaza Strip	38
2.9 Conclusion	45
3 Architecture of the Everyday	47
3.1 Introduction	47
3.2 The Concept of the "Everyday"	47
3.3 Aesthetics of the Ordinary	49
3.4 Everyday Objects and Their Aesthetic Origin	53
3.5 Architecture of the Everyday	58
3.6 Everyday and the Self-build	60
3.7 Conclusion	62

4 Gaza's Design-based Case Study	64
4.1 Introduction	64
4.2 Rehabilitation of Damaged Houses Project	66
4.3 Location Conditions	69
4.4 Need Assessment Phase	72
4.5 Design Phase: Floor Plans and Facades	75
4.6 Project Simplicity and Cost Efficiency	80
4.7 Lessons Learnt and Use for Further Investigations	84
4.8 Conclusion	86
 5 Methodology and Fieldwork	 89
5.1 Introduction	89
5.2 Design Research Methodology	89
5.3 Challenges of Field Research in the Gaza Strip	92
5.4 Tools and Methods of Site Investigation and Technical Testing	94
5.5 Research Sites	97
5.6 The Participants	99
5.7 Developing Contacts in the Field	100
5.8 Fieldwork Stages	101
5.9 Analysis Methods	105
5.10 Limitations and Ethical Issues	110
5.11 Conclusion	112
 6 Mapping Gaza's Everyday	 114
6.1 Introduction	114
6.2 The Social Infrastructure of the Gaza Strip	115
6.3 Extended Family in the Everyday Space	119
6.4 Normalisation of Abnormal Conditions	122
6.5 Everyday Rituals (Birth, Marriage, and Death)	126
6.6 Movement between Buildings	128
6.7 Mapping the Physical Infrastructure	138
6.8 Self-built Houses and a Fragile Construction of Gaza	146

6.9 Minimizing Construction and Architectural Components	151
6.10 Grey Boxes and the Form Making Process in the Gaza Strip	153
6.11 Reconstruction, Affordability and Quality	156
6.12 Conclusion	156
7 Participatory Design and the Gaza's House Design Prototype	160
7.1 Introduction	160
7.2 Participatory Design in the Gaza Strip	161
7.3 Analysing the Findings from the Participatory Sessions	163
7.4 Materials Accessibility and Acceptability	170
7.5 The Gaza's House Design Prototype	175
7.6 Reflections on the House Design Prototype	190
7.7 Conclusion	192
8 Conclusion	195
8.1 Review	195
8.2 Implications of Research	197
8.3 Reflections on the Research Process and Methodology	199
8.4 Strength, Weakness and Limitations of the Research	200
8.5 Recommendations and Suggestions	201
Bibliography and Cited References	204
List of Illustrations and Credits	223
Appendix A: Rehabilitation of Damaged Houses Project Drawings (2011)	
Appendix B: Consent Forms (2016)	
Appendix C: Gaza's House Design Prototype Drawings (2019)	

Abstract

This research by design project draws on the notion of the ‘Architecture of the Everyday’ in order to investigate the relationship between the active and on-going situation of conflict and the changing social needs of occupants in the Gaza Strip, Palestine. Gaza is a setting with profound challenges and opportunities and as such it could be seen as a laboratory for an *architecture of scarcity*, which could address in a unique way the complex social dynamics of this location. The thesis aims to design a vision of and articulate a model for the post-conflict reconstruction of marginalised communities in the Gaza Strip based on the principles of the architecture of the everyday, which is the core of the research. The principles for an architecture of the everyday are abstracted from a study of vernacular and generative architecture. Having set out a framework which defines the architecture of the everyday, I argue that examining Gaza’s socio-cultural context through such a framework does not only restore the personal agency of beneficiaries, but also gives rise to creative possibilities in the built environment where few such possibilities exist currently.

The search for specific architectural solutions in the reconstruction of human settlements in the Gaza Strip thus provides the template for my doctoral project. A design-based case study of the Rehabilitation of Damaged Houses project in the Gaza Strip is featured as a critical appraisal of one of my related projects undertaken in Gaza. The thesis further draws on my architectural background, linking emergency and architectural site-work to fieldwork research and thus exploring the potential of social and physical mapping as research tools. A further ‘house design prototype’ for a representative low-income extended family then acts a background to discussing the real issues involved in everyday architectural design in the Gaza Strip. More specifically, through design by participation, this research project seeks to address and account for inhabitants’ needs, perceptions, appropriate affordable materials, and self-building construction techniques. By enabling interaction with participants in their homes, it was ensured that the participatory design sessions that produced the data for this prototype design took place in natural settings.

In this way, the requirement for inclusiveness, specifically concerning the low-income extended families participating in the study, was also fulfilled. The findings from the participatory design sessions are analysed in relation to families' domestic place-making processes and shown to inform a proposed house design prototype. The objective of this design process is to propose a dynamic living environment instead of a rigid human storage facility that accommodates intergenerational households in conditions where land and resources are often scarce. The house design prototype is thus seen as being informed by the relation of socio-cultural routines to physical settings in the Gaza context. In presenting and analysing such a house prototype, I hope to challenge conventional attitudes toward home reconstruction and to emphasize how architecture not only provides a sense of stability and protection from conflict but also restores social agency that thus finds expression in a variety of forms.

1 Introduction

1.1 Background

The Gaza Strip, Palestine is one of the most densely populated areas in the world, with two million Palestinians living in an area of only 139 square miles (PCBS, 2018; OCHA, 2015). More than half of the population consists of refugees, who in 1948 fled or were expelled from their original homes in what is now known as the state of Israel. Like other Mediterranean and Arabian societies, the prominence of the family as a social unit in the Gaza Strip is rooted in the history of Palestine and its social and political organisation. Up until the beginning of the 20th century, family clans played a major role as powerful landowners (Allweil, 2016). While land ownership is no longer a marker of social prestige in Palestinian society, the extended family remains the most typical basic social unit of the Gazan society. Older parents and grandparents are expected to rely on the financial support and the care of their children and grandchildren (Robinson, 2008).

In local Arabic, “*Enta men dar/beit meen?*” (which family/home are you from?), will be the first question that someone will ask you if she/he meets you for the first time. The Arabic word ‘*dar*’ or ‘*beit*’ means ‘house’. It is customary for people to be identified in everyday interactions by their family name and, in a more informal way, by their sheer physical resemblance to other members of their extended family. A single man, divorced or a widower, is the object of horror and pity. In the Palestinian psyche, the home is synonymous with family life (Qleibo, 2011). Home; as a physical place of family practices, is important in the Arabic culture and for uprooted people such as the Palestinians, extended family serves as an important institution critical in the survival of their culture (Harker, 2011).

The high density of the population in the Gaza Strip (5,204 persons/km²) results in overcrowding, which is a serious problem and this in turn means that there is often very little space available for new construction (PCBS, 2018). For example, young married couples can hardly enjoy their privacy (OCHA, 2015). Equally, young people are forced to study in their grandparents’ homes, on roofs

and in kitchens of their houses, which several recent studies have shown to cause lower academic achievement (Akesson, 2014).

In addition to the population increase, existing houses have been repeatedly bombed and destroyed, and the situation has worsened since 2014. During the fifty-one-day conflict with Israel in July and August 2014, more than 100,000 homes were damaged or destroyed and lack of funds and the blockade which started in 2007 continue to hamper reconstruction (OCHA, 2015). Most of the population continued to have restricted access to construction materials due to the Israeli blockade and the complex Gaza Reconstruction Mechanism (Barakat et al., 2018). Due to the factors that negatively influence the narrative of architecture, such as the unstable and poor economic situation resulting from the occupation, the illegal blockade, the border restrictions and their effects, and the scarcity of land, the majority of the dwellings in the Gaza Strip are not completed. If they are, then they often fall short of the Palestinian building code requirements with gross violations of basic health and safety standards.

Families will often participate in the process of house construction by undertaking building work themselves. This is done mainly through self-finance and with some local technical assistance. Communities have little choice but to construct, rehabilitate or rebuild their houses to address their urgent and basic needs despite all the constraints and the shortage of material and expertise. They may self-build using their own ideas or may pay a local contractor. Given that land and resources are limited, the urban-scape and physical environment (residential buildings) tend to be reduced to the bare essentials. Low-income families in the region try to build houses that accommodate the requirements of their extended families, but because of their financial circumstance the construction work may take time, and rooms may be added on in an incremental fashion (Harker, 2011).

In response to factors such as the scarcity of land and the limited skilled local workforce, architectural plans and the work practices that produce residential buildings employ simple materials and unsophisticated construction techniques, with little capacity for an understanding of the possibilities of being more innovative with the available materials. Houses are made up of essential elements

such as floors, walls, roofs and hearth but they are not functionally efficient in terms of providing for the basic human needs of shelter and thermal comfort and responding to the extended families' requirements. The type of work undertaken is determined by the client's budget, which means that households often work with semi-skilled builders from their immediate neighbourhood. The work that is undertaken is determined by the main building materials available (mainly concrete masonry blocks) and the limited financial resources (Fig. 1.1).



Figure 1.1: An example of a construction site in the Gaza Strip; and without being equipped with hard hats or lifelines, semi-skilled bricklayers peer down while putting another row of cement blocks. Source: Salem Al Qudwa, 2010.

The buildings that result from such basic building techniques and the circumstantial constraints placed upon the inhabitants of Gaza are concrete blocks that are far below the usual basic building standards. The self-built structures (houses built by owner families) are of slow construction evolution and represent most of the built fabric in the Gaza Strip. They cannot respond to the everyday urgent community needs and to the climatic conditions as they are extremely hot during the summer and damp and cold in the winter. In the long run, they are also

wasteful of water, electricity, and natural resources. Such self-built residential buildings fail to provide a sense of place, of belonging, for most low-income extended families having to be concerned with addressing their immediate domestic needs on a daily basis.

There are two types of residential buildings in the Gaza Strip, (1) Multi-storey detached houses, which were normally constructed in incremental phases, and which have different floor plans responding to the extended family needs at a certain moment in time; and (2) Residential projects to be constructed in one build (Hadid, 2002). Unlike other buildings, these residential blocks have identical plans for all floors, a mass production for multi-families which is funded by donors from Saudi Arabia and the Gulf States or by the United Nations Relief and Works Agency (UNRWA) for Palestinian refugees in the Gaza Strip. These housing projects “were of different types, including cooperative housing and subsidized mass housing clusters, as well as, in a few cases, neighbourhood units” (Asfour, 2017, p. 40). To date there has been limited research by Palestinians from Gaza concerning the relation between socio-spatial practices and architectural design aspects in the Gaza Strip (Mushtaha, 2006; Jabareen and Carmon, 2010; Ammar et al., 2013; Asfour, 2017). As a consequence of this limitation, I selected the mapping exercise for this research by design to deal mainly with incremental detached houses, which were self-built by low-income extended families in marginalised communities.

In general, the self-building strategies (Rudofsky, 1964; Turner, 1976; Ward, 2012) point to the increasing relevance of the ‘architecture of everyday’ principles such as simplicity, use of common available materials, being ‘ordinary’ (Fausch, 2014) and ‘transformative’ over time by the functional needs of its occupants (Hourigan, 2015). A growing number of architects are promoting an architecture that is resourceful in its simplicity. According to Berke and Harris (1997, p. 8), the intention is “to avoid cycles of materialistic consumerism and transient fashion, that have reduced architecture to a series of stylistic fads.”

Despite their limitations, self-building techniques significantly contribute towards the empowerment of the community, enhancing the quality of life and human dignity. In this sense, this thesis aims to show that severe restriction of

resources, technology and manpower does not necessarily lead to ‘hopelessness’, but can be transformed into ‘resourcefulness’, by capitalizing on the attitude of ‘resilience’ (Saito, 2017, p. 19). These qualities of resilience and resourcefulness are assets that now operate primarily at a very small scale, but perhaps can be redirected to solve larger scale problems. This PhD by Design therefore sets out to make sense of these complex socio-political constraints and to investigate the architecture of the everyday in the Gaza Strip as a resource for alternative solutions and, through this, as a practice that is replete with possibilities.

1.2 Research Aims and Objectives

The research undertaken as part of this PhD by Design aims to investigate self-building as a social adaptation technique in relation to the current crises in the Gaza Strip. The research engaged local communities with a view to understand/develop their needs, perceptions, appropriate affordable materials and self-building construction techniques. The findings from the participatory design sessions with Gazan families were subsequently analysed in relation to place-making and used to inform a proposed house design prototype. The main research objectives refer to:

1. Develop a conceptual framework for examining the Gaza context under current socio-political constraints (Chapter 2) and to define the concept of ‘Architecture of the Everyday’ (Chapter 3), in particular with respect to the notions of ‘home’, place identity and the processes that produce identity.
2. Identify the fundamental reconstruction constraints for low-income extended families in rural and marginalised areas (Chapter 4).
3. Identify, through social and physical mapping, the dynamics and behaviours of communities that are relevant to producing the built environment and to place-making, characterizing the self-building approach (Chapter 6).

4. Elaborating through the use of participatory design sessions a house design prototype suitable for the current socio-cultural practices of the low-income Palestinian extended families in the Gaza Strip (Chapter 7).
5. Reflect on how the design outcomes encompass notions of home and place identity within the context of architecture of the everyday.

1.3 Research Questions

The study focuses on providing clarity on the nature of the ‘architecture of the everyday’ with a major concern on how architecture of the everyday could help improve existing tectonic quality and spatial forms in Gaza under current constraints while engaging local communities on issues of architectural design in self-building. The search for a ‘new vernacular’ in Gaza which responds to local needs and cultural norms, as well as the research on design principles that take into consideration the architecture of the everyday arises from three areas of reflection as follows:

- Why has the ‘architecture of the everyday’ produced by people in Gaza and the ‘self-build techniques’ have given rise to the design-process adopted by this thesis?
- How in turn does this contribute to the conceptual framework of the ‘architecture of the everyday’ and an understanding of the ‘vernacular’ in this context?
- How architects and local builders share knowledge in relation to the self-building techniques, and what is the value of public participation?

Further questions stemmed from these main considerations and they are: What is the social role of the architect in addressing such challenges? What are the ethical implications of post-conflict experimental architectural techniques?

1.4 Expected Outcomes of the Research Project

Ideas developed in this research project aim to fill a gap in the understanding of self-(re)-building methods and the responsive strategies of populations in conflict-affected areas. The data collected informs reflection on house building and self-building for a suitable design in the current context in Gaza. Understanding the existing self-building practices can provide insights into immediate possibilities, while also suggesting innovative design alternatives that could contribute to the improvement of conflict and post-conflict building responses.

The research results set out to identify some design principles for architecture of the everyday in terms of: (a) Everyday domestic practices; (b) Design approach; and (c) Construction methods that can save materials and resources to suit the local current conditions of the Gaza Strip. In addition to producing more economic and durable buildings to improve the housing conditions in the region, a major concern of this research is how the notion of ‘the everyday’ and its significance could be recognised given the existing situation in there. In addition, how this language of the everyday could be assimilated into designs using available construction techniques and resources. In other words, by combining both the social family practices and the physical place, the thesis investigates families’ domestic place-making processes and the resulting identity of place. The main outcomes of the research project can be summarized as follows:

- A mapping of the current housing situation in the Gaza Strip under existing constraints.
- An integration of cultural identity in empowerment techniques to address local issues concerning the regeneration of their communities.
- A set of key design principles that support the ‘architecture of the everyday’ standards for houses of low-income families in the Gaza Strip.
- Established ways of working related to the house architecture, such as materials, the potential for savings while building, the availability of natural resources and the environmental issues associated with it, such as energy efficiency.

- A house design prototype with minimum thresholds and ceilings for costs to ensure decent houses and to provide durable housing solutions for low-income families who need them.

The prototype emphasises the use of locally sourced materials and the design can be adopted in poor, marginalised and rural areas in the Gaza Strip where there are material constraints and an urgent need for low-income family houses. The architectural design outputs from this design inquiry were presented using sketches, collages, 1:100 architectural drawings, indicative computer-generated images for the architectural form and interiors within the everyday socio-physical context of the Gaza Strip, and detailed costs estimation. Therefore, the prototype which can become a new form vernacular architecture in Gaza is the pragmatic approach. On the one hand, it encompasses the participatory design sessions and the fieldwork, directly meeting with low-income extended families concerned in this research. On the other hand, the approach and philosophy formulating the design brief and the objective of this design-process is to propose a productive living environment instead of a rigid human storage facility. The shape or form may have to adapt in instances considering location, density, and other factors such as everyday domestic routines and its resulting sense of place. The principal and components, that this research have derived from this research should always be present for new builds.

1.5 Research Design and Methodology

The research was structured around techniques of mapping the social and cultural grounds available. The first stage of this research by design was conducted through semi-structured interviews and social mapping methods. Interviews were carried out with 20 extended families between June and December 2016. The humanism of the ethnographic approach of architecture deployed was inspired by previous consulting work undertaken in the Gaza Strip for a different project (see Chapter 4). Since the research undertaken aimed at improving an understanding of the meaning of architectural design within the local communities studied, interviews that could then be analysed appeared to be the most salient method to

encourage people to speak about their ideas and ideals related to their houses. While the interviewees did not object to being named by their real names, care was taken to offer anonymity and thus protect the identity of those who took part in the research project. The interviews were coded into two representative categories: urban households (UH) and marginalised households (MH). In order to identify the self-build challenges that might be represented by ‘architecture of the everyday’ in the Gaza Strip, the second stage entailed physical mapping and five participatory design sessions. The researcher worked with five of the 20 families that had been interviewed (who were strategically placed with the structure of self-build and that have knowledge relevant to the objectives of the study) to assess their responsiveness to a house design prototype given the current constraints in the region (Chapter 7).

Together with the design-based case study (Chapter 4), the information gathered during the fieldwork and the participatory design sessions helped to establish the house design prototype that could be part of a pilot scheme, a module project, where space is limited and shrinking. The interviews with the 20 households established an immediate and local understanding of some aspects of the architecture of the everyday and domestic priorities. The notions of home and identity explored in the interviews in terms of privacy, protection, belonging, house appropriation, and physical expansion under the current constraints. It gave ground to a better understanding of how socio-cultural practices and places identity can be preserved in scarcity and conflict contexts and translates in construction options and design choices.

1.6 Original Contribution to Knowledge

The literature review identifies gaps within this evolving area of design research, i.e. ‘architecture of the everyday’, and how it relates to architectural design particularly in the Gaza Strip. The published research relating to Gaza is mainly within a political and developmental context while focusing on humanitarian and social issues (Grady and Abu Daqqa, 2001; Nusseibeh, 2008; Qleibo and Mohana, 2009; Roy, 2016; Barakat and Masri, 2017). Most of the traditional architectural research is focused on architectural styles of houses and architectural identity

and/or the analysis of housing needs on a larger planning scale (Jabareen and Carmon, 2010; Mushtaha and Arar, 2011; Ismail, 2012; Muhaisen, 2016; Asfour, 2017). There is a very limited academic analysis of the social meanings and their integration with daily routines in relation to place-making and design issues for low-income extended family houses in the Gaza Strip.

The Gaza Strip continues to endure a difficult time with the Israeli bombardment and a situation of impermanence. Due to this on-going situation, people's expectations of their own immediate needs remain unmet. The research undertaken towards this PhD by Design engages the topic of architecture from a multidisciplinary perspective. It draws on ethnographic work, not only analysing the statements of the 20 extended families interviewed, but also those of relevant international and local organizations, agencies, institutions, that all try to address the issue of housing needs through their work. In addition to ethnographic work, the researcher organised five participatory design sessions with extended families as an inventory of each family's daily life, comprising their daily practices, needs, and their perceptions of appropriate affordable materials. This multi-disciplinary approach represents one of the first design-led projects investigating the architecture of the everyday in the Gaza Strip and its potential for a collective urban environment and building homes that encourage ownership. By way of proposing a design-oriented inquiry, the project also articulates the need for and the benefits of constructing rapid and simple buildings in the context of the current political situation and given the urgent housing demands in the region. Moreover, as the reality of housing is investigated from a multidisciplinary perspective, this attempts to ensure that the needs are addressed in a variety of ways that are respectful of the social, political, and religious aspects of the community. The practice-based contribution to knowledge of this thesis can be specified as follows:

- The design process developed here aims to bring together architectural theory, local needs and cultural norms, and the design input of the beneficiaries, i.e. extended families in need of adequate houses,

emphasizing the relevance of socio-cultural identity in achieving a responsive design inspired by families' domestic place-making processes.

- The inquiry into everyday practices sheds light on current as well as future issues related to the methods employed by architectural design and the problems that it faces: the uncertainty, disorganization and even the unpredictability of urban design in Gaza (no clear urban planning framework, no reliability of basic services, such as the provision of water, electricity or construction materials). As such, it opens the way towards other much needed work in architecture and urban planning that will need to be undertaken in Gaza at the same time as a commitment to a stabilizing of the current regional political situation.
- It is proposed that the house design prototype will benefit the Palestinian Ministry of Public Works and Housing as well as international aid agencies working in the Gaza Strip, such as the Norwegian Refugee Council, Islamic Relief Palestine, and the UN-Habitat. This is will be achieved by producing a design manual utilising the material as set out in this PhD that offers guidelines on construction phases, cost estimations and labours required, and to provide guidance on matching design with Gaza's context.

It would be presumptuous to think that a focus on a well-considered architectural design would provide sufficient resilience in the face of on-going Israeli airstrike attacks. Hence, the research undertaken in this PhD promotes a self-build approach for low-income extended families which enables them to have some control on their future. The self-build houses can be supported or enhanced by institutional players and which can denote a sense of identity, pride, and permanence to its inhabitants. This supports a notion that the 'new vernacular' in Gaza is heavily influenced by the concept of 'permanence' as 'resistance' to the 'occupation' and the on-going conflict that is experienced on a day-to-day basis. While the field of research and expertise in relief and development for housing the displaced rarely mentions the 'everyday', the main contribution to knowledge of this research is to consider the value of the everyday, its unique power, and its aesthetic appreciation by the inhabitants in the context of living in conflict zones

with economic instability. When ‘resourcefulness’ and not ‘hopelessness’ is mentioned as a reference to the way people repair, reconstruct and rebuild their damaged houses in the Gaza Strip, it is not the intention to encourage ordinary people to appreciate the negative aesthetic qualities of what they already have. Quite the opposite, and in the responses to the situation imposed against any economic prosperity in Gaza (Roy, 2016), this research highlights the relevance of the everyday aesthetics discourse as well as simple and minimal buildings in the Gaza Strip. The challenge then becomes how to provide an impetus for improvement of the living environment in the sense of physical identity, stability, and getting better functional yet healthy, comfortable, and protected homes for the inhabitants.

Finally, there is limited evidence regarding a published discussion on the aesthetic considerations to support the architecture of the everyday as more than simply a functional application (Kowaltowski, 1998; Al Qudwa, 2017). The appearance of self-built houses in the Gazan setting under conflict and constant Israeli blockade are often piecemeal in construction (Harker, 2011). For the purpose, the researcher attempted to develop the notion of the aesthetics of the everyday in terms of its theoretical framework (Chapter 3). This was achieved by applying his practical experience (Chapter 4) in the mapping of Gaza’s everyday (Chapter 6), that was then translated into the design process (Chapter 7). The following section describes the detailed structure of the PhD thesis.

1.7 The Structure of the Thesis

The thesis is structured as follow:

Introduction Chapter provides a brief background and knowledge about the research topic and presents the research aims and objectives and underlying the research questions. It contains a summary of the found literature and the gaps and presenting the methodology used to conduct this research by design.

Chapter 2 provides a context for the research through an examination of the historical background of the current social and political situation in the Gaza

Strip, as well as a brief historical review of the architectural heritage. The political and economic limitations as well as the common challenges faced in the Strip at the moment are outlined. This was deemed necessary in order to show the multiple issues that have affected the way Gazans build.

Chapter 3 presents some of the concepts associated with the ‘architecture of the everyday’ and reveals the importance of the families’ domestic place-making processes. There is a general recognition that the concept of the architecture of the everyday needs to be better understood in order to uncover the relationships between various socio-cultural aspects, local needs, and the relevance of these to the physical identity of domestic space in Gaza given the current blockade and constraints. The concepts of the architecture of the everyday will also prove useful when considered as part of the design process, offering the architect and the beneficiaries a common ground to establish priorities in designing a building in a given space.

Chapter 4 further expands on the theoretical contribution of Chapter 3 by taking up a critical appraisal for a design-based case study that was previously undertaken in Gaza by the researcher. The chapter assesses the architecture of everyday in the Gaza Strip and highlights its potential, making apparent the role of the architect in the process of the rehabilitation of houses in Gaza in the context of current constraints. The analysis undertaken in this chapter lays out the conceptual basis for the research project and sets the scene for the research methodology presented in Chapter 5.

Chapter 5 describes and critically presents the methodological approaches and techniques related to fieldwork carried out in three identified communities, during which social as well as physical mapping were undertaken. These were then complemented by participatory design sessions which focused on specifying a prototype house design.

Chapter 6 draws on the social and physical mapping presented in the previous chapter, looking more closely at the qualitative data collected with a view to assessing the potential of the architecture of the everyday. This chapter

summarizes the data collected and highlights the main themes according to which the data can be organized and interpreted. The aim of this chapter is to evaluate the social practices and the existing situation's aspects of functionality, the internal environment, and the visual appearance of the built houses, as well as to test the economic simplicity and savings possibilities of existing building practices. This will be in the consideration for the design process in marginalised areas.

Chapter 7 looks at the outcomes of the five participatory design sessions and proposes a house design prototype. Alternatives to developing the existing architecture are suggested, as well as design solutions to overcome the multiple current difficulties. The outputs of this chapter are a written component, a design portfolio comprising sketches, analytical diagrams, a selection of photographs, and the house design prototype's architectural drawings at different scales.

Conclusion Chapter offers a discussion about the potential of the architecture of the everyday in the Gaza Strip and summarises the research. It discusses important parts of the findings, their limitations. The chapter concludes with some recommendations and states a view for further work.

Chapter 2: The Gaza Context

2.1 Introduction

Chapter 2 considers the historical background, the architectural heritage, and the political processes that have shaped the Gaza Strip from 1917 to 2018. It specifically focuses on the impact of the blockade and the frequent Israeli attacks on the day-to-day lives of Palestinians. It also highlights initiatives taken to deal with those constraints. This is followed by a description of the fragmented communities and Gaza's fragile landscape with a specific focus on housing needs and scarcity of resources, as an introduction to the relevance of the rest of the thesis.

2.2 Beneath the Layers of Gaza

The Gaza Strip is the southern region of the Palestinian flat coastal plain on the Mediterranean north-east of the Sinai Peninsula. The Strip constitutes approximately one percent of the area of historic Palestine. It is 365 square kilometres with a length of 41 kilometres and a width ranging from 6 to 12 kilometres. Egypt lies to the south-west of the Strip and Israel to the north and east. It takes its name from Gaza, its main city (UNEP, 2009). The Palestinian Strip has a Mediterranean climate and it is hot in summer and cool and wet in winter. Nowadays; and because of the Israeli occupation, "the Gaza Strip is considered one of the most beleaguered environments in the world. For urban scholars and designers it presents a complex space due to political uncertainties and the ethical considerations of urban development on such a limited strip of land with a floundering economy and urban settlements that suffer from high social, health and security risks" (Terreform, 2015). It has not always been like this. Palestinians lived along this coast in towns and villages, and Gaza as a chief city of the area situated on the maritime route linking Asia to Africa, was always a place of regional significance. In ancient times it marked the end of the Frankincense Trail in the Roman and Early Christian eras, and during the Muslim Mamluk period it was the capital of the province of Palestine. Gaza city

was a religious and cultural centre during Ottoman rule, and one of the most important cities in the Palestine province. At this time, “a dramatic change unfolded in Palestine’s landscape starting in the 1860s. Within about forty years, Palestine’s fortified cities spilled beyond their centuries-old walls, and a new class of landowners developed a vast new housing and settlement form, the plantation” (Allweil, 2016, p. 1).

At the end of the Ottoman period the city had a vibrant economy and exported large quantity of agricultural produce. In that period Gaza remained a quiet city, with a desert hinterland and a pastoral coastline. According to Allweil (2016, p. 14), “nondurable construction materials, primarily mud bricks or mud-covered straw, characterised the typology of houses.” As shown in Fig. 2.1, the vernacular architecture of the region is still recognizable in some parts of Old Gaza City. Another example is the Sayed Hashim Mosque (Masjid as-Sayed Hashim) which is located in the ad-Darraj Quarter of the Old City. The current mosque is on the site of one of the oldest and largest mosques in Gaza built during 12th century. It was rebuilt in 1850 and materials used in the mosque’s construction were taken from the mosques and other buildings destroyed by Napoleon Bonaparte’s troops (Ibrahim, 2018, p. 26).



Figure 2.1: The Ibn Othman Mosque is located in the Shejaiya Quarter, and is the second largest mosque in Gaza City, after Al Omari Mosque. Source: Salem Al Qudwa, 2016.

After the end of Ottoman rule during World War I (1914–18), the Gaza area became part of the League of Nations Mandate for the territories of Palestine under British rule. The city saw a boom of construction and development, and many new neighbourhoods appeared along the coastline during the 1930's and 1940's. In November 1947, and before this mandate ended, the General Assembly of the United Nations accepted a plan for the Arab-Jewish partition of Palestine; under which the city of Gaza and an area of surrounding territory were to be allotted to the Arabs (Bardi, 2016). The British Mandate ended on the 15th of May 1948 and on that same day the first Arab-Israeli war broke out¹. Egyptian forces soon entered the town of Gaza, which became the headquarters of the Egyptian expeditionary force in Palestine. As a result of heavy fighting in autumn 1948, “the area around the town under Arab occupation was reduced to a strip of territory 25 miles (40 km) long and 4–5 miles (6–8 km) wide. This area thus became known as the Gaza Strip and its boundaries were demarcated in the Egyptian-Israeli Armistice Agreement of February 24, 1949” (Pressman, 2005, pp. 4-6).

During the 1948 fighting, approximately 700,000 Palestinian had fled to Arab parts of Palestine, such as the Gaza Strip and the West Bank. Many Palestinians fled to Gaza as refugees as the towns they once lived in became part of Israel. The Gaza Strip was under Egyptian military rule from 1949 to 1956 and again from 1957 to 1967. From the beginning, the area's chief economic and social problem was the presence of large numbers of Palestinian Arab refugees living in extreme poverty in squalid camps (Kushner, 2005; Hazboun, 1994). The Egyptian government did not consider the area part of Egypt and did not allow the refugees to become Egyptian citizens or to migrate to Egypt or to other Arab countries where they might be integrated into the population. According to Hazboun (1994) and Roy (2016), the refugees were maintained largely through the aid of the United Nations Relief and Works Agency (UNRWA) and the Strip reverted to Egyptian control in 1957 following strong international pressures on Israel.

¹ The 1948 Palestinian exodus known in Arabic as the *Nakba* which brought about the creation of Israel.

2.3 Political Processes that have Shaped the Gaza Strip

Following its establishment, Israel designed a system of law “that legitimised both a continuation and a consolidation of the nationalisation of land and property, a process begun decades earlier” (Hazboun, 1994, p. 66). According to COHRE and BADIL (2015), “a series of laws passed by the first Israeli government prevented Palestinians refugees from returning to their former homes or to receive compensation for their loss of property” (p. 39). For the first few years of Israel’s existence, many of the new laws continued to be rooted in earlier Ottoman and British law. These laws were later amended or replaced altogether and “the first challenge facing Israel was to transform its control over land into legal ownership. This was the motivation underlying the passing of several of the first group of land laws” (COHRE and BADIL, 2015, p. 37). The ‘absentee property owner’ played an enormous role in making Israel a viable state (Badri, 2016, p. 168). In 1954, more than one-third of Israel's Jewish population lived on absentee property. Nearly a third of the newly displaced Palestinians (250,000 people) settled in urban areas and refugee camps abandoned by the former Arab population. The camps were carried out by direct relief and works programmes for Palestine refugees by the UNRWA (Metz, 1988; Davis, 2003).

In the Six-Day War of June 1967 between Egypt and Israel, the Gaza Strip was again taken by Israel, which occupied the region for the next quarter century and 21 Israeli settlements existed within the Palestinian territory of the Gaza Strip. According to Hazboun (1994), in the early 1970s, Israel initiated what it called the ‘build your own home’ programme for Palestinians refugees in Gaza as an incentive to establish a life of permanence outside of the camps. A half a *dunam*² of land outside the camps was given to extended families who then paid a down-payment in the first stage, financed the purchase of building materials and, usually with the help of friends or local contractors, erected a home. Israel provided the infrastructure: sewers, schools, etc. More than 11,000 camp dwellers were resettled into ten different neighbourhoods. The Palestine Liberation Organization

² *Dunam* is an Ottoman measurement and the metric dunam is equal to 1,000 m² in Palestine.

(PLO); established in 1964, used intimidation tactics to end the programme in 1989 (Hazboun, 1994, pp. 144-146).

In December 1987, rioting and violent street clashes between Gaza's Palestinians and occupying Israeli troops marked the birth of an uprising that came to be known as the *Intifada*³. In 1994 Israel began a phased transfer of governmental authority in the Gaza Strip to the Palestinian National Authority (PNA) under the terms of the Oslo Accords that were signed by Israel and the PLO in 1993 and 1995. According to Kelman (2007), the fledgling Palestinian government, led by Yasser Arafat, struggled with such problems as a stagnant economy, divided popular support, stalled negotiations with Israel over further troop withdrawals and territorial claims, and the threat of terrorism from militant Muslim groups, such as *Hamas*⁴ and the Islamic Jihad. Both refused to 'compromise' with Israel and were intent on derailing the peace process (Kelman, 2007, p. 297).

The Oslo Accords allowed the Israeli army to maintain a security perimeter between Israel and the Gaza Strip. Beginning in late 2000, a breakdown in negotiations between the PNA and Israel was followed by a further, more extreme outbreak of violence, termed the Second Intifada (Kelman, 2007). The 'buffer zone' (a military no-go area) soon became off-limits to Palestinians (PASSIA, 2018; Diakonia, 2011). In an effort to end the fighting, Israeli Prime Minister Ariel Sharon announced in late 2003 a plan that centred on withdrawing Israeli soldiers and settlers from the Gaza Strip. In September 2005 Israel completed the withdrawal from the territory, and control of the Gaza Strip was transferred to the PNA. Israel continued to patrol its borders airspace, maritime area and population registry (Fig. 2.2).

³ *Intifada* is the Arabic for "uprising".

⁴ *Hamas* is the Arabic for "the Islamic Resistance Movement".

Figure 2.2 has been removed from
this version of the thesis due to
copyright restrictions

Figure 2.2: The current Gaza Strip map and the buffer zone that extends along the entire northern and eastern perimeter of Gaza, bordering with Israel, as well as the southern border with Egypt. Source: OCHA 2015.

Gaza's urban landscape started to change dramatically after the Second Intifada in 2000, with further changes in 2006 when Hamas took power having

won the Palestinian legislative election that year. Access to this area has become even more constricted since an Israeli and an Egyptian blockade was introduced in 2007 (OCHA, 2015). According to the reports of humanitarian and human rights organisations (Gisha, 2011; International Crisis Group, 2015), Gaza's connectivity to the outside world can be defined through five border crossings, four with Israel and one with Egypt. All materials and goods required for the people in the Gaza Strip are officially to enter through Israeli border crossings, whereas the Egyptian crossing is only for persons' movement. Access to the Mediterranean Sea is limited to three nautical miles along the Strip coastline. The population estimated in 2006 was 1,444,000 and the area's growth rate is one of the highest in the world. By mid-2018 there were approximately two million inhabitants blocked into the Strip; one third of Gazan agricultural land is a buffer zone, which makes the reminder one of the most densely populated areas in the world (PCBS, 2018). Palestinian refugees in the Gaza Strip now comprise 1.2 million out of the two million residents, the reminder having lived in Gaza for generations. The timeline below (Fig. 2.3) highlights the historical and political process of the Gaza Strip and displays the milestones that shaped the built environment, such as the Palestinian Intifada, the Oslo Accords, and the disengagement of Jewish settlements from the Strip.



Figure 2.3: The Gaza Strip timeline. Source: Salem Al Qudwa based on different sources, 2018.

2.4 The Impact of the Blockade

Since June 2007, following the elections and takeover of Gaza by Hamas, Israel imposed a land, sea and air blockade on the Gaza Strip. Furthermore, the Egyptian-controlled crossing (Rafah) has been almost continuously closed

(OCHA, 2015). Moreover, the 2008/09, 2012 and 2014 invasions of the Gaza Strip have resulted in a substantial deterioration of the social, economic, political and the 'civilian infrastructures' of Palestinian society (Weinthal and Sowers, 2019, p. 4). Inevitably, erosion of these essential infrastructures is worsened by the density of Gaza's population. For these reasons; and since 2007, the blockade has reduced Gaza's GDP by 50% and the unemployment rate during 2014 stood at 43% on average. Youth unemployment exceeded 60% (PCBS, 2018). The blockade impacted access to fuel, electricity and other basic needs, such as cooking gas and basic supplies, to levels falling far beneath the area's minimal requirements (Nusseibeh, 2008; OCHA, 2018). All normal trade has been destroyed by the blockade. For an economy as small as Gaza's trade, particularly exports, is vital. With minor exceptions that are effectively non-significant for Gaza's economy, all exports have been prohibited for nearly eleven years. Nearly 80% of Gaza's population receives some form of international aid, the bulk of which is food assistance undeniably as a direct cause of low-income and high rate of unemployment as well as due to the siege (OCHA, 2015; Roy, 2016).

In politically stable times, as much as one-tenth of the Palestinian population travel daily to Israel, where they are not allowed to stay overnight, to work in menial jobs. Political tension and outbreaks of violence have often led Israeli authorities to close the border for extended periods, putting many Palestinians out of work (Muhaisen and Ahlbäck, 2012). Since September 2000, the beginning of the Second Intifada, Israel has tightened restrictions on Palestinian access to the sea and to land located near the fence with Israel, citing security concerns. According to PASSIA (2018), the buffer zone (Fig. 2.4) has tightened the Israeli chokehold around Gaza's small strip of land. Anyone within the zone has been warned by the Israeli military to leave or risk being bombed.

Figure 2.4 has been removed from this version of the thesis due to copyright restrictions

Figure 2.4: The buffer zone, ‘the No-Go Zone’, has tightened the Israeli chokehold around Gaza’s small strip of land. By Léopold Lambert, 2014: geographicalimagination.com/category/law/page/3/

In autumn 2007 Israel declared the Gaza Strip under Hamas a hostile entity and approved a series of sanctions that included power cuts, heavy restriction on imports and border closures. In January 2008, Israel broadened the siege against the Strip after facing sustained rocket assaults into its southern settlements. It completely sealed its border with the Gaza Strip and temporarily preventing fuel and basic needs imports. Later that month, after nearly a week of the intensified Israeli blockade, Hamas’s forces demolished portions of the barrier along the Gaza Strip–Egypt border (closed from Hamas’s mid-2007 takeover until 2011), opening gaps through which, according to some estimates, hundreds of thousands of Gazans passed into Egypt to purchase food, fuel, and goods unavailable under the blockade (Diakonia, 2011). The Egyptian ex-president Hosni Mubarak temporarily permitted the breach to alleviate civilian hardship in Gaza before efforts could begin to restore the border (Fig. 2.5).

Figure 2.5 has been removed from this version of the thesis due to copyright restrictions

Figure 2.5: Palestinians crossing over the demolished border fence with Egypt at Rafah, southern Gaza. Photo by Mohammed Saber, epa/Corbis, 2008.

However, the border remained closed for trade. Since mid-2013, it has been continuously closed for certain periods of time and sporadically opens for others, including for humanitarian assistance. The Gaza transportation problem, that is the lack of connection between roads and transit systems, is a further cause of inefficiency and economic disparities. Large parts of the unemployed population of the Gaza Strip cannot access jobs in the areas where employment is concentrated. For example, they cannot get permits to work in Israel or the West Bank. With Israel and Egypt tightly controlling Gaza's borders, most of its two million inhabitants are not able to travel outside the enclave. Fishermen are currently allowed to access less than one third of the fishing areas allocated under the Oslo Accords – six out of twenty nautical miles (nm) from the coast. As a consequence, this exacerbates overcrowding and lack of job creation (NRC, 2018).

Figure 2.6 has been removed from this version of the thesis due to copyright restrictions

Figure 2.6: Men selling cabbages and potatoes in the market of the Nuseirat refugee camp in the middle of the Gaza Strip. Photo: Paul Jeffrey, ACT Alliance.

While Gazans grow much of their own food (Fig. 2.6), repressive restrictions on land use imposed by the Israeli military, as well as farmers who could not reach their lands nearer to the buffer zone, means increasingly more food has to be imported at great cost from Egypt and Israel (OCHA, 2015). A thriving smuggling industry has emerged that use a network of subterranean tunnels linking parts of the Gaza Strip with neighbouring Egypt. The tunnels provide Palestinians with access to goods such as food, fuel, medicine, electronics, weapons, and construction materials. The dangers excavating and using these tunnels are numerous as the Israeli government sets out to destroy them in their attempt to damage Hamas.

2.5 Attacks on the Gaza Strip

Repeated aerial and ground invasions have killed thousands of Palestinians (International Crisis Group, 2015). These assaults, and the on-going closure of the Israel-Gaza security barrier, have generated a humanitarian disaster on a scale unprecedented since Israel's occupation began in 1967 (Roy, 2016). In December 2008 Israel launched a military assault known as Operation Cast Lead that lasted for 22 consecutive days. About 1,400 people were killed and more than five thousand civilians wounded. The infrastructure was significantly damaged. As a result of the continuous attack during the operation, more than 4,100 buildings were completely destroyed while more than 17,000 houses, governmental and public buildings were partially damaged (Shelter Cluster, 2011). Another military

attack in November 2012 has had a devastating impact on the people when 163 civilians were killed, 1,200 injured, thousands displaced, and significant damage was inflicted on infrastructure over a period of eight days. A total of 213 houses were destroyed or severely damaged, and another 1,500 were assessed as being in need of repair (Islamic Relief, 2012).

In July 2014 Israel launched another military assault on the Gaza Strip that lasted for 51 days. The Palestinian fatality toll was 2,131 of whom 1,473 have been identified as civilians, including 501 children. Estimates by the Palestinian Authority suggest that about half a million children no longer have a school to go to, either because of damage and destruction to their school buildings or because schools are being used as shelters (Fig. 2.7) to house internally displaced persons (OCHA, 2015). Access to schools for children living in the restricted areas can be dangerous due to Israeli incursions and classes are often disrupted (Akesson, 2015).

After the open-ended ceasefire; which entered into force on 26 August 2014, approximately 110,000 internally displaced persons (IDPs) remain in UNRWA emergency shelters or with host families. An estimated 18,000 housing units have been either destroyed or severely damaged, leaving approximately 108,000 people homeless. Around 450,000 people are unable to access municipal water due to infrastructure damage and/or low pressure (OCHA, 2015).

Figure 2.7 has been removed from
this version of the thesis due to
copyright restrictions

Figure 2.7: Homeless shelter in a UN school to house internally displaced persons. UNRWA, 2014.

The two million inhabitants of this thin coastal region had no hope of any immediate improvement of their situation following 2014 summer's Israeli military offensive known as Protective Edge (Roy, 2016). During 2018; and while finalising this research, more Israeli attacks took place with heavy fire across the Gaza Strip borders. Regional diplomatic efforts to end violence have proved ineffective and the blockade has been tightened more against the civilians in the Strip.

2.6 Everyday Life from Gaza: Energy and Water

The scarcity of energy since Israel bombed Gaza's single power plant has had a profound impact on the economy and daily life in Gaza. The rapid rate of population growth in the Gaza Strip and dependence on ground water as a single water source also presents a serious challenge for future political stability and economic development (Weinthal et al., 2005). In the case of fuel and electricity

the “plan of the Israeli government was not to stop supplies of fuel and electricity totally but rather to set levels of supply that are much lower than what Gazans need by allowing a minimal flow of fuel to reach the Strip, indicating that it could not go below certain limits, citing the need to abide by the minimalist moral imperative to avoid a humanitarian crisis” (Nusseibeh, 2008, p. 2).

In June 2006, the only power plant was directly targeted by Israeli air force missiles, reducing by about half the electricity supply for the residents of the Gaza Strip and causing an environmental and health disaster that threaten to cross the borders of the Strip (Tolan, 2018a). The electric power plant was later repaired, and some improvements in the electricity supply occurred, but the harsh effects of the damage can still be felt, and power generation has not returned to full capacity. Auxiliary damages caused to the electricity distribution networks in the hostilities in and after 2008 have further impaired the provision of electricity in Gaza (Muhaisen and Ahlbäck, 2012).

As a result of the shortage, electricity supplies are cut off at least 20 hours per day disrupting economic activities and all aspects of daily life (Fig. 2.8). Meanwhile demand for electricity increases by about 10 – 15 MW annually as a result of the natural population growth and the expansion in various sectors, including the housing and domestic sectors, thus further aggravating the electricity shortage (Muhaisen and Ahlbäck, 2012). The electricity crisis and fuel shortage are affecting agricultural yield and the quality of fresh produce especially in the dry months of summer when crops need a lot of irrigation. According to EWASH (2011), many farmers use excessive amounts of chemicals to fertilize the soil or to exterminate agricultural pests and the chemicals end up seeping into the aquifers. All of these factors make farming less profitable and result in rural communities seeking refuge and employment in the cities.

Figure 2.8 has been removed from this version of the thesis due to copyright restrictions

Figure 2.8: A light in darkness. A girl lighted a candle inside her house during a power cut in Jabalya in the northern Gaza Strip. Gaza's lone power plant shut its generators due to a fuel shortage. Photo: Mohammed Salem, Reuters, 2013.

Electricity shortages affect the everyday rhythms of Gazans in that they influence other economic and industrial processes at the macro scale, and to that extent, everyday life is also affected. Initiatives to overcome the electricity shortages include people buying and using home electric motors and generators which cause a lot of noise and pollution. Several studies highlighted the effects of the siege of the Gaza Strip on the environment and the impact on air quality. Toxic gases, including sulphur dioxide and carbon monoxide, which harm the respiratory system, are released into the air as a result of the use of home generators to compensate for the shortage in electricity caused by Gaza's inability to run its power plant full-time due to the acute shortage of fuel. It is estimated that there are about 100,000 of these generators in use and that they consume about 500,000 litres of fuel per day. The Gaza Strip has an average of 320 days of sunshine a year, making solar energy a viable alternative power source. The UNDP has installed solar panels in schools, healthcare clinics and water facilities in support of the Palestinian Solar Initiative, which aims to meet 30% of energy

demands in the coastal enclave with renewable sources by 2020. Private use of solar power remains costly. One solar power unit worth \$1,500 can supply a family home with electricity to power fridges, heaters, lamps, water pumps and other appliances. Many families cannot afford this, and instead burn wood and coal for cooking and warming their homes in the winter months.

According to the World Health Organization, Gaza's limited sources of water and the pollution of available sources have led to a decrease in the daily water allocation provided to Gaza residents. Individual Gaza residents are receiving less than the amount recommended to remain healthy (Tolan, 2018b). The severe shortage has steadily worsened as a result of the increasing population and absence of comprehensive development for the water and sanitation sectors. This is causing another major problem: deterioration in the water quality, as seawater is entering the aquifers as a result of aquifers being overdrawn. The sewage plants have been bombed resulting in raw sewage flowing into the sea and being sucked into aquifers. Often, families buy water from private companies who charge what they wish and run desalination plants with little regulation (Fig. 2.9). International NGOs working in Gaza are undertaking training sessions with small scale farmers on the best use of water and the most efficient ways of irrigation, maximising water use when it is available (Fig. 2.10). Large scale farms however face bigger problems given their water demand and "access restrictions due to Israeli control over more than 82% of water resources in the Palestinian territories" (ARIJ, 2015, p. 9).

Figure 2.9 has been removed from
this version of the thesis due to
copyright restrictions

Figure 2.9: A child and elderly man fill water containers at public multi-faucet sinks in the Gaza Strip. Water is purchased from Israel's national water company. Photo: Muhammad Sabah, B'Tselem, 2014.

Figure 2.10 has been removed
from this version of the thesis due
to copyright restrictions

Figure 2.10: An NGO staff members helping technical team in one of water and agriculture projects northern the Gaza Strip. Photo: ARIJ, 2015.

2.7 Gaza's Urban Fabric: the Unstable and the Unpredictable

Decades of sporadic violence in Gaza have altered the urban landscape significantly and since the 2014 Israeli attacks entire neighbourhoods stand in ruins. In Gaza, destruction has become so frequent that building, rebuilding and obliteration are occurring at the same time (Leech, 2014). Scarcity of land has meant that as cities are expanding upwards, urban life of their citizens is shifting from horizontal to vertical. The on-going conflict is being exacerbated by an influx of people from rural areas, arriving in Gaza City. "The pressure to maintain the physical and political administration of a city experiencing such profound urban flux makes cities increasingly vulnerable to internal stress and, inevitably, to civil conflict. These continuing ruptures to the social and economic fabric of the world's societies challenge us to rethink not only how cities are to be understood, but also how people are to survive and thrive in large urban centres" (Charlesworth, 2006, p. 9).

During the 1990s after the Oslo Agreement, Gaza City grew skyward, as many high-rise apartment buildings were erected in the city centre and neighbourhoods. In the wealthiest neighbourhoods, construction was marked by vertical as well as by horizontal growth. This growth and expansion for the city of Gaza does not account for social influence in the adoption and utilization of new building systems. Specifically, it is difficult to distinguish if usage of such building types is caused by the influence of what appeared to be a fake stability. According to Jabareen's pilot study (2005) on 'Culture and Housing Preferences in Gaza City', "the vast majority of residents of all social groups interviewed said

they preferred to live in detached houses rather than the multifamily housing that emerged in Gaza after the Oslo Agreement in 1993.” (p. 137) Palestinians returning to Gaza following the agreement are seen as the influencers of this social and architectural change. Land-saving housing patterns, such as attached and semi-attached housing units, are not common in Gaza. The main reason for this lies with the individual ownership culture, namely people’s preference for single housing schemes (Itma, 2014). On the other hand, housing units may be available, but remain empty because they are not affordable (Asfour, 2017). Overcrowding is a major issue in the Gaza context where long term and chronic overcrowding can lead to increased protection concern including an increase in domestic violence and general breakdown of social and culture norms.

2.8 Housing Shortage in the Gaza Strip

The housing shortage in the Gaza Strip continues to increase, driven by rapid population growth and on-going damage to the existing structures as a result of the conflict and Israeli restrictions on importing construction materials. Furthermore, the Gaza Reconstruction Mechanism (GRM) was initiated against the entry of dual-use construction materials such as cement and iron reinforcements after the 2014 attacks (Barakat et al., 2018). According to the government policy for reconstruction, eligible households are entitled to receive compensation for the value of the damaged suffered. Depending on the size and condition of the housing units prior to the 2014 offensive, the value of repairs may be insufficient to meet the cost necessary to meet the Shelter Cluster Minimum Standards (NRC, 2018).

2.8.1 Re-Construction and the Donor Industry

Despite extensive efforts of the Ministry of Public Works and Housing and many international NGOs, approximately 79% of current housing needs are due to natural growth and the refugees currently living in camps who need to be rehoused. What make this situation harder to address are the on-going Israeli military operations resulting in the destruction of thousands of civilian houses.

After the 2014 attacks, plans to reconstruct housing damaged or demolished as a result of the conflict remain stagnant. If the current situation continues, reconstructing Gaza could take decades. About 100,000 people are living in temporary accommodation because of this lack of materials. Tens of thousands more are living in severely damaged homes (Oxfam, 2015). A recent survey identifies that 19,700 housing units are beyond repair, and 24,000 households require prioritized shelter assistance before reconstruction of their homes can begin (OCHA, 2018). The scarcity of land in the Gaza Strip limits housing projects to high-density multi-storey residential buildings (Fig. 2.11). The impingement of agricultural land by settlements is impacting on poverty, as there is less viable land for subsistence farming and livestock (ARIJ, 2015, p. 6). The housing crisis continues to permeate and create social problems for affected families, contributing to an overall inability for Palestinians to fulfil their rights to adequate housing. The challenges that the Palestinian society affected by conflict faces daily are also reflected in the issues that arose more generally. This will be discussed later in chapters 6 and 7.



Figure 2.11: Partially damaged housing units in a five-storey apartment building that is still inhabited despite being targeted in Khan Younis, the Gaza Strip. Source: Salem Al Qudwa, 2013.

During the 2014 military events, internal migration occurred within the Gaza Strip and this took place from the hazardous and exposed border areas towards Gaza city, which caused a significant increase in land prices and housing needs compared to the limited available resources. As of July 2019, funding is lacking for the reconstruction of around 1,300 housing units for over 2,200 internally displaced families (Shelter Cluster Palestine, 2019). In addition, this on-going emergency situation attracted more experimental structures in the Gaza Strip. This was due to the difficulty of bringing in construction materials, and the urgent need of temporary and transitional shelters for the newly displaced. For example, in 2015, acutely vulnerable families affected by the events accepted that an international organization would erect wooden houses for them as a temporary measure until cement was available to build permanent houses. These Israeli military events as well as the construction of temporary makeshift shelters have led to substantial demographic and social changes, in particular for low-income extended families. This has on-going negative social implications that contribute to an overall inability for Palestinians to fulfil their right to adequate housing. Considering the population's perspectives and understandings, the goal of this research project is to improve the living conditions of the families in the Gaza Strip and to strengthen local building culture with regards to socio-cultural aspects. Such culturally acceptable solutions are to protect the extended family fabric and to provide visual privacy while maintaining simplicity and flexibility regarding houses construction.

2.8.2 Materials Scarcity

The comprehensive Israeli blockade since 2007 has included the closure of all crossings that link the Gaza Strip with the other Occupied Palestinian Territories (OPT), preventing the movement of people and the entry of goods and materials, with the exception of basic humanitarian necessities. Construction materials, such as cement, gravel, and steel bars are among the essential items along with a wide range of spare parts, mainly for vehicles and computer equipment, that Israel define as “dual use” items. The Israeli occupation authorities ban or severely restrict so-called “dual use” construction materials and spare parts stating that

these can be used for military purposes, such as building tunnels or intelligence gathering, as well as for civilian needs. By June 2015, less than one per cent of the construction materials required to rebuild homes that were destroyed and damaged during the previous year's hostilities, and for new houses to address natural population growth have so far entered Gaza (Shelter Cluster, 2015). The small amounts of construction materials which are available in the local market make the cost of reconstruction extremely high and unaffordable, particularly for many low-income families.

As land is scarce in the Gaza Strip, to prevent wastage the use of alternative construction techniques on a limited area needs to accommodate the social dimensions of reconstruction and the vertical growth produced by extended families. Architectural projects intended as prototypes are at risk of demonstrating a limited understanding of the spatial formation of the urban fabric in Gaza. Prototypes that are mainly conceived and funded by international organisations do not always consider the skills and experience of local construction workers. The participants in this research stressed the importance of having concrete foundations and columns. The notion of 'permanence as resistance' has determined the choice of building materials as part of their everyday resilience (Fig. 2.12). They also made the connection between the physical elevation and social growth, noting the significance of a stable core structure for the expected vertical design. This will be discussed in greater depth in chapters 6 and 7.

Figure 2.12 has been removed
from this version of the thesis due
to copyright restrictions

Figure 2.12: An owner of a destroyed building is sharing his plans and vision for his house which he had rebuilt using reinforced concrete with strong foundations and columns. What he said (the above subtitle) reflects a sense of hope and everyday resilience. Source: Film stills from Al Jazeera Documentary Channel, 2012: <https://youtu.be/Jp2UcV2Ldaw>

2.8.3 Housing Needs and Difficulties

After the attacks of the summer of 2014, the United Nations has provided assistance to just one family to rebuild its totally destroyed home. In June 2015, the governments of Israel and the Palestinian Authority reached an agreement on a Residential Stream of the Gaza Reconstruction Mechanism (GRM) to allow for the reconstruction of entirely demolished homes. UNRWA submitted applications for refugee families with demolished homes who had their documentation ready. After approval, they were able to commence the reconstruction process (Barkat, 2018). As part of the system, both the UN and the Palestinian Authority continue to collect detailed information on Palestinian families that are then passed on to Israel. Rather than ease and eventually end the siege, the GRM entrenches and institutionalizes the blockade and perpetuates the status quo by reinforcing Israel's control over the Gaza Strip. Due to the devastation to Gaza's economy, those lucky enough to obtain building supplies such as cement through the GRM often sell them on the black market merely to meet their basic needs (Roy, 2016).

In October 2014, international donors pledged \$3.5 billion dollars to rebuild the destroyed infrastructure, houses, schools and hospitals in Gaza. But a year later, only a third of the funds pledged have been paid. UNRWA claims that just \$247 million has been pledged for its emergency shelter program, leaving a shortfall of almost half a billion dollars (UNRWA, 2015). Israel has allowed imports of some cement and steel for reconstruction under the UN-brokered post-war arrangement, easing restrictions it says were imposed to prevent Hamas from diverting materials for military use (Barkat, 2018). One year after the donor conference, little tangible change had taken place on the ground in Gaza and living conditions continue to worsen. Reconstruction promises are not delivered on Gaza and about 100,000 displaced people continue to live in tents pitched on rubble or in rented apartments and storefronts. Whilst only a single house was rebuilt in 2015 (Fig. 2.13), by April 2016, the number increased to 3,000 homes overall according to UN-OCHA. By the year 2018, although the direct compensation of demolished units has been almost fulfilled, the housing needs continue to increase day by day putting pressure on already overburdened coping mechanisms and structures.

Figure 2.13 has been removed
from this version of the thesis due
to copyright restrictions

Figure 2.13: At the beginning of 2015, this was the only house completely destroyed during Israel's summer 2014 assault that the UN had rebuilt. Photo: Adel Hana AP, 2015.

Most international donors have been trying to work around the border restrictions, rather than challenging them. One newspaper at the time reported on the speed at which projects were being undertaken, often with the explicit objective of unlocking further funds and the vast majority of the pledges never materialised (El Sarraj, 2015). It is forecast that by 2020 Gaza's infrastructure; much of it built to serve a small refugee population in 1948, will be irreversibly damaged and collapsing and the impact of this will be catastrophic (UNCT, 2017, pp. 18-21; UNCT, 2012). Some Gaza residents speak of shame at the way life has 'gone backwards' with the siege – using cooking oil in cars, wood fires for cooking, and horse and donkey carts for transportation; where cement is denied, rubble and other temporary materials to rebuilt their homes (Fig. 2.14). As an example, one of the women interviewed for this research said: *"We don't have a stable income. We cannot even feed the donkey sometimes. My children often collect rubble in order to buy a pound of barley for the donkey"*.

Figure 2.14 has been removed
from this version of the thesis due
to copyright restrictions

Figure 2.14: A Gazan built a small one-room shelter for his family using the rubble of his house, which was bombed in August 2014. He is hoping for one thing: reconstruction! Photo: Anas al Baba, Oxfam, 2015.

“Gazans have always been extremely hardworking, entrepreneurial people. They want nothing more than to work, earn a living and provide for their families. They have been denied this right—and it is a human right—by Israel, the US, the EU and other donor nations supporting Israel's pernicious blockade, which has ruined the Palestinian economy. Instead, Gazans have been forced into dependency on foreign assistance, which is an obscenity. End the restrictions that have undermined the economy, allow people to produce and trade, return to them their economic and human rights, and no one will ask for anything” (Roy, 2016, p. 57).

2.9 Conclusion

The importance of shedding light on the contemporary political, and social issues, emphasises the relevance of a specific focus on housing needs and difficulties in the Gaza Strip. Humanitarian reports, mainstream media articles and videos, as well as photographs documenting the Gaza crisis up to 2018 have been used as a background in the writing of this chapter to ensure the information is recent and applicable. This chapter establishes the various social and economic problems of Gaza, as well as the political process or lack thereof that informs such problems, which also produces the numerous constraints on everyday habitation for the people of Gaza. The on-going blockade and conflict crippling the local housing economy, small market destruction, and population displacement crises makes the Gaza Strip unique for this research by design. The 2015 housing conditions survey undertaken by MoPWH revealed that close to 20% of the housing units in Gaza are overcrowded and this research suggested those suffering from overcrowding are likely to have worse shelter conditions. As of May 2017, repair to a total of 102,670 housing units has begun or is completed, while 57,330 repairs remain (Shelter Cluster, 2017). To address the immediate crisis, international NGOs, the local municipalities and central government focus on dealing with emergency recovery projects.

Most research to date on the provision of housing projects for low-income households in the Gaza Strip has focused on urgent reconstruction in the aftermath of Israeli attacks (Asfour, 2017). Critical and strategic housing issues that

consider the infrastructure as a whole have not been properly investigated. Nor has there been a consideration for an architectural design that is both relevant to the needs of the people who live there and representative of their wish for their own autonomy and privacy in all aspects of their daily lives and social interactions. As discussed earlier in this chapter, housing projects have traditionally been politically initiated, funded, and commissioned, which is part of the implementation problem. Furthermore, there is no public sector for residential construction, and the residential construction falls entirely on private individuals (Roy, 2016).

Chapter 3 titled ‘Architecture of the Everyday’ will review the theoretical arguments related to the concept of ‘the everyday’ in relation to architectural design. Chapter 6 will detail how social and physical mapping can be used as tools to begin to outline some of the critical and strategic housing issues to show the importance of realistic and achievable self-build housing schemes in the Gaza Strip. In Chapter 7, an objective will be to provide a framework for developing a house design prototype that has an aesthetic awareness in its functionality.

Chapter 3: Architecture of the Everyday

3.1 Introduction

With the context of the Gaza Strip described in Chapter 2 as a political and historical background, Chapter 3 attempts to set up a theoretical background around the concept of ‘the everyday’ by setting out its systematic relevance to an architectural understanding of the daily rhythms of life, and of the objects of use that populate it. What we designate with ‘Architecture of the Everyday’ constitutes both a set of theoretical tools that make sense of reality, as well as an actual practical concern with the physical structures that we ought to design and build.

The ultimate focus of this thesis is a self-build house design prototype for low-income extended families in the Gaza Strip. Many of the issues that are considered in this theoretical chapter will be tested through the practical component of the research and the data collected in the course of mapping social activities and physical settings through a series of participatory design sessions which established the necessary criteria for the house design. The main interest lies in the connection of theories regarding the architecture of the everyday, place-making, and spatial awareness with the everyday practical routines and needs of the Gaza Strip inhabitants and how these may be accommodated. In keeping with Lefebvre’s (1991) conceptualization of the ‘rhythm of lived spaces’ as consisting of physical setting, daily routines, and meaning, this thesis considers home as a place of everyday activities, thereby uncovering the needs of low-income extended families. As this is with a view to improving their living conditions, and through the self-build approach which encourages a sense of autonomy given the on-going conflict in the region.

3.2 The Concept of the “Everyday”

Henri Lefebvre (1971, 1991), who consecrated the concept of everyday life and its rhythms, attempted to provide a Marxist critique of contemporary mass culture such as he saw it in the 1930s, set against a backdrop of historical transformation.

He helped overcome the dichotomous and hierarchical thinking while focusing entirely on disclosure of the social life. According to Lefebvre, everyday life is dependent on certain universals such as “sustenance, clothing, furnishing, homes, neighbourhoods, environment...” (Lefebvre, 1971, p. 21). Lefebvre referred to this level of functionality as the “the totality of the real,” and suggested that it is there that the social dimension of life acquires meaning (Lefebvre, 1991, p. 97). However, Lefebvre’s contribution to the understanding of the everyday is twofold. On the one hand, the everyday “comprises seemingly unimportant activities”. On the other, it is “a set of functions which connect and join together systems that might appear to be distinct” (Lefebvre, 1984, cited in Upton, 2002, p. 707). The inference is complex and one that relates to how the everyday may be perceived by all that is absent, instead of what is present, or taken for granted.

Everyday habits and social activities constitute a routine according to which we renew our existence everyday, and this led Lefebvre to speak about the concept of the ‘rhythm of lived spaces’ as a principle through which the everyday becomes possible. He states that: “What we live are rhythms – rhythms experienced subjectively. Which means that, here at least, ‘lived’ and ‘conceived’ are close: the laws of nature and the laws governing our bodies tend to overlap with each other – as perhaps too with the laws of so-called social reality” (Lefebvre, 1991, p. 206).

The rhythms of *lived* spaces that specify the life of a community or of a society are notoriously complex and actively produce the life of that community or society. These rhythms result in the routine and habits of the everyday, and Lefebvre intended to uncover how such routine and habits produce life itself through the diversity of various practices. It was in order to study such rhythms that Lefebvre proposed that we use the concept of dialectics, aiming to describe the process through which the practice of everyday life unfolds (Middleton, 2016, pp. 414-415).

Michel de Certeau, who is credited for developing these theories into his own interpretation of the everyday, stressed the relevance of everyday practices and the tactics that ordinary people; or “obscure heroes”, deploy for the assurance of their existence (de Certeau, 1998, p. 3). As de Certeau showed, the everyday

refers to a myriad of activities that lack the lustre of the productions of an artist or of those of an expert. Instead, the ordinary men and women of the everyday appear ‘passive’ and subjected to a wealth of already made ideas and objects that fill up their life. They are, in other words, ‘consumers’ of the processes of making and regulation that they have little influence over (de Certeau, 1998, p. 251). They are neither architects, nor urban planners, yet their life is the subject of both these professions. De Certeau’s argument was that, despite their perceived passivity, most people are deeply concerned with an ‘art of making’ that gives meaning to the everyday (de Certeau, 1998, p. 216; Saito, 2017).

The research draws from this view in an attempt show how the everyday can be the source of another aesthetic for the built environment – one not limited to traditional categories of the beautiful or the sublime. The intention is to convey an understanding that ‘the aesthetics of the ordinary’ is integral to an understanding of what constitutes the everyday in an unstable environment.

3.3 Aesthetics of the Ordinary

“The example of His light is like a niche within which is a lamp, the lamp is within glass, the glass as if it were a pearly [white] star lit from [the oil of] a blessed olive tree, neither of the East nor of the West, whose oil would almost glow even if untouched by fire.” Quran, Surat An-Nur (The Light):35.

Allah – the Creator of all things according to the Muslims – asks us to take time to look deeply at those details and objects of everyday life around us (Fig. 3.1). The inference here is two-fold, this notion of seeing beauty in the ordinary and functionality in beauty is one that is core to the researcher’s understanding as a practicing architect. House designs, even in their most modest form as interim shelters, need to assert the significance of a collective humanity and a right to adequate housing. In an attempt to make sense of ‘place-making’ (Casey, 1997) it is important to consider how cultural and spiritual meanings have advanced ‘everyday making’ as the space where the aesthetic dimension accommodates a certain quality of life and determines the social and political aspect of our world, for better or worse. How this then impacts on the way people live or are forced to

live is one that the researcher considers fundamental to his argument for a house design prototype that will take those that live there into account.



Figure 3.1: A local builder bathing in natural light. Source: Salem Al Qudwa, Al Shouka, 2011.

Yuriko Saito (2007, 2017), a scholar of philosophical aesthetics and a native of Japan with a special interest in Japanese aesthetics, refers to “how our trivial everyday experiences can lead to the recognition of the universal in the specific” (Saito, 2010, p. 57) in a manner that is perhaps not sufficiently acknowledged by either ourselves or other aestheticians. Given limited resources globally, the aim is to direct and facilitate a cumulative and collective enterprise of constant better world-making. Such a change in the content of the ‘aesthetic experience’ is motivated by the fact that, while traditional art works are often understood only by audiences who are familiar with the art world, an everyday sense of the beautiful is accessible to all, given the ubiquity of the everyday (Saito, 2017, p. 26). In addition, Saito includes a feminist dimension in her research when she addresses the domestic domain, such as cooking, cleaning, ‘doing laundry’ and ‘laundry

hanging' (Saito, 2017, p. 121), as more than simply functional spaces in ways that have been neglected (Fig. 3.2).

The researcher also attempts to understand this 'recognition of the universal in the specific' within the context of domestic life representative of many households in the Gaza Strip. In particular, how dough prepared by Palestinian women is an integral part of the rituals of the everyday (Chapter 6), and more specifically how the confines of a room are equivalent to a week's supply of flat bread rounds; bread which is "the symbol of the hardships of life and work" (de Certeau, 1998, p. 86). In this accommodation, the essential has an aesthetic sensitivity and an emphasis of gendered space. These the researcher explores for the purposes of meaning and design motif (Chapter 7).



Figure 3.2: A week's supply of flat bread rounds prepared in a room used for the purpose during the day and for the children's sleeping quarters at night. Source: Salem Al Qudwa, Beit Lahia, 2007.

Leddy (2012, p. 112) stresses “the close relationship between everyday aesthetics and the aesthetics of art and points out the relevance of this relationship to the objects and environments we encounter in daily life”. According to Saito (2017), such a theory will also highlight a different way in which we think about design, allowing us ‘to observe the architectural object as a work of art’ (Bader, 2015). That is less likely to be considered of greater value but to the detriment of the ordinary, the familiar, and/or the useful. In his capacity as an architect with an interest in accommodating the aesthetic in a design based on functionality with limited materials, the researcher constantly looks for signs of artistic sensibility in objects of everyday life, or “everyday objects that are not always depicted in architectural drawings” (Tayob, 2018, p. 211). One he noted while writing up this thesis was a shop in the historic city centre of Oxford – “Objects of Use”. Shelves display enduring household tools and practical items. These reproduce universal archetypes of everyday ‘vernacular’ objects that have been made in a similar way with similar materials for a long time and would be instantly recognisable in most parts of the world (Fig. 3.3). It is clear that the domestic has been addressed in new ways, particularly the ones that underline the aesthetic.

Figure 3.3 has been removed from this version of the thesis due to copyright restrictions

Figure 3.3: Household items designed and made with a focus on timeless functionality. Source: Objects of Use, Oxford: www.objectsofuse.com

3.4 Everyday Objects and Their Aesthetic Origin

The German artist Joseph Beuys (1921–86) argued that everybody can practise their own particular kind of art, thereby contributing to renewed ways of social organization, which he understood to be summarized by the concept of social sculpture (Jordan, 2013). Beuys raised the question: what might distinguish a conceptual masterpiece from a bit of urban debris? Can the block of stone in which a sculpture originated generate an aesthetic experience in the same way in which the actual sculpture does (Fig. 3.4)? In this sense, it should be pointed out that any work of art might be considered to presuppose an emplacement, in that it is concerned not just with an object, the actual artefact, but also with a space and a place. From a more sociological point of view, for a work of art to be received as such it is necessary that it describes a space and that it engages meaningfully with the very world that produces it, foregrounding certain aspects of that world.

Figure 3.4 has been removed from
this version of the thesis due to
copyright restrictions

Figure 3.4: Looking at Art. Source: Colours magazine number 87.

It is the sociological relevance of the work of art that led Joseph Beuys to develop the theory of social sculpture in the 1970s, supporting his idea that most aspect of everyday life could be approached creatively. The concept of ‘social sculpture’ – the vestiges of the everyday transformed – reunited Joseph Beuys’ idealistic ideas of a utopian society with his aesthetic practice (Jordan, 2013). He took this further in his attempt to reduce the divide between the artist and the rest of society. He believed that “life is a social sculpture that everyone is called to and can help shape” (Beuys, 1993, cited in Packer, 2003). The realm of art and that of ordinary experience were made to communicate and to interrogate each other, something that may happen in a process of decoding the message of a work of art. And while the work of art is generally presented as abstracted from the world and from life, as Scha (1998) points out,

“When dealing with the products of human artists, these conditions for the aesthetic experience are usually not fulfilled. The artist does have practical aspirations, and often the work betrays this all too clearly. In many cases, the artwork does embody an explicit idea, and a dedicated observer may in

fact reverse-engineer the work and reconstruct the idea.” (Scha, 1998, p. 105)

Art constantly invites one to actively interpret it as well as the world that one brings into contact with the world of art, as his/her own background. In turn, artists often use everyday objects to create masterpieces, and in so doing they assert not just their own message, but also the power of universal human creativity, teaching everybody that everybody can be an artist and that in becoming artists, people can empower themselves to carry the message of their work of art further into the social, economic or political spheres. In de Certeau’s view, art can be an “art of making and doing things” (de Certeau, 1998, p. 215), thus becoming a principle of organization, which is present in the idea of sculpture, in the idea of design, and by extension, in the idea of moulding and transforming a neighbourhood and a society. Such a principle of creative organization suggests the ability of the individual; or a ‘household’, to join others and to participate in the ‘collective’ agency, through which one can hope to effect change in the world (de Certeau, 1998, p. 163; Mistry, 2004).

The capacity of an art of making to mobilize creative energies is also found in the collage representing the dirty or tired hands of everyday people, self-builders and craftsmen who fashion out of common materials works of art or installations. All of these people are also brought together by means of an attempt at another work of art, which is at the same time a documentary, namely the collage in Fig. 3.5.

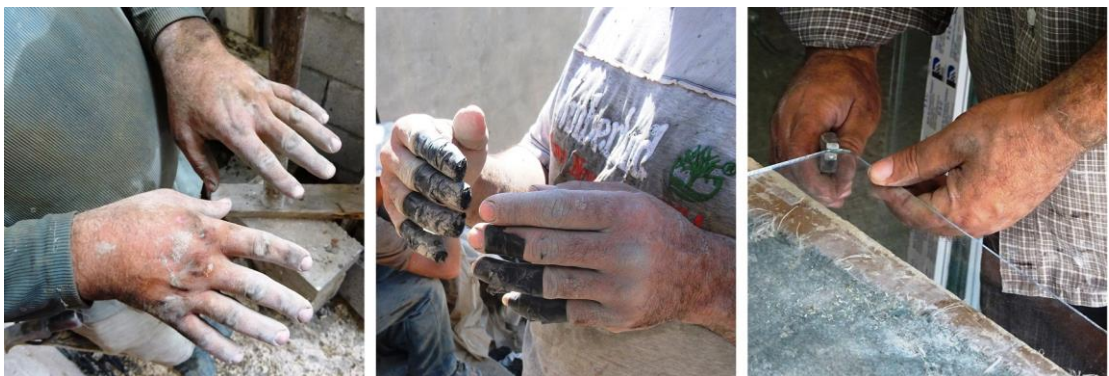


Figure 3.5: Hands of self-builders and makers of daily objects. Source: Salem Al Qudwa, 2016.

For example, the creation of ‘fragile pieces’ in situ – an installation in an urban or rural setting, part of a naturescape or demolition site – fit within the realm of the everyday, as daily rituals may be repeated, but are never quite the same (Fig. 3.6). Photography and audio-video recordings play a crucial role in providing a lasting record of such works, displaying their presence and marking the moment; or even capturing the memories for the everyday, when the work is at its most alive. The connections are layered, embedded in the fabric of the chosen material and how the artist and/or the self-builder choose to rearrange these within their surroundings. For this research, the significance of such process into the ‘architecture of the everyday’ in the Gaza Strip has a duality between the need for survival, to build a shelter, and aesthetic preferences. The use of similar tools for memorisation is an attempt to show in the preparation for the house design prototype the multi-layered connections. These include a relationship between the individual household members – male and female, young and old – and their engagement with the researcher during the participatory design sessions (Chapter 7). Added to this are the choice of available materials, the political situation and the climatic conditions. Put all these layers together and the objective remains an examination of the potential for building homes that encourage ownership.



Figure 3.6: Salvaged damaged breeze blocks after destruction from a totally damaged building in the Gaza Strip. Source: Salem Al Qudwa, 2015.

This research proposes that the benefits of an everyday aesthetic sensibility are apparent in situations of conflict, and if acknowledged for their transformative capacity they could be of relevance to those societies which are affected by on-going economic, social and political crises. The qualities of resilience and resourcefulness in the Gaza Strip is such an example (Saito, 2017, p. 19). The urban texture has been affected by successive attacks from the Israeli military force, and reconstruction is made more difficult by the lack of materials, lack of a clear planning framework for reconstruction, as well as, the economic and political blockade that applies to the Gaza Strip (Chapter 2). Given these circumstances, people's everyday life and environment are precarious, and for this reason they may consider it futile to plan for a better future. Even in these conditions there is an attempt at organization and transforming what is available, albeit damaged and worn, into a new structure with its own aesthetic (Fig. 3.7). As Saito states,

“Given that the political situation unfortunately cannot be resolved by individual effort, everyday aesthetic experience can help its residents retain a sense of humanity, dignity, and resilience. In such a case, everyday aesthetics' contribution to their lives can be considerable.” (Saito, 2017, p. 19)



Figure 3.7: Simple behaviours to improve the appearance of ceilings and walls within the physical environment of self-built houses, by having ornaments added to them in Al Shouka (left) and Beit Lahia (right), the Gaza Strip. Source: Salem Al Qudwa, 2011.

Chapter 6 points out the resources that the Gaza Strip may have despite the on-going political situation for the provision of living spaces for families in need.

The self-build house prototype proposed encourages households to participate in the design and implementation (Chapter 7).

3.5 Architecture of the Everyday

Lefebvre (1991) points out that any definition of architecture requires a prior consideration of the concept of space and place-making. Moreover, Lefebvre's concern with the spatial nature of social life resonated with a long-established claim that an awareness of how space is produced should be the defining element of a modern architecture and with the belief that everyday life has the potential to mount a critique of modernity. It should be pointed out here that, often, architectural discourse sets out as an explicit goal to make sense of modernity and outline what a modern architecture might be (Upton, 2002). This thesis focuses on the production of space with a view to better understanding the everyday routines of domestic life. The necessary requirements to establish a domestic space for low-income extended families and how these impacts on the wider urban and rural environments have been central to the selection criteria for the house design prototype. The constraints that the wider environment places on a domestic space not only determines its functionality in providing accommodation, but also ensures privacy and the preservation of life (Rapoport, 1969), i.e. the lives of various categories of individuals that make up a family.

Buildings are complex systems and, often, the process of inhabiting an architectural environment presupposed aspects that cannot be determined at the design and construction phase, with users actively reshaping the relationships that best suit the inhabited space for them. It is therefore important to consider the uses that architectural space is put to and this requires an awareness of subject-object relationships that architects can only influence to a limited degree. In this sense, Buchli (2003) refers to the 'social logic of space', which is surrounded by boundaries of architectural durable walls, and to "how changes within something like the arrangement of rooms could provide evidence of a cultural unconscious" (Buchli, 2003, p. 54-55). The trends that such a cultural unconsciousness describes point to necessity and can be summarized as follows: land is becoming

scarcer; rapid population growth; and there is a steady migration from rural to urban areas in search of work.

Mistry (2004), for instance, suggests in her design research the notion of domestic space as separate from its wider environment and which can be redefined as a ‘collective urban environment’. The intention is to examine ‘the spatial and architectural implications of a departure from traditional forms of domesticity and the family ideal’. The establishment of a collective urban environment is one that could be considered as more appropriate for communities like those in the Gaza Strip, where there is a lack of infrastructure and very little stability. From this point of view, house design prototypes would need to take into account that the boundaries between individual homes and the immediate neighbourhoods are blurred as inter-generational families live in communities and share many of the domestic activities on a daily basis (Fig. 3.8).



Figure 3.8: A collective of rural and marginalised environments: a depart from traditional forms of space configuration using affordable building materials to design with a view to accommodating inter-generational families. Source: Salem Al Qudwa, Gaza, 2011.

Arguments on how to design for a communal as well as an individual use of architectural space to accommodate the everyday are not new. Bachelard (1992), for instance, speaks about how we seem to inhabit shells and refers to the house as a soul-endowed organism, with cleaning the house being a kind of polishing of that soul. The building’s inner life and the characteristics of occupancy enable an

architectural understanding of performance-related concerns during the building operation or the ‘use phase’, and this aspect is increasingly brought to bear upon the design decision making process. In this sense, and in direct connection with ‘the everyday’, architect Kate Macintosh explains what architecture means to her: “Architecture must offer both shelter and protection at the most basic level but it must also free people, liberate them both psychologically and emotionally to achieve their own objectives, their own realisation. And unless it can do that as well as shelter, it is not architecture” (Macintosh, 2010).

3.6 Everyday and the Self-build

Berke and Harries (1997) used the term ‘Architecture of the Everyday’ in order to connote a rejection of architecture as a consumer product or a fashion accessory, implying that the ‘everyday’ rather stands for the restoration of a sense of nobility and dignity to small scale buildings for clients of modest means. In this context it may be different from ‘vernacular architecture’, i.e. traditional architecture built with limited means and without professional assistance as described by Rapoport (1969). As Oliver (1997, 2003), has argued vernacular architecture “will be necessary in the future in order to ensure sustainability in both cultural and economic terms beyond the short term” (Oliver, 2003, p. 13-14). Thus, the relevance of ‘vernacular architecture’ to the ‘everyday’ lies in its being an expanding field of knowledge, because it contains ‘significant’ or important examples of everyday buildings produced by people without ‘formal’ architectural training (Crysler, 2003, p. 7). The essential meaning of vernacular architecture – narrowly conceived as ‘the architecture of a particular people, place or region’ – has been replaced by a ‘neo-traditional’ configuration (Steele, 2005). This tendency in the literature is highlighted by Hourigan (2015), who concludes that “this type of (vernacular) building is one that does not remain static and is often characterized by its ability to adapt and transform itself to new usages... and linked to the social, economic and environmental history of a given region or nation” (p. 22).

On the other hand, Berke and Harris (1997) state that characteristics of an architecture of the everyday include: 1) Architecture that supports authorship,

denies celebrity, and embraces invisibility in physical and tectonic terms; and 2) Architecture that draws strength from its simplicity, use of common materials, and its relationship to other fields of study (Berke and Harris, 1997, p. 8). These characteristics are in line with Fausch (2014) and her perception towards architecture being 'ordinary'. In the same vein, Manolopoulou (2013) defines modernist architectural discourse indeterminacy in buildings in terms of its flexibility, stating that "a flexible building should allow change" (p. 69). The works of Moore (1997) and Hakim (2007) specifically their manifesto refer to 'everyday' (re)generative processes in architecture and urbanism', highlighting that this change may be done by democratic means, by engaging citizens (extended families) in decision making about such (building) technologies and communication among community members to improve the places where they live. Such 'regenerative architecture' needs to be instrumental in the construction and implementation of future technologies that support the routines and customary practices of everyday life. This emphasis on the process of place-making and the changes effected by users' needs, family practices, and natural growth over periods of time is advanced in tandem with the concept of self-building of houses and neighbourhoods and the physical identity of houses (Turner, 1976).

Since formal aspects of architecture are shown to have limited application in relation to the self-building process, Kowaltowski (1998) discusses the complexity of aesthetic considerations in the context of self-built houses under economic constraints. Such considerations are showing that "the perceived 'beauty' is mainly linked to socializing aspects and diversity in house appearance while the perceived 'ugliness' is linked to a lack of urban infrastructure and lack of maintenance" (Monzeglio, 1990, cited in Kowaltowski, 1998, p. 300). This aspect was also analysed through the participatory design sessions that informed this thesis, as documented in Chapter 7, with limitations being seen as a positive trend towards a search for a new vernacular. However, the main purpose of the house design prototype proposed in this thesis has been to offer an optimal type of functional habitation to those extended families that need housing. This, of course, is in keeping with the relation between tradition and innovation, such as it was outlined by Hourigan:

“The vernacular maybe shaped over time by the utilitarian requirements of its occupants and indeed all functioning cultures concomitantly synthesize both tradition and innovation in everyday life as a necessary component of development.” (Hourigan, 2015, p. 22).

3.7 Conclusion

The transformative nature of the ‘ordinary’ is highly significant to an understanding of the importance of the ‘architecture of the everyday’. This thesis highlights this aspect with specific regard to the design of a house prototype that would accommodate extended families in need in the Gaza Strip. While reviewing the theoretical resources of a ‘vernacular’ architecture, this chapter has also shown that finding a solution to the habitation issues such as those of Gaza presupposed the dynamic nature of the vernacular, with a view to accommodating a daily life domestic perspective. The latter focuses on providing an improved environment that has an impact both socially and physically, and that can also accommodate current social and political challenges. The identification of architectural possibilities has highlighted the need for a consideration of the ‘aesthetic of the ordinary’ and the ‘art of making’ in the design and implementation process of a house prototype. A crucial reason for these considerations is that families’ domestic place-making processes and realities in Gaza seem to highlight the importance of ‘architecture of everyday’ (Berke and Harris, 1997) which can become a ‘new vernacular’ but also can enhance resilience and strengthen identity. Furthermore, there are gaps in knowledge in Gaza as this is an under-researched area. In researching architectural design, it was found that the Palestinian academic engagement with the topic of ‘architecture of the everyday’ is very limited, with fewer than five publications written by Palestinian researchers in the past two decades.

In such environment of protracted conflict, subjective definitions and understandings of ‘home’ are affected by the glaring contradiction between ‘home’ as an ideal, and ‘home’ as lived experience—a contradiction that demands further research. This is mainly due to the restricted living conditions and lack of available choice for upgrading or rebuilding houses in the Gaza Strip. In this

research the terms ‘home’ as a physical and social setting, and ‘place-making’ as a process, are central to its contribution. They are used to describe inhabited indoor spaces, and the ways and processes in which low-income Palestinian extended families have built, used, and appropriated their ordinary houses in the Gaza Strip. Applying a place-focused approach (Rapoport, 1969; Lefebvre, 1991; Casey, 1997), it is these inhabitable physical and social settings that can be seen and mapped: the variety of a family’s everyday activities with place, collective lived experiences, and agency that result while dealing with everyday challenges in times of the on-going conflict (Kowaltowski, 1998; Buchli, 2003; Hourigan, 2015).

In what follows, Chapter 4 undertakes to present the design-based case study, also taking into account a critical appraisal of one of the researcher’s main related projects in the Gaza Strip. It marks the first engagement of the researcher with Palestinian rural and marginalised communities on the level of the everyday and the techniques used for houses rehabilitation at that time. This will serve as background to Chapters 5, which addresses the methodology used to collect the data relevant to the daily life routine and activities assessment in view of the proposed house design prototype. Chapter 6 looks at the social and physical contexts using mapping tools to locate the rhythms of the everyday in Gaza and to specify the priorities of an architectural project of this nature. This prepares for Chapter 7 that details the house design prototype.

Chapter 4: Gaza's Design-based Case Study

4.1 Introduction

After the 2008/09 Israeli attacks on the Gaza Strip a rehabilitation of damaged houses programme was developed as part of an emergency response to enable the conflict-affected households to return to a normal life. The main objective of the project was to provide 167 households with safe, adequate and durable permanent dwellings through house rehabilitation and (re)-construction (IR, 2009). The researcher's interest in aspects of everyday life, the techniques used for upgrading damaged houses, and their relation to the architecture of the everyday started in 2006 when he joined the Islamic Relief Palestine (IRPAL) as an emergency architect. By reviewing this experience, the chapter attempts to illustrate how the theory of place-making can be used to better understand the experiences of low-income extended families and everyday domestic routines at that time. This first engagement with local communities and subsequent practical experience working on projects for building and rehabilitation in poor rural and marginalized areas has influenced the researcher's focus on the design component of damaged houses, that is intended to both build on and improve this design-linked research (Chapters 5, 6 and 7).

This chapter focuses on three major aspects: firstly, it reviews the pre-design process, and how the contexts and surroundings have influenced the stages of organising and implementing the project. Second, it presents the design process making use of the methodologies that informed the mapping conducted on the ground in view of the design. Lastly, it showcases examples of the work undertaken while implementing the project. As background to this project, the researcher, a local emergency architect, had worked with Palestinian communities from 2009 to 2011. He was involved in a supervisory role as a project architect and co-ordinator on the IRPAL initiated Rehabilitation of Damaged Houses Programme in the Gaza Strip (Fig. 4.1). In this capacity, he undertook to support the local communities in rehabilitating their damaged and derelict properties.

Figure 4.1 has been removed from this version of the thesis due to copyright restrictions

Figure 4.1: Structure for the Rehabilitation of Damaged Houses Programme in the Gaza Strip. Source: IRPAL, 2011.

Islamic Relief Palestine (IRPAL) is an affiliate of the international NGO Islamic Relief Worldwide. Founded in Birmingham, UK, in 1984, it has been active in Gaza and the Palestinian territories since 1998. IRPAL supports the Palestinian people through three main programmes: Emergency Relief, Development Projects, and Child Welfare Programmes (IR, 2009). In 2006, IRPAL started collaborating with local municipalities and NGOs to produce an integrated network of buildings and activities for local communities in need in the Gaza Strip. They organized projects designed to reach remote and marginalized communities focusing on areas that have been neglected. One being the Rehabilitation of Damaged Houses project, the researcher was closely involved with, which was part of a special care programme aimed at disadvantaged families in rural Beit Lahia and Al Shouka in Rafah (Northern and Southern of the Gaza Strip). These projects aimed to enhance the living conditions of local communities affected by the Israeli attacks, while establishing much needed social and technical networks (with local NGOs and local contractors) for developing a new reconstruction methodology that would be likely to have long-term applicability (Barakat, 2003).

This Rehabilitation of Damaged Houses project is described through its various stages such as: need assessment, design, procurement, and the rehabilitation and construction. These are outlined within the overall framework for the project and the work methodologies employed at the time. Some aspects were formulated as the project progressed, making it a ‘live’ project with design considerations that might be applicable in future reconstruction projects in situations of crisis. Given the overall socio-political context of the crisis in Gaza, interventions need to be appropriate and to make a measurable difference to livelihoods, i.e. they need to be affordable, equitable and efficient. The chapter highlights that as the rehabilitation of damaged houses project unfolded, it was possible to identify the challenges that housing for extended families under these conditions in Gaza present. Consistent with Lefebvre’s concept of ‘producing an appropriated space’, this is essential for housing rehabilitation in high-density areas of the Gaza Strip while involving incremental development processes with the focus on small-scale increments of one room or a kitchen and a bathroom (Ward et al., 2011).

4.2 Rehabilitation of Damaged Houses Project, the Gaza Strip

The targeted beneficiaries selected were households affected by attacks in previously identified communities. Their houses were deemed of a poor living standard and partially damaged, with displaced families who had limited ability to provide for the refurbishment of their own houses, or opportunities for rehabilitation. This was due to the blockade, the lack of construction materials in the local markets, and insufficient income (EUNIDA, 2009, pp. 47–49). The main details of the project were:

Table 4.1 has been removed from this version of the thesis due to copyright restrictions

Table 4.1: Project information. Source: IRPAL, 2009.

The project was divided into four phases according to the affected geographic areas in Beit Lahia in the North and Al Shouka in Rafah in the South of the Gaza Strip (Fig. 4.2). After an area survey was conducted, 167 households were selected from an original selection of 200 of those affected by the Israeli attacks that erupted in January 2009 (See section 4.3: Need Assessment Phase). This was followed by a structural assessment carried out on the damaged houses considering the cost of reconstruction, and the financial status of the households concerned. The physical rehabilitation works for the 167 houses consisted of: the rebuilding of boundary walls, the maintenance of metal or wooden doors and the installation of new doors, installing complete aluminium frames and glass panels for windows, the plastering and painting of internal walls and ceilings, the plastering and painting of external façades, the tiling of floors and installing new electrical fixtures, maintenance of the water taps, the replacement of drinking water pipe networks and sanitary appliances, and sewer connections. Some plots were supplemented with core housing, comprising a latrine and a kitchen or a minimum house with a paved access and plinth as an additional built-up area. At the end of the project, the 167 houses rehabilitated then occupied by the former occupants (Fig. 4.3).

Figure 4.2 has been removed from
this version of the thesis due to
copyright restrictions

Figure 4.2: Distribution of the project beneficiary households across the Gaza Strip. The number of damaged houses and population are according to OCHA statistics. Source: IRPAL, 2011 (Redrawn by the researcher in 2015).



Figure 4.3: A child's drawing on a hot corrugated metal sheet is reminiscent of a typical child's dream of a good house with familiar elements. The stories of the children living in Al Shouka (Rafah) and the shelter project team willing to give them hope and happiness. Source: Salem Al Qudwa, 2009.

4.3 Location Conditions

Rural areas in the Gaza Strip are dry and hot, the soil is sandy or consisting of compacted clay, and there are also indigenous woods in some locations (Fig. 4.4). Similar to other marginalized communities, nature in combination with the architectural features of buildings (Heringer, 2008) – hard grey walls made of cement breeze hollow and solid blocks, natural fabrics and rough surfaces (Fig. 4.5) – the colours and textures of the site invite certain necessity-based design solutions that need to take into account, for example, the low-income extended families living arrangements (Marinovic and Baek, 2016).



Figure 4.4: Soil is sandy and/or clay in Beit Lahia (left) and Al Shouka (right). Source: Salem Al Qudwa, 2010.



Figure 4.5: Basic materials such as tin sheeting with barbed wires are used for fencing in rural and marginalized areas of Beit Lahia and Al Shouka. Source: Salem Al Qudwa, 2010.

In Beit Lahia and Al Shouka people have limited access to work, and mainly in construction, and some subsistence farming. The concept of design reconstruction and rehabilitation are constrained by the impact of war and long-

drawn-out conflict. In war-divided areas, “the housing problem is further compounded by the lack of legitimate authorities who ought to administer basic services” (Charlesworth, 2006, p. 13). In the case of Beit Lahia and Al Shouka, while access to services provision such as health and transport is difficult, there is, nevertheless, some legitimate government in place as well as an administrative network, which can manage the situation on the ground. Most of these families live in scrap-built homes without access to water and adequate sanitation services (Fig. 4.6), having to rely on their land and animals as a source of income.



Figure 4.6: Scrap-built homes without proper access to water and sanitation services in Beit Lahia (left, a hole for the toilet rather than a bathroom) and Al Shouka (right). Source: Salem Al Qudwa, 2009.

Design criteria are often severely constrained by immediate necessity, by limited availability of resources, and by the need to attend to the lowest possible cost. Families try still to prioritise the social and financial investment in their houses so they may last for a lifetime, and for this reason, they are keen to participate actively in the rehabilitation and/or building of their homes. From this context, perception towards local needs, cultural norms, and common construction materials present a strong case for buildings that comply with an expected image.

4.4 Need Assessment Phase

In July 2006, after the Israeli attacks on the buffer zones of the Gaza Strip, several agencies, including UN-OCHA and the Palestinian Central Bureau of Statistics (PCBS), conducted a rapid assessment of damage, using different approaches such as mapping for housing conditions and classifications. UN-OCHA indicated that about 30,000 housing units had been damaged, and the damage was classified according to the following criteria:

Table 4.2 has been removed from this version of the thesis due to copyright restrictions

Table 4.2: Category of the damaged houses in the Gaza Strip. Source: OCHA, 2007.

The needs assessment conducted by IRPAL in 2007 (using the same classifications as OCHA) has revealed long waiting-lists of damaged houses that belong to low-income people. Funded by Islamic Relief Germany and Islamic Relief UK, the site visits by IRPAL engineers focused on certain areas for analysis and produced a first-hand report of the extent of the damage. In order to establish a preliminary list of beneficiaries, the coordination with two local bodies was sought: the Beit Lahia Development Association (northern Gaza Strip) and the Al Shouka Municipality (southern Gaza Strip). Liaising with these two community-based organizations enabled the IRPAL surveyors to identify damaged houses with poor living conditions, especially those equipped with sub-standard kitchens and bathrooms. Field visits to the areas concerned carried out inspections of living conditions for a sample of these houses. The visits began on March 2007 and reinforced the need for rehabilitation work for houses in both Beit Lahia and Al Shouka. Two local guides from Beit Lahia Development

Association and the Al Shouka Municipality had been involved in visiting the houses and giving some feedback about each family to the IRPAL surveyors. The selection criteria referred to vulnerability factors to do with the social and economic status of the various categories of beneficiaries involved: unemployed people, vulnerable children, sick people, and all the other vulnerable groups/individuals affected by the on-going conditions. In addition to these, the beneficiaries were also required to prove that they owned their houses as well as the land on which these structures had been built. After setting up the lists of beneficiaries according to the relevant criteria, the IRPAL team – a Social Worker with an Architect/a Civil Engineer (Fig. 4.7) – carried out field visits in order to verify the following:

- Implementation of a scoring sheet detailing the social information and engineering data for each beneficiary.
- Writing up of a report based on an evaluation committee's approval to include the selection methodology and the beneficiaries.
- Documentation that IRPAL liaised with OCHA and the National Shelter Cluster to prevent duplication, either geographically or by a beneficiary. All lists of beneficiaries were double-checked with other agencies before implementing any activity.

The researcher being the designated architect and project coordinator visited more than 200 individual houses in order to assess the needs of each family and then draw up plans for modifications. Time limitations and the emergency circumstances in the Gaza Strip meant that the researcher had to establish direct connections with the representative beneficiary community and for this reason the professional relationships at household level was more remote. Furthermore, the assumption was that the men were the head of the households and would make the key decisions, regardless of whether the women managed the day-to-day domestic affairs, and few would be in a position to discuss their needs during home visits. Despite this, and during the need assessment phase, the researcher's focus was on listening to families and ensuring that their concerns and ideas directly informed

design. He actively sought to engage family members, young and old, in the process of making and shaping their homes (Fig. 4.7 and Fig. 4.8).

Figure 4.7 has been removed from this version of the thesis due to copyright restrictions

Figure 4.7: The entitlement of every beneficiary was identified through a social and technical assessment carried out by the Social Worker and the Architect/Civil Engineer. Source: IRPAL, 2009.

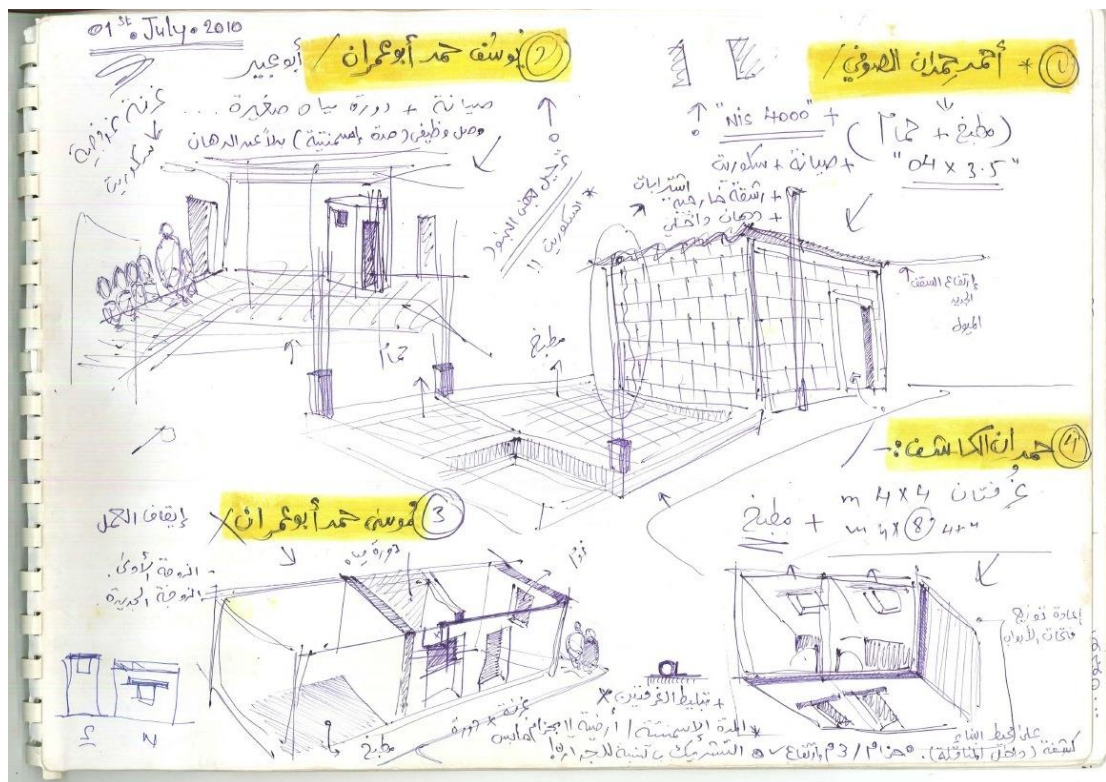


Figure 4.8: Researcher's sketches which show recording the requirements of each household. Source: Salem Al Qudwa, 2009.

In the summer of 2007 and during the tender stage for the project, the Damaged Houses Rehabilitation Programme was frozen due to the Israeli blockade and access limitations to construction materials: cement, aggregate and steel bars. The project was renewed in 2009 and as a result of the needs assessment 167 households were approved as beneficiaries. The approval was given to prepare a detailed bill of quantities and tender documents for the project. Four meetings took place at the Beit Lahia and Al Shouka Municipalities' town halls and included the signing of the project's contract by each nominated household. By December 2011, 167 houses were rehabilitated, and more than 1,200 persons had a better living environment (Fig. 4.9) than before their homes were damaged after the conflict.



Figure 4.9: A house before (left) and after rehabilitation (right) and the adding of a new bathroom. Source: Salem Al Qudwa, 2009.

4.5 Design Phase: Floor Plans and Facades

Community planning is usually a long, risky, and tedious process and it requires relationships of trust with local communities (Jabareen and Carmon, 2010), while emergencies and conflicts require very quick solutions because people are homeless. Transitional housing needs to be provided before planning can begin, and it is important for architects to be involved (Budeiri, 2014). On the other hand, “housing technologies (in Gaza) should respect and follow local socio-cultural conditions and changes and not vice versa” (Jabareen and Carmon, 2010, p. 451). The use of prototype buildings, with accessible designs that could be built in a standard grid, was suggested in the early stages of the Rehabilitation of

Damaged Houses project. The inherent danger of such an approach includes the failure to take into account the culture, living habits and family bonds of the people concerned. Most of the Palestinian rural and urban fabric relies on a pattern of extended family housing (Chapter 6), whereby each house is built on a family plot and is later extended horizontally and/or vertically in order to accommodate newer generations.

For this reason, the IRPAL project team made certain decisions at the early stages and during the need assessment phase, which have all impacted on the social fabric throughout and at completion of the project. These decisions resulted in the promotion of a basic housing unit, which would subsequently inform the building of prototypes (and could be adjusted according to the needs of each family). These prototypes would allow for a quicker reconstruction of the houses and a reduction in the construction costs of the units (Aravena and Iacobelli, 2013).

For the project's design phase, the researcher drew freehand sketches at each house site and took digital photographs of interior spaces and structural elements that required maintenance. Along with the Civil Engineer, his responsibilities included tracking local market prices and estimating costs for activities. He participated in preparing bid documents with a bill of quantities, material specifications, general and special conditions, and basic architectural drawings. Targeted houses were either rehabilitated and/or supported by the addition of permanent living and utility units. The units influenced the relationship of the existing building to its surroundings and privacy needs (Rapoport, 1969). These were added with consideration to avoid the breakdown of social links and make use of what land was available. The researcher used sketches to document the process of visualising the design and outcome, and throughout the project as a communication tool always with the aim to engage interested family members in the process of design and implementation.

The research and planning processes were on-going, dynamic, and flexible due to the extent of the damage to the houses selected. Due to the small scale of IRPAL project, there were only basic planning and implementation drawings for the contractors to use and most of the details were developed and finalised on site

throughout this process. A combination of the researcher's notes, sketches, and photographs based on his accounts of local construction expertise and the households' engagement were essential material and the media for documented communication (Fig. 4.10). The use of this material recorded by the researcher during the IRPAL projected addresses the methodology framework for his thesis (Chapter 5). This material will be used later during the thesis fieldwork research to prioritise and collect the data relevant to the daily life routine and activities assessment, and as a reference to the dynamic process of changes in rural houses for a proposed house design prototype (see Chapter 6, Fig. 6.9).



Figure 4.10: Sketch notebook and concrete were the media of communication at site. Source: Salem Al Qudwa, 2010.

The use of traditional building techniques increases the durability and lifespan of the homes. Many of these were limited for the purpose of this project given the blockades and airstrikes on the Gaza Strip. Local materials were used depending on their availability and to reduce costs. Among the numerous challenges imposed by the siege that had to be overcome in order for the project to succeed was the dependence of smuggled basic building materials, which were available only in the local markets. A benefit of the project was that it did provide tens of jobs for unemployed workers.

The houses were rebuilt using reinforced concrete, corrugated sheeting, metal rods, and timbers, and walls were made from breeze cement blocks. Influenced by the concept of ‘permanence’, building materials were selected as part of the everyday resilience noting the significance of a stable core structure for a possible social growth and horizontal extension (see Fig. 4.14). The kitchen and bathroom were built as autonomous structures, closely following the trend of traditional vernacular architecture (Heringer, 2008). Three-model unit cube structure options were offered depending on need: a bedroom with a bathroom unit, a bedroom with a kitchen unit, and a kitchen plus a bathroom unit (Fig. 4.11). While these options double the family living area, they also manage to maintain the same building footprint. The displacement of beneficiaries was avoided. Land was saved by adding the living and utility units to the existing houses. In addition, there was flexibility for some beneficiaries to rebuild on site or on an alternative piece of land that they own, providing all legal requirements were met.

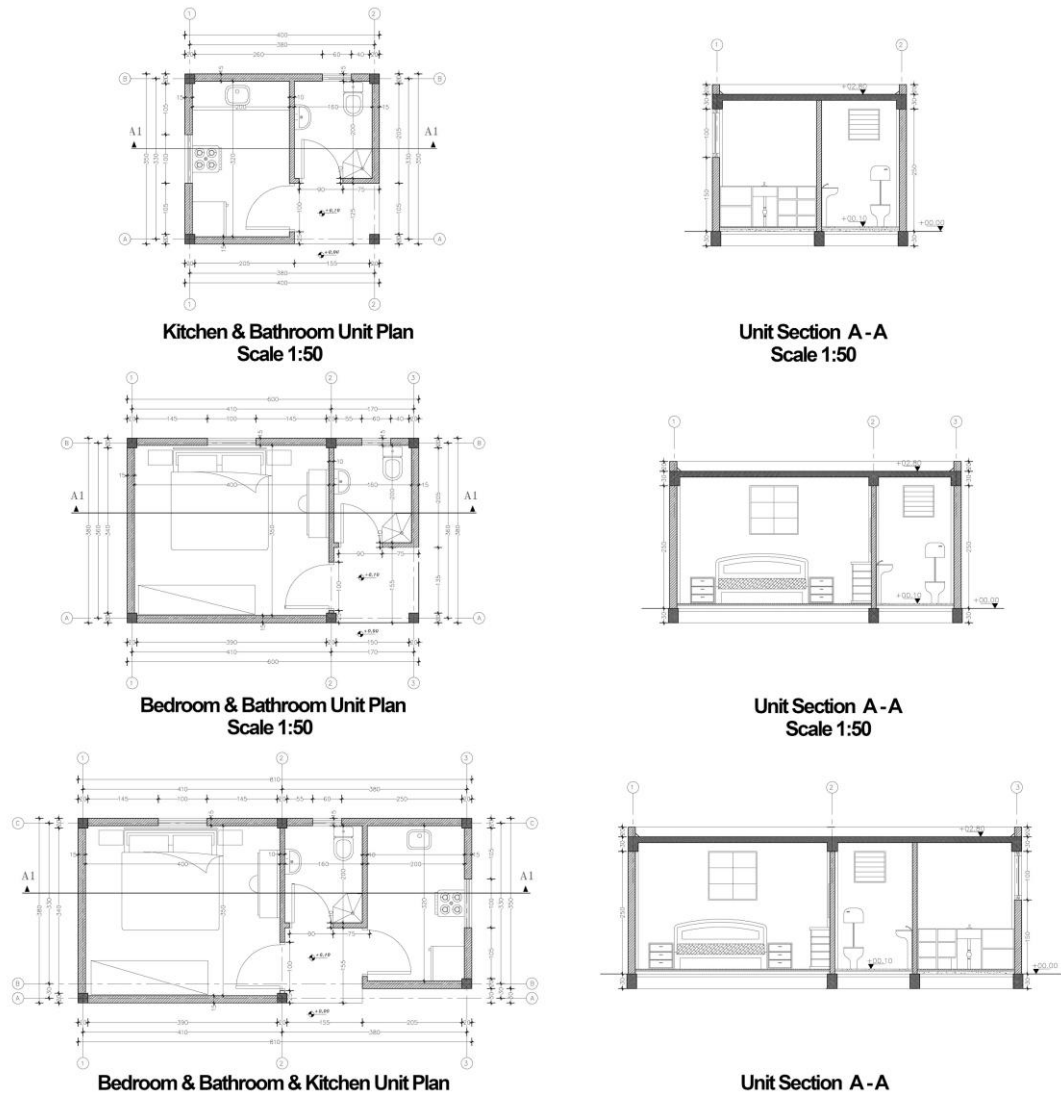


Figure 4.11: Basic architectural plans and sections – A kitchen with a bathroom unit, and a bedroom with a bathroom unit (Scaled drawings are attached in Appendix A). Source: Salem Al Qudwa, 2015.

The focus on low-income housing shortage and on improving living conditions in ‘informal’ areas, rural and desert locations had to take into account seasonal and environmental factors. A number of factors were addressed in order to ensure that adequate ventilation occurs, and indoor temperature is maintained at a comfortable level. For example, in winter the cold air came in through the openings and hot air escaped through the metallic roof. Thus, there were improvements in the roof structure’s thermal mass, insulation was fitted, and some openings were designed for cross-ventilation. This was done in response to the houses being very hot in summer, due to the fact that the un-insulated

corrugated iron roof sheets (*zinco* in local Arabic) quickly heat up the interior and poor ventilation does not allow the hot air to escape. Building was carried out by drawing extensively on an adequate knowledge of the site, ensuring that foundations were equipped with a thin layer of cement and a damp proof course in order to prevent pests from coming into the buildings and moisture from rising from the ground into the walls.

In comparison to the old houses, where interiors tended to be dark, the rehabilitated houses have more light and cross-ventilation. Many of the houses previously had no appropriate sanitation services (the latrine) especially for families with children. For some families this was the first time they had been able to use toilet facilities in privacy and safety. *“When the new units were handed over, it was a moment of joy for the households because they had the feeling, for the first time, that somebody was taking care of them”*, the Mayor of Al Shouka Municipality said (Interview, 2011).

4.6 Project Simplicity and Cost Efficiency

The rehabilitation process and the simplicity of the design for the additional units for each house based on the three-model unit cube structure options took about 15 days to rehabilitate using skilled labour from the local community. By the end of the project in 2011 the estimated cost for the restoration of each residential unit was approximately \$4,400 which is 55% less than the normal cost. A detailed cost estimate per unit by IRPAL that includes a comparison between normal cost and minimal cost as an illustration of how much could be saved for each building item is attached in Appendix A. It took seven months to rehabilitate/rebuild 70 housing units for the first group of beneficiaries. Their requirements were simple: a bedroom, a kitchen, a covered external area and a washroom with a latrine. Although these new structures replaced basic facilities, the outcome was significant, because such facilities were often little more than a single-room tin shack with no water and, very rarely, with electricity supplied by a single wire slung from a nearby building. The approach reduced the need for large amounts of materials, most of which were expensive and not always available, and may result long-term in time-consuming maintenance (Fig. 4.12).

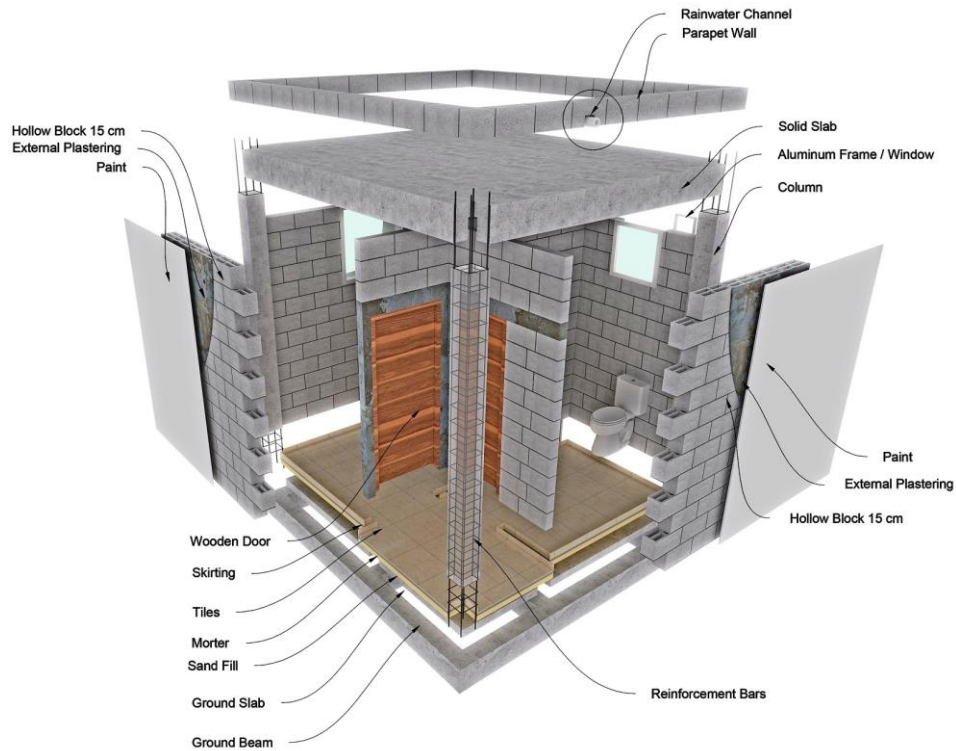


Figure 4.12: An exploded axonometric to show the layers of the basic housing unit.

The new units with their breeze block walls, re-inforced concrete structure, wrought-iron grill windows and gates, corrugated sheet metal and/or reinforced solid slab for roofing used resources that were smuggled and immediately available in the local markets. The skills relied on everyday contemporary practices to respect local norms. The resulting architecture of the projects reflects simplicity of form and material (Fig. 4.13). The project attempted to employ ideas of low-cost architecture in its design and construction. The researcher was aware from his studies that sometimes the human aspect may be forgotten in profit-driven building projects.



Figure 4.13: The project offered low-cost housing solutions for poor communities. Even the project's budget was limited, some units rendered and painted taking into consideration the future horizontal extension (rough render for external wall and smooth render for interior wall). Source: Salem Al Qudwa, 2011.

This project was built on a philosophy of needs-based design and it relied on employing the transferrable local knowledge according to a simple architectural framework, standards, and building methodology, allowing for a dynamic, slow and controlled process (Fig. 4.14). The researcher as the project architect, with a background working in the humanitarian field, adopted through this core thinking. As highlighted earlier in this chapter, the researcher attempted to engage with as many members of each household as possible and to do this within the framework of the participatory approach. That approach was unfamiliar to him at the time and was not possible to be fully achieved within the timeframe of the emergency project. In addition to using his sketches and photographs to document each household and his/her needs with visual records, the researcher considered the exchanges of hospitality between the beneficiaries and himself as key to learning more about the households' daily lives and stories of their families, marriages, and aspirations. These were for the purpose of establishing an understanding of domestic priorities, both present and for the future, and how these may impact on any project's imperatives with regards to the rebuilding of damaged houses.

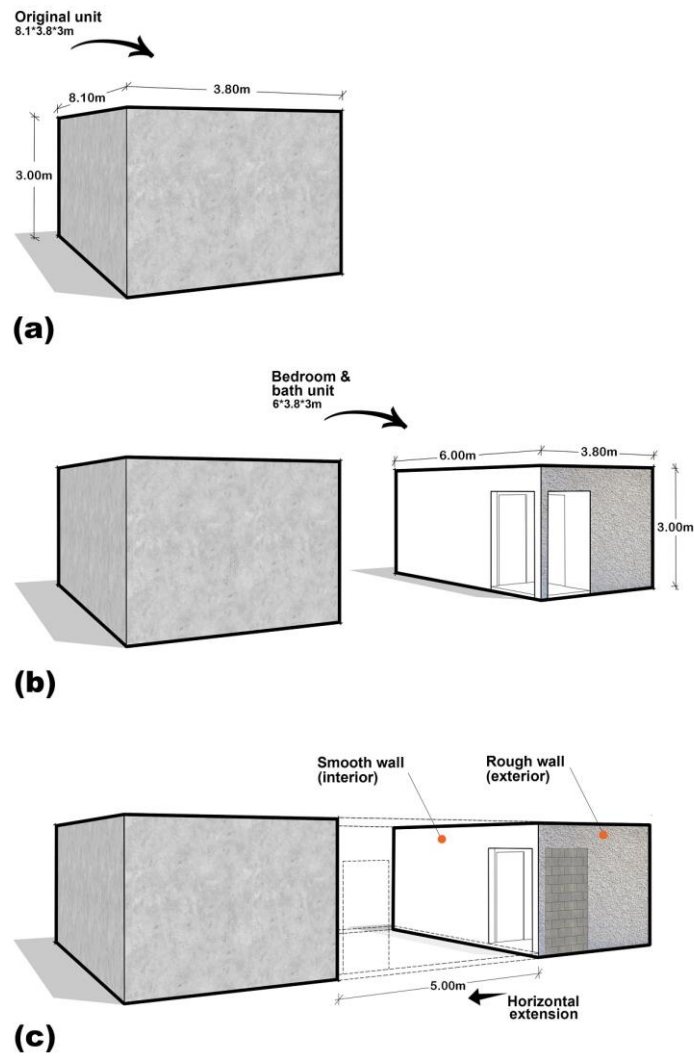


Figure 4.14: Possible horizontal extension in rural areas in Gaza and protecting the extended family fabric while maintaining simplicity regarding home construction. Source: Salem Al Qudwa, 2012.

Specific problems that occurred during Rehabilitation of Damaged Houses project implementation were, for example, the amount of work increased on site for some of the units due to infrastructure issues, which affected the overall budget, prompting cuts in areas, such as plastering, painting and tiling. Given the blockades of the Gaza Strip, a benefit of this project was that it provided jobs for

unemployed workers. In addition, each contractor had to employ and train young builders. The training of young masons took place in each community during the four phases of the project, usually on the job and at actual construction sites, as opposed to the way it had been undertaken previously, in formal vocational training centres that were removed from the local community. Local and generally illiterate masons learned how to construct reinforced roofs in three to six months of apprenticeship, depending on their prior experience. In addition to this contractual modality approach (Barenstein, 2006; Ward, 2012), some beneficiaries were able to partially manage the repair and upgrade works of their own homes by themselves, with technical support from site engineers. The household representatives' contribution in monitoring, identifying, and addressing the quality of workmanship and their feedback of the contractors' level of professionalism was noticeable. A failing of this communication process was that IRPAL did not establish a complaint mechanism prior to beginning the project, which could have addressed issues relating to the timeframe, cost monitoring, and workmanship, and provided the option for the beneficiaries to present feedback directly to the IRPAL office in Gaza.

4.7 Lessons Learnt and Use for Further Investigations

With a view to improving the living conditions for low-income extended families, the main interest lies in the connection of theories regarding place-making and spatial awareness (Rapoport, 1969; Lefebvre, 1991; Casey, 1997) with the everyday practical needs of inhabitants and how these may be accommodated (Berke and Harris, 1997; Buchli, 2003; Hourigan, 2015). Consistent with the theoretical framework of the research, this design-based case study, the Rehabilitation of Damaged Houses project, made use of existing building methods. People in the Gaza Strip are accustomed to using cement as a primary building material, even though it became one of the banned 'dual use' materials during the Israeli blockade (Chapter 2), and getting hold of it by official means is difficult. The project drew on the local 'new vernacular' in Gaza (Chapter 3) which is influenced by a notion of 'permanence.' Cement as the core fabric is the ideal material because it is long-lasting and inexpensive – especially in

comparison with temporary alternatives, such as mud or wood. It requires minimal maintenance and its exterior surfaces need not be painted, nor sealed against exposure to changes in the weather.

The project with its focus on the rehabilitation of damaged houses in rural areas was a new direction for IRPAL and for the researcher. Instead of working in urban informal settlements surrounding Gaza city, where all the other incremental houses have been self-built, the project team and the researcher were requested to work in northern and southern rural areas of the Gaza Strip. These marginalised communities brought their own set of challenges, plus a whole new raft of useful relationships to be formed with the local partner NGO in Beit Lahia and the Municipality in Al Shouka. For example, IRPAL offered project information and engagement sessions to the men only in these small and remote communities, yet the researcher found that the women of the households made constructive contributions relating to the priorities necessary for this rehabilitation process. Despite being a native Arabic speaker and a Palestinian resident of Gaza city, the researcher faced language barriers while working with the Bedouin community in Al Shouka. In addition, not enough time was given by IRPAL to conduct proper home visits, or home-based participatory design sessions with the Bedouin households, mainly the women.

No physical, design, nor construction activities involved women during the implementation of the project. In the Gaza Strip society men are considered to be the representative for their family. As head of the household, the man is expected to provide for and fully protect his wife and children. This responsibility may include the care of his elderly mother, unwed sisters, and any other vulnerable members of his extended family (Chapter 6). Yet, it was obvious throughout the project that women in such a traditional setting are also extremely resilient and capable. During the design process, the researcher noted that some women in describing their daily activities suggested an improvement to the overall design plan. These suggestions included privacy and protection for the women and children and were also mindful of proper ventilation and natural lighting. The constructive engagement of women within households could be emphasised in future projects by hiring a female social worker and a female site engineer which

did not occur in any of the four phases of this project. Based on this experience, the researcher sought out the opinion of the women of the households for his design prototype (Chapter 7). He did so by using the participatory framework learnt from the IRPAL project, in the company of the significant male, and at the homes instead of at public venues that accommodated the men only. The researcher visited the 167 houses one year after the completion of the project and noted that minor maintenance was needed. Some technical guidance was given to residents, such as how to fill cracks in roofs to prevent rain-water leakage, how to save water, and they were encouraged to have food-producing gardens around their houses.

This previous design experience in combination with the findings of the social and physical mappings (Chapter 6) formed the basis for the design-process used in the rest of this thesis (Chapter 7). In line with the household dynamics (Rapoport, 1969; Buchli, 2003; Hourigan, 2015), lessons learnt from this consultative project are central to the researcher's design focus on how to improve and adapt the three-model unit cube structure on a wider scale, while considering the local culture, daily practices, and extended family bonds of the people concerned. The significance of spending time with each household during home visits was a key lesson learnt from the IRPAL project and should be seen as an investment to build trust, rather than solely for asking questions about any project problems and/or for filling out project feedback questionnaires. In addition, flexibility and allowances made for adaptation to changing needs and circumstances at an individual household level should be supported in a self-help and/or contractor-led approach. This will ensure the households' awareness of and expectation of the project, as well as the management of the reconstruction process and the development of its structural phases (Chapter 7, Fig. 7.16).

4.8 Conclusion

Initiatives in conducting research into shelter design in the Gaza Strip are limited (Shelter Projects, 2016). By involving the local population, that includes the voice of the women, in both the upgrading of existing damaged houses, and/or the design and the building of new homes, the researcher learned that architects are

able to establish a framework for mutual exchange of knowledge and skills. The researcher's experience as an emergency architect was limited when first offered a role as project architect and coordinator. These 167 houses in two designated rural areas within the Gaza Strip were the result of hands-on work by the researcher, and the nominated family households. This engagement meant that the project succeeded in including some of the beneficiaries in the repair work, and the design process from the early stages, despite the difficult socio-political context of the Gaza Strip and despite the scarcity of materials. Furthermore, the rehabilitated houses with the three-model unit cube structure options could be constructed anywhere within the Gaza Strip. By implementing simple and highly functional durable designs, the outcome of this project questions some provisional, ostensibly cost-saving solutions that have been offered by international funding agencies, such as mud, sandbags and wooden transitional shelters. It also questions some of the established categories in the theory of emergency practices and international development and intervention, such as 'pro-poor' and 'participatory' (Linsell, 2014; Sanya, 2016). Instead, the researcher builds on the potential of the concept of everyday life and its multi-faceted impact, explored in Chapter 3. As Davis writes that "healthy architecture has traditionally developed through common, culturally embedded knowledge of building, along with the political and economic ability to put that knowledge to use" (Davis, 2005, cited in Pear and Mitchell, 2010, p. 36), the researcher endorses the original meaning of 'participation' rather than using it as 'a facade of good intentions' (White, 1996).

This project undertaken with Islamic Relief Palestine has enabled the researcher to work towards a comprehensive list of indicators and requirements for similar projects, and to explore a prototype reconstruction self-build housing project in terms of its feasibility (Chapter 7).⁵ After 2011, no long-term impact

⁵ The stages of the project were documented in a short film that was co-directed by the researcher. The documentary prompted him to present more sketches that relate to mapping everyday life and capturing its ordinary aesthetics (Chapter 3), specifically, ordinary houses in Gaza. The short film (in Arabic with short captions in English) outlines the stages that 'participative' building involves, showing the architect and local communities at work in constructing a new 'everyday life'. The link to the film is: www.youtube.com/watch?v=KHk9JCfl2PU

assessments were made, nor were post-occupancy evaluations conducted with the families living in the 167 houses. The researcher returned for the purposes of this thesis to some of the households in 2016 to conduct a further investigation (see Chapter 6). He carried out social and physical mapping with five extended families to learn more how they have contributed to and adapted further their houses and the surrounding spaces in the five years from the project's completion. A clear and structured methodology for this fieldwork is explained in Chapter 5.

Chapter 5: Methodology and Fieldwork

5.1 Introduction

The methodological approach to this research, including the fieldwork carried out in the Gaza Strip, Palestine, between June and December 2016 is the focus of Chapter 5. The first section explains the ethnographic approach of architecture (Atelier Bow Wow, 2017; Buchli, 2013; Pavlides and Cranz, 2012) by showing how the structures are relevant to a study of daily life, specific to the Gaza Strip communities. The ethnographic architectural approach used relates to the analysis of daily activities and cultural events integral to place-making (Lozanovska, 2002; Tayob, 2018). To investigate the impact of architecture of the everyday under conflict and reconstruction, it was necessary to consider the choice of research sites, as well as to provide a rationale for the selection of participants.

The data collection tools to include observation, semi-structured interviews, group discussion, field diaries, visual methods and participatory design sessions are addressed in the second section. This is followed by an explanation of the techniques employed in the analysis of the data. Issues pertaining to research ethics, limitations and the challenges related to carrying out the fieldwork are also covered here. Due to the on-going situation in the Gaza Strip, the fieldwork had to allow for the possibility that the timescale, methods, and the number of participants could change at any given time.

5.2 Design Research Methodology

An ethnographic approach enabled the researcher to access and interact with local communities and to observe how they go about their everyday lives and learn what their concerns and perceptions were (Emerson, 1995; Bader, 2015). This immersive process had its foundations in the project work the researcher had done as an emergency architect for Islamic Relief Palestine (see Chapter 4). The researcher was familiar to some of the participants and this helped to establish a basis for mutual engagement that is necessary to understand more fully their behaviour and perceptions. Corbin and Strauss (2008) state: “to do qualitative

research means to go past the known or the assumed and to see the world through the eyes of participants” (pp. 317-318), and to gain an in-depth understanding of the phenomena from the perspective of the people affected. The focus was especially on ordinary person (the individual level) and extended families in need (the household level) living in marginalised and rural areas (the neighbourhood level). The purpose being to study the social context within a physical framework of those selected, to reveal how the participants experience and utilise the architecture of the everyday. The inquiry by design was structured around the key assumptions that:

- a) Qualitative research is an approach to the study of the social world which seeks to describe and analyse the culture and behaviour of humans and of their groups from the point of view of those being studied (Bryman, 2012).
- b) Visual methods and ‘visual thinking’ skills (Gray and Malins, 2004, p. 155) can be used successfully in order to investigate and to analyse the perception of architecture of the everyday in the Gaza Strip and of its effectiveness, with a view to producing alternative design solutions.

The research approach builds on the working agenda of two selected architectural practices: Atelier Bow-Wow, and Estudio Teddy Cruz. Both practices have adopted architectural ethnography, artistic experimentation, and social responsibility as fundamental aspects which structure their work. The emphasis is on an understanding of the individual and how common human behaviour leads to a more meaningful localised architecture (Charlesworth, 2006; Fraser, 2013). The Japanese Architecture firm Atelier Bow-Wow “investigates the living conditions of people through various fieldwork and design practices. Their interests range broadly from the relationship between house typologies and urban fabric to the relationship between public space and unlocked common resources” (Atelier Bow Wow, 2017). The Atelier holds regular discussions (in the form of public engagement lectures and architectural exhibitions) about the role of architectural design in tackling the barrier between the needs of a community and their available daily resources. This has enabled Atelier Bow-

Wow to develop the concept of ‘architectural ethnography’. Their methods of documentation and presentation of micro public spaces and small buildings in ‘Graphic Anatomy’ (2007, 2014) include photographs, elevations, maps, sketches, and brief descriptions (Atelier Bow Wow, 2014).

Figure 5.1 has been removed from
this version of the thesis due to
copyright restrictions

Figure 5.1: Affordable housing for immigrant neighbourhoods using hybrid materials. Source: Estudio Teddy Cruz, 2016.

While asking the question: ‘can design been born from conflict?’, the American architect and urbanist Teddy Cruz is “recognized internationally for his urban and architectural research of the Tijuana-San Diego border, advancing border immigrant neighbourhoods as sites of cultural production, from which to rethink urban policy, affordable housing and civic infrastructure with emphasis on affordable housing using hybrid materials (Fig. 5.1). His investigation of this geography of conflict emerges from an architectural practice that integrates design production with theoretical research” (Designboom, 2014). According to Cruz, “How to reconnect artistic experimentation and social responsibility, must be the central question in today’s debate” (Roy and Crane, 2015, p. 320).

The researcher chose specifically these two architectural influences because of their relevance, given the on-going blockade, displacement of people during the

frequent Israeli raids, in addition to the overcrowding and limited land area and the constraints on construction materials in the Gaza Strip. Bottom-up socio-economic, cultural and environmental intelligence embedded in communities was investigated using some of the approaches of these two selected architectural practices (Chapter 6), and to reflect on the design project (Chapter 7). In order to observe the social and physical environment and to gain insight into the people's perceptions as inhabitants of a space (Bader, 2015), a combination of written, visual and audio records, as well as 'photo elicitation' (Harper, 2002) were used. These include field diaries and interviews (Emerson, 1995), photographs and sketches (Banks, 2001). The purpose was to establish a comparison between the building processes and the production of an everyday self-built architecture. Sketches and architectural drawings, collages and models, photographic inventories and short films were used to produce the relevant design inquiry that met the aims of this investigation.

5.3 Challenges of Field Research in the Gaza Strip

Taking into consideration the on-going conflict environment in Gaza, this section identifies some of the challenges that has been addressed in the later sections of the chapter. For practical and political reasons and due to the closure of the borders of the Gaza Strip, no pilot project could be conducted, and the researcher had to start directly with the main fieldwork. He also had to leave Gaza earlier than expected when a one-time opportunity to leave was presented to him as borders with Egypt were being closed. This nature of the field visits being short and between June and December 2016 meant there was a degree of reticence from the community to share the conditions of their domestic situation.

In addition to shelter vulnerability in an ongoing conflict environment (Shelter Cluster Palestine, 2018), dealing with the vulnerability of all research participants was a prime concern. Due to poverty and dependency on humanitarian agencies and relief charities working in the Gaza Strip, most of the households interviewed for this research were expecting to receive some benefit from the researcher. For example, when he entered their houses at the first visit, some of the vulnerable households insisted on giving him a copy of medical

reports of sick family members, a copy of their identity cards showing that they had many children, and reports on their partially damaged houses.

Furthermore, in ordinary everyday life while working with Gazans' needy communities who have minimum literacy levels, signing a paper is mainly related to getting either food parcels or other kinds of humanitarian assistance. Putting this vulnerability against such academic formality, the researcher found it insensible to ask his participants to sign informed consents. Instead, some participants were asked to give oral consents. This also ensured their engagement more naturally in the process of this research in terms of 20 interviews and five participatory design sessions. Furthermore, the researcher gave the family members the right to participate and not doing harm while protecting their autonomy and dignity. The researcher was careful of framing his questions and of his use of Arabic language while conducting the face-to-face interviews.

Due to the nature and extent of the Israeli blockade against Gaza and frequent military attacks, it was expected that the participants may become distressed by being asked about their damaged houses and how they were coping under the blockade conditions. The researcher made it easier for them by carefully considering ethical, and sensitive measures. For example, the research was not intended to focus specifically on individual or personal matters, and it was expected that the possibility of such an occurrence was limited. Participants' testimonies were protected by an appropriate level of data security through anonymisation.

In this sociocultural context and while working with conservative communities, the researcher found that sharing of information was predetermined by gender (Caro, 2011). Being a male researcher, access to the spaces used by the females was restricted, such as those for their daily routine. Or exposure to the movement between and inside spaces was limited, especially among the Bedouin community of Al Shouka. Therefore, the location of interviews was the choice of the participant to ensure familiarity with place and privacy. Aware of this constraint before commencing the fieldwork, the researcher chose the lunch time (between eleven o'clock in the morning and two o'clock in the afternoon) to visit families; obtaining the permission of the head of the household and the women

concerned to observe women while cooking and preparing the main meal of the day. This was also the time when children would return from school, and it was a good opportunity to observe their movement inside and around the house.

5.4 Tools and Methods of Site Investigation and Technical Testing

The tools of investigation – maps, plans, sections, elevations, photographs – are a means with which to inquire about and represent an architectural discourse of the everyday (Lozanovska, 2002, p. 141). They allowed the flexibility to show to scale what existed and to make adaptations with the participants' engagement. By using these tools, the record keeping of the investigatory process was in itself part of the design outcome (Chapter 7). This made it easier to establish consistent methods of site investigation and technical testing throughout the fieldwork.

Methods of site investigation and technical testing were organized through two forms of mapping and design by participation in relation to everyday practices and place-making (Berke and Harries, 1997; Casey, 1997). Social mapping and physical mapping were used to collect primary and secondary data on social, cultural, economic and physical aspects from 20 households within self-built houses in the Gaza Strip and data on people's perception of place-making. These forms of mapping aimed to encourage people to explain why and how they were doing things themselves to their houses. The researcher found that it was often not possible to separate the social from the physical aspect in this process.

- a) **Social mapping** through interviews, observation, and visual methods were used in order to investigate people's perceptions of what constitutes home, to observe behaviour and daily routines. The main data collection method consisted of semi-structured interviews, which were carried out by the researcher with key community representatives, individuals from the community, and householders. These interviews explored the participants' perception of inhabiting their houses and of the effectiveness of their houses for their needs, specific to their community (see Chapter 6). As well as cultural-material layers, some generational, and the effects these produce in place-making. Given that data collected was of a qualitative nature, the

interviews were considered as a ‘conversation with a purpose’, with every conversation providing the opportunity for observation and reflection. Note-taking was the primary recording tool used. Two interviews were filmed, with permission granted by the participants. Key to the research making a critical assessment out of this qualitative approach – what to include from the note-taking, sketches, photographs and short films – was the awareness that this in turn would influence the analysis and impact on the design process (Chapters 6 and 7). Through social mapping and the images/drawings resulting from this process, the researcher could reveal a considerable amount of site information that could otherwise be left ‘hidden’ (Tayob, 2018).

- b) **Physical mapping** testified to the hazards experienced in pursuing a normal life in the Gaza Strip, while challenging the current situation and planning for the future. Observations included expectations for rebuilding houses, which might differ between family members and neighbours. It also took into consideration the available materials and their structural, economic, environmental and socio-cultural properties. This approach could accommodate sudden changes due to the on-going situation in the Gaza Strip. The physical mapping allowed to explore participant’s attitudes towards affordable architecture and the making and protection of spaces, as well as the changes to the environment that occur as a result of conflict (Fig. 5.2).

Figure 5.2 has been removed from this version of the thesis due to copyright restrictions

Figure 5.2: The researcher photographing during architectural site-work in Gaza after the 2014 Israeli attacks. Photo credit: Emad Badwan, 2015.

Design by participation actively orientated the research within the communities. ‘Participatory practice in architecture’ (Jones et al., 2005) offers guidance on process, working from the detail of everyday life in search of beginnings that count, building on from these, and making meaningful locally the abstractions of the global causes we champion – poverty alleviation, environmental ‘sustainability’, and ‘resilience’ (Hamdi, 2010, p. 151-152; Hamdi, 2014). Architects need to use their design skills in order to help realise localism while being a listener in their local communities with a view to producing the best layout for everyone that would want to inhabit the neighbourhoods (RIBA, 2011). For this purpose, the researcher took into consideration the advice of his Supervisor: “*be a good listener and consider the participants as local experts*”. ‘Mapping’ and ‘modelling’ techniques are useful participatory tools for documenting information, aspirations and for expressing views and opinions about place in a non-confrontational setting (Hamdi, 2014). While diagrams are a useful way of capturing the vision that people have about inhabited space,

sketches and drawings also illustrate participants' emphasis on rebuilding family, their tradition and authority. Out of the 20 households interviewed, the researcher worked initially with five families using some of the participatory techniques in order to test the ideas of the participants. Stick sketches drawn in sand, chalkboard illustrations and playing with wooden pieces were simple tools to encourage architectural discourse. The documentation process comprised certain aspects: the process used; the tools and techniques chosen; and the results and information extrapolated in order to show how they might inform and direct the understanding of the participants' perception of 'home' – for example, how such a perception might differ between mothers and their children. These aspects and the techniques relating to them will be explained in the design chapter (Chapter 7) and to include an assessment of the advantages as well as the drawbacks of some of the techniques that were used.

5.5 Research Sites

Three sites situated along the 1949 Armistice Line: Beit Lahia, Shejaiya and Al Shouka were identified as the case study areas (Fig. 5.3), since they had significant levels of destruction and damaged residential buildings caused by Israeli bombing (see Chapter 2). They held the highest numbers of internally displaced people in UNRWA schools (UNITAR, 2014). In addition, the research sites were selected for being rural and marginalised (Beit Lahia and Al Shouka) and one with densely populated urban features (Shejaiya). Beit Lahia (north) is renowned for its many large sycamore fig trees and is known for its fresh, water, berries and citrus trees. Shejaiya (Gaza), with 92,000 people in 6-square kilometres, is one of the most densely populated areas of the Gaza Strip. Al Shouka (south) evolved as a small border village which functioned as a trade and services centre for the semi-settled Bedouin community. With a high unemployment rate and cheap labour force engaged in construction activities. All three areas have been characterized by rapid subdivision and unplanned

development (Shelter Cluster, 2016). The researcher's decision to carry out research in these particular regions was organized around several important themes:

- a) The tension between the notion of home, displacement, and symbolic rehabilitation. How these might orient and record a particular textual and visual production of place, which is the object of study here.
- b) The strategic performance of the self-built approach in relation to place-making and material culture (Fig. 5.4).
- c) The impact of unfinished buildings and the slow construction process on the participatory design outcome, because of on-going conflict and a life of adversity.

Figure 5.3 has been removed from this version of the thesis due to copyright restrictions

Figure 5.3: Map of affected areas after the 2014 attacks. Source: UNITAR, 2015.



Figure 5.4: Permanent and temporary hybrid materials at one of the Gaza rural houses. Source: Salem Al Qudwa, 2016.

5.6 The Participants

Families from the three affected neighbourhoods were identified via key community representatives already known to the researcher (see Chapter 4). Their choices were supported with information from the Beit Lahia and Al Shouka municipalities and a community-based organization in Shejaiya. A pool of potential families was selected (50 in total) and sampling done randomly. The selection was based on the following criteria: geographic area affected, the house condition (partially damaged; with minor and moderate damages), poor economic situation (less than 1,000 NIS/month; which is less than 270 USD/month) and family size (extended families with more than seven children; according to the Palestinian Central Bureau of Statistics, the mean number of children ever born for women ever married in the Gaza Strip in 2016 is 4.5 births). A determining factor was that extended families in need could not hire local contractors to rebuild and/or rehabilitate their partially damaged houses.

In social research methods, a key aspect in decision making relates to the type of research question to be addressed and the methodology it proposes to adopt. Many, such as Bryman (2012) and Baker and Edwards (2012) suggest that the minimum number of interviews needs to be between twenty and thirty for an interview-based qualitative study to be representative (Bryman 2012, p. 425). In this research, there was no a priori target number. Such flexibility raises the question: how did the researcher know when a sufficient number of families would be representative for the purposes of the research? The answer relates to the concept of ‘redundancy’ (Baker, 2012). Once the interview was completed with one family, the process was repeated with another family, who may have had exposure to similar everyday knowledge and experience of daily activities. The additional information obtained confirmed much of what was already learned from the first interview. This was mainly due to the restricted living conditions and lack of available choice for upgrading or rebuilding homes. The number of interviews that were carried out was contingent on the interview process itself. The quality of the data collection was not determined by reaching a pre-established number of interviews, and saturation was reached when nothing new was gathered.

The final fieldwork was conducted with 20 families as the participants in the interviewing phase. The 20 households were made up of nine households in the urban area and eleven in the marginalised areas. Codes were inserted as UH for urban households in Shejaiya and MH for marginalised households in Beit Lahia and Al Shouka. Among those households, the researcher interviewed three builders that he knew from previous Islamic Relief projects as part of the physical mapping and to know more about their perception towards the self-building techniques currently used in Gaza (see Chapter 6).

5.7 Developing Contacts in the Field

In June 2016, the researcher conducted field investigations and carried out a mapping exercise of different neighbourhoods in order to investigate the settings of the existing buildings and reconstruction sites. In parallel to that, the researcher kept in touch with the shelter programmes in Gaza on themes directly linked to

his research such as increasing an awareness of the importance of architecture and its implementation to improve daily life among the poor people within the Gaza communities.

On 16th of August 2016, the National Shelter Cluster Coordinator in Palestine invited the researcher to be a round-table facilitator for a one-day ‘Lessons Learned’ workshop in Gaza. This was a review and evaluation of the progress of the shelter response since the 2014 hostilities. The ‘Lessons Learned’ workshop was conducted in a participatory manner allowing for all those invited to contribute to the evaluation, including the Ministry of Public Works and Housing, the Ministry of Social Affairs, UNRWA, UNDP and the Shelter Cluster. The researcher was given permission to access the housing database and shelter projects in the Gaza Strip. This along with the fieldwork investigations and interviewing of the key stakeholders gave the researcher the opportunity to receive an overview related to a transitional and durable housing solution in the Gaza Strip, and to confirm the site selection research criteria.

5.8 Fieldwork Stages

The researcher conducted initial visits (between June and July 2016) to the sites in Beit Lahia and Shejaiya in order to check the validity of the selection criteria. The potential participants of the research study were contacted directly by the researcher via phone and provided with an explanation of and introduction to the research study. Permission was sought for the home visits, and the participants given a week within which to contact the researcher if they were to participate in the research. This oral consent was followed by participant information sheets distributed to the participants during the home visits. All participants participated in the research voluntarily and following informed consent (Appendix B). Following the expression of interest, a number of 20 families were invited to take part in semi-structured interviews (Walliman, 2001), to gather information about their daily routine and socio-cultural habits. In order to clarify further details of the research, the researcher organised several meetings with the participants who had consented to take part in the research project. This process allowed the researcher time to plan in advance which fieldwork to carry out to visit other

families, and it also allowed time for participants to digest the aims of the research and to reflect on their relevant experiences. This included information about available household supplies and in the absence of certain basic everyday items, their alternative uses. Each interview took about 45 to 60 minutes and the goal was to achieve an interactive and informative conversation.

The researcher found that the first two interviews were time-consuming, with no useful input related to place-making. It was not easy to ask people to document their social activities and cultural habits. In an attempt to address this, the researcher used a double-face board with white face for using temporary colour markers, and another to be used as a chalkboard to facilitate the interviews (Fig. 5.5). This technique enabled the researcher to describe the daily routines of participants and to record their narrative through sketches and diagrams. The participants were invited to be involved in this process of sketching. This informal approach was productive, and it encouraged the participants to conceptualise issues relating to the state of their homes, and to making connections that provided information for how these could be addressed. It gave the researcher the opportunity to see reality through the eyes of the participants, with a specific focus on the context and meanings of everyday life and of the process of place-making (Fig. 5.6).

Figure 5.5 has been removed from
this version of the thesis due to
copyright restrictions

Figure 5.5: The researcher with a white board in the process of sketching the narrative of the interviews, to engage the participants, and to encourage conversation. Photo credit: Mohamed El-Reefi, 2016.



Figure 5.6: The participants, a father and son, using a chalk board for drawing the plan of their dream house. Source: Salem Al Qudwa, 2016.

Fifteen of the families agreed to continue after the interviews and to participate in the participatory design stage of the research. This design by participation stage allowed participants willing to take part in the study beyond the interviewing stage to do so, and this time they had to sign the consent form. Random sampling was employed to ensure fairness in the selection of these participants. The criterion was to select those families who had self-build experience and who possessed informative design by necessity techniques, i.e. local experts/builders. This allowed them the opportunity to contribute local knowledge to the research study (Fig. 5.7). Following this preliminary enquiry, five families were selected from among those who participated in the first phase and agreed to take part in the second one as well, to contribute to the participatory design sessions. The selection of three families with an agricultural and rural background, and two families were living in the densely populated urban neighbourhood, allowed for knowledge and experiences from different backgrounds to be represented.



Figure 5.7: Participatory design sessions using different techniques and inviting key family members to participate (left). After an intense conversation and design discussion, an example of a house design sketches that drawn by a self-builder with a brief cost estimation for a permanent house (right). Source: Salem Al Qudwa, 2016.

The selection process took into account of several other criteria, namely the extent to which houses had been affected by the 2014 attacks (partial damages), the extent to which the population inhabiting the houses could be deemed to be vulnerable in the highest degree (more than six family members with low-income); and most importantly, extent to which these families were involved in the self-built initiatives. The five families – who had knowledge that was relevant to the aims of the study and self-built experience – were invited to reflect on their everyday perception of the function of and the circulation within interior spaces of their houses. The researcher used social mapping techniques to organise in-depth interviews with the five families based on their self-built practices outside and inside their homes. They were also encouraged to express their views of alternative building materials and of the construction system. In addition, the five families were asked to document their monthly maintained items or the purchased

construction materials used for the rehabilitation and/or the re-construction of their houses for a period of three months.

5.9 Analysis Methods

The data collected was of a qualitative nature, although some quantitative outcomes were recorded during the mapping phase (for example, data concerning the physical reality of the residential buildings and of construction materials). Corbin and Strauss (2008, p. 1) define qualitative analysis as “a process of examining and interpreting data in order to elicit meaning, gain understanding, and develop empirical knowledge”. In this instance, it refers to the process of understanding everyday architecture and its inhabitants in the three areas selected within the Gaza Strip, and the implications for the participatory design study. The data analysis, in the form of the researcher’s appraisal of situations and what he was being told, occurred throughout the study: during the interviews with the families and the informal discussions that took place. The researcher was able to discern at this point a direction for interpreting the data. A field diary recording observation data gathered by the researcher was kept throughout the fieldwork and during data transcription. Notes of interesting facts and situations were filed. Collages of photographs and sketches were collated as material for presenting some of the mapping results (see Fig. 5.10).

Furthermore, informed consent included to use the audio-recorded interviews and to share two short films on YouTube. The filming of the two interviews provided the researcher with a record of observations for repeated viewing. One was relevant to social mapping and representative of the family household setting (participant MH01), and the second, to physical mapping and the expertise of the local builders (participant MH03):

1) Social mapping, a short film:

www.youtube.com/watch?v=DDHIyl9IAPY&t=121s

2) Physical mapping, a short film:

www.youtube.com/watch?v=18FwPVT_DgM

The daily narrative and the 20 interviews data were analysed through content analysis (categorisation of verbal and behavioural data) and narrative

analysis was used for the classification of the collected data (Caro, 2011; Walliman, 2001). The researcher translated the interviews from Arabic into English and broke down longer sentences into shorter ones in order to set out the codes and themes related to place-making. In terms of coding, and after having the interview transcripts, the researcher did coding manually to extrapolate the key themes, simply by highlighting keywords and concepts with different colours. This analysis involved labelling and coding so that similarities and differences could be recognised, and that the important messages, features or findings related to the place-making process could be highlighted (Tayob, 2018).

The analysis approach aimed to “balance detailed documentation of events with insights into their meaning to those involved” (Randall, Harper and Rouncefield, 2007, p. 320). The words common to all the 20 household interviews and comprised the key themes that participants kept repeating were: home, safety and protection, belongingness, privacy, togetherness, sharing, flat roof, extension, cooking, food making, and possessions. As shown in Fig. 5.8, those findings were checked again during the ‘Lessons Learned’ participatory workshop (Chapter 7).

Figure 5.8 has been removed from
this version of the thesis due to
copyright restrictions

Figure 5.8: The problems tree with keywords and real problems facing the households. Source: Shelter Cluster, 2016.

The observation and analysis of everyday narratives, the processes of dwelling and the spatial stories of the inhabitants, helped the researcher to gain a better understanding of domesticity and human interaction as issues to be resolved by architecture at the level of the everyday. The drawings and models that came out of the participatory design workshops were compiled together with images, audio-recordings, and video clips in order to illustrate the themes of the participants' narratives and the observation process. This documentation provided the framework for showing the material that would inform the architectural design project. The researcher used pencil-and-paper hand-drawn methods to spatially represent archetypes of house/s and residential neighbourhoods based on the material gathered during fieldwork. In order to link the results of mapping and design, images, and the key themes that emerged, these were turned into axonometric drawing (Fig. 5.9) and architectural collages (Fig. 5.10). The following are some examples of the results collected while carrying out mapping through sketches, and axonometric models.

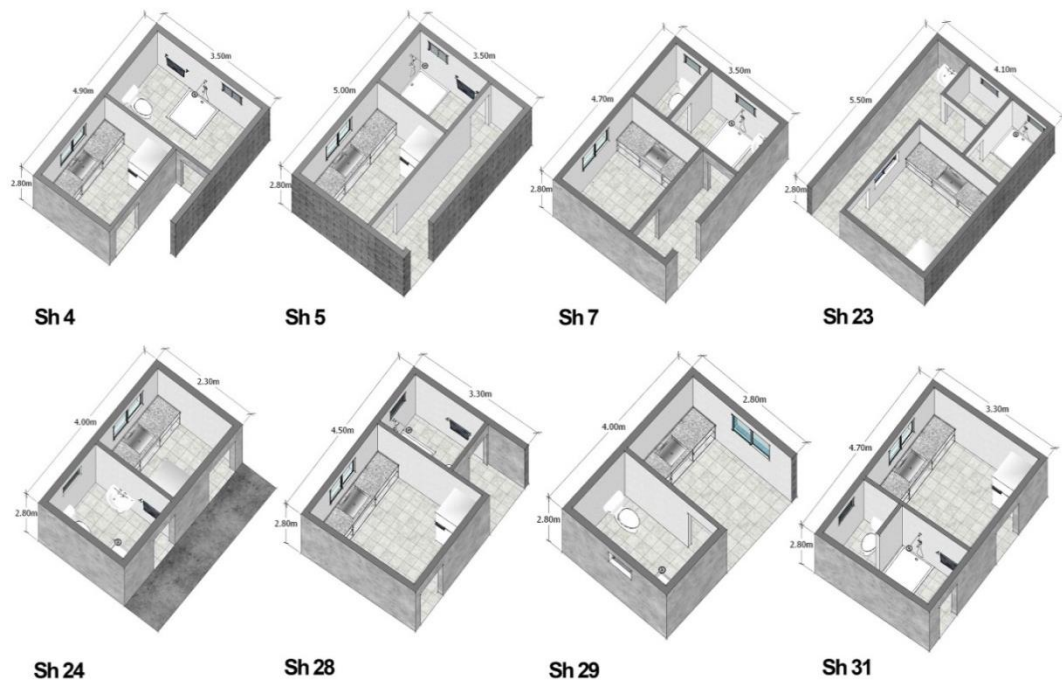


Figure 5.9: Axonometric drawings showing alternatives for the adjacency of kitchens and bathroom in different rural houses. Source: Salem Al Qudwa, 2017.



Figure 5.10: Spatial strategy with collaged everyday activities developed by the researcher based on photos he took for his design-based project (Chapter 4) and from other places in Gaza while conducting his fieldwork (Chapter 6). Adding the animal elements (chicken and donkey) and a house pocket garden, the collage proposes the differences in improving external finish material for Gaza buildings where the change is easier as the building grows. Source: Salem Al Qudwa, 2017.

The field notes, sketches, axonometric graphic collages, and audio-visual representations were collated into categories that emerged from the household interviews and discussion meetings central to place-making. There were: cloths washing and drying, tools and objects, water and drinking, indoor/outdoor activities, materials used and skills for day-to-day survival due to the on-going situation of conflict in the Gaza Strip. This composite form of representation was used to illustrate a link between indoor and outdoor activities, reflecting the needs and aspirations of the participants.

The use of photography in conveying the architectural features of buildings can be helpful as much as misleading. The use of photography provides a certain architectural understanding of a building. One that is informed by the photographer's choice of position in relation to the building while taking the photograph, then by the moment, and context when the viewer contemplates the image of the building. Manolopoulou (2013) noted that capturing the unnoticed beauty of such 'architectural moments' is about the "simplicity of chance in the

form of coincidence and simultaneity” (p. 63). For example, Aghasi conveyed her impressions of a Beirut building in her review of two similar images from the Beirut Photo Exhibition, Artheum, Sept18–25, 2013 (Aghasi, 2013), (Fig. 5.11):

“I just loved the colors and symmetry of this, and the next photograph of a building in Beirut by Lola Claeys Bouuaert. They depict Beirut balconies. The same pattern of the curtain is the residents’ attempt to make the building look aesthetically pleasing, and the laundry, people, and objects crowding the balconies bring the space to life. This crowded front is telling of the packed lives of the people occupying the city.”

Figure 5.11 has been removed
from this version of the thesis due
to copyright restrictions

Figure 5.11: Beirut balconies by Lola Claeys Bouuaert. Source: Aghasi, 2013.

The wish to see an aesthetic that may say more about a viewer’s perception of what they observe than the conditions being photographed is one that the architect Christopher Day would argue may not relate to the building in its architectural form. The only feature the building shares with the photograph refers to the extent to which it constitutes an aesthetic experience and thus invites certain emotions. According to Day:

“Photographs focus our attention but let us ignore context. Architecture, however, is the frame in which we live. We don’t just look at architecture; we live in it.” (Day, 2004, p. 1)

In agreement with Day’s view, the researcher is mindful to consider photography as a tool for record keeping – to show the potential for a collective urban environment with its own everyday aesthetic appearance. In addition, photography also proved a reliable medium for communicating and sharing information with the participants at the time of working with marginalised communities in need. The researcher could engage further with the participants by encouraging them to comment on the photographs, drawings and collages, with the aim of making small but positive changes to their houses and surroundings.

Participatory design sessions organised with the five households that were involved from the original selection of 20; and out of which the researcher focused on three representative extended families (MH03, MH08, and MH10), were central to the researcher’s fieldwork to gather the material for the house design prototype. After interpreting the findings from the fieldwork, the provision of an alternative housing solution and an efficient reconstruction design proposal for extended families in the neighbourhoods that have been identified will inform a design proposal (Chapter 7) that could be implemented later.

5.10 Limitations and Ethical Issues

An advantage was that between 2006 and 2014, the researcher worked as an emergency architect (the shelter project coordinator) with Gaza communities affected by the conflict, and was known in the three study sites in Beit Lahia, Shejaiya, and Al Shouka (see Chapter 4). This practice-based experience made the researcher aware of the limitations, in terms of the frequency and duration of the field visits, and the response from the community. As discussed before in Chapter 4, the researcher had a lead responsible of security while working in the Gaza Strip, which was and still is considered a high-risk environment during the Israeli attacks in 2008/2009, 2012 and 2014. His work along with his shelter team in Gaza was one way he helped others witnessing stories of tragedy, suffering,

devastation, and moral dilemmas. Being part of this organisational climate, the on-going conflict and unstable atmosphere, has strengthened his commitment to improve and manage his own stress and to ensure that he will make the necessary priorities to further develop self-care during any further fieldwork. For the matter of security, the researcher took all necessary measures to mitigate against going to buffer zones areas. In addition, as a father of two children, and a supporter of his elderly parents, he was able to show sensitivity while dealing with extended families living in urban and rural areas of the Gaza Strip.

As a consequence, it may be necessary to consider the researcher's own subjective position and how this may have shaped the fieldwork. In the sense that during the process of mapping and analysis he found that, being a Palestinian citizen from Gaza, but also as a researcher and an experienced architect, an individual who has travelled and studied outside of the area, his voice was different from that of a local inhabitant. It is important to state here that during the fieldwork and the subsequent process of analysis the researcher attempted to integrate these different facets, in order to translate as accurately as possible the voices of households interviewed, and to speak as a professional architect from the area.

One of the limitations that the researcher felt was the difference between working with households as an emergency architect or a project coordinator working with an international NGO, who could participate in the reconstruction and/or rehabilitation of their houses (Chapter 4), and being a researcher who could only offer listening to them. Being aware of this situation, the researcher was mindful of expectations and introduced himself as a student/researcher in the hopes that the households would not be inclined to expect anything from him, whilst feeling free to reveal hidden aspects of their situation. Being familiar to the households interviewed, it was anticipated that there will be a direct and more accurate impact from participation in this research project. These home visits however allowed participants the opportunity to a) Provide feedback on their current situation and effectiveness of any previously implemented project in their community; and b) Raise individual/community concerns and awareness of the effects of participatory design through home visits to a wider audience.

Due to the nature and extent of the Israeli blockade of the Gaza Strip, the researcher endeavoured to make it as easy as possible for the participants to speak, taking into consideration the relevant ethical aspects of the research such as protection of dignity of the 20 participants and preventing harm (Linsell, 2014). The researcher received oral consent initially over the phone from those who wished to participate in the study. This was followed up with written consent from the heads of households during the first field visit. The researcher fulfilled the ethical requirements for academic research of this nature. There was no risk for the participants in taking part in this research and participants had been informed that they had the option to end the interview at any point or to not answer a question – see Appendix B for a copy of the consent form. The participants were reminded of the aims and scope of the interview/research and they were assured of their anonymity and confidentiality. Except for two participants (MH01 and MH03), the written consents included the use of audio-recorded interviews and photographs for publications/exhibitions and to share two short films on YouTube. The fieldwork for this research had been monitored by the Supervisors on a regular basis (through emails and Skype meetings) while sending them a monthly report about the progress of the fieldwork in Gaza.

5.11 Conclusion

The use of social and physical mapping, to include participation by design methods set out to investigate the impact of architecture of the everyday under reconstruction. The process of the self-build was from the perspective of the 20 households in the three areas chosen for the study, over a certain period of time. The challenges of the fieldwork were three-fold: relating to community engagement; the role of the architect; and building material. Observation of families living in damaged sites within some of the most affected areas in the Gaza Strip, meetings with key informants, and interviewing the 20 families needed time and opportunities to build trust. The researcher, in his capacity as a qualified architect from the Gaza Strip, had to consider the social responsibility of architects working with fragile communities under conflict. Discussions relating

to reconstruction of existing or new structures would have been futile without taking into account the limitations of available resources.

The mapping outcomes through interviews, informal conversations and design sessions, in order to exchange experiences and ideas with the households and local communities, established the basis for the participative design approach. The data collection methods and analysis techniques described in this chapter were developed to understand the architecture of the everyday in the Gaza context. The emphasis was on finding alternative housing solutions and an efficient reconstruction design proposal for family clusters in the three neighbourhoods (Chapter 7).

The research with its design proposal could not be isolated from the researcher's role as an architect. The experience and knowledge that this expertise brought to the study helped to elicit information from the participants, relating to the current state of their households and the adaptations they considered necessary. In the concluding chapter, the researcher will attempt to address the role of the architect in the design and reconstruction of houses in a precarious environment (see Chapter 8).

Chapter 6: Mapping Gaza's Everyday

6.1 Introduction

The semiotics of the everyday in the Gaza Strip as discussed in Chapter 2 is complex and rooted in instability. The fieldwork methodologies described in the previous chapter provide the background for the aims here. These are to identify through social and physical mapping the dynamics and behaviours of communities in relation to the built environment and place-making; to consider willingness towards and opportunities for self-build approaches to suitable houses, and information regarding current attitudes towards Gaza's new vernacular architecture. In an attempt to do so, it is important to consider the 'normalisation' out of necessity of abnormal conditions (Piquard, 2016). Households interviewed indicated how they accommodated the lack of space, privacy, resources, infrastructure, and that these adjustments needed constantly to be reviewed. Such unpredictability has an impact on both traditional ways of living and planning for the future.

While undertaking the social and the physical mapping, the researcher attempted to identify those issues that appear important to most Palestinians as they go about their daily lives under conflict. In this sense, the mapping exercise looked at how family structure and behaviours of communities relate to urban infrastructure. This is specifically taking into account changes that have occurred since the Israeli blockade came into force and following the attacks of 2014. The context is one that "constantly mixes violence with people's efforts to repair and reconstruct both symbolically and physically their lives" (Piquard, 2016, p. 76).

The social mapping addressed local groups of people not necessarily all from the specific households interviewed. The intention was to render apparent the diversity of interests and preoccupations in the Gaza Strip. At the same time that social mapping was carried out among these groups, there were those that were conducted separately with the heads of the households and their wives and children who belong to the 20 families interviewed. These comprised categories such as farmers, builders, and fishermen from nine urban households (UH) and

eleven marginalised households (MH). When mapping social practices and daily activities, the focus was on those family practices that directly or indirectly contribute to place-making while configuring the nature of space.

The physical mapping exercise comprised two strands primarily based on observation as explained in the methodology chapter. Photography was used to record the urban environment and its outskirts in the Gaza Strip, documenting private and public spaces and the ways in which they inter-connect. The classification and then prioritizing of an estimated 1,000 photographs that were taken during the fieldwork highlighted the extent to which the daily rituals were relevant to the house design process. As explained in Chapter 5 of how and on which criteria the pictures have been selected, captions were added to the selected pictures to identify what was photographed and its relevance. A systematic observation of interior spaces and physical structures was also undertaken through sketches and note taking.

6.2 The Social Infrastructure of the Gaza Strip

Extended families in the Gaza Strip tend to live together in the same neighbourhoods. Compounds are divided into apartments that are assigned for inheritance to all male offspring and their families (Robinson, 2008). Young people very seldom get their own house before marrying and having children. Thus, married sons, and unmarried daughters, live together with their parents. The majority (17/20) of the families interviewed live in extended family houses, and the following provides examples of this arrangement. During the fieldwork, three households (MH01, UH09, and MH10) invited the researcher to attend the wedding ceremony of their children. The daughter of UH09 moved to her in-law family's house. The sons of MH01 and MH10 respectively, who are low-income earners and both married at a young age, lived with their unemployed fathers. A further physical mapping was carried out for the house of MH10 to show the physical changes along with the social logic of space configuration (Buchli, 2003) that occurred during the same time as the fieldwork, and this will be presented in the next design chapter (see Chapter 7 and Fig. 7.3).

The ethos of traditional Palestinian culture highlights the responsibility of children to learn from a young age of their future duty as adults to care for their family members (older parents and grandparents). Elderly parents; and/or unmarried aunts and cousins who have no children, are nearly always cared for at home. Such a responsibility is entrusted most of the times to the eldest son, but it can also be transferred to those who are better placed financially or, sometimes, to the more extended family as a whole. In addition to home as a place of normal daily activities, these caring routines of family members are an important aspect of families' domestic place-making processes and the resulting sense of place (Buchli, 2003; Akesson, 2014). Of the households interviewed, for example, UH08 cared for the husband's elderly mother and MH10 cared for the wife's mother. Both of the older women shared a room with their respective grandchildren. The rooms needed rearranging during the day and at night due to their specific requirements.

The accommodation of the extended family is a key consideration for understanding Gaza's urban environment as "residents can build on land that is already owned without the need to buy more" (Harker, 2011, p. 14). To represent such self-organisation of family members or households within residential units, which is also regarded as the 'social logic of space' (de Certeau, 1998; Buchli, 2003; Mistry, 2004), Figure 6.1 illustrates how the self-built house is shared by several generations of a family. In such units, the elderly parents occupy spaces on the ground floor, which is easier for them to access and to move in and out and to receive guests. The first and second floors are shared by their married sons and their wives and children. The roof is a shared space between the generations for different activities (see Fig. 6.3b and Fig. 6.6). In this perspective, Lefebvre argued that "the *representation of space* and *representational space* are mutually reinforcing" as lived experiences of people who interact with the space (Lefebvre, 1991, p. 74). Founded on the extended family as the basic social and spatial element means that the discourses about a social space in the Gaza Strip is a way in which they come to influence and represent architecture, for example, in terms of inheritance when the original owner-parents die? Similar to self-built consolidated dwellings in developing countries (Ward et al., 2011), this can be

just one of the several ramifications to architecture and housing that important events in the life of the extended family in Gaza can cause.



Figure 6.1: Social infrastructure spatial diagram. It illustrates how different sections of a Palestinian extended family live together at a typical self-built urban residential unit in Gaza. Source: Salem Al Qudwa, 2017.

In urban areas, the extended family pattern is strong and a variety of older relatives, especially mothers-in-law and uncles, exert control over the women in the households' lives. Their influence is often stronger than that of the husband (Grady and Abu Dagga, 2001). Qleibo and Mohana (2009, p. 27) point out that "...this has created tension between female members of the family (mothers-in-law, sisters-in-law and daughters-in-law). Some young married women put their personal security at stake and may get in conflict with family members to preserve their autonomy and live in a separate house while still respecting their husbands' responsibility towards extended family." Three of the female interviewees (UH18, UH19, UH20) who were from Russia, Ukraine, and Croatia respectively, and who had been living in Gaza with their Palestinian husbands for the past 20 years, pointed out this influence. One woman confirmed these feelings by saying: *"I enjoyed tremendously the sense of belonging through my in-laws in Gaza. One never feels anonymous here and for many, this can be bothersome. I have enjoyed it"* (Interview, UH18).

The impact of social tension or a sense of belonging in relation to the built environment and place-making may have enduring consequences for the whole family. For example, the wife of one interviewee (MH11) left her home and children, returning to her parents' household, when her unemployed husband could not complete the extended family house and provide his wife with an appropriate independent living area. *"As the building materials are expensive and with the financial help of others, I built four walls between the columns on the top of the ground floor with a small kitchen. I hope that the new added room will encourage my wife to return to take care of our six children. My mother is taking care of them right now."* MH11 said in an interview. Drawing on evidence based on cultural norms and local needs, Rapoport (1969) has argued that the constraints that the wider environment places on a domestic space not only determines its functionality in providing accommodation, but also ensures privacy and the preservation of life. During constraints and ongoing conflict such as in the Gaza Strip, Rapoport's (1969) and Lefebvre's (1991) discussions in the wake of the postwar shortage of accommodation become relevant. Accordingly, to inhabit homes in Gaza is to appropriate domestic spaces while falling in between the

Israeli constraining powers, and the sociocultural forces of appropriation. This scenario of how physical space, or the lack thereof, affects social outcomes such as safety, security, and privacy was also mapped as part of the physical mapping section.

In Gaza, where Sunni Islam is practiced, it is allowed but not common, for men to have more than one wife. Out of the 20 families that were interviewed, two households were married to more than one wife. When a man is married to more than one wife, it is expected that he can afford a large house and within this house, each of his wives is entitled to her own rooms. This was the case of MH06, and in his instance, with the financial help from a local NGO, he managed to make some renovations to his house on the ground level for his first wife and to add another set of rooms on the first level for his second wife (see Fig. 6.4).

The arrangements of the Palestinian society are such that the need is for inhabited spaces to reflect this emphasis on accommodating an extended family. Meanwhile limited space within the confines of the Gaza Strip and the impact of overcrowding in the urban environment and marginalised areas means that families are obliged to consider the costlier measures of building vertical rather than horizontal house structures.

6.3 Extended Family in the Everyday Space

The extended family generally includes three generations living together and each generational unit has its own space. Cooking is a communal activity and the whole family will eat together. After the Friday prayers, for example, the grandparents, parents, and children all sit around the same table to have lunch. Consequently, the space of habitation (requirements of housing) is determined by certain traditional communal practices, such as an extended family having their meals or socialising together. A majority (18/20) of the households interviewed for this study indicated that they still have their meals at home with their families.

When families visit each other in Gaza, traditional Palestinian culture is expressed in the way that men and women inhabit separate spaces socially. This determines how these spaces are ordered, surrounded by physical boundaries, and regulated according to the 'social logic of space' and the cultural norms

(Rapoport, 1969; Buchli, 2003). As elsewhere in the region, female space in Palestine is connoted with privacy needs, what is covered and, to a certain extent hidden, whereas male space suggests a type of interaction that is more public and more likely to be egalitarian (Abbasoglu and Dagli, 2005). All participants interviewed agreed that there has been little change to the traditional way of socialising. Except that the power cuts affect every aspect of life in the Gaza Strip including social events within households. Often decisions are made about when and where to socialise to minimise the distress caused by the power cuts. Furthermore, gathering to stay safe in times of political violence was a clear reflection in households' perception of home as a safe gathering place (Akesson, 2014). Nevertheless, gathering during a power cut produces a certain community spirit, but does it also produce reflexivity, that is thinking together about what can be done. A man from Beit Lahia said: *"I now often sit with my wife discussing and negotiating what to do to survive"* (MH01). Sharing their feelings and understanding their difficulties, the ordinary people can rise above the ordinary when challenged.

In addition to place as a site of normal daily activities, women from the same extended family and their neighbours often gather in the semi-open space of the house (usually in the living rooms with proper natural lighting) to prepare the bread which are then baked in a shared mud or metal oven located on the ground floor of one of the houses (Fig. 6.4). As highlighted elsewhere (Mushtaha and Noguchi, 2006), and based on the researcher's field observation, the living area and/or the guest reception room play an important part in the household arrangements: where necessary these spaces are turned into sleeping areas at night by arranging mattresses on the floor. All of the 20 families interviewed used mattresses instead of sofas in the living room for sleeping at night (Fig. 6.2). In response to this specific situation and to the multiple needs of low-income extended families, the need of spaces for accommodation in Gaza can explain how homes are shaped and appropriated over time. Lefebvre's concept of the appropriation of space is the closest approximation for such understanding of dwellings in the case with family members to modify homes on various scales and making it of their own.

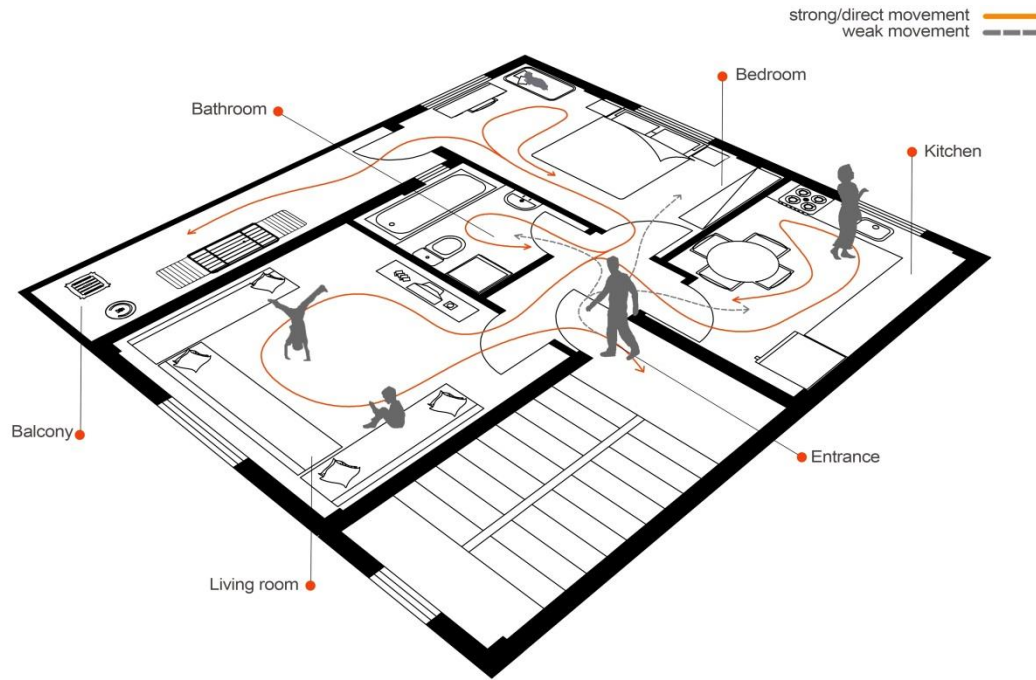


Figure 6.2: Interior space arrangement at one of the houses visited (UH20). It represents a typical architectural plan in Gaza. This undefined organic movement of the family members is indicated by a continuous thick line for strong/direct movement between spaces and dotted lines for weak movement. Source: Salem Al Qudwa, 2017.

Due to overcrowding in Gaza and limited living area, it is no longer possible for houses to have large enough spaces for larger social gatherings. Of the five families interviewed for the house design prototype, one family (UH13) was living in a dense urban area and sharing one room with an approximate area of 25 m² in an extended household for almost 13 years. This single room was used for cooking, eating, washing dishes, studying, playing, washing clothes, hanging laundry, and sleeping. The space contained typical furniture as in any bedroom in Gaza besides many possessions piled everywhere (kitchen equipment, children's toys, blankets, and clothes). This limited interior space offered no privacy for the family as all family members slept in this room. The mother said that: "*We have almost no social interaction with our neighbours as there is no room for guests to visit*" (Interview, UH13). This 25 m² room acting as a multi-functional area literally controlled the family's life and daily activities. Four of the nine low-income families (UH08, UH09, UH13, UH20) interviewed in the urban sites are

living under similarly difficult conditions. It was evident through observation and interviews that these households are living in restricted spaces because they could not afford a larger home and because of a housing shortage. Such constraints will need to be considered to inform the prototype in terms of providing more flexible layouts that can be appropriated over time.

6.4 Normalisation of Abnormal Conditions

The fractures created by the Israeli blockade affect the Palestinian society as a whole in its capacity to provide for and govern its housing infrastructure. As discussed in Chapter 2, people in the Gaza Strip experience electricity cuts for at least 18 to 20 hours a day. Most families depend on generators and sometimes the fuel crisis also stops them from using generators. Added to this is the on-going scarcity of water and inadequate urban planning. Such fractures are visible at the micro-level social spaces (e.g., the family and home) that is in the difficulties and problems that ordinary people in Gaza encounter everyday as they go about their lives.

Over time and through necessity people have become accustomed to the frequent electricity blackouts, caused by the incapacity to run power-plants continuously due to severe shortage of fuel. Families who have money can afford to buy generators or to install rooftop photovoltaic systems. All of the low-income families interviewed for this research are forced to cope with alternatives such as rechargeable lamps, small unreliable generators, candles or outdated and hazardous kerosene lamps. Households interviewed said that they usually spend their evenings in the dark, using fire to heat up what water they could spare to bathe. One of the participants from Beit Lahia explained: *“I’ve got used to electricity outages. There were times when we only had water for half an hour after three days without a drop. And even I need two pumps to take water from town connection to the water tanks on the top of my house. The water that comes out of the tap is way too salty to drink. I had to fill my tank with purchased water twice a week. I paid 30 NIS (about \$8) each time”* (Interview, MH01).

In order to compensate for the shortage of water most people have become used to buying drinkable water from water stations or from water sellers delivered

by truck in the streets. Desalinated water is pumped into rooftop tanks via hoses. The process of buying and storing fuel as well as buying water and keeping it, is exhausting, time-consuming, and moreover it requires a space in each house to keep fuel in a safe place, and to store clean water for a short period of time. The impact over time of these negative coping strategies is a 'normalisation', out of necessity and because of this an acceptance of a circumstance of extremes and deprivation (Akesson, 2014; Piquard, 2016).

Bread making is an example of this adaptation due to the scarcity of flour and the reliance on humanitarian aid. In the two rural and marginalised areas of Beit Lahia and Al Shouka, all the eleven households studied rely on the flour they receive from humanitarian aid agencies in order to bake flat bread for their extended families. Based on the researcher's observation, the tradition of baking bread at home has been revised albeit in a more practical way so as to save money due to the hardships imposed by the blockades and to save hundreds of shekels on grocery every month (Fig. 6.3). Due to limited space inside their houses, it is observed that the insufficiency of space for mud ovens in the densely urban locations forced the nine households to get good use of some spaces to bake *saj* bread (thin circular shaped bread). *Saj* bread is still baked in front of the entrances or on the rooftops of some houses using dome-side-up over the fire (Fig. 6.3b). Three of the wives interviewed (MH01, MH06, MH08) said that they are used to baking about 200 to 250 bread doughs per week for their families (Fig. 6.3a and Fig. 6.4). They also highlighted that they are baking more than before for feeding their growing children as flour is the main ingredient for daily meals and which means they need more space to bake the bread (see Chapter 7, Fig. 7.2).



Figure 6.3a: Mapping the social activities within the physical settings. Dough circles repeated in rows, prepared by the wife of household MH08 in the confines of their living room.



Figure 6.3b: Space in Gaza has become a valuable commodity and many households are making use of the rooftops to spread out the bread as it is not a permanent use. Source: Salem Al Qudwa, 2016.



Figure 6.4: One of the study participants (MH06) made a mud oven and placed it underneath the concrete single stair for the women of the household to use. A mixture of clay and straw is used to make the tabun oven, which has the shape of a box with an opening on top. It is tall enough for four or five flatbreads at a time to be placed on its mud walls. Source: Salem Al Qudwa, 2016.

The households interviewed were representative of families who use communal space for food preparation, clothes washing, and for water and fuel storage to save money. This is an attempt to cope with the everyday constraints endured under the siege and frequent Israeli attacks. The researcher considers the possibility from his observations that these coping strategies also might be pointing to certain socio-economic changes in Gaza that could bring new practices. The use of domestic spaces in the Gaza Strip highlights functionality and it also refers to new social and domestic patterns: how confined space shared erodes traditional notions of privacy on the one hand and rituals of hospitality on

the other. This form of ‘appropriation’ of existing space out of necessity and transforming it into a human property (Lefebvre,1991) ought to be reflected in architectural design whenever decisions are taken about the utilization of space and place-making.

6.5 Everyday Rituals (Birth, Marriage, and Death)

At the level of a neighbourhood in the Gaza Strip, ceremonial events such as the celebration of marriages and births, or the mourning of the deceased are made poignant given the instability caused by the Israeli airstrikes without warning and the blockades. The practices surrounding marriage, birth and death are highly connected to space, particularly to inhabited space. There is a tradition in Palestinian society that consists of sharing the ground floor of the biggest house of one of the cousins or relatives in the neighbourhood in order to celebrate a wedding or to host the three-day mourning period. Both the wedding and the funeral reveal the social structures of the extended family in cooperation; as well as the casual formation of semi-private space, often under abnormal conditions full of uncertainty and with increasingly welfare losses for the larger households (Fig. 6.5).

The researcher was invited to and witnessed two funerals, one at an urban and the other at a marginalised setting while doing the fieldwork. The head of the household from MH10 invited the researcher to attend the funeral of his mother-in-law that was held beside his house. This ceremony; which was limited to one day because of limited space and finance, was representative of households within Gaza’s marginalised communities, where the ritual obligations to mourn the deceased are still played out in a nearby open space. Depending on the limitations of the inhabited space and the number of mourners, this may be by closing one of the roads beside the house of the deceased to use for the gathering.



Figure 6.5: An example for the organisation of ceremonial space at a house (that is not representative of those interviewed) during a wedding day in Gaza (left) and the spatial use as well as social norms of sharing and supporting within extended family networks. Second picture (right), it is a marriage ceremony for men to have gathered eating together. Source: Salem Al Qudwa, 2016.

Since 2017, and due to the difficult economic situation, the researcher observed that most of the families in the Gaza Strip started to cancel the offering of lunch for guests attending the mourning period. Only dates and black coffee were offered for half a day for the period of two to three days. Although this may not affect the space directly, it reduces the concentration of people at one specific location to attend the mourning period. These events both produce and shape the space inhabited by the community.

Young men killed in the Israeli attacks are called martyrs and due to traditions and cultural constraints in Gaza, their young widows; as well as all widows not only those of martyrs, may be obliged to marry their brothers-in-law to keep the children within the husband's family and to protect them. In the case of MH02, the head of the household was a widow, who took care of her grandchildren, as her son (their father) was killed by Israeli forces in the 2008/2009 attacks. She had her own house and her other two sons (MH03 and

MH04) lived beside her in two separated houses. Another man from Al Shejaiya explained: *“One of my daughters got married and she lived at her husband's house. In the 2014 Israeli attacks, her husband was killed. My widowed daughter came back to live with us with her little son on the ground floor”* (Interview, UH12).

Martyrs in Gaza are highly respected in their communities, and their families acquire a high social status. When community feasts are organized, the whole town visits the martyr's tomb, and such a procession is reserved for martyrs only. In addition, this specific event attended by Gazans might be seen as having no relevance to this topic, but it has some hidden symbols that could be seen afterwards in the streets of the Strip. For example, graffiti works featuring the faces and the names of the martyrs, their pictures along with the flags of their political parties are hung on the top of electricity columns adding more visual chaos to the streetscapes. Some roads, mosques and even schools and hospitals had been named after the martyrs as well. As there is a need for shared spaces that can be used for communal functions by the community (Fig. 6.5), the casual formation of semi-private space will need to be taken into account for a house design prototype in marginalised areas.

6.6 Movement between Buildings

The social open spaces in the Gaza Strip are influenced by origins, background, traditions, living conditions, and latterly by conflict. In terms of general arrangement of urban space or dwellings typologies, the urban communities are based largely on a grid plan of houses on both sides of the road. The urban space in Gaza is organized into community zones and these influence how public spaces (or semi-private spaces) are produced. Due to the zoning system, people travel from area to area, for work, school, leisure or shopping, preventing a transportation gridlock and the total closure of the Gaza Strip. This means that the residents of the three areas constituting the most closed-in neighbourhoods, those who bear the worst stigma because of where they live beside the buffer zone or beside the sea (see Chapters 2 and 5), always have access to the rest of the city and the outskirts.

The issues of being exposed living on the edge of occupied land or the shoreline – seems to have its influence on the three fishermen (UH14, MH16, MH17) interviewed for this research. While talking about the daily rhythm of work and in particular fishing off Gaza, MH17 said: *“We are always worried as we are living beside the borders. Everything is dying as the water is too salty and even the Arabian palm trees are getting attacked by the palm worms. The fishing is becoming very weak every season and even the groups of fish coming from the Egyptian side are changing their directions when they reach our sea. The groups of fish are coming to spit on our faces and they return back to the other side”* (Interview, MH17).

Pavements or pedestrian pathways in the Gaza Strip are the responsibility of the nearby plot holder and so vary in terms of materials and maintenance – often with barriers to mark boundaries – making continuous use of the pavement for walking challenging. Daily activities in Gaza may include going to school or to work, to the mosque, hospital, shops, waiting for a taxi or a friend, filling containers with drinking water, distributing electricity and water bills. More than half of the Palestinian population is under eighteen (PCBS, 2018) and thus one finds many children and young people in the street. A typical neighbourhood of extended family cluster-type houses in the urban areas of Gaza has a lively street life. Furthermore, and as a direct impact of overcrowding in the urban environment, and that there are no places to play, children are running and playing in the streets (Akesson, 2014). Sometimes older people carry plastic chairs to the street in order to rest under a tree (Fig. 6.6). In this case, public space within the neighbourhood is also being appropriated for forms of semi-private use and allows family members to appropriate to some extent the conditions of their own existence and to live well in their homes.



Figure 6.6: Gaza dwellings in the urban areas are constructed in stages over time. A typical building can have up to four stories, and the younger generation (the sons) live above the rooms of their parents. On the uppermost level the columns are left bare in expectation of future generations that can add more floors, if needed. The painted balcony and the laundry lines, flat rooftops containing black water tanks, satellite dishes and columns and steel bars are typical details for every house in Gaza. Source: Salem Al Qudwa, 2017.

As discussed earlier, in the consideration for a house design prototype in marginalised areas, there is an articulated need for shared spaces that can be used for communal functions by the community (Fig. 6.7). As argued by Buchli (2003) and Mistry (2004), and with regards to the spatial organisation, the importance of the ‘spaces between’ inhabited structures as well as of the domestic spaces between family units needs to be emphasized in the design process, while also taking into account the interrelationship of social spaces that thus emerges and which reflects the everyday aspects of communities. In this way, the passages

between households, the immediate community and neighbourhoods need to be seen as both dynamic and unified.



Figure 6.7: The house door as a place of reverie and withdrawal and connecting the inside with the outside. The door to marginalised households is a fine line between the outer spaces and confined interiors, both of which have repeated movement. Source: Salem Al Qudwa, 2016.

6.6.1 Gender and (im)mobility within and between spaces

As gender segregation is a traditional social structure in the Palestinian territories (Ababneh, 2014), five females and five males (age-group 21 to 25 years) from the

20 households living in urban neighbourhoods were chosen as representatives of the youth group of the Gaza community. Such sampling was informed by the consideration that it is individual such as these that influence or engage with how the life of the majority age group relates to the urban structure. Figures 6.8a and 6.8b outline graphically their typical day in terms of mobility and daily routine, outlining how young men and women are using domestic and urban space differently. Thus, illustrating daily activities by drawing the spaces such as they are practised by people highlights the connections between various moments in the life of inhabitants and how these moments are produced in and by different spaces. Similar to the analysis of a statement, it “involves reducing a long response, parsing it according to a set of rules into lines, stanzas, and parts, examining its organising metaphors, and creating a schematic to display the structure” (Riessman, 1993, p. 50).

The two students’ mobility map was useful in terms of cross-checking the daily routines of the young women and men living in urban areas and for defining activities that can be used as the background for future design and planning. As discussed elsewhere (Qleibo and Mohana, 2009), it is evident that women of all ages in Gaza spend most of their time inside their family houses. For younger unmarried women, going to the university, or to the market, is their only chance to be outside their homes. Younger men might have more options and, as a consequence, they could escape the electricity cut-off intervals and find refuge at a place that provides more thermal comfort and clean water. For this reason, they spend most of their time at local sports clubs and/or at the mosques, which are provided with electrical generators and drinkable water most of the time.

A typical day of a female student in Gaza

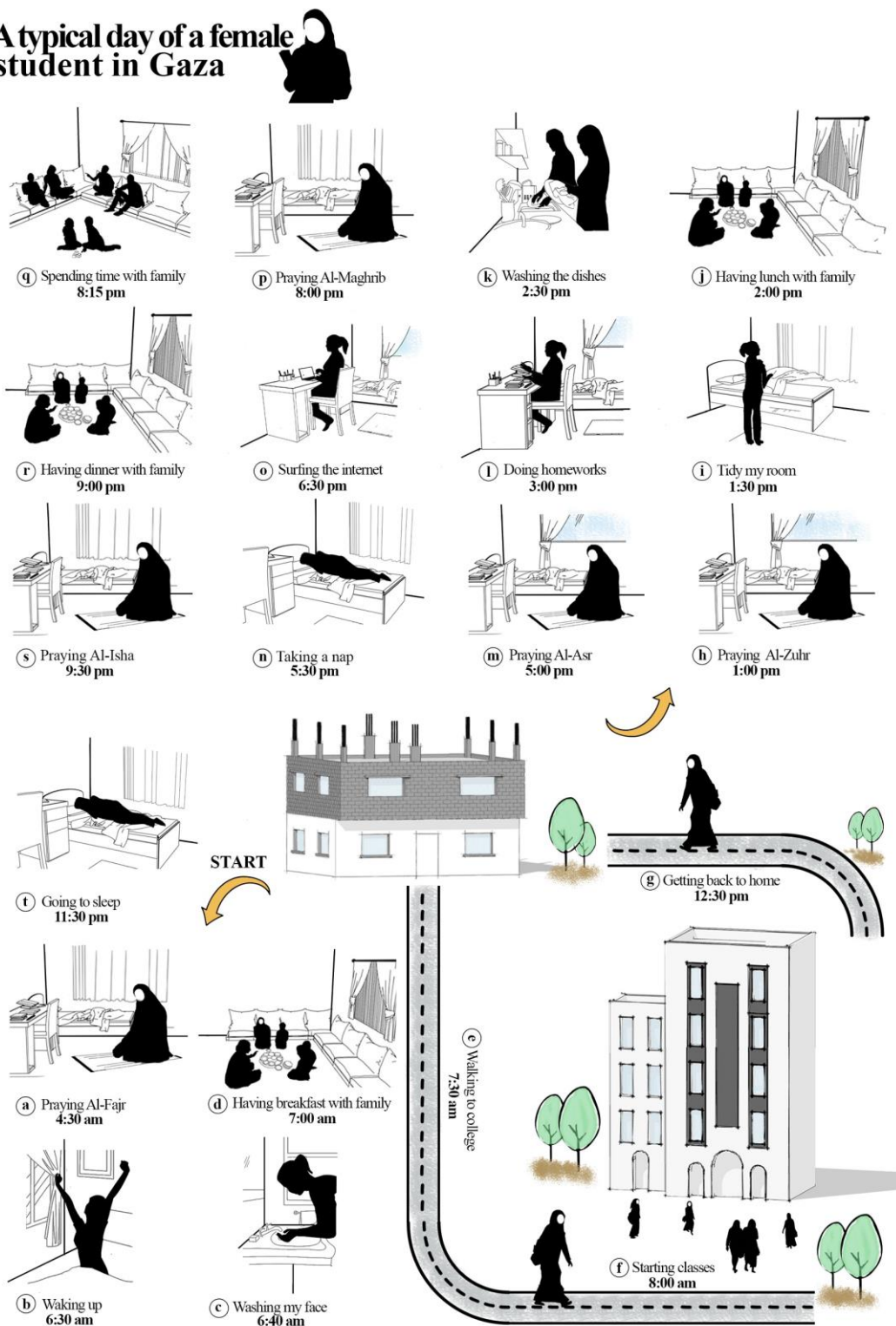


Figure 6.8a: The typical daily patterns of a female university student in Gaza representing MH09, UH14, UH18, UH19, and UH20. Redrawn by Salem Al Qudwa, 2017.

A typical day of a male student in Gaza

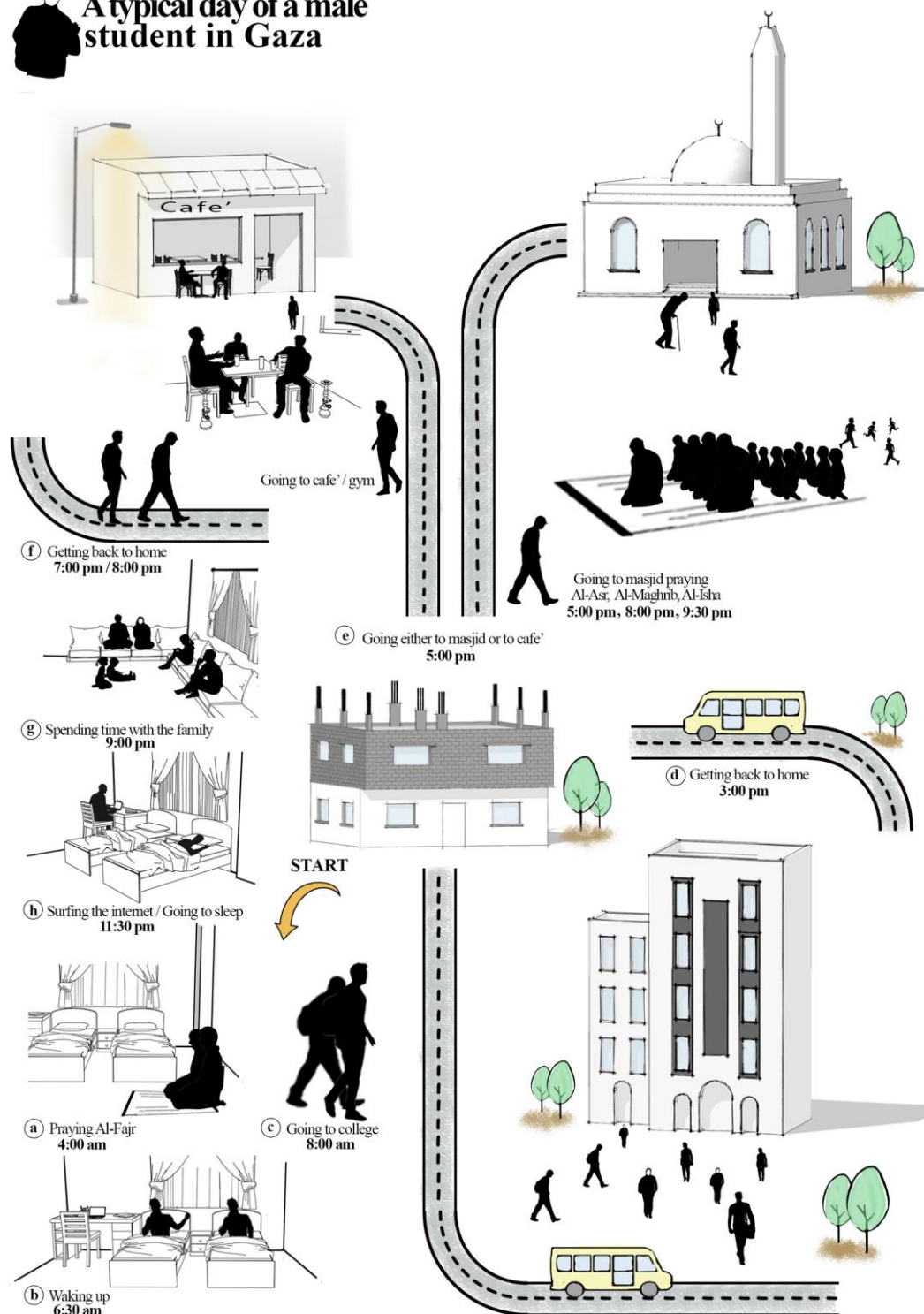


Figure 6.8b: The typical day of a male university student. Redrawn by Salem Al Qudwa, 2017.

A social study conducted by Grady and Abu Daqqa (2001) confirmed that in rural and agricultural areas in the Gaza Strip; and where rural families are often

more conservative, women bear household responsibilities to a greater extent, since in addition to cleaning the house and caring for children, they are expected to oversee the planting of crops and to care for domestic animals. During the interviews in Beit Lahia and Al Shouka, observations showed that husbands were often at home given that they were unemployed. Their wives kept themselves visible as they were preoccupied with daily work around their houses and within their domestic domain and were quietly engaging with what their husbands had to say. Women moved in and out of their kitchens, to the bread oven, the water tank, to feed the donkey and the chickens, and to the laundry lines. In two houses (MH01, MH08), it was also observed that this kind of movement is changing dramatically from the horizontal (around the house) to the vertical level (inside and on the top of the spaces of the house).

In relation to this change in the spatial ordering of the house; and as it is shown in Fig. 6.9, one of the households in Beit Lahia said: *“My wife asked me to take the mud oven to the roof of our new house and I will install a wooden pergola as a protection for her from the sun so that she could bake bread for us”* (Interview, MH08). These increments are mainly to accommodate cultural norms and local needs within the daily constraints in which users can most effectively manage the housing design process (Rapoport, 1969; Turner, 1976; Buchli, 2003; Ward et al., 2011). In the consideration for a house design prototype in marginalised areas, this micro-scale adaptation (of adding small-scale increments of one room or less for the oven on the roof) will be considered as part of a dynamic process of changes in rural houses in the Gaza Strip.



Photograph 1 (2010)



Photograph 2 (2016)



Photograph 3 (2016)

Figure 6.9: Photograph 1: note the location of the mud oven to the left in relation to the house with a small palm tree (Source: Salem Al Qudwa, 2009, Chapter 4). Photographs 2: shows the covered semi-open space for the mud oven. Photographs 3: shows the newly constructed concrete house of MH08 where the mud oven is to be moved to the top of the house roof which marks a change in the spatial ordering of the houses in rural and marginalised areas. It has now lost its view to a larger house. Source: Salem Al Qudwa, 2016.

6.6.2 From ‘social’ settings towards ‘physical’ and ‘spatial’ practices

At the beginning of the fieldwork in 2016 some social narratives and practices appeared to be less important for the researcher’s documentation of the everyday in Gaza and its relevance as material for a house design prototype. It later became apparent that these social narratives are crucial to an understanding of space as a social product in this context (Lefebvre, 1991). For example, one of the children in a Beit Lahia household said: “*The chickens give us fresh eggs and we sell them at the market. I like my white chicken*” (Interview, MH07). At this point the child ran to release the family's chickens from their enclosure and hugged his favourite one. There is a little room around the house for domestic animals such as chickens and rabbits, and often small birds such as canaries are kept as pets in cages, usually at the entrance of the house. Raising pigeons is also a popular pastime among young unemployed men in Gaza and a pair of new-born pigeons sells for around \$10. As elsewhere, with unemployment running high in the region, parents say that their sons can keep out of trouble and also generate an income in this way (Mansell, 2016). The researcher also noted that some spaces around the houses visited were to generate livelihood income for some families (MH02, MH05, MH06) such as drying fruits and vegetables that could be sold later in the local market.

Due to the Israeli blockade, many of the sons of the households interviewed have dropped out of education for the sake of minor jobs, when it proved it was hopeless for their fathers to go back to work in Israel (Chapter 2). As an example, one of the women from Beit Lahia said: “*We don’t have a stable income. We cannot even feed the donkey sometimes. My children often collect rubble in order to buy a pound of barley for the donkey*” (Interview, MH01). One of her children added: “*From early morning to late afternoon I am scanning the ground with my eyes, and combing it with my fingers and looking for breeze blocks and pieces of concrete. Filling plastic buckets with collected rubble and putting buckets in the donkey cart, I am used to filling four carts of rocks. After dumping it at a nearby construction site, I am selling the rubble for \$ 6,*” the boy said. His elder brother added: “*Sometimes the people use to think that we are thieves as we are collecting, by mistake, some plastic buckets allocated in front of some houses for*

garbage.” The practice of collecting and clearing rubble in Gaza, as well as other recyclable materials such as plastic bottles and hessian bags, has become a normal activity under abnormal conditions, undertaken mostly by children as a result of the blockade. It is becoming acceptable to use rubble in minor construction activities such as building boundary walls. An awareness of the use of rubble and recyclable materials in the rehabilitation of houses is important in an understanding of the challenges Palestinians face on a daily basis.

This leads to the next part of this chapter which looks at how buildings in the Gaza Strip are organized spatially, and also takes into account the materials that are mostly used for their construction. For this purpose, the physical mapping undertaken during the fieldwork, as part of collecting material for the house design prototype, offers an account of the process of making buildings while documenting the social analysis of house interiors in Gaza.

6.7 Mapping the Physical Infrastructure

According to Sprake: “Places can be read through user-producer intervention in the rituals, repetitions, and routine of everyday life” (Sprake, 2003, p. 1). The analysis presented in this part of the chapter refers more generally to the problematic nature of reading everyday spatial practice (Lozanovska, 2002), in addition to documenting and representing the architectural space (Macken, 2012), and its relevance to understanding user-producer relatedness in design as a set of practices and appropriation (Lefebvre, 1991). The aim of the physical analysis is to provide insights into everyday rhythms and architectural developments and into how construction techniques are defined and employed in the making of local buildings. This is with a view to identifying key characteristics of a neglected aspect of the new vernacular in the Gaza Strip.

In urban areas and on the outskirts of the Gaza Strip, the head of a Palestinian household is traditionally expected to plant an olive tree, a grape vine, or a fruit-bearing tree, raise his sons and attach a room or an entire new floor on top of the flat roof of his apartment. The average house usually consists of a kitchen, a living room, a bathroom, and small bedrooms. Some houses also allow for small gardens that are often surrounded by high walls (for privacy and for

protection from the sun) with a gate, and an open space on the ground level which is known locally by *hawasel* in Arabic (see Fig. 6.5). This ‘shed’ is used as garages, stores, or it “can be changed easily at urgent times into housing units” (Mushtaha and Noguchi, 2006, p. 25). The building which is constructed to host the family and its business is usually leased until the children get married. None of the 20 households interviewed has leased their houses due to overcrowding and the limited space inside their houses.

As shown in Fig. 6.10, and during the incremental process, occupied detached houses are superimposed vertically with new rooms or floors made possible by the concrete rebar extending upwards from the roof of the building. The fieldwork findings showed that the 20 low-income extended families are still looking for financial resources to construct small-scale increments on the top of their houses. This future extension may take place through practices of self-help building over time (Ward et al., 2011). Yet, there is no documentation to the small-scale incremental process in the Gaza Strip and still needs further sociological investigation and architectural analysis. As discussed in Chapter 7 (Figs. 7.2 and 7.3), the thesis seeks to analyse the ways incremental change is arranged by the cultural norms and local needs guiding everyday design and construction decisions.



Figure 6.10: Some homeowners often do not complete the construction of the upper floor, as doing so prevents the reclassification of the building from ‘work in process’ to ‘completed building’. Often some of the support columns are used as planters or to hold laundry lines. Source: Salem Al Qudwa, 2016.

In Gaza, the lack of urban and regional planning and property management is a critical issue. Building licenses are granted liberally, existing land use regulations are often ignored, and urban planning mechanisms are largely absent (Al Qudwa, 2017). At the same time, the population is increasing, while the available land is decreasing. In this sense, open spaces have evolved into closed spaces, producing a form of signage that is specific for box-like buildings. Most of the households (17/20) agreed that their houses are ‘boxes’ with flat roofs (the word ‘*boxa*’ is also a common word used by Gazans at the market when they buy fruit and vegetables in large boxes and not in kilograms). This perception illustrates the confined circumstance of living in Gaza with all its restrictions.

The majority of houses (15/20) in the three neighbourhoods studied are characterized by their uneven, rough plastering layers applied on unfinished cement walls and by their convenient simple structure. In the Gaza Strip, house forms and their spatial relations, both inside the confines of their own walls and in relationship to their surroundings, are dictated by the lifestyles and needs of extended families. Instead of by the intended composition of an architectural designer, if there is a designer at all (Fig. 6.11). Most of the families (18/20) confirmed that they had never used an architect to design their houses when they were built the first time. Two of the households (MH01, MH08); who had built vertically, used architects but only in a minimal administrative capacity and to draw the maps (architectural plans) with official stamps to obtain the required licence from the Municipality of Beit Lahia.



Figure 6.11: Architectural form is determined by the needs of the occupants in a typical self-built house in the Gaza Strip. Much can be learnt about a household from the height of their building, the way one floor is added to another, how windows are inset and the exterior is finished. Source: Salem Al Qudwa, 2018.

The common patterns that surround detached houses in urban areas are setbacks and buildings are separated from each other by only two to three meters. Because of the space limitations, as well as the overcrowding, people in the Gaza Strip make use of these setbacks by projecting new added floors some centimetres away towards the alleys every time they add a floor (*tayer* in local Arabic). One of the households (MH03) interviewed and filmed for this research and who is working as a builder in Beit Lahia described this by saying: *“During this process, we usually fit both maps (plans of the ground and the first floor) together vertically while keeping the interior spaces with minor modifications for walls, and the extra area of the first floor will be added as a cantilevered area (balcony) on the bedroom or the kitchen side”* (Interview, MH03). This emphasis placed on the materiality of the extended family structure by MH03 is similar to the view of another household, who said: *“Our house is getting smaller as my family grew since the last twenty years. Two of my sons got married and they live with us with their families. The first and the second floor are expansions for my two sons”* (Interview, MH15).

The close proximity of houses has spatial, social, as well as environmental implications on extended families. In particular, this closeness allows women the opportunity to converse and share food with each other over the boundary walls without leaving their respective homes. Some houses that have extended vertically may limit the amount of light coming in through the windows of neighbouring houses and as a consequence the level of interior light falls below the accepted level. The placement of openings/windows in such confinement may cause tension between families as privacy sought by individuals is not protected. Households cannot open windows during hot summers in case this allows neighbours to see inside their domestic space. Most houses do not have much privacy and all of the women interviewed from the 20 households held the view that the lack of privacy in the home from outsiders was an extremely important issue to address. The majority (17/20) of households interviewed agreed that they do not have enough natural lighting or proper ventilation, and that the thermal comfort is at an unacceptable level in summer and winter. This is due to poor ‘space orientation’ (Mushtaha and Arar, 2011) and the lack of good distribution of

the building's openings. As it is shown in Fig. 6.12, some households of adjacent houses had to modify the original design of their houses to increase the extent of privacy and access to natural light and ventilation.

The constant awareness of the domestic privacy of Palestinian families is compounded by vigilance within the private space of the home that relates to the day-to-day safety and security on a public scale (Weizman, 2007). For instance, when there is a combat drone (an Israeli unpiloted aircraft for intelligence with high power signals/microwaves) flying over Gaza, the signal power of the drone interferes with the satellite digital signals and this is registered in the interference of the images on TV screens. In many places in the world, people watch television as a distraction from their daily life. In Gaza, even by watching television households are painfully reminded of their circumstance. The feeling of protection is missing while being inside the home and the chances of a fatal attack are ever present. One of the mothers said: *"Our son had been burnt by the bombs and was sleeping in the ICU. We almost lost hope and didn't expect him to live. An Israeli drone also hit him once and the second time he was burned inside the house"* (Interview, MH01).



Figure 6.12: The images show that some owners of adjacent houses tried to solve this problem at the ground levels of their houses by either blocking part of the windows or by raising their height above the walking human eye level. Source: Salem Al Qudwa, 2016.

Inhabited spaces in Gaza have several functions according to the circumstance at the time. A school could be adapted into a shelter or a temporary hospital (see Chapter 2). The house is meant to be a shelter but may feel like a prison to many in Palestine (Akesson, 2014; Piquard and Swenarton, 2011), where they have the feeling of being observed most of the time. To escape the hot days of summer without electricity, some family members in marginalised communities use their rooftops (Fig. 6.13). One of the participants from Beit Lahia explained the current situation: “*It is very hot in the summer and I sleep on*

the rooftop of my house” (Interview, MH01). Neither individual, nor household is free from intrusion and spatial confines impact at a domestic and public level.

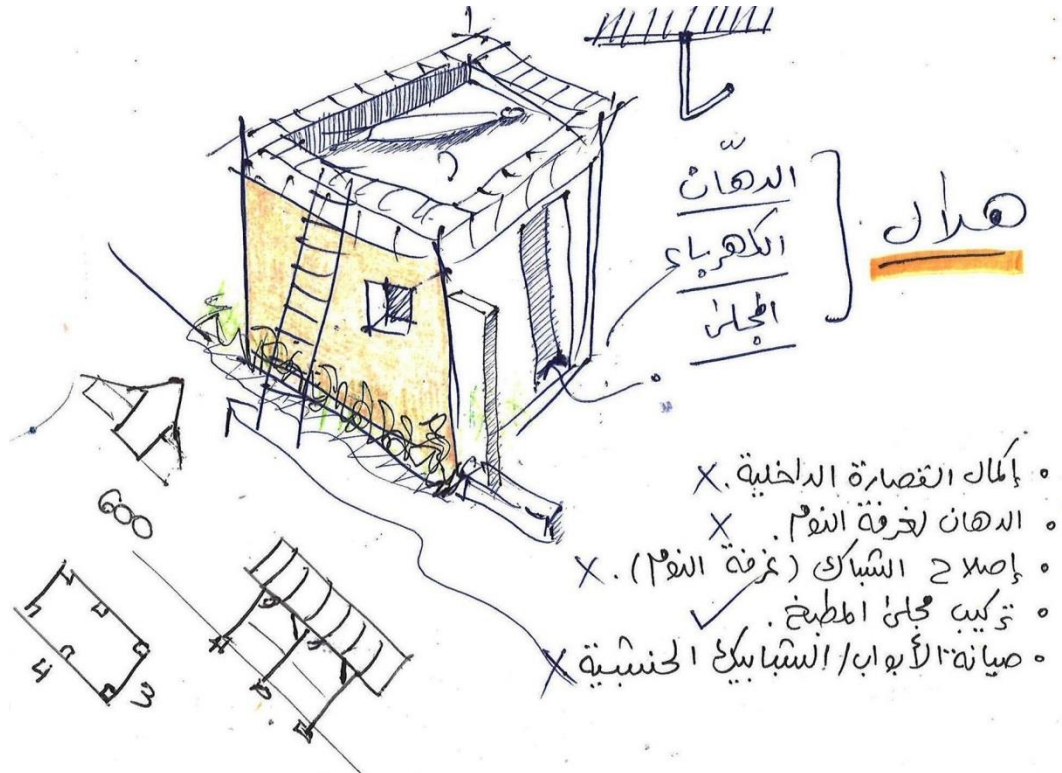


Figure 6.13: The request from the household (MH01) to increase the boundaries of the top of the newly constructed bedroom and bathroom unit (see Chapter 4) so he could sleep at night without falling down was recorded in a sketch by the researcher in 2010 (top). The movement of the same household to the top roof using a vertical ladder was recorded again when the researcher visited the house during the fieldwork in 2016. Source: Salem Al Qudwa, 2016.

In urban areas, houses smaller than 100 square meters are less common, and most families live still in houses that exceed their daily needs with an area of more than 150 square meters. As a general characteristic, people in the Gaza Strip prefer would rather have large housing areas, despite the current context of land scarcity (Asfour, 2017). The 20 households interviewed, all expressed a preference to live in houses they owned rather than in rented. Two families (UH12 of nine occupants, UH13 of five occupants) lived in rented houses. They often had to choose smaller units, irrespective of their family size, in order to avoid an increase in rental costs. In another example, one of the participants (MH16) moved into a new development (a Saudi Arabia-funded housing project in the southern Gaza Strip) with his family 10 years ago. At that time, he and his family asked for a house that could accommodate seven people. Given that both he and his brothers are now married, his extended family now amounts to more than double the initial size of the family, that is fifteen family members in all, and space is too confined for their immediate needs.

Reducing the surplus areas is the suggested solution and this will be discussed in-depth in Chapter 7. Environmental and climatic considerations impact the design parameters, but these were not taken fully into consideration when the 20 houses were originally built. In the case of the urban houses, there is little vegetation – trees, shrubs or pocket gardens – as many people consider such greenery an aesthetic addition to their living space; whereas at the rural houses vegetation is a source of sustenance and of income in their daily lives.

6.8 Self-built Houses and a Fragile Construction of Gaza

In the dense urban areas of the Gaza Strip, there is a wide range of residential building standards, ranging from extremely solid concrete frame constructions equipped with all services, to windowless shacks made of a combination of breeze blocks and salvaged materials, like corrugated iron and plastic sheeting. The occupants of these houses are from different social and economic backgrounds. This reflects the wide range of income levels, evident in the varied sizes and quality of the buildings, from well-appointed detached houses, to multi-storeyed apartments, and informal houses all erected in close proximity to one another (see

Fig. 6.9 and Fig. 6.12). Single and extended family houses are scattered throughout the region and are aligned to the outer perimeter of Gaza city. Many are self-built by the owner families. In a typical neighbourhood (or *mujaawarra* in Arabic), the majority of self-built houses; as well as all the houses interviewed, are built with concrete blocks.

Based on field observation and interviews, two households (MH06 and MH07) were careful to avoid enhancing the exterior of their houses, not to deter jealousy from neighbours, but to keep securing the support of international NGOs to help finish their houses to a better standard than what they could afford. Some households (MH03, MH06, MH10, MH11, UH12) were able to receive financial assistance and technical aid from international NGOs to partially repair their dwellings. These five households interviewed reported that their living conditions had improved because of the repairs. They were able to withstand the changes in weather conditions after increasing thermal comfort inside their houses by replacing the ceilings and installing new windows and doors.

Two households (MH01, MH08) managed to build new houses at the same location of their former homes on lots owned by their families. One of the households said: *“I sold the gold of my wife and borrowed three thousand Jordanian dinars from some friends to build stronger foundations to our new house”* (Interview, MH08). To save money on building costs of his house, he participated with his wife and sons in different work on the site. These included carrying cement bags and mixing cement with sand, water and aggregate and assisting by handing breeze blocks to the local builders on the site. The family moved in to the skeleton house which is without doors and windows and MH08 added: *“I still need a lot of money to finish the house”*. Furthermore, there is no public sector for residential construction, and the residential construction falls entirely on private individuals (Roy, 2016). For example, other local inhabitants whom the researcher met while conducting the fieldwork expressed their need for rapid house construction, as they continue to live in the most basic houses and are unable to afford any improvements at all in adaptation to each family’s changing needs and circumstances.

In addition to observing and learning on construction sites about local building skills, and in particular the process for erecting self-built houses in Gaza, building techniques were discussed with three households interviewed (MH03, MH04, UH09). As these men worked as local builders (urban self-builders with a low-income), the three interviews provided more contextualised information about local building knowledge. This also offered an insight into the attitude of people towards minimal living and architecture of the everyday. One of these builders said: *“Building is part of my life, for me, it is like eating and drinking. I cannot spend a day without building. Building is like a cure for me, when I am sad, I build because seeing people happy while building their houses makes me also happy”* (Interview, UH09). Building practices are collaborative and UH09 pointed to nearby buildings that he had participated in constructing, and he mentioned that sometimes he is unable to build due to knee and back problems.

The head of MH04 said in regard to his employment situation: *“When there were no building materials entering Gaza, I spent five years without building and worked as a taxi driver. Those five years were the toughest, and I was angry all the time, which is not my nature at all. I like building better, because I move, sit with people, talk to them and see how happy they are”* (MH04). When asking him about the life in the recent years he said: *“Later on the people started to build concrete houses and they got developed as Israel opened its borders to the Palestinians from Gaza. When the Israeli left the Gaza Strip, then the life of the people became worse than the boiled tar.”* (Interview, MH04)

Builders in Gaza earn a satisfactory income, about 100 Israeli shekels per day (around 27 dollars) and thus their economic status is quite good, owing mostly to the fact that the work they provide is in high demand. They are certainly not rich, but definitely better off if one compares them to the rest of the population. A builder met on a construction site said that he was an English teacher, but he had abandoned his career as he earned more money from building. Skilled and low-skilled workers regularly undertake construction work or building maintenance work. Yet, after twelve years of the Israeli blockade, the number of skilled construction labourers has not increased. Given the limited confines of space to build in the Gaza Strip construction work is competitive, many builders,

like MH04 try to find other sources of employment. The head of MH03, a builder and tile setter by trade, remains unemployed. The main reason for this situation is due to the scarcity of construction materials as a result to the closure of all the cross-border smuggling tunnels that were used to bring cement and construction materials into Gaza by Egypt and the Israeli complicated reconstruction mechanism (Chapter 2). He said: *“The situation is difficult these days as the price of cement has increased and this has decreased the construction frequency”* (Interview, MH03).

In the MH03 family, building is a skill acquired in Israel as a consequence of necessity. MH03 learned to build at the age of 18 years when he worked as a labourer on the construction for Israeli settlements. He has passed these skills on to his children. When he was 15 years old, his father asked his elder brother (MH04) to teach him, but he did not want to be a builder, so he went with his brother to work in order to pass the time. For the next three years, he spent eight hours each day watching and helping his brother build, and this is how he learned and was able to seek employment when he was 18 years old (Fig. 6.11). The 2016 to 2017 reconstruction activities within the Gaza Strip provided an opportunity for builders like MH03 to work on local construction projects, yet these were not enough to create a new generation of skilled workers who would be capable of leading and providing experience for the next generation.

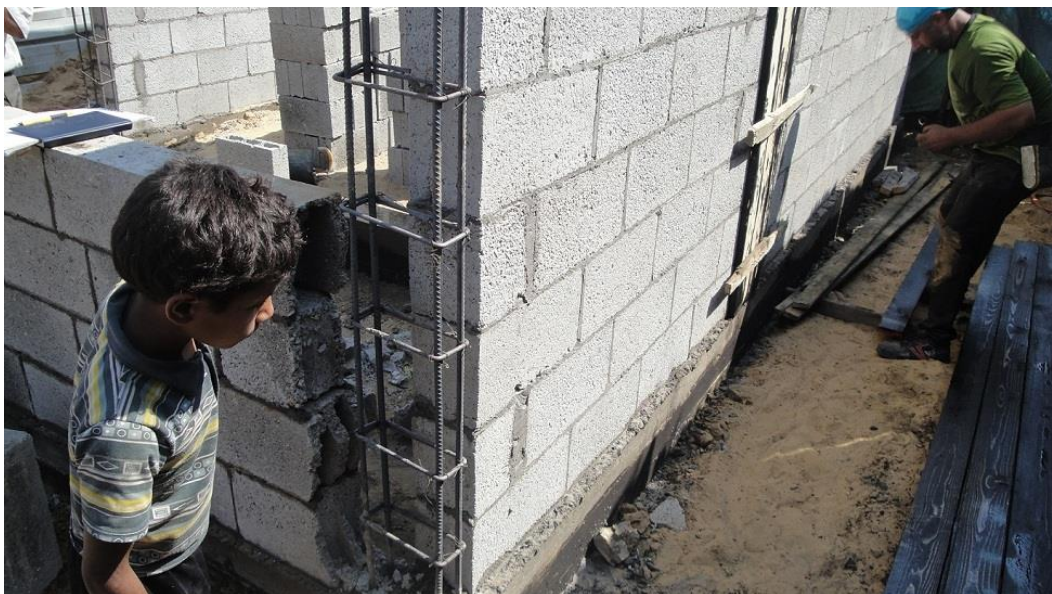


Figure 6.11: A local building apprentice in Gaza being watched by a child and possibly learning through observation. Source: Salem Al Qudwa, 2011.

Given that there has been a rise in the number of construction projects undertaken by ‘unskilled workforce’, the risk lies in unskilled workers managing construction sites, causing a fall in building standards (Ferris, 2013, p. 76). In addition, it was discussed during the ‘Lessons Learned’ workshop (Shelter Cluster, 2016) that the number of skilled leaders and engineering supervisors of reconstruction activities is adequate, but as the amount of construction work increases, and the absence of engineering supervision of the private sector activities will endanger the reconstruction quality. At the same time, because of the lack of a skilled workforce, shortages will also become apparent in the number of civil engineers with adequate technical experience. The sporadic rise in construction activities is resulting in a shortage of construction infrastructure: workshops, factories, relevant machinery, and transportation trucks, including the spare parts, maintenance, and in some cases replacement.

Two other builders MH04 and UH09 pointed out that building with cement is quick, cheap, and enjoyable. Such local building knowledge is reproduced, charged and it enacts politics in relation to place-making through routines, habits, and techniques that also assert a right to livelihood. Since Palestinian men often socialize around tea and coffee drinking, this is also a good time for them to have conversations and close business deals, which are often sealed with a cup. The Palestinian labourers who work at the construction sites have their own form of tea ceremony, which is simply a way of reconnecting socially at construction sites. This engagement, with all its daily rituals, was bound by the interconnections between ‘sharing, giving, offering and receiving’ in the construction of physical settings. Reminiscent of a sense of place-making on a domestic level that noted in the social mapping exercise, these builders were both physically constructing and also taking care of each other (Fig. 6.12). These dynamics may be typical of many construction sites elsewhere in the world, but they are made poignant by the fact that a building, regardless of whether it is completed or not, may be totally or partially destroyed by an Israeli attack at any given time, causing a threat to life.

Figure 6.12 has been removed
from this version of the thesis due
to copyright restrictions

Figure 6.12: Tea break at a construction site in the Gaza Strip. Source: Film still from Al Jazeera documentary on Gaza, 2012: <https://youtu.be/Jp2UcV2Ldaw>

The transmission of practical self-build skills and construction techniques, both orally and through observed practice, and the turning of this indigenous knowledge into everyday architecture is widely shared among the urban and rural communities. Yet, it is not well documented in the Gaza Strip and still needs further investigation and research. These construction techniques are explained in the following sections of this chapter to show how they have been adapted to the specific conditions of region.

6.9 Minimizing Construction and Architectural Components

Building techniques are kept simple and minimal because of the economic and political situation in the Gaza Strip. In addition, it could be considered that such simplicity of ‘necessity-based design’ testifies to the influence of early modernism that first arrived in the region via the Occupied Palestinian Territories (OPT), reaching its zenith in the 1930s and filtering through to the Strip with the work undertaken by Palestinians construction workers, to the point of almost becoming the ‘new vernacular’ (Weizman and Dietrich, 2000). Residential buildings have a restricted arrangement and construction, due to the availability of local materials, skills and knowledge, and the impact of seasonal extremes in weather. The layout

of buildings is also dictated by the topography of the landscape. The concrete facades of most residential buildings, large or small give a sense of order to an architecture that is based not on conceptual ideas or design, but on a common-sense logic and the rationale of local place-making (Heal, 2010). And while the architectural project is generally understood to bring about order in space, order and rhythm in the Gaza Strip may not, at first, appear to inform the quality of building work or they may not be easily discernible (Al Qudwa, 2017).



Figure 6.13: Hollow concrete blocks, in which local work crews in the Gaza Strip, are well versed. Source: Salem Al Qudwa, 2015.

As previously mentioned, most people, and all of those interviewed could not afford an architect, other than for the basic plans. Throughout the building process another relevant aspect is the client's budget, which demands that households work with local contractors and builders and determine the choice of the main building component: concrete masonry units (Fig. 6.13), which are the only popular material with which the workers have experience. In a filmed interview with the household MH03, he described the building process for the

self-built cement-based structures and said: *“On average, I use to build about 500 blocks (a room and a half) per eight to ten hours a day when the work is easy to access. When scaffolding is needed, or if it is an interior project, I build about 250 to 300 blocks.”* (Interview, MH03)

Following typical architectural plans, workers employ poured concrete and concrete masonry units as some of their principal building blocks. Blocks are then coated with a cement render in order to protect the building against dampness and are arranged with apertures that provide screening and filter daylight into interior spaces. The construction codes in Gaza, which are also a consequence of the Israeli occupation for the Strip, require concrete masonry walls to include horizontal and vertical reinforcement in the form of reinforced bond beams, grouting and rebar in vertical cells, and joint reinforcement galvanized welded wire ‘ladder’ reinforcement every few courses. The stretcher bond is commonly used in buildings without columns. As elsewhere in the region, this process is usually collaborative and “the pouring of a cement floor usually brought the whole neighbourhood out” (Abourahme, 2014, p. 12).

6.10 Grey Boxes and the Form Making Process in the Gaza Strip

As discussed before, in urban areas of the Gaza Strip, the over-crowded houses are equipped with cement blocks for internal and external walls, as well as with flat slab concrete roofing. A recent survey identifies that more than 92 % of the Gaza Strip housing units possessed some kind of shelter vulnerability (Shelter Cluster Palestine, 2018). Restricted by what the low-income households can afford and what is available, corrugated metal sheets in the marginalised and camp houses and steel or aluminium frames for exterior openings are chosen for their low-maintenance qualities. On a larger scale, wherever there are many buildings in close proximity, variation is minimized as forms are repeated across the site. For larger buildings, which have a natural tendency to be more complex than smaller buildings, it may be necessary to reduce complexity through repetition (Heal, 2010). A generic form or type can be repeated to accommodate a growing dwelling brief. In this way, the range of different forms and building types is minimized. The same can be said about the repetitive use of building products and

components utilized in the building process, which come together to form a simple whole.



Figure 6.14: The picture conveys the over crowdedness of Gaza's urban landscape, as well as the incremental nature of erecting buildings. Source: Salem Al Qudwa, 2016.

The structure of buildings is determined by the confines of the physical surroundings. This is evident in the planning for residential buildings in the Gaza Strip, which are limited by the layout of the plots. The concrete grey boxes are uncluttered by formal concepts; quite simply, there existed already a certain tried and tested way to build structures, and most buildings were made that way (Fig. 6.14). In addition, the absence of concepts produced visual simplicity of form and a certain aesthetic appearance. Examples of architectural abstract form can be seen in the streets of the Gaza Strip (Fig. 6.15). The grey colour of concrete can be noticed while moving through the city roads and neighbourhoods. And while 'grey' might be the first image that comes to mind when we think of concrete, this can also add an element of raw beauty to the style of the residential buildings.

One of the builders (MH04) interviewed in this research started working in ‘Abu Ghosh’, which is an Arab Israeli village, and there his building skills improved. He learned that *“In Israel they leave the walls without plastering and when you look at them, you can see all the beautiful details. You can see the hard work of the builder through the details, unlike with the plastered walls,”* he said. He explained how they treat the cement breeze block facade to look beautiful. They clean it with mortar and make the lines between the blocks black. *“The exterior of a building there was amazing, unlike the un-plastered houses here in Gaza, and this was because they chose it to be like this, whereas in Gaza people just leave it like that because of poverty,”* he said. Nevertheless, it should equally be remembered that the existing aesthetic quality is also a result of the economic and political situation in the Gaza Strip (see Chapter 2).



Figure 6.15: A simple breeze block structure that expresses the power and fragility of the architecture of the everyday in Gaza, while meeting local needs and budgets. Source: Salem Al Qudwa, 2010.

6.11 Reconstruction, Affordability and Quality

Among the observations made during the fieldwork only two of the households interviewed (MH01 and MH08) had rebuilt properties, but they still needed money to finish them. Most of the work was aimed at upgrading partially the damaged houses. When governmental housing projects have been successfully carried out, there are often further additions of housing units to such housing projects and a significant number of people have started to carry out work on unfinished buildings even for investment purposes. Yet, even as the reconstruction cycle has started to move, there are some important facts to be discussed and addressed in relation to affordability and building quality.

As was highlighted in the second chapter, *The Gaza Context*, the process of obtaining permanent housing (whether through new builds or reconstruction) can take years because of, for example, having engineers to conduct a damage assessment, allowing for time to remove debris or to secure available land (proving land ownership) on which reconstruction can take place. In 2015, the Ministry of Economy reduced the fixed price for cement to 550 NIS from the previous price of 1000 NIS. Local municipalities started to receive applications to register new (not damaged) housing units for people, with commitments to coordinate construction materials through MoPWH, depending on GRM approval. Many officials have expressed a concern with the fact that all this (building) activities cannot succeed in fulfilling the housing needs of Gaza's rapidly increasing population, or indeed, in addressing the need to replace the building destroyed by Israeli military operations.

6.12 Conclusion

As the previous sections show, the inhabited spaces and homes in Gaza have been – and still is – dynamic and constantly transforming. Much like Lefebvre's (1971, 1991) concepts of the 'rhythm of lived spaces' and 'place-making', Hourigan (2015) and Buchli (2003) indicate that home does not remain static and must be viewed through its relation to family practices. Furthermore, the adaptation strategies employed by people in Gaza to cope with the constraints of the current

blockade were considered in this chapter. Specifically, in the context of the changes that have taken place in architecture since the Israeli blockade and attacks during the period 2007–2017. Due to the high rate of the unemployment, the Palestinian social life in Gaza is changing. More women are forced to go outside looking for work to support their families. Some social changes due to the on-going conflict might, for instance, display a clear spatial dimension. This requires work towards spatial adaptation in ways that will need to be observed and addressed over the following years. In this sense, widowed women who dwell together with their children in their in-law's family house are a highly relevant category that can inform and reshape the contours of everyday architectural design in order to provide for privacy and long-term security for young women and their children.

Connections between the design of architectural spaces to accommodate everyday domestic routines and individuals who use specific places are not new (Bachelard, 1992). This seems to suggest that the spatial is a significant platform, where local architects can intervene by using their design skills in an attempt to rethink alternatives that address the production and limitation of spaces. The lessons learned from residents participating to the research was about life under unstable circumstances and findings revealed an urgent need to provide an efficient building process of the family cluster-type home within the confines of limited space in the neighbourhoods that have been identified. This is because in keeping with traditional social structures, extended families tend to prefer neighbourhoods that developed organically overtime.

Building methods and architectural styles remain unchanged in the Gaza Strip and most of the residential buildings do not address the changing climate (hotter summers and colder winters), which would require the improving of insulation procedures by adopting certain construction techniques and design concepts. On the other hand, the attachment to a particular building construction method (the skeleton reinforced concrete structure) becomes the physical identity of buildings in Gaza, or the new vernacular. It is both rooted in nationalist feeling and above all the intimate rhythms of family practices and the way houses need to be expanded and in ways that maintain life and make it meaningful. The Gaza

Strip in its current state of political instability is ill-equipped to invest in permanent architecture, yet these challenges have to be addressed to accommodate an increasing population. A sense of permanence in this fragile state is what the practicing architect in Gaza needs to cater for, in order to conceive of a life that is more in a permanent for those that live there. For the Palestinians in Gaza, permanent buildings empower people who have already been insecure for decades now to feel their lives matter. According to Roy (2016), economic prosperity as a result of this investment is likely to bring about peace and out of this, a positive change. In this sense, the permanent character of buildings allows people to be creative and productive, and thus empowers them.

What emerged from the physical mapping exercise is the contested nature of minimal building practice and an embedded understanding of local building knowledge, deriving not from the imposed Israeli political constraints, but rather from established ways of working. It is also important not to over-romanticize place qualities advanced by local residents in Gaza, but to preserve some of them and discard others when moving to the design stage of the research project. Furthermore, the representation of the Gaza Strip in the media can lead and has led to a sense of aesthetic appreciation of politically caused devastation. There is a need instead for architectural practice to both internalize such categories and reach beyond them in an attempt to engage genuinely with people's day-to-day experience of rebuilding and their real need for assistance. As discussed elsewhere (Al Qudwa, 2017), the 'accidental' sculptures and the '*minimisation* to give tectonic clarity' (Heal, 2010) can be observed often develop without intention, one might say 'naturally'. In line with de Certeau (1998) who stressed the relevance of everyday family practices and the tactics that ordinary households deploy with priority given to construction, the surface aesthetic qualities of such works are often the last thing the 'makers' and 'self-builders' would have thought about and more of an 'in the eye of the beholder' type of thing. In this sense, the aesthetic criteria that pertain to buildings deserve careful consideration. At the same time, such aesthetic qualities born out of needs can suggest a sense of beauty that is embedded in the everyday use of building and thereby congeals in self-

building approaches and techniques that can successfully inform the architectural design process.

The preoccupation for aesthetics in architectural design should not, however, detract from the pressing needs, in Gaza, for accommodating the increase in population density and for minimizing the damage from attacks, by deploying design solutions that provide more compact buildings with smaller windows, and shared communal spaces. There are opportunities to utilise the current architectural context in Gaza despite the many important barriers. The architectural design process ought to evaluate the existing situation's aspects of functionality, the internal environment and the visual appearance of the built houses, as well as testing their economic viability, by capitalizing on opportunities for savings where these are available. This could provide architectural practices with useful design ideas and solutions for the Gaza Strip at the level of the everyday. In the next chapter, the contribution of five families to participatory design sessions is examined in order to obtain a better understanding of their needs and aspirations and to assess the ways in which the mapping and analysis of such needs can inform the production of a house design prototype. Taking these observations and findings into consideration, our design prototypes will have to consider: (1) Lack of space to build, high density, and overcrowding; (2) Unhygienic conditions inside the households; (3) Lack of building materials; and (4) Scarcity of energy sources.

Chapter 7: Participatory Design and the Gaza's House Design Prototype

7.1 Introduction

The house design prototype presented in this chapter is constructed based on three dimensions identified throughout the thesis: (a) The influences of political and social conflicts and their economic impact; (b) The relevance of the everyday and local cultural norms to architectural approaches; and (c) The ways architectural practices propose to engage with these two aspects. The research methods developed in Chapter 5 and the findings identified in Chapter 6 helped in defining and the organisation of participatory design sessions.

Key to this chapter is a design project objective, that would support access to vulnerable Palestinian families to adequate housing conditions. This is in line with the expected outcomes of the research project (Chapter 1), where the objective of this design process is a productive living environment not a rigid human storage facility. It is intended that the resulting self-build house design prototype has wider applicability to accommodate vulnerable households both at entry point when they are enabled to move out of unsatisfactory temporary accommodation and later as they are empowered to adapt and enhance their living conditions as their circumstances change. In such new builds there is the opportunity to draw up the researcher/architect design parameters and building regulations to maintain a desired level of services and aesthetics. However, in construction of new houses there will be givens like the population density in a specific area of the Gaza Strip, which will be a main concern given the land shortage that has been pointed out. There are also the population mix and the existing land use. As noted in the previous chapters of this thesis, the key approaches adopted by international aid agencies in the construction process are not necessarily symbiotic with local needs and cultural norms. Therefore, as the focus of this research has been housing, a pilot area has is selected in Gaza to demonstrate how a desired density and flexibility can be achieved with the proposed prototype.

Chapter 7 aims first to present the results of the five participatory design sessions with three families living in an agricultural and rural area and two families living in the densely populated urban neighbourhoods. In combination with the findings of the social and physical mappings and of the participatory design process, the participatory engagement with users aims to inform the design of the prototypes by examining and understanding user priorities.

7.2 Participatory Design in the Gaza Strip

Hamdi (2010) in his book, 'The Placemaker's Guide to Building Community' offers new tools for engaging communities as agents of change in the process of place-making. Hamdi challenges the top down approach to architectural design and planning. In line with this guide, the term 'participation' is used ranging from local residents simply 'participating' in an activity to being the principal actors or instigators and decision makers in a 'shared process' (Kallus, 2016, p. 617; White, 1996).

The term 'participatory design' is sometimes used in a naive or simplistic way in the Gaza Strip. For instance, most participatory workshops use traditional techniques such as coloured cards and markers in a classroom atmosphere and the sharing of ideas is often abstract. The focus groups separate women from men as well as their children, so that participation becomes exclusive or lacking integration. The activities take place in comfortable locations, often remotely from the sites of the participants' houses. This is understandable when practical considerations to do with planning and building, or social situations, relating to household dynamics are not sufficiently taken into account, or if members of different families are concerned but not if the research unit is the household. These workshops are often limited to consultation without a real involvement in architectural design that responds to the everyday challenges (Fig. 7.1).

Figure 7.1 has been removed from this version of the thesis due to copyright restrictions

Figure 7.1: Male youth invited to a focus group meeting regarding camp improvement priorities. Photo by: Khalil Adwan, UNRWA, 2015.

As an example, some projects claim to be participatory though in fact the consultation and implications of residents are limited. In one case, a participatory project that took place in the middle area of the Gaza Strip was a camp improvement project. The official website stated that: “The project is innovative, with all community members encouraged to input ideas into the project and be involved in its implementation” (UNRWA, 2015). It became apparent during the fieldwork that the contractor(s) responsible for the implementation would be delivering 60 identical houses for all families without taking into consideration the specific needs of each family.

In line with the above concern; while dealing with another housing project in Gaza city, and in her paper titled: “The Effect of Participation in Design and Implementation Works on User’ Satisfaction in Multi-Storey Housing Projects in Gaza, Palestine”, Ammar et al. (2013), mention participation in design and implementation works as being the right of all citizens. Although the title is relevant, and the aims set out in the paper are important, the study referred to is a post-occupancy questionnaire survey of residents who have purchased and moved into completed apartments. The residents had no direct involvement during the

design stage and liaised only with the contractor(s) in order to build the interior walls for their apartments.

In another project funded by the European Union, the ‘House Reconstruction Project’ for non-refugee families who lost their houses during the 2014 conflict in Gaza, the selected families received cash assistance for reconstructing their houses. The project’s official website stated that: “The 18 month project utilised an owner driven construction approach to enhance inclusion of the affected population, while ensuring the quality, integrity and safety of the structures for the families that will live in them” (Homes4Gaza, 2018). One of the participants of the 20 households (UH19) interviewed for this research was a beneficiary of the project and she said: *“My husband and I designed the home and I am so happy that I was part of it. My home is even better than before.”*

The research findings highlight that it is possible and feasible to engage households in the design process from the beginning, and to include extended family members in the participatory design sessions. The next section looks at the findings from the five participatory sessions. It is, however, acknowledged that this type of approach to house design assistance needs more time and follow up efforts (Kowaltowski et al., 2005).

7.3 Analysing the Findings from the Participatory Sessions

Similar to other places where resources are scarce, demand for housing in the Gaza Strip is high, the urgency is acute, and change and uncertainty are a way of life. Furthermore, house building and subsistence living are closely linked as the mapping processes illustrates how physical settings and social activities are intertwined (Chapter 6), and their significance in the everyday approaches to architecture. The physical mapping helped to understand place-making practices while the social mapping elaborated on the use of space (Lefebvre, 1991; de Certeau, 1998). By interacting with five participant families in their houses, the participatory design sessions took place in natural settings which helped to maintain inclusiveness within the five extended families participating in the study.

In preparation for the participatory design activities, domestic details included the location of mud ovens for baking in relation to each house, and designated areas for storing water, or growing vegetables, the utilization and adaptation of the areas surrounding their houses were recorded. In line with the rhythms of lived spaces that produce the life of a specific community (Lefebvre, 1991), the organization of space varied among the households and stemmed from the different habits and various needs of each family and how these were influenced and accommodated by the surrounding area. Similarly, research indicates that homes cannot be thought of in static terms and users (extended families) transform places where they live differently effected by everyday practices and natural growth (Turner, 1976; Ward, 2012; Hourigan, 2015).

For example, and as shown in the following Figs. 7.2 and 7.3, two of the families (MH06, MH10) had extended their house by adding a new room and an internal staircase. In the case of MH06, the household started building up to add another set of rooms on the first level for his second wife and their children as the ground space was needed for domestic activities such as food preparation and cooking (see Fig. 6.4). In addition, MH06 kept his horse and cart that he used for agricultural activities in a small stable within the courtyard at the ground level. In Fig. 7.2 – phase (d), it might appear that is a lot of staircase to build for one small room but the family will use this staircase later to reach the first floor after adding more rooms on the top of the original unit (house).

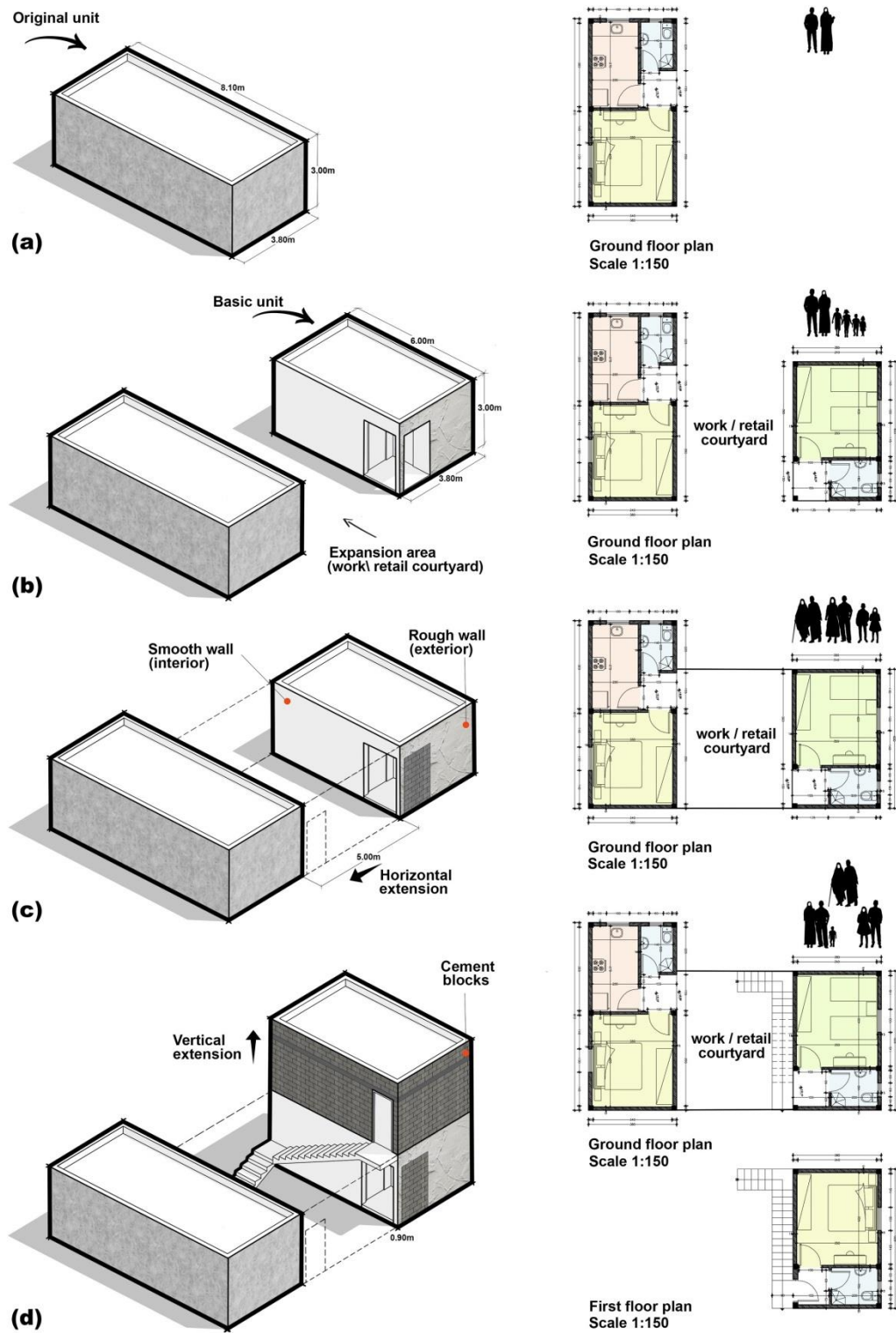


Figure 7.2: Diagrammatic view of what the researcher has observed the family MH06 does for the extension from the horizontal to the vertical. Source: Salem Al Qudwa, 2017.

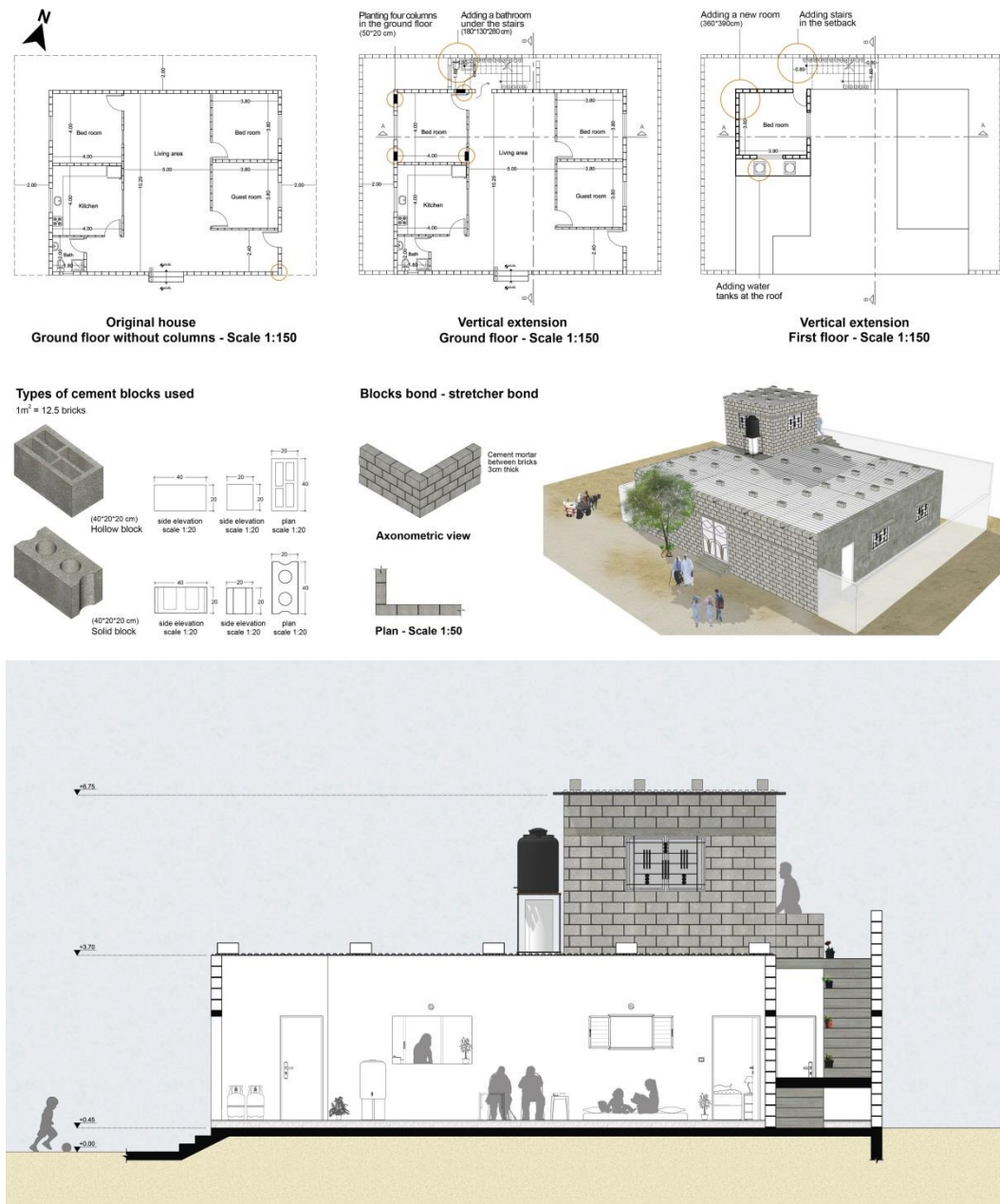


Figure 7.3: Diagrammatic view and a section for the extension of a courtyard house (MH10) from the horizontal level to the vertical. Source: Salem Al Qudwa, 2017.

In the case of MH10, and as his eldest son was preparing to get married, the unemployed household received some financial help. A monetary donation from his brother-in-law allowed the householder to have access to resources to afford the concrete and to hire local semi-skilled builders from the same neighbourhood to build up a stair and to add another concrete solid slab. This took place after planting four new columns inside the walls of one of the ground floor rooms. The

householder and his sons participated in this process by carrying sand and cement bags to the builders which reduced the working days required. During the place-making processes, Buchli (2003) has identified social invisible changes within homes which is surrounded by visible boundary walls. In the section drawing (Fig. 7.3), such space configuration and the territory of the married son is more easily understood within the newly added room on the first floor. Furthermore, the placement of the concrete slab gave families the opportunity to make final changes to other parts of the house within its ground level. Changes in the interior of the house and arrangement of rooms were apparent when looking at the house of MH10 after the placement of the concrete solid slab.

Photographs taken during the fieldwork both map physical places and record the social characteristics inherent in inhabiting such places. They depict how the space defined for everyday life is produced to conform to the different domestic needs of the families. Photographic documentation was used in combination with freehand sketches and improvised model making. Through photographs, certain characteristics of everyday spaces that relate to a (now resurrected) minimalist/ordinary aesthetic were identified and used to enhance the design process of the self-build house prototype. While reconceiving spaces from house of low-income families, the photographs provide a record of evidence to propose design solutions such as the interior spaces adjacency and space orientation, the general plan layout, and the location of the staircases for future extension (Figs. 7.4 and 7.5). During (and after) the participatory design sessions a photomontage technique was used to document the original temporary fragile architectural models, and to contribute to the design process of the house design prototype in the Gaza Strip (Fig. 7.6).



Figure 7.4: The participants determine the uses of space. A husband and his wife interviewed made this floorplan with a proper scale using breeze blocks (left) and another household is showing the spaces of his proposed plan. Source: Salem Al Qudwa, 2016.

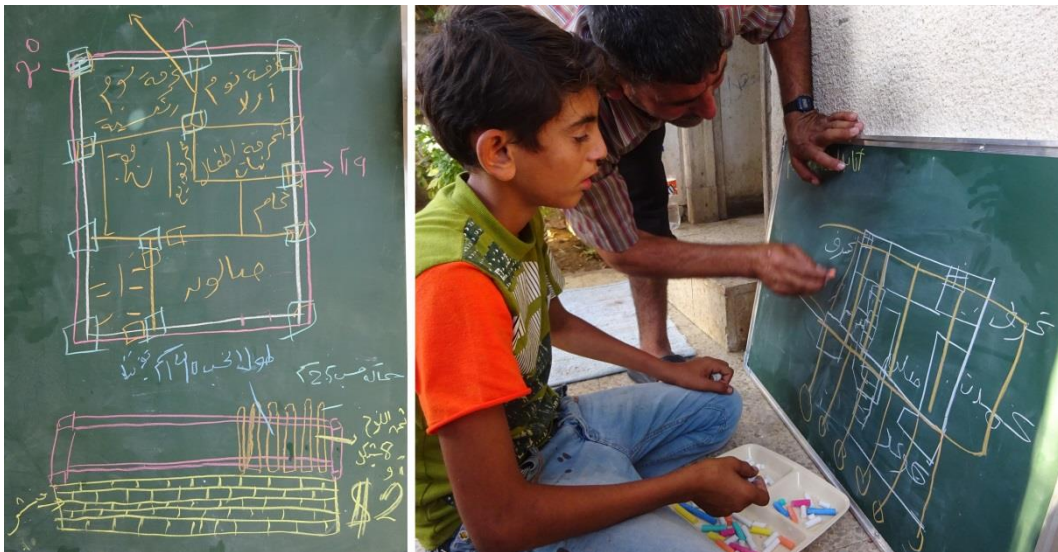


Figure 7.5: After an intense conversation and design discussion, two examples of a sketch design. The sketch to the left was drawn by a self-builder with dimensions and suggestions for materials. Source: Salem Al Qudwa, 2016.

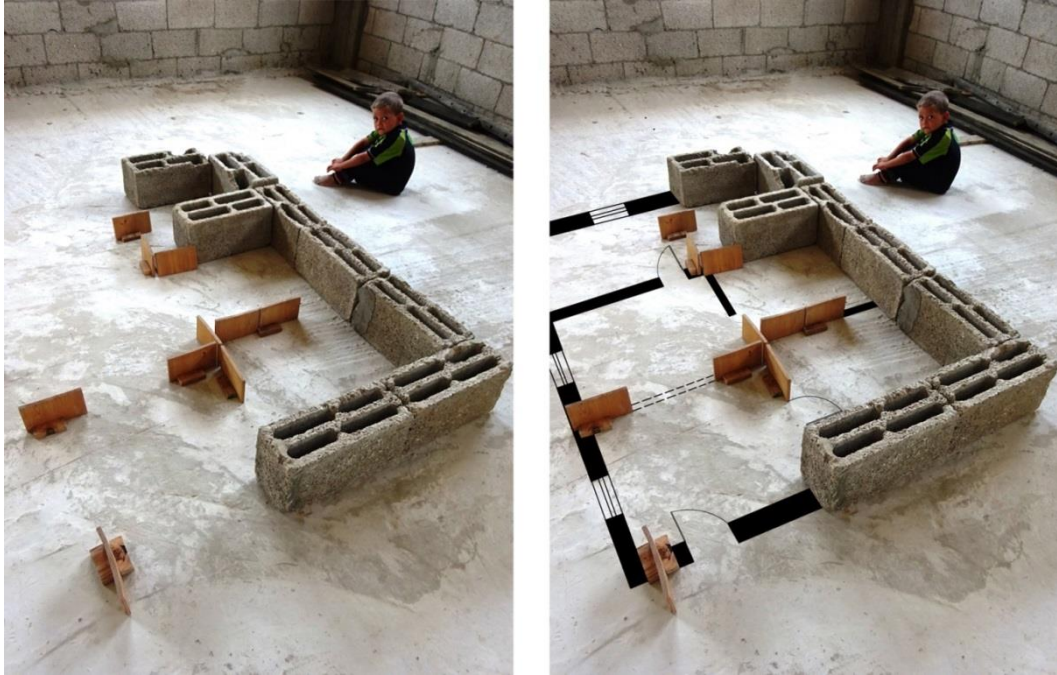


Figure 7.6: Pictures (left) taken at site during participatory design sessions and later the researcher added imaginary 2D walls (right) with openings: doors and windows on the background to complete the architectural plan. Source: Salem Al Qudwa, 2016.

During the design sessions on conceptual design visualisation all the participants stressed the importance of having concrete foundations and columns (as shown in the plan and section drawings, Fig. 7.5). They also made the connection between the physical elevation and social growth, and they noted the significance of a stable core structure for the expected future vertical expansion. By combining both the physical and the social changes; which is also regarded as the ‘social logic of space’ (Buchli, 2003), planting concrete columns and adding concrete slabs are considered to set the stage for vertical expansions and it is a determinant for the path of future progress and natural growth of the extended family. In addition, the participants considered aesthetics qualities and the perceived beauty (Kowaltowski, 1998) related to the house design prototype as those mainly related to having hygienic spaces that are provided with proper sanitation networks connected to the main neighbourhood’s infrastructure.

The characteristics of design that appear as crucial to all of these issues are based on necessity and for many families resources need to be carefully shared between shelter and subsistence needs. This influences building materials and

financing models. Taking into consideration the current complicated reconstruction mechanism in Gaza, the following section will consider the ethical implications of experimental architectural technology and designing on behalf of the affected communities (Linsell, 2014).

7.4 Materials Accessibility and Acceptability

As seen for many communities, the response to different types of crisis has meant that reconstruction in the Gaza Strip is seen as an opportunity to construct a new type of building. These projects focused mostly on using alternative building materials such as mud, sand bags, and wood/rubble, which is a temporary solution, but is not enough if the aim is to create sustainable society and therefore, to rebuild the identity of the territory (Ismail, 2012). The following is a comparative analysis of ethical implications of recent experimental architectural technologies and transitional design for communities in the Gaza Strip between 2009 and 2018. Given the shortage of construction materials, and after the 2008/2009 Israeli attacks, UNRWA built about 50 houses using mud as an alternative to the traditional cement that is used at all stages of building works in Gaza. How well did this model do in Gaza then and, more specifically, would an extended Palestinian family want to live in it?

The spread of buildings made of mud was mainly influenced by: 1) The need for intensively skilled labourers; 2) The limited ability to build multi-storey buildings; and 3) The lack of resistance to moisture and rainwater and the needs for considerable maintenance on a regular basis (El-Sawalhi and Abu Ajwa, 2013). Even if mud is treated using ‘compressed stabilized earth blocks’ (Abu Ajwa, 2011, pp. 152-154), it could be used only as filler between concrete columns and not as a structural element. In addition, extensive use of clay on a large scale could harm agricultural land, already scarce in the Gaza Strip. The idea of building mud houses was not well received by all interviewed families for cultural reasons. Moving displaced people from temporary accommodation in UNWRA schools into what they consider to be shacks is not perceived as improving their situation. There is a perception in Gaza that eco-build houses

(especially earth build) are old-fashioned, represent ‘the past’ and are therefore not fit for ‘modern’ people to live in (Fig. 7.7).

Figure 7.7 has been removed from
this version of the thesis due to
copyright restrictions

Figure 7.7: A local builder talking about his experience about alternative housing solutions in relation to building materials. Source: Film stills from Al Jazeera Documentary Channel, 2012.

During the 2014 military events, internal migration occurred within the Gaza Strip and this took place from the hazardous border areas towards the Gaza city, which caused a significant increase in land prices, also reflected by the cost of housing. In addition, it attracted more experimental designs in the Gaza Strip and this was due to difficulties in bringing in construction material, and the urgency to find temporary shelters for the newly displaced. In 2015, families affected by the events had to accept, after much deliberation, that an international organization was going to build wooden houses for them as a temporary stop-gap measure until people were able to get hold of some cement and build a ‘proper’ house. These Israeli military events as well as the shelter design experiments led

to substantial demographic and social changes for low-income extended families. A beneficiary from the transitional house project said: *“A wooden house is better than living in a tent. I live with my wife, my two daughters and two of my unmarried sons. My other three sons rented homes to live there with their wives and children”* (Abou Jalal, 2015). It was not seldom that the households interviewed on housing were keen to point out that these transitional shelters are breaking up social ties of their extended families by forcing their sons to leave their original neighbourhoods and to move away looking for a room/flat to rent. Again, in 2017, the same international NGO which built the wooden houses started a new project by announcing a shelter design competition for new emergency and transitional shelters using temporary imported materials (CRS, 2017).

Since land is very limited in the Gaza Strip, using such alternative construction techniques on a limited area, without taking into consideration the social dimensions of construction and the vertical extension produced by the extended families, amounts to wasting or burning that piece of land. Such architectural ad hoc projects intended as prototypes generally demonstrated a limited understanding of the morphology and the spatial formation of the urban fabric in Gaza. Such prototypes were not taken into account the skills of construction workers, and prior investigation undertaken seemed to be limited.

In this participatory exercise, and in order to identify the connections between materials, participants were encouraged to find similarities between objects in an attempt to have more design alternatives. This also taught all of us to combine two different materials which have one thing in common (e.g., shape, texture, and colours). It was identified that one material could be used instead of the other such as wood and/or rubble (gabion walls) as filler between columns, particular because of cost reduction and availability (Fig. 7.8).



Figure 7.8: In the design process, participants considered the selection of surface materials that they identified with and which were readily available. Source: Salem Al Qudwa, 2016.

Alternatives to local building materials were highlighted in relation to their costs (Fig. 7.9). For more explanation and contextualisation, a detailed table is attached in Appendix C to identify the cost of each element, ease of access to it in Gaza and level of skill required to use it in construction, and its use as a structural and/or infill component. This analysis will help to inform the two components of the prototype: (a) The foundations and the skeleton frame that requires skilled labourers and an engineer; and (b) The self-build components that can be used by and/or added later by home-owners.

At the end of the five participatory design sessions, the three families (MH03, MH08, MH10) living in the agricultural and rural area expressed a preference to build and extend their houses horizontally while adding external stairs to link the ground with the additional first floor. Instead the two families (UH09, UH14) living in the densely populated urban neighbourhood preferred to build and extend their houses vertically by adding a shared staircase for their multi-storey building.



Figure 7.9: A description and a cost estimate for temporary and permanent materials to select materials available in the local market played a vital role throughout the design process and in finding permanent solutions. Source: Salem Al Qudwa, 2019.

The closed architectural plan is the most preferred by families living in urban areas as well as in the rural areas of the Gaza Strip. A previous study found that the average per capita living space in Gaza is 17-20 m² (Mushtaha, E. et al., 2010). In comparison with other countries with similar context of limited space area such as Japan; and according to Japan's Ministry of Land and Infrastructure,

a single person living by himself in a city centre or suburb should have at a minimum 25-square meters of residential space (Real Estate Japan, 2017). Lifestyle and floor area per capita in the Gaza Strip will decrease in the coming years if conditions continue to worsen.

As discussed in chapters 2, 4 and 6, in addition to an underdeveloped economy, lack of built development, and a damaged infrastructure, the critical aspects that influence construction in the Gaza Strip are: a) The overcrowding and lack of space to build; b) The restricted access to building materials; and c) Electricity cuts and the scarcity of drinkable water. These main problems are all arguments to take into account for providing healthy spatial and physical interventions and to overcome the current conditions. Furthermore, this will impact on both the construction process as well as provisions for such elements in the completed house(s).

After this participatory process and collecting all the above responses and feedback from the households, the design entered its second phase for schematic design development. The research has responded to the identified needs by proposing a house design prototype (section 7.5) using available resources and a combination of professional and self-build construction techniques. Made up of flexible and incremental spaces, the prototype aims to accommodate everyday activities specific to the requirements of each household. The prototype also takes into account environmental elements and solutions based on the research criteria which acknowledge and discuss the social imperatives for such design.

7.5 The Gaza's House Design Prototype

The following section presents the house design prototype for an extended family in the Gaza Strip. The main is to increase low-income families' access to protective and healthy environments in the same densities using a flexible housing typology. The prototype is intended to house an extended family of seven to nine members that has lost its homes during the 2014 Israeli attacks on Gaza. Its situation represents a common scenario in the Gaza Strip context. Furthermore, and responding to multiple scenarios, the prototype has a wider applicability to accommodate vulnerable households both at entry point (recently married

couples, a nuclear family of three to four members, and/or a family moved into urban area) when they are enabled to move out of unsatisfactory temporary accommodation and later (an extended family with seven to nine members) as they are empowered to adapt and enhance their living conditions as their circumstances change. A four-storey scheme with a service core is proposed as it answers specifically future extension and environmental issues highlighted in this research. As it is shown in Fig. 7.10, the specific objectives for the house design prototypes are to: (1) increase vulnerable households' access to hygienic living conditions and to clean water and low energy drainage systems; (2) decrease overcrowding through adding new structural elements for increased living space; and (3) enhance thermal comfort levels and reduce energy use within the housing unit.

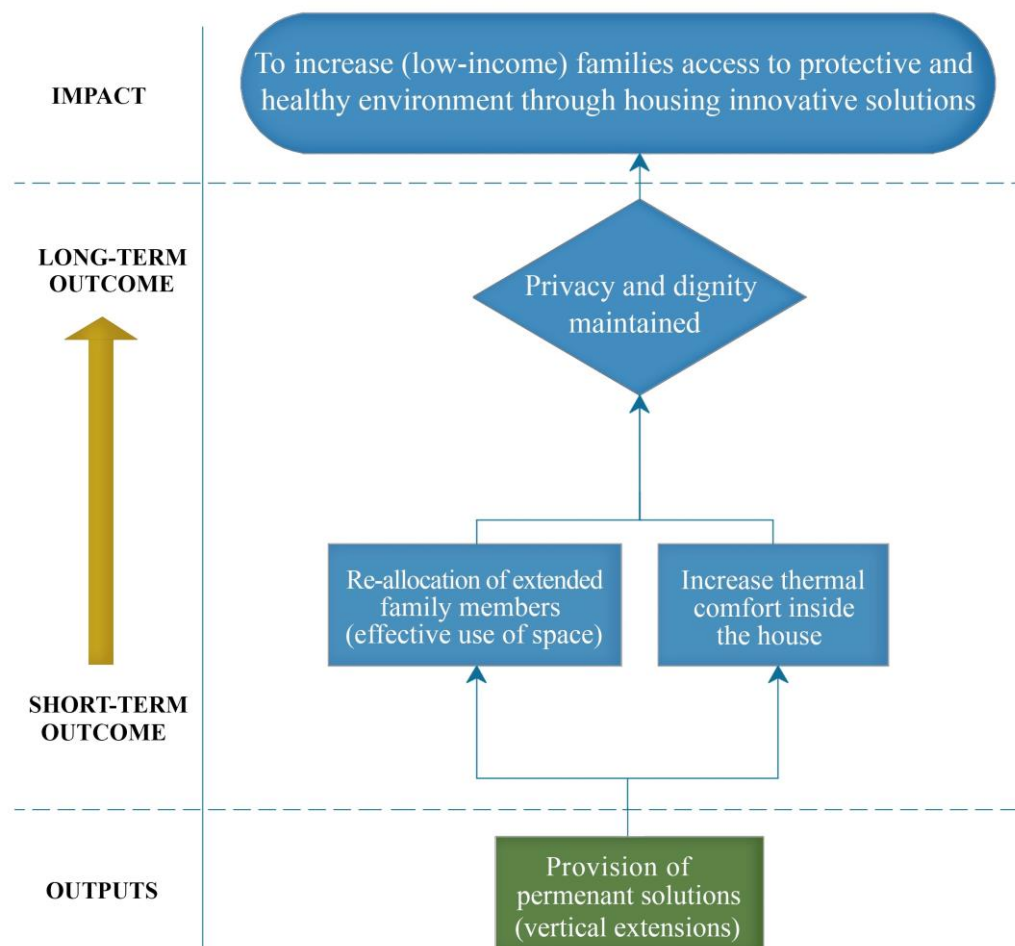


Figure 7.10: Diagrammatic representation for the logic of the intervention which considers the impacts that it could have based on evidence and clearly defined indicators. Source: Salem Al Qudwa, 2018.

The proposals of the Ministry of Public Works and Housing concerning the building and rehabilitation of houses in the Gaza Strip were considered as part of the analysis (MoPWH, 2015; Shelter Cluster, 2011), as were other relevant transitional shelters' principles and solutions that had been implemented in the Gaza Strip between 2010 and 2016 (Shelter Projects, 2016). The design proposal adopted the incremental extension approach, while using traditional materials, locally available skills, and self-building techniques.

7.5.1 Land tenure, location and land use

A typical location on the outskirts of the Gaza Strip has been selected to demonstrate the viability of a project that is currently the focus of a housing development in an area between the Strip's northern borders in Beit Lahia. This typical location links the site to the city, both by public transport and through the pedestrian walkway, which runs through the middle of Gaza city. On the other hand, the prototype could be located in one of many other places and could be occupied by a variety of family arrangements. The key characteristic/novelty of this prototype thus consists in its flexible and reoccurring qualities as well as in its capacity to introduce new elements, which improve the environment, and which are affordable and culturally acceptable.

7.5.2 Site analysis

Starting on bare sand and rubble from a destroyed house, the project is allocated to an extended family in most need, as per the findings of the fieldwork which the researcher conducted in 2016. The house design prototype is unlike other recent projects where housing blocks can appear uniform and regimented with the same heights of facades, to include positioning of windows and doors. However, the house design would not be isolated from existing houses. As locals did not have a say in the design process of their houses, the researcher has considered it a crucial aspect of his house design prototype that it is integrated into a scheme that considers the neighbourhood in Beit Lahia and its occupants as a whole. The scheme he proposes consists of a loose gathering of cluster houses around a central open space which operates as an informal communal gathering space for

results in ensuring the liability of such design. Drawing from locally embedded knowledge and material practices, this exchange impacted directly on design through materials' selection and construction methods. This exchange also challenged local conventions tied to building scale, feasibility of off-grid applications, and appropriations of the new vernacular building traditions (Fig. 7.12).

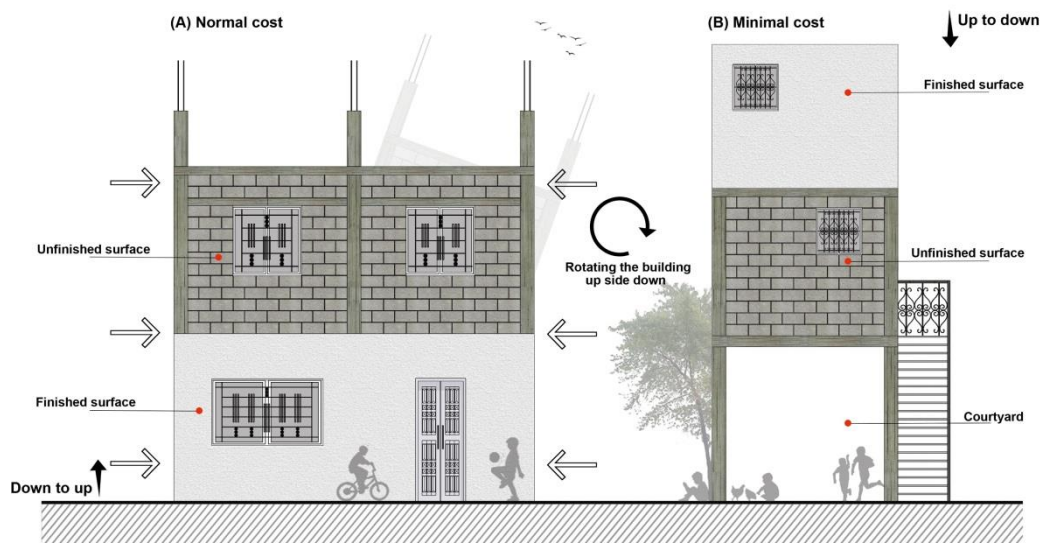


Figure 7.12: 'Upside down' approach to the house design prototype (right) and reducing the surplus areas; as well as decreasing the ceiling height from three meters to two and a half meters (wall with a minimum height), is the suggested solution given the scarcity of resources and increasing loss of land in the Gaza Strip.

On the other hand, and in relation to modes of distribution of voids, the researcher conceived the act of designing the house prototype as an interactive and participatory process. The architect supplies the structural system and components, while the local inhabitants determine the uses of space. In addition, voids can be distributed and redistributed in a number of variations that emerge from use and need. The arrangement of the blocks and the different forms could give Gaza designers more alternatives. To tackle the land problem, the house design prototype comprises two distinct volumes, with a lower ceiling, open-plan living area and a four-storey house building section that can accommodate two duplex flats or four smaller flats, with additional options for residents to use part of the ground floor for commercial purposes. This distinction in the internal

layout serves to reduce the impact of the footprint of the housing on the site, giving the impression of a cluster of smaller dwellings with open spaces that could be conceived as courtyards between them (Fig. 7.13).



Figure 7.13: Architectural plans and the block arrangements are examples of more integrated designs. Scaled drawings are attached in Appendix C.

7.5.4 Project programme

With no specific brief for a dwelling perspective, the house design prototype provides a space that can be divided up into a certain number of rooms in a duplex plan layout with a size of twelve metres long by eight metres wide with a shared service core and an external communal staircase. To solve the circulation more effectively, the interior layout of space eliminates useless areas of circulation as extra square meters will considerably increase the cost of the dwelling. Bathrooms and kitchens are aligned on all floors to save on vertical infrastructure so that all bathrooms will overlook the service core. Each floor plan is set out so that a family could use either both floors or a single floor. In addition, the design emphasizes the home-scaled identity of the housing unit, provided with a front porch and a room-sized private open court. For a single plot at a spatial

measurement of 67 square metres, it is to be built along one edge of the site (a 124 square metres) in order to maximise the pocket garden and the northern exposure for the principal living areas. In addition, the flexibility of the floor plan means that it can be placed in any direction depending on the plot dimensions and location of street frontage (Fig. 7.14).



Figure 7.14: An urban layout plan of how a group of these structures could be placed together illustrating the density, independency, privacy and tectonic integrity that can be achieved.

The top of the building has a 15-20 square metres of open-to-sky flat roof which can be partially protected by a pergola for sitting out during the mornings and evenings, and for sleeping out at nights. For the self-build components, the residents will be left to determine what this will look like. For example, the pergola is to be part of a later resident-led addition rather than one provided by an aid agency. In addition, on the exterior, the households could choose to use crisp geometric forms and tinted stucco yield compositions that are playful yet dignified and compatible with the Gaza residential vernacular (Fig. 7.15).



Figure 7.15: An elevation showing the shared service core (right) which could be a summer courtyard shared by the families, and the external communal staircase. Scaled drawings are attached in Appendix C.

Not specific to one plot, the prototype could be replicated around its shared service core for a cluster of families. This integrated approach to space that begins with the design and layout of the framework for the detached houses fits in with most of the houses in the Gaza Strip. The difference is that the house design prototype forms a cluster. This arrangement is intended to consolidate the focus for studies of modes of fragmented and collective living, while addressing larger urban issues and the scar created on the urban fabric of Gaza. In answering what this research identified before, the aspects that feed into this project are: the

everyday activities, local identity, occupants' dynamic needs, and incremental extension.

7.5.5 Project finance and sustainability

Materials will need to be those readily available in the Gaza Strip to reduce cost and enhance sustainability. Starting with the existing skills of the local workforce, the architectural plans employ simple construction techniques from the existing materials such as reinforced concrete, breeze blocks, and rubble. The focus is on using everyday materials in different ways, with no interest in innovating with the material. Reinforced concrete will be used in very limited quantities in the structural elements such as foundations, ground beams, and columns to provide the initial framework for the house design prototype. As local builders in Gaza are familiar with the traditional techniques of laying breeze blocks, the design will need a short implementation time. With some initial and basic designs for buildings, brief technical instructions to illustrate how each building phase could be done and by hiring skilled workers to execute the framework of the house, the work may not require exceptional talent or expensive training, just straightforward workman skills and patient attention to basic self-build principles.

As cost is central to the whole project, and to demonstrate how savings can be achieved in comparison to what is already happening in Gaza, a detailed cost analysis table is attached showing calculations for elements of the design project according to a cost survey conducted in January 2019. Considering the columns and staircase as the major elements for the vertical extension, the design also refers to the essential 'difficult half' (Elemental, 2015; Aravena, 2014), with a view to providing for the future extension of the families. The gaps left between the columns and dwellings could be filled in by residents later. It might take some time to include the self-build components; such as rubble for boundary walls (or fillers between columns in the ground floor for the first phase) and wooden elements for pergolas, but it is envisaged that afterward the process will speed up for the other phases (Fig. 7.16). The prototype will be able to demonstrate flexibility, self-organisation (de Certeau, 1998; Buchli, 2003), and adaptation to changing needs of each household, including housing several families in one four-

storey unit if necessary while privacy can be maintained in a shared option as well.

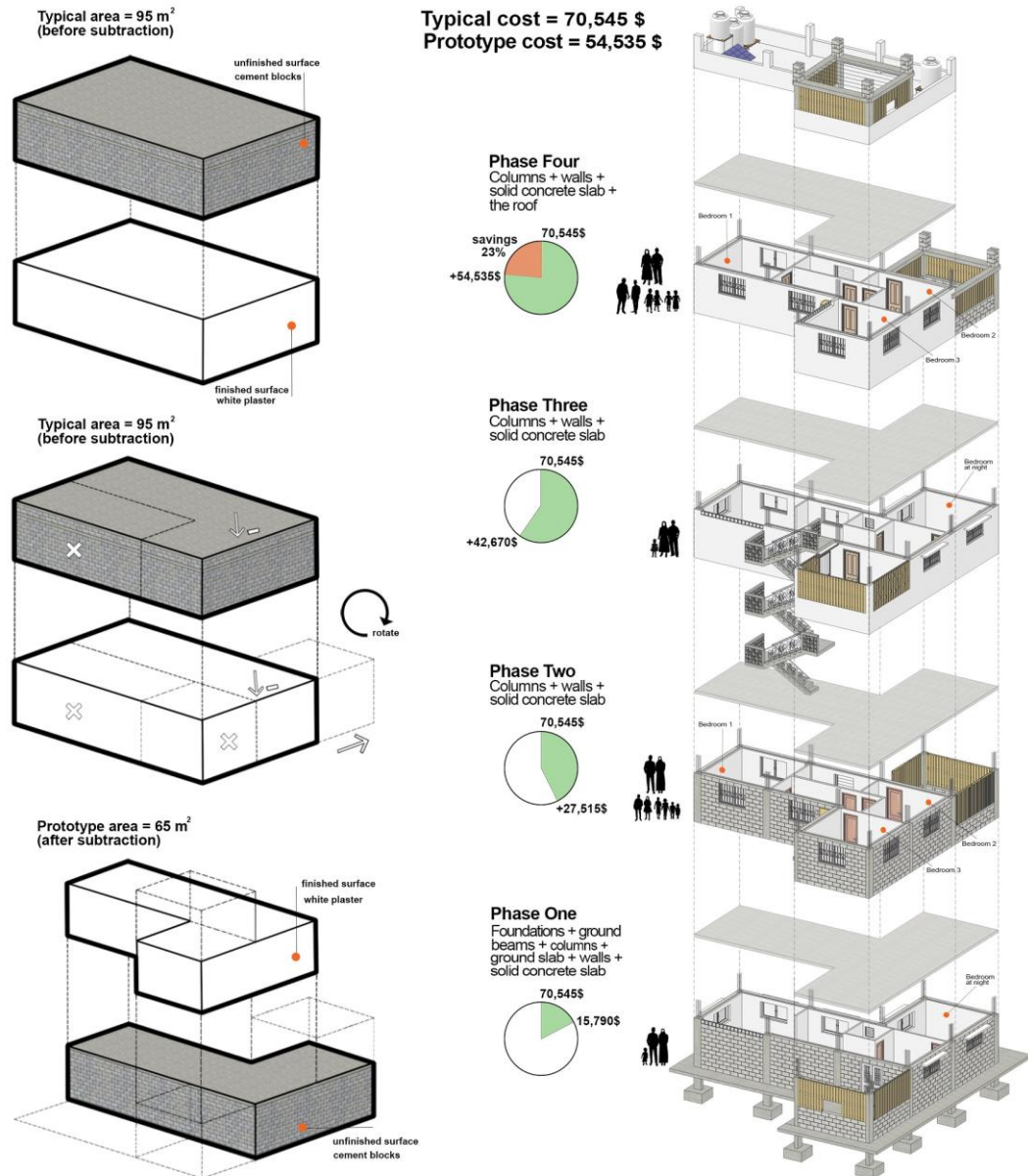


Figure 7.16: Volume layout, structural strategy, and procuring the house design prototype is illustrated with four phases development. It is a more cost-effective solution (right, minimal cost) in comparison to what is already happening in Gaza (left, normal cost). The average cost estimation is according to a cost survey conducted in January 2019.

Such a project could be financed with a combination of loans and grants from the public and private sectors. The project could be proposed to obtain a

grant from a donor agency to build the first house prototype as a start. Using contractual modality or a self-help approach (Barenstein, 2006; Ward, 2012), the project can be supervised and executed by a local architectural practice. In addition, more funds could be obtained to provide self-help cash support to rehabilitate surrounding damaged houses and all of the residents could be involved in the daily management and maintenance of the neighbourhood.

According to the preference of households, and during the first phase after constructing the ground floor, the space allocated for the entrance area (a room-sized private open court) can be opened up to the road for the occupants to use as a small shop or business (Fig. 7.17). For example, the household might choose to bake and sell pita bread, *saj* bread and cookies (see Chapter 6). This provides the family with space for an economic/livelihood activity that will raise income that could also support the extension of the property. As the attitude of people in Gaza is changing due to the economic difficulties that they are facing in their daily life, the household may also decide to move to upper floors and to rent the ground floor area. From a financial point of view, the house design prototype with its initial and flexible framework could contribute to a permanent solution to Gaza's housing shortage.



Figure 7.17: Using a combination of materials to provide another level of privacy, wooden pallets are used above the breeze blocks to close the two sides of the pergolas at the ground level allowing for future extension. This semi-open front porch (including a bedroom elevated above the ground) could be used as the shaded family living area during the hot days of summer and/or as a small shop to allow the household to sell small things, thus providing a flexible commercial space.

Taking into consideration the rising costs of land and material, cost reduction and construction decisions aims mainly to address the issue of affordable incremental housing for low-income extended families. In line with the aim of this PhD by design, the researcher used this participatory design process as a practical model to test the budget required while working on such affordable and individual house design prototypes in the current socio-political context in Gaza. Construction decisions such as decreasing the ceiling height from three meters to two and a half meters was primarily aimed at reducing costs. Furthermore, the modular system and the elimination of useless areas of circulation aimed to provide more flexible layouts and supports cost reductions as well. In terms of cost efficiency, although it appears that the cost of the proposed design is higher than what is termed conventional builds in Gaza, this extra cost is due to providing households with environmental components (section 7.5.6) which are providing a long-term healthy and better environmental performance. The purpose of this is to improve the quality of life of residents and improve resilience of families in need.

7.5.6 Environmental issues

Because of the hot climate during the summer in the Gaza Strip, the prototype is to be built around a service core which will provide an open and shaded area during the daylight. In addition, the service core is demonstrating environmental components such as: solar water heating units, storage of rainwater, and greywater recycling (Fig. 7.18). The project intervention will provide the households with adequate sanitation facilities that are connected to a proper water supply system as required by the Gaza building code. Also because the proposed design will be delivered with some flexibility, in order to give each family the choice of the layout of space that suits their daily needs, this will allow the proper orientation of the structures that will ensure healthy ventilation and the availability of natural light inside the rooms of the house. The shared service core provides natural light inside the house and cross ventilation in every room. As suggested by the participants, the orientation of the kitchen into the service core acknowledges its prominence as a focus of family life (Fig. 7.19).

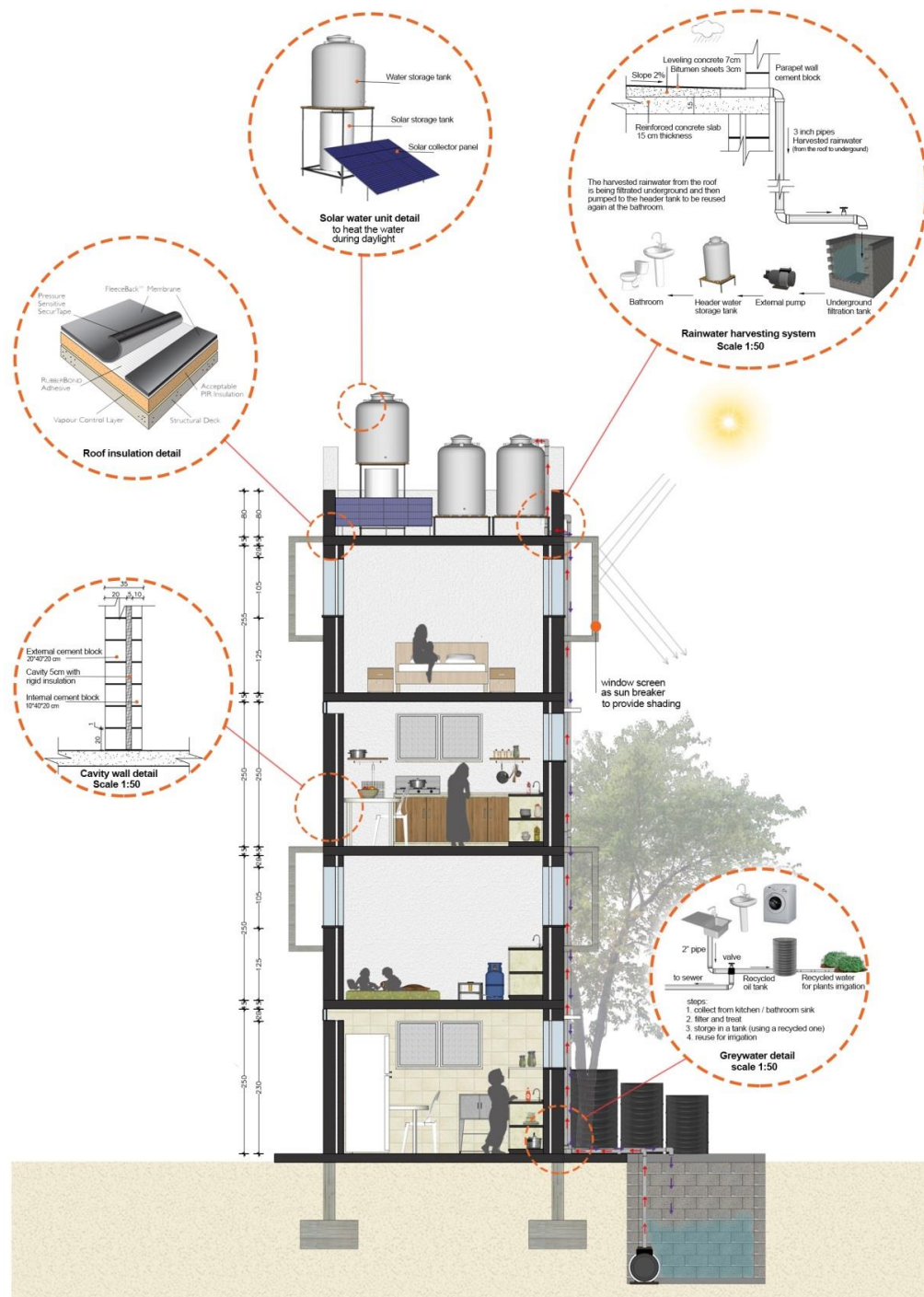


Figure 7.18: The section drawing in relation to the service core (right) and the environmental components such as: solar water heating units (top), rainwater harvesting system (top and bottom) to flush household low-flow toilets, and greywater re-cycling (bottom) where the household can plant a tree beside the kitchen in the backyard to reuse greywater coming from the bathroom sinks and the kitchen. The flat roof structure has proper insulation (bitumen roofing is asphalt-based) designed for buildings with low-slope or flat roof structures. It provides an exceptional balance of quick installation and strong durability. Solar water heating units will be used to heat water during daylight hours which saves energy.



Figure 7.19: Interior perspective drawing showing the grandmother and her granddaughter enjoying their protected and clean house.

As shown in Fig. 7.12 and the section drawing in Fig. 7.18, decreasing the ceiling height from three meters to two and a half meters will make more saving in terms of breeze block quantities and plastering and painting required. It is not only about the feeling inside, but it also about saving while providing thermal comfort inside. Reduced wall heights mean lower ceilings and warmer spaces during the cold winters in the Gaza Strip. The option of separation of the night area from the day area within the dwelling gives independence to the spaces and also facilitates energy saving. These savings are used to provide double/cavity walls and proper insulation for each room. During the hot days of summer in the Gaza Strip, the double walls will provide thermal comfort for the residents inside the house. Furthermore, windows are inset to keep the interiors cool, and solar screen blocks (claustra screen) are added to provide more privacy given that houses are to be right next to each other (Fig. 7.20). In terms of protections from future attacks, aluminium windows are made from different pieces to minimise any damage during bombings. For openings, window protection screens are to resemble traditional perforations and surface details of old metallic doors and windows.

window screen to provide privacy

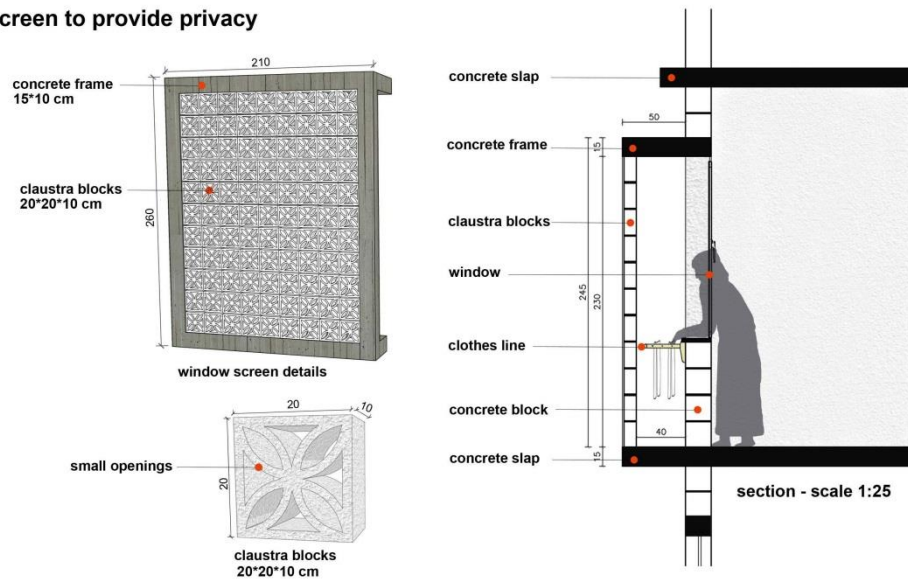


Figure 7.20: A section drawing showing the distance between the window wall and the screen which is wide enough for a woman to hang laundry of her family members. To connect the concrete frame (its endpoint from top) to the height of the breeze blocks at 2.5 meters so it works as a horizontal sun breaker made from claustra blocks while providing a level of privacy.

During the participatory design sessions, the significance of maintaining spaces for greener everyday habits and climbing plants around the houses was highlighted. The surrounding greenery is vital for increasing high-density living and prolonged periods of high temperatures to keep the households cool. In addition to demonstrating the environmental components, the shared courtyard space (Fig. 7.21) provides an area for safe play to children and additional room for a number of chores around the house and growing of plants while gabion walls are used for boundary walls. Such boundaries between individual homes and the immediate neighbourhoods are blurred as the shared courtyard space features a modest laundry area where women could meet and talk while baking bread and topped with steps for climbing and sitting. Furthermore, placing the mud oven as a communal outdoor feature for the use of several families will bring more heat by transition inside the interior living space during the winters. A protected canopy of trees (or a sunshade sail canopy) will shade this collective space.



Figure 7.21: The courtyard as a collective space for the extended families with different degrees of exteriority according to weather and time of the day.

7.6 Reflections on the House Design Prototype

While developing the design prototype, the initial architectural drawings were shared distantly with one of the participants (MH09) in the Gaza Strip using one of the social media applications. Feedback and opinions were requested from the participant (in his own Arabic language) in terms of positive and negative features of the project and in terms of the impacts that the latter could have based on evidence and some clearly defined indicators, such as construction phases and environmental concerns.

According to household MH09, the positive features are: 1) The *builder* (also the *household* here) can control the building area according to the amount of money currently available (financial ability). At the same time, the house can be occupied immediately after the completion of the first phase of construction (ground floor) by a small family or young people at the beginning of their married life or as relief dwelling provided (by an agency) for a certain amount of money/fund; 2) The design does not interfere with the works that may happen at a later stage with a view to increasing the size of the building; 3) The design meets the needs of the family for all stages of life so that construction can incrementally be spread over time in order to accommodate the needs of family members and of family interaction; 4) Given that the arrangements of a traditional Islamic society such as the one in Gaza require a separate space for guests from the one available to the people of the house, this design allows for controlling the movement of the

guests, who can be received in the shaded area at the front of the house, as well as in the guest room or on the roof terrace; 5) The house is suitable for all seasons and locations in terms of design, i.e. in the countryside as well as in the city; 6) The design is more resistant to natural disasters such as earthquakes because loads are well distributed; 7) The design also allows easy intervention in case of fire or the need to remove injured people; 8) The building also allows inhabitants to adapt to the temperature inside and outside of the house easily, providing sunny spaces in winter and also a refreshing shade in summer ; 9) The house is allowing the sun and air to enter and pervade the rooms; and 10) The design also allows for a home garden at the front and for a backyard, where inhabitants can plant trees such as citrus fruits.

The same participant also pointed out some disadvantages of this building: 1) To implement this kind of incremental house, the members of the community will need to be educated concerning the different stages of construction and in order to identify and put into practice the general idea of the prototype; 2) The design is not suitable for a large number of family members in the first phase of construction (the ground floor only); 3) Difficulty in using the internal staircase for the elderly; 4) The design might provide little privacy while the first floor is being built, as it is easy to see from the outside what goes on inside the building; 5) The design only seems adequate for owners of limited income or in receipt of relief income, as whoever has more money is not likely to use such a design; 6) The design provides poor insulation from the noise outside, especially if the house is situated on a public street; and 7) The house may be less safe when exposed to burglary and theft, especially from the back of the staircase.

The researcher took these concerns into consideration while developing the final stage of the house design prototype. The prototype has also addressed environmental issues and how these link with the needs of the families. The priority of the design process was to use judiciously the natural resources available, while also empowering a community to be involved in the rebuilding of their damaged homes. Such a project aims to create healthy and comfortable spaces as well as benefit the local economy. The drawings and technical details, including everyday occupancy needs, refer to the way in which a building is

conceived and delivered – from feasibility to construction – and as such, to the responsibilities which an architect must be contractually tied to until completion and operation.

7.7 Conclusion

As an urgent need, thousands of low-income households are waiting to receive a flat concrete slab on top of their existing houses to accommodate further rooms and roof-top terraces (Shelter Cluster Palestine, 2018). These slabs would serve as incremental constructions to host the natural growth of the population, to avoid overcrowding spaces, and to provide thermal comfort inside the living spaces according to the minimum standards. The immediate alteration to existing houses and the building of houses based on the design prototype, with their emphasis on the initial framework, would alleviate some of the housing crisis in Gaza. This integrated approach to planning and construction by those from the areas affected would take into account the cost of implementation and imperatives for sustainability.

The impingement of arable land by settlements is in turn having an impact on poverty, as there will be less viable land for subsistence farming and livestock. Therefore, an ‘upside down’ approach to a house design prototype was proposed in this chapter given the scarcity of resources and increasing loss of land. The completion of the top story of a four-rise structure first would have multiple benefits to include accommodating the narrowing of the urban – rural gap. Furthermore, the prototype with its service core will give each family a practical chance using a framework of concrete columns to shape their own environment and to fulfil their future housing needs.

While looking for alternative viable materials, it is important to test out some ideas through prototypes, in order to ensure that they correspond to the socio-economic conditions. There is no ‘best’ design; or even a ‘readily available design’ in a strict sense without inviting the people in the damaged areas to participate in the planning and design of any housing project. From what can be observed on the ground, the previous attempts at reconstruction in the Gaza Strip (the temporary solutions) are often not accepted by local communities. The

participatory design sessions with five extended families took into account their views of transitional house designs and the extent to which they were satisfied with these as beneficiaries. The researcher has utilised his former experience as an emergency architect and shelter project manager to take into account some of the related problems prevalent in the Gaza Strip which necessitate minimising the processes for construction. These include producing more economic and durable/permanent buildings, while assembling designs with construction techniques that enhance the aesthetic of the everyday. The design of durable housing solutions for low-income people needs to consider the cost of the initial framework with minimum thresholds and ceilings, while taking into account the future cost implications for the family. At all times in the design, planning and construction process the dignity of the families, to include the safety of the children and privacy for the women has to be a priority.

The five in-depth participatory sessions attempted to identify real needs while respecting the socio-cultural practices. Organisation of everyday domesticity – food preparation and water storage, bathing, and sleeping arrangements – at an individual household level also took into consideration the efficient use of immediate resources. With its service core, the house design prototype offers an example for low-cost housing solutions for families in poor and unstable communities with a focus on improving access to water and hygienic sanitation facilities, decreasing overcrowding through flexible, structural frameworks that provide thermal comfort. Such solutions are also environmentally sensitive since they use appropriate building materials while adopting local building techniques and a participatory community approach to design and construction.

These evaluations inform the observations and reflections of the house design prototype to demonstrate the potential to exploit the use of breeze blocks in the design and construction of the architectural building envelope. The research proposes that it is possible to use breeze blocks for a variety of modular superstructure, cladding and external joinery systems. The findings identify limitations, such as a lack of research and development investment, from government and business, and a lack of knowledge and focused direction across

the industry. However, the house design prototype illustrates the unique properties of breeze blocks (ultimately flexible, hard wearing and sustainably produced in Gaza) which can be innovatively manufactured and assembled by residents to fit into whatever space they are needed for the design and construction of the low-energy architectural building envelope. Furthermore, the properties, technology and skills available have informed an additive tectonic approach that is specific to Gaza-made breeze blocks.

Mull (2009) stated that “Designers must constantly switch between the roles of citizen and professional. In this way, participatory design not only asks questions but also leads to action. Furthermore, the design process cannot operate without materiality and prototyping: it is fundamental to be good at building the real thing at every scale.” It is the social responsibility, and in particular the problem of mass housing in Gaza, that should be the chief concern of any architectural design research programme while working with people in rural and marginalised communities. In addition to stabilization of the idea of architects as shelter practitioners and the relation between architecture and our daily life in order to improve the housing condition in the Gaza Strip at the level of a single unit of the built environment (e.g., a house).

8 Conclusion

8.1 Review

While drawing to a close of the thesis and centring this on key messages of investigating how low-income extended families can benefit from a recognition of an architecture of the everyday and self-building activities and its implementation, this chapter will be drawing a conclusion based on the analysis of the results obtained from the research. Academically, the chapter will present what other researches have already achieved and how this thesis is contributing to add another stone to the existing knowledge. In addition, it will outline major implications and make suggestions for further research. As discussed earlier in this thesis, in the past decade (post-2008/2009 Israeli attacks), insufficient progress has been made in addressing housing needs of vulnerable inhabitants in the Gaza Strip. The Israeli blockade, the 2012 and 2014 military attacks, and the complicated Gaza Reconstruction Mechanism have created challenging conditions for addressing housing construction and reconstruction issues. Furthermore, there has been only limited academic discussion on how this important field of practice, i.e. ‘architecture of the everyday’, relates to architectural design in the Gaza Strip. Added to which, there is limited available documentation and successful academic analysis of the essence of daily life in relation to place-making for the Palestinians in Gaza.

The literature reviewed showed that published studies and research relating to the architecture of Gaza were mainly within an historical, political, developmental, and geographical perspectives. More recent studies (post-2008/2009) focused largely on humanitarian and social issues and the politics of post-war reconstruction (Barakat and Masri, 2017; Barakat et al., 2018). Few studies and field researches have succeeded in exploring some of the social matters related to the Strip, such as the way of life for Gazan society under siege and current constraints (Nusseibeh, 2008; Roy, 2016), and gender-related issues, such as the impact of political violence on women and children (Akesson, 2014; Grady and Abu Daqqa, 2001; Qleibo and Mohana, 2009). More specifically,

academic researches related to these living conditions and the impact that this has on domestic life at a household level on a daily basis are limited. Most of the traditional architectural research on the Gaza Strip kept the focus on architectural styles of houses and architectural identity (Hadid, 2002; Ismail, 2012; Muhaisen, 2016), and the analysis of housing typology, housing shortages, and housing needs on a larger urban planning scale (Asfour, 2017; Mushtaha and Arar, 2011; Jabareen and Carmon, 2010). These rarely consider design issues related to the families' domestic place-making processes on the level of the everyday (Lefebvre, 1991; Bachelard, 1992; de Certeau, 1998), or consider links between the socio-cultural family practices and the spatial space making in Gaza under the current constraints.

As discussed in Chapters 4 and 7 in the context of participatory design and the process of place-making (White, 1996; Hamdi, 2010; Kallus, 2016), the 'social logic of space' and household dynamics (Rapoport, 1969; Buchli, 2003; Hourigan, 2015) are not sufficiently taken into account in practical considerations related to planning in the Gaza Strip and/or to deliver on the housing needs of extended families. While steps have been taken toward improving the ability to provide humanitarian response and technical assistance after conflicts and military attacks on Gaza, the research undertaken towards the design component presented in this thesis has also considered that:

- Emergency and transitional shelter solutions offered as an immediate response by the International NGOs working in the Gaza Strip (such as tents, sandbags, mud and wooden shelters) are inadequate in addressing the prevalent housing crisis and often fall short in their use of available resources.
- Investing in less temporary disaster-relief shelters is more economical, in that it caters both for the solution of transitional shelters, but also paves the way for a more permanent solution to Gaza's on-going housing shortages.
- There is a local attachment to the skeleton reinforced concrete structure, which is perceived as being permanent, and as such it epitomises the physical identity of houses in the Gaza Strip, or the 'new vernacular'.

As the notions of ‘home’ and place identity is rooted in the intimate rhythms of family practices, the aim of this research was to identify the implications of ‘architecture of the everyday’ to the urban and rural patterns in the post-conflict reconstruction process. This design-linked thesis has endeavoured to fill a gap in the knowledge of architecture in the Gaza Strip by specifically proposing a realistic house design prototype in areas affected by conflict. In relation to the research questions, the objective of this design process is to propose a dynamic living environment instead of a rigid human storage facility, that accommodates intergenerational households, in conditions where land and resources are often scarce.

8.2 Implications of Research

As Lefebvre (1991) argued that space is a social product, an ‘architecture of the everyday’ can influence social practices and perceptions not just by providing people with basic facilities, like a kitchen and a bathroom, but also by offering families the opportunity to think of the house as an embodiment of permanence and stability. Consistent with Lefebvre’s concept of ‘producing an appropriated space’, it can produce a space to move where they can enjoy autonomy and dignity and are sheltered against the world at large, and sometimes even from their own kin. For the case of the Gaza Strip, there are aspects that could be addressed as part of defining the parameters of architecture of the everyday, namely, the extent to which social events, celebrations and gatherings, and cultural rituals influence architecture. And although largely unexplored by Palestinian researchers, the main question would be about a more substantial analyses of architectural structures (actual physical space) that contain the everyday events and family practices (human experience). Social events such as marriage and death will also determine ownership rights and who has the authorization to extend the house, for instance, when the father dies or when one of the sons marries, in particular the firstborn son. Age-old traditions and their adaptation, because of the current situation and how this may impact on the future in Gaza are some of the considerations that are bound to influence architectural issues. The analysis undertaken has shown that the requirements of housing in the

Gaza Strip need to take into account the social structures of the Palestinian family. For example, in the case of an extended family, a complex of at least two flats is required, with the parents and sons living together (maybe to include the unmarried/widowed daughters). Incremental house models with multiple alternatives and built on demand, that can offer a solution for the accommodation needs of a growing number of low-income extended families ought to be considered as suitable housing options instead of temporary shelters.

As discussed in Chapters 2 and 6, low buildings standards are a direct result of the economic and political situation and the participants noted that their homes were unhealthy places. Despite these concerns, most of the participants interviewed preferred to stay in their houses during the military attacks and to die there rather than go to UNRWA school shelters; a sentiment shared by other displaced people having no other choice given their houses were destroyed. Yet, the same participants stated that they would invest all their savings to build new houses; or to reconstruct their houses if destroyed, at all costs with stronger foundations on the glimmer of hope to keep their extended family members all together. As discussed in Chapters 6 and 7, home and place identity in the Gaza Strip is rooted in the rhythms of family practices, and the way houses need to be expanded.

This thesis draws on the social realities of the Gaza Strip in order to assess how a predominantly negative state of affairs can be changed into a constructive one, built on a positive and hopeful attitude that promotes an everyday design approach and stimulates responsive and rapid building techniques. As Wigglesworth and Till (1998, p. 34) state, “our technologies are obvious and easy to construct; they can be performed by people without great prior knowledge and they make use of existing and ready-at-hand materials.” This research showed that the dwelling structure in the Gaza Strip is dynamic and organic in social and physical terms, and the process of this growth is more important than the final product or the form of the house architecture. The assumption that for what is required to cope with this growth are some designs for small-scale incremental buildings, brief technical instructions to draw and/or modify the plans for each house according to the family size and the labour of skilled and semi-skilled

workers who would execute those houses (Kowaltowski et al., 2005; Ward et al., 2011). However, the work itself may not require exceptional talent or an investment in formal education related to architecture or building practices, but rather applied skills and the careful consideration of basic self-building principles. These aspects of the reconstruction process need to be urgently and effectively addressed in Gaza as they account for the minimalist tendency of the ‘new vernacular’ architectural design (Al Qudwa, 2017). It is hoped that this research is of relevance to researchers as well as to practitioners committed to engaging at the grassroots level towards a more equitable and effective response to housing needs and reconstruction in the region.

8.3 Reflections on the Research Process and Methodology

The methods deployed in this research aimed to shed light on house construction in places such as the Gaza Strip, where there is a scarcity of land, restriction on resources and on-going instability. Throughout the fieldwork between June and December 2016, the researcher was involved in developing and carrying out a range of mixed methods, observation and sketching, 20 extended family interviews in three neighbourhoods, and as well as participatory design and model making sessions with five families. To reach the stage that the house design prototype proposal could take shape, it was necessary to give priority to the participants’ interviews and the information that could be used to establish a comprehensive understanding of how best to approach the prototype (in terms of flexibility and adaptation to changing needs), that it may be adaptable for different households. The fieldwork data collection was divided into two categories that relate to social and physical mapping, and a participatory approach that engaged the community at the level that is currently relevant in Gaza, namely that of the family, which is understood as a more or less extended unit. One of the research interests is to encourage involvement in the processes of conceptualisation and building from all family members (Chapters 5 and 6). The importance of consulting the entire family at their own property (the site of the family house/unit), as opposed to meeting the men or women separately at a community hall, was welcomed by the five families participating in the design sessions. This

helped to maintain inclusiveness within the five extended families participating in the study.

The organization of participatory design sessions prompted reflexivity, not just concerning the actual content of the research, but also on the format of the encounters on the ground and on the researching behaviour that was the most likely to lead to obtaining relevant design data (Chapter 7). The use of drawing and model-making as a way of stimulating people to think about their inhabited structures and to analyse their specific housing needs proved productive. Drawing on people's natural inclination to express their ideas verbally as well as visually in dealing with everyday life, the medium of drawing as a tool for explanation came naturally to many of the participants. Consistent with the ethnographic architectural approach used by Estudio Teddy Cruz and Atelier Bow Wow (see Chapter 5), the thesis provided a natural middle-ground between the skill of the specialist (the researcher/architect) and the expectations of the families, to include engaging the children (Lozanovska, 2002; Akesson, 2014; Tayob, 2018). This approach represents one of the first design-led projects investigating the architecture of the everyday in the Gaza Strip. The approach is keeping with Lefebvre's (1991) conceptualization of the 'rhythm of lived spaces' and the concept of the appropriation of space. The research builds upon and adds to existing research findings in terms of place-making by combining both the social family practices and the physical place. The thesis investigated families' domestic place-making processes and the resulting identity of place. This also supports a notion that the 'new vernacular' in Gaza is heavily influenced by the concept of 'permanence' as 'resistance' to the 'occupation' and the on-going conflict that is experienced on a day-to-day basis.

8.4 Strength, Weakness and Limitations of the Research

The use of observation through social and physical mapping and participants' interviews at each stage of this research project allowed for clarification of the findings and their application. The internal reliability of the research derives from its capacity to engage effectively the sample of beneficiaries and allow them to speak freely about their needs and ideas. In tackling the housing needs of

vulnerable inhabitants in the Gaza Strip, for example, one often needs to make use of alternatives in order to deal with material scarcity or lack of land availability. The goals of architectural practice can be realized by approaching the everyday reality of existence in ways that provide low-cost, affordable and energy efficient housing in the Gaza Strip as elsewhere. The prototype house design project that emerges can be used in contexts that are similar to the one in the Gaza Strip, Palestine, and to address human displacement and active large scale post-conflict reconstruction of the built environment in places such as Syria, Iraq, Yemen, and Libya.

There were certain limitations that affected this research project by design. One of these refers to the scale of the study and since the research focused on the architecture of the everyday in the Gaza Strip, it may not be immediately possible without adaptation to generalize its findings to cater for other social, cultural, and political contexts on a larger scale. Other limitations were the mixed methodological choices and difficulties of linking the research findings (the behaviour of people under stress) with design components.

8.5 Recommendations and Suggestions for a Future Research Agenda

In relation to the social realities in the Gaza Strip, it was not the intention of this research project to focus on a specific group or gender category, but rather to inquire into the housing potential available to extended families in rural communities. The previous chapters (see Chapters 6 and 7) point to the need for further research to be undertaken on a specific group, for example, young married women who choose to live in a separate house, rather than within an extended family household. Another relevant group, in this sense, is that of young widowed women who dwell together with their children at the extended family home of their late husbands. One of the findings underlines the relevance of including widowed households in the design process. Such research would make apparent how these women adapt to their new situation within their in-law's family house and how this situation can reshape the contours of everyday architectural design when it comes to privacy and long-term security for women and their children. The house design prototype proposal points to the need for more multidisciplinary

and in situ research in order to understand the complex characteristics of inhabited space and the way this space accommodates traditional social structures. This is further mediated by continuous social changes of traditional practices within Palestinian communities in the Gaza Strip.

In terms of place-making, and while this research project inquired into the capacity of architectural design to deal successfully with lack of privacy, unsanitary living conditions and, more generally, with the uncertainty that permeates people's lives, it should be acknowledged that planners and architects are not always successful in overcoming the various problems of daily urban life with their solutions to vital housing issues. In order to expand the inquiry into the everyday realities of architecture, certain recommendations are offered. On the level of architectural practice and professional planning, an inclusive approach that engages the community should be considered a critical factor in participatory design while emphasizing the social role of the architect towards the local community. Furthermore, to develop everyday aesthetics the designer must engage the beauty of the materials available, even in their raw form.

Academically, although digital architecture dominates design studios, needed academic weight should be given to the passion for simplicity and visual everyday aesthetic values. In the context of the current challenges facing the Gaza Strip, the emphasis on the everyday aspect of architecture is crucial since it can enable the public to articulate their needs and ideals, thus allowing them to appreciate and actively produce an architectural form that combines function with the (unadorned) beauty and simplicity of everyday objects and activities. This can be achieved, for example, through the regular organisation of art and architectural photography exhibitions that enable local communities to understand their immediate surroundings be they urban or rural.

This research attempted to inquire into the capacity and adaptability of architectural design and spatial re-organization to provide relief in situations of scarcity, as well as to respond to the expectations of various beneficiaries, while at the same time to integrate a design component and aesthetic that acknowledges the possibilities of a different future, albeit imagined at this stage. The latter is never an easy task as it requires determination and rigor to actually accomplish

everyday simplicity against all the many influences that tend to produce its cluttered opposite. Palestinian architects as well as urban designers working in the field should seek to render essential architectural features with clarity and simplicity by rediscovering and making the most of the valuable qualities of ordinary materials. By acknowledging the socio-political constraints within the Gaza Strip, this PhD by Design is better equipped to investigate what might be considered the architecture of the everyday in the region in an attempt to establish improved self-build housing solutions. The emphasis on an ‘architecture of the everyday’ can contribute significantly to Gaza’s economic welfare as a polity, resulting not just in affordable dwellings, but also in the facilitation of a much needed process of self-discovery and identification through architecture and culture.

Bibliography and Cited References

Ababneh, S. (2014) 'The Palestinian Women's Movement versus Hamas: Attempting to Understand Women's Empowerment outside a Feminist Framework', *Journal of International Women's Studies*, 15(1), pp. 35-53.

Abbasoglu, M. S. and Dagli, U. U. (2005) 'Women's Visual Privacy Analysis in Traditional Houses and Modern Apartment Block Neighbourhoods in Famagusta (North Cyprus)', *5th International Postgraduate Research Conference in the Built and Human Environment*. University of Salford, 14-15 April. Manchester.

Abou Jalal, R. (2015) 'Demand rises for traditional Gazan bread', *Al-monitor*, 15 December. Available at: <https://www.al-monitor.com/pulse/originals/2015/12/gaza-palestinian-traditional-bread.html#ixzz55U6Rn5jq> (Accessed: 20 May 2016).

Abourahme, N. (2014) 'Assembling and Spilling-Over: Towards an 'Ethnography of Cement' in a Palestinian Refugee Camp', *International Journal of Urban and Regional Research*, 39. doi: 10.1111/1468-2427.12155

Abu Ajwa, H. (2011) *Mud Building Practices in Construction Projects in the Gaza Strip*. Master's thesis. The Islamic University, Gaza. Available at: <https://library.iugaza.edu.ps/thesis/95920.pdf> (Accessed: 12 July 2016).

Akesson, B. (2015) 'School as a place of violence and hope: Tensions of education in post-intifada Palestine', *International Journal of Educational Development*, 41, pp. 192-199.

Akesson, B. (2014) 'Castle and Cage: Meanings of Home for Palestinian Children and Families', *Global Social Welfare*, 1(2), pp. 81-95. doi: 10.1007/s40609-014-0004-y

Al Qudwa, S. (2017) 'Aesthetic Value of Minimalist Architecture in Gaza', *Contemporary Aesthetics*, 15(1).

Al-Agha, Z. (1997) 'A national outlook for housing in Palestine', in Zahlan, A. B. (ed.) *Reconstruction of Palestine, Urban and Rural Development*. London: Kegan Paul.

Allweil, Y. (2016) 'Plantation: Modern-Vernacular Housing and Settlement in Ottoman Palestine, 1858-1918', *ABE Journal*, 9(10). doi: 10.4000/abe.3259

Ammar, S., Ali, K. and Yusof, N. (2013) 'The Effect of Participation in Design and Implementation Works on User' Satisfaction in Multi-Storey Housing Projects in Gaza, Palestine', *World Applied Sciences Journal* 22 (8), pp. 1050-1058. doi: 10.5829/idosi.wasj.2013.22.08.2842

Aravena, A. and Iacobelli, A. (2013) *Elemental: Incremental Housing and Participatory Design Manual*. Box Blg edition. Hatje Cantz.

ARIJ (2015) *Palestinian Agricultural Production and Marketing between Reality and Challenges*. Available at: https://www.arij.org/files/arijadmin/IDRC/finalceremony/Palestinian_Agricultural_Production_and_Marketing_between_Reality_and_Challenges_2015.pdf (Downloaded: 5 February 2016).

Asfour, O. (2017) 'The role of land planning policies in supporting housing affordability: The case of the Gaza Strip', *Land Use Policy*, 62, pp. 40-48. doi: 10.1016/j.landusepol.2016.12.018

Atelier Bow-Wow (2017) *Architectural Ethnography*. The Incidents, Harvard University Graduate School of Design and Sternberg Press.

Atelier Bow-Wow (2014) *Graphic Anatomy*2. Toto Publishing.

Bachelard, G. (1969) *The Poetics of Space*. Translated by Maria Jolas. Boston: Beacon Press.

Bader, A. P. (2015) 'A model for everyday experience of the built environment: the embodied perception of architecture', *The Journal of Architecture*, 20(2), pp. 244-267. doi: 10.1080/13602365.2015.1026835

Baker, S. E. and Edwards, R. (2012) *How many qualitative interviews is enough*. Methodological Review Paper. National Centre for Research Methods.

Banks, M. (2001) *Visual Methods of Social Research*. London: SAGE.

Barakat, S., Milton, S. and Elkahlout, G. (2018) 'The Gaza Reconstruction Mechanism: Old Wine in New Bottlenecks', *Journal of Intervention and Statebuilding*. doi: 10.1080/17502977.2018.1450336

Barakat, S. and Masri, F. (2017) 'Still in ruins: Reviving the stalled reconstruction of Gaza', *Brookings Doha Center*. Available at: <https://www.brookings.edu/research/reviving-the-stalled-reconstruction-of-gaza/> (Accessed: 12 September 2017).

Barakat, S., and Zyck, S. A. (2011) 'Housing Reconstruction as Socio-economic Recovery and State Building: Evidence from Southern Lebanon', *Housing Studies*, 26(1), pp. 133-154. doi: 10.1080/02673037.2010.512750

Barakat, S. (2003) 'Housing Reconstruction after Conflict and Disaster', *Humanitarian Practice Network (HPN)*, Overseas Development Institute, number 43.

Bardi, A. S. (2016) 'The "Architectural Cleansing" of Palestine', *Journal of American Anthropologist*, (118)1, pp. 165-171.

Barenstein, J. D. (2006) *Housing reconstruction in post-earthquake Gujarat, a comparative analysis*. Available at: <http://repository.supsi.ch/4766/> (Accessed: 11 February 2019).

BBC (2007) 'Palestinian sanctions to remain'. London (BBC). Available at: <http://news.bbc.co.uk/1/hi/6469217.stm> (Accessed: 20 March 2016).

Berke, D. and Harris, S. (ed.) (1997) *Architecture of the Everyday*. New York: Princeton Architectural Press.

Bryman, A. (2012) *Social Research Methods*. 4th edn. Oxford: Oxford University Press.

Bryman, A. (1988) *Quantity and Quality in Social Research*. London: Routledge.

Buchli, V. (2013) *An Anthropology of Architecture*. London: Bloomsbury Academic.

Butina-Watson, G. and Bentley, I. (2007) *Identity by Design*. Oxford: Elsevier.

Caro, E. (2011) *From the village to the city: the adjustment process of internal migrants in Albania*. PhD thesis. University of Groningen. Available at: <https://www.rug.nl/research/portal/files/2553937/thesis.pdf> (Accessed: 23 February 2017).

Casey, E.S. (1997) *The Fate of Place: A Philosophical History*. University of California Press.

Certeau, M. and Giard, L. and Mayol, P. (1998) *The Practice of Everyday Life, Volume 2, Living and Cooking*. Translated by Timothy J. Tomasik. University of Minnesota Press.

Charlesworth, E. (2006) *Architects without Frontiers: War, Reconstruction, and Design Responsibility*. Oxford: Elsevier.

COHRE and BADIL (2015) *Ruling Palestine: A History of the Legally Sanctioned Jewish-Israeli Seizure of Land and Housing in Palestine*. Available at: http://www.badil.org/phocadownloadpap/Badil_docs/publications/Ruling%20Palestine.pdf (Downloaded: 14 March 2016).

Collier, J. and Collier, M. (1986) *Visual Anthropology: Photography as a Research Method*. Rev. and expanded ed. Albuquerque: University of New Mexico Press.

Corbin, J., and Strauss, A. (2008) *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Thousand Oaks: Sage Publications.

Crysler, C. G. (2003) *Writing Spaces: Discourses of Architecture, Urbanism and the Built Environment, 1960–2000*. London: Routledge.

Davis, H. (2005) 'Architectural Education and Vernacular Building', in Asquith, L. and Vellinga, M. (ed.) *Vernacular Architecture in the 21st Century: Theory Education and Practice*. London: Intermediate Technology Publications.

Davis, U. (2003) *Apartheid Israel: Possibilities for the Struggle Within*. London: Zed Books.

Day, C. (2003) *Consensus Design – Socially inclusive process*. Oxford: Architectural Press.

Day, C. (2004) *Places of the Soul: Architecture and Environmental Design as a Healing Art*. 2nd edn. Architectural Press.

Dean, O. A. (2002) *Rural Studio: Samuel Mockbee and an Architecture of Decency*. New York: Princeton Architectural Press.

Dean, O. A. (2005) *Proceed and be Bold: Rural Studio after Samuel Mockbee*. New York: Princeton Architectural Press.

De Certeau, M., Mayol, P., & Tomasik, T. (1998) *Practice of Everyday Life: Volume 2: Living and Cooking* (Giard L., Ed.). University of Minnesota Press.

Designboom (2014) *Teddy Cruz visualizes the impact of conflict on design*. Available at: <https://www.designboom.com/architecture/teddy-cruz-political-equator-border-conflict-05-18-2014/> (Accessed: 7 March 2017).

Diakonia (2011) *Within Range: an Analysis of the Legality of the Land "Buffer Zone" in the Gaza Strip*. Available at: https://www.diakonia.se/globalassets/documents/ihl/ihl-in-opt/within_range_legal_analysis_of_the_gaza_buffer_zone_on_land_diakonia_sept2011.pdf (Downloaded: 17 June 2015).

El Sarraj, W. (2015) 'The futility of hope in Gaza', *Middle East Eye*, 24 February. Available at: <https://www.middleeasteye.net/opinion/futility-hope-gaza> (Accessed: 16 June 2015).

El-Sawalhi, N. and Abu Ajwa, H. E. (2013) 'Mud Building Practices in Construction Projects in the Gaza Strip', *International Journal of Construction Management*, 13(2), 13-26. doi: 10.1080/15623599.2013.10773209

Emerson, R. W. (1837) 'The American Scholar'. Available at: <https://emersoncentral.com/texts/nature-addresses-lectures/addresses/the-american-scholar/#complete-essay> (Accessed: 25 June 2015).

Emerson, R. M., Fretz, R. I. and Shaw, L. L. (1995) *Writing Ethnographic Fieldnotes*. Chicago: University of Chicago Press. Available at: https://people.ucsc.edu/~gwells/Files/Courses_Folder/documents/Fieldnotes.pdf (Downloaded: 9 February 2016).

EUNIDA, (2009) *Final Report: Damage Assessment and Needs Identification in the Gaza Strip*. The European Network of Implementing Development Agencies and the European Union, Brussels.

EWASH (2011) *Water for Agriculture and Food Security in Gaza*. Available at: https://reliefweb.int/sites/reliefweb.int/files/resources/Full_Report_3576.pdf (Accessed: 21 August 2015).

Fausch, D. (2014) *Can Architecture Be Ordinary? Essay*. Available at: <http://www.mascontext.com/issues/23-ordinary-fall-14/can-architecture-be-ordinary/> (Accessed: 13 July 2017).

Ferris, S. (2013) *Overview of the Housing Situation in the Gaza Strip*. Available at: <https://www.sheltercluster.org/palestine/documents/overview-housing-situation-gaza-strip> (Downloaded: 21 January 2014).

Forty, A. (2012) *Concrete and Culture: A Material History*. London: Reaktion Books.

Fraser, M. (2013) *Design Research in Architecture: An Overview*. Farnham: Ashgate.

- Gisha (2011) 'Scale of Control'. Available at: https://www.gisha.org/UserFiles/File/scaleofcontrol/scaleofcontrol_en.pdf (Accessed: 18 June 2015).
- Golzari, N. and Sharif, Y. (2011) Reclaiming space and identity: heritage-led regeneration in Palestine, *The Journal of Architecture*, 16(1), pp. 121-144. doi: 10.1080/13602365.2011.547022
- Goonewardena K., Kipfer S., Milgrom R., Schmid C. (eds.) (2008) *Space, Difference, Everyday Life, Reading Henri Lefebvre*. London: Routledge.
- Grady, H. and Abu Daqqa A. (2001) *Assessing women's needs in Gaza using participatory rapid appraisal techniques*. Available at: <https://pubs.iied.org/pdfs/G01369.pdf> (Downloaded: 5 May 2017).
- Gray, C. and Malins, J. (2004) *Visualizing Research, A Guide to the Research Process in Art and Design*. England: Ashgate.
- Hadid, M. (2002) *Architectural Styles Survey in Palestinian Territories*. Available at: <http://www.molg.pna.ps/ecb/studies/architecture/arch.pdf> (Downloaded: 15 February 2012).
- Hakim, B. S. (2007) 'Generative processes for revitalizing historic towns or heritage districts', *Urban Design International*, 12/2-3, pp. 87-99.
- Hamdi, N. (2014) *The Spacemaker's Guide to Big Change: Design and Improvisation in Development Practice*. London: Routledge.
- Hamdi, N. (2010) *The Placemaker's Guide to Building Community*. London: Earthscan.
- Hamdi, N. (2004) *Small Change: About the Art of Practice and the Limits of Planning in Cities*. Earthscan: Routledge.
- Hamdi, N. (1991) *Housing Without Houses: Participation, Flexibility, Enablement*. Van Nostrand Reinhold.
- Harker, C. (2011) 'Geopolitics and family in Palestine', *Geoforum*, 42(3), pp. 306-315.

- Harper, D. (2002) 'Talking about pictures: a case for photo elicitation', *Visual Studies*, 17(1), pp. 13-26. doi: 10.1080/14725860220137345
- Harries, K. and Armstrong, R. (2004) *Lebbeus Woods: Experimental Architecture*. Carnegie Museum of Art.
- Hawley, C. (2013) *Transitions: Concepts + Drawings + Buildings (Design Research in Architecture)*. Ashgate.
- Hazboun, N. (1994) *The resettlement of the Palestinian refugees of the Gaza Strip*. PhD thesis. University of Leeds. Available at: <https://core.ac.uk/download/pdf/42605857.pdf> (Accessed: 23 January 2016).
- Heal, A. (2010) *Building Simply: An investigation into the potential for Building Simply in the UK*. MPhil thesis. Cardiff University. Available at: <http://orca.cf.ac.uk/13549/1/2011HealAMPhil.pdf> (Accessed: 11 August 2012).
- Heringer, A. (2008) *HOMEmade – family houses in Bangladesh*. Available at: <http://www.anna-heringer.com/index.php?id=39> (Accessed: 9 January 2016).
- Homes4Gaza.org (2018) *Family Profiles*. Available at: <https://homes4gaza.org/#/FamilyProfiles?section=aa&phase=1> (Accessed: 23 January 2019).
- Hourigan, N. (2015) 'Confronting Classifications - When and What is Vernacular Architecture?', *Civil Engineering and Architecture*, 3(1), pp. 22-30. doi: 10.13189/cea.2015.030104
- Ibrahim, N. (2018) *Tourism Sector in Gaza Strip*. Available at: <http://atg.ps/en/wp-content/uploads/2018/09/english-book-2018.pdf> (Downloaded: 20 October 2018).
- International Crisis Group, (2015). *No Exit? Gaza and Israel Between Wars*. Middle East Report N°162. Available at: <https://www.refworld.org/pdfid/55dd8c284.pdf> (Downloaded: 26 August 2015).
- Islamic Relief (2012) *Islamic Relief report highlights severe damage to Gaza projects and profound psychological impact on children*. Available at:

<https://reliefweb.int/report/occupied-palestinian-territory/islamic-relief-report-highlights-severe-damage-gaza-projects> (Accessed: 25 November 2012).

Ismail, E. (2012) 'Evaluation and Development Study of Housing Types Used in The Gaza Strip to Rebuild the Place Identity', *The 4th International Engineering Conference – Towards Engineering of 21st Century*. Islamic University of Gaza, Palestine.

Itma, M. (2018) 'High-Rise Apartment Buildings in Palestinian, in Response to Human Needs', *Journal of Engineering and Architecture*, 6(1), pp. 60-66. doi: 10.15640/jea.v6n1a6

Itma, M. (2014) 'High-density Housing In Palestine: Learning From Traditional Typologies', *The Sustainable City IX: Urban Regeneration and Sustainability*, 191, pp. 87-95. doi:10.2495/SC140081

Jabareen, Y. (2005) 'Culture and Housing Preference in a Developing City', *Environment and Behavior*, 37(1), pp. 134-146. doi: 10.1177/0013916504267640

Jabareen, Y. and Carmon, N. (2010) 'Community of trust: A socio-cultural approach for community planning and the case of Gaza', *Habitat International*, 34(4), pp. 446-453. doi: 10.1016/j.habitatint.2009.12.005

Jones, P. B., Petrescu, D., Till, J. (ed.) (2005) *Architecture and Participation*, 1st edn. London: Routledge Group.

Jordan, C. (2013) 'The Evolution of Social Sculpture in the United States: Joseph Beuys and the Work of Suzanne Lacy and Rick Lowe', *Public Art Dialogue*, 3(2), pp. 144-167. doi: 10.1080/21502552.2013.818430

Kallus, R. (2016) 'Citizenship in action: participatory urban visualization in contested urban space', *Journal of Urban Design*, 21(5), pp. 616-637. doi: 10.1080/13574809.2016.1186490

Kelman, H. C. (2007) 'The Israeli-Palestinian peace process and its vicissitudes: Insights from attitude theory', *American Psychologist*, 62, pp. 287-303. doi:10.1037/0003-066X.62.4.287

Kowaltowski, D. (1998) 'Aesthetics and self-built houses: an analysis of a Brazilian setting', *Habitat International*, 22(3), pp. 299-312. doi: S0197-3975(98)00005-8

Kowaltowski, D., Pina, S., Ruschel, R., Labaki, L., Bertoli, S., Francisco, B. and Fávero, É. (2005) 'A house design assistance program for the self-building process of the region of Campinas, Brazil: Evaluation through a case study', *Habitat International*, 29(1), pp. 95-111. doi: 10.1016/S0197-3975(03)00065-1

Kushner, A. (2005) 'The UN's Palestinian Refugee Problem'. *Azure no. 22, Autumn* 5766. Available at: <http://azure.org.il/include/print.php?id=164ones> (Accessed: 13 June 2015).

Leddy, T. (2012) *The Extraordinary in the Ordinary: The Aesthetics of Everyday Life*. Toronto: Broadview Press.

Leddy, T. (2009) 'Everyday Aesthetics'. Review of *Everyday Aesthetics*, by Yuriko Saito. *Notre Dame Philosophical Reviews*.

Leech, N. (2014). 'Architects of hope: rebuilding Gaza and imagining a Palestinian state', *The National*, 18 September. Available at: <https://www.thenational.ae/arts-culture/architects-of-hope-rebuilding-gaza-and-imagining-a-palestinian-state-1.237916#page1> (Accessed: 19 October 2015).

Lefebvre, H. (1971) *Everyday Life in the Modern World*. Translated by Sacha Rahlnovitch. New York: Harper and Row.

Lefebvre, H. (1991) *The Production of Space*. Translated by Donald Nicholson-Smith. Oxford: Wiley-Blackwell Publishing.

Linsell, N. (2014) 'Designing like you give a damn - about what exactly? Exploring the ethics of 'humanitarian' architecture', *XXV World Congress of Architecture conference*. Durban, August.

Lozanovska, M. (2002) 'The Problematic of Representing the Everyday', *Space and Culture*, 5(2), pp. 140-151.

Macintosh, K. (2010) *Kate Macintosh explains what architecture means to her*. Available at: <http://www.utopialondon.com/wiki/kate-macintosh> (Accessed: 4 September 2015).

Macken, M. (2012) *The Book as Site: Alternative Modes of Representing and Documenting Architecture*. Doctor of Philosophy. PhD by thesis and creative work. Sydney College of the Arts, University of Sydney. Available at: https://ses.library.usyd.edu.au/bitstream/2123/8400/1/01m_macken_2012_thesis.pdf (Accessed: 26 January 2016).

Manolopoulou, Y. (2013) *Architectures of Chance (Design Research in Architecture)*. Ashgate Publishing.

Mansell, C. M. (2016) 'Camp Code', *Places Journal*, pp. 1-31. doi: 10.22269/160405

Marinovic, G. and Baek, J. (2016) 'Lessons of Incremental Housing Two Chilean Case Studies: Elemental Lo Espejo and Las Higuera', *Architectural Research*, 18(4), pp. 121-128.

Metz, H. C. (1988) *Israel: A Country Study*. Washington: GPO for the Library of Congress.

Middleton, S. (2016) 'Henri Lefebvre on education: Critique and pedagogy'. *Policy Futures in Education*, 15(4), pp. 410-426.

Ministry of Public Works and Housing, (2015) *Guide to the Reconstruction Mechanism: sheltering and direct losses of the aggression in 2014*. The Gaza Strip, Palestine.

Mistry, K. (2004) *Collective Domesticity*. Available at: <http://www.kerriemistry.com/2012/04/collective-domesticity-urban-housing.html> (Accessed: 25 June 2015).

Moore, S. (1997) 'Value and Regenerative Economy in Architecture', *85th ACSA Annual Meeting Proceedings, Architecture: Material and Imagined*. pp. 544-550.

Muhaisen, A. and Ahlbäck, J. (2012) *Towards sustainable construction and green jobs in the Gaza Strip*. Switzerland: International Labour Organization.

Mull, R. (2009) *Global Developments and Academic Networks: EDUCATING THE GLOBAL ARCHITECT*. *New Policies of Space in Times of Globalization*. Available at: <https://www.ancb.de/sixcms/detail.php?id=240340> (Accessed: 28 November 2017).

Mushtaha, E. and Arar, M. (2011) 'House Typology from Adjacency Diagram Theory to Space Orientation Theory', *International Journal of Civil and Environmental Engineering IJCEE-IJENS*, 11(2), pp. 60-66.

Mushtaha, E. and Noguchi, T. (2006) EVALUATION AND DEVELOPMENT OF HOUSING DESIGN: Analytical study on detached houses' plan of Gaza city, *Journal of Architecture and Planning (Transactions of AIJ)*, 71(605), pp. 23-30.

Mushtaha, E., Arar, M. and Hamid, F. (2010) 'Assessment Tools: Mathematical Factorial and Adjacency Distribution Theory for Housing Typology in Gaza City', *International Journal of Architectural Research: ArchNet-IJAR*, 4(1), pp. 149-157.

NRC (2018) *ISRAEL TIGHTENS GAZA BLOCKADE, CIVILIANS BEAR THE BRUNT*. Available at: https://www.nrc.no/globalassets/pdf/reports/palestine/gaza-briefing_03082018.pdf (Accessed: 13 August 2018).

Nusseibeh, S. (2008) *Gas-less in Gaza*. Available at: <http://www.sari.alquds.edu/gaza.pdf> (Downloaded: 11 March 2015).

OCHA, (2018) *Survey identifies 19,700 housing units beyond repair and 24,000 requiring prioritized shelter assistance*. Available at: <https://www.ochaopt.org/content/survey-identifies-19700-housing-units-beyond-repair-and-24000-requiring-prioritized-shelter> (Accessed: 17 December 2018).

OCHA (2015) 'The Gaza Strip: The Humanitarian Impact of the Blockade'. Available at: <https://www.ochaopt.org/content/gaza-strip-humanitarian-impact-blockade-july-2015> (Accessed: 5 August 2015).

Oliver, P. (1997) *Encyclopedia of Vernacular Architecture of the World*. Cambridge; New York: Cambridge University Press.

Oliver, P. (2003) *Dwellings, The vernacular houses worldwide*. London: Phaidon.

Oxfam, (2015). *Vital building in Gaza could take a century*. Available at: https://oxfamapps.org/media/press_release/2015-02-gaza-6-months-on/ (Accessed: 20 July 2015).

Packer, R. (2003) *Notes for Discussion based on the reading of the Joseph Beuys essays*. Available at: http://www.zakros.com/jhu/apmSu03/notes_beuys.html (Accessed: 3 March 2016).

PASSIA (2018) *Understanding Gaza*. Available at: <http://fespal.org/wp-content/uploads/2018/07/Understanding-Gaza-ilovepdf-compressed.pdf> (Downloaded: 21 January 2019).

Pavlidis, E. and Cranz, G. (2012) 'Ethnographic Methods in Support of Architectural Practice', in Mallory-Hill, S. Preiser, W. and Watson, C. (eds.) *Enhancing Building and Environmental Performance*. John Wiley and Sons, New York, pp. 299-312.

PCBS (2018) 'On the occasion of the International Population Day'. Available at: <http://www.pcbs.gov.ps/post.aspx?lang=en&ItemID=3183> (Accessed: 23 September 2018).

Peoples, F. M. (2012) *Egypt at the Rafah Border and the Prospects for Gaza*. Peace Research Institute Oslo (PRIO).

Petrescu, D. and Trogal, K. (eds.) (2017) *The Social (Re)Production of Architecture: Politics, Values and Actions in Contemporary Practice*. London: Routledge.

Piquard, B. (2015) *Observing Symbolic Violence*. Available at: <https://www.youtube.com/watch?v=5KgHjtGESrE> (Accessed: 9 May 2016).

Piquard, B. (2016) 'From Symbolic Violence to Symbolic Reparation. Strengthening Resilience and Reparation in Conflict-Affected Areas through

Place-(re)making. Examples from the West Bank and Colombia', *Dearq: Revista de Arquitectura*, (18), pp. 68-79.

Piquard, B. and Swenarton, M. (2011) 'Learning from architecture and conflict', *The Journal of Architecture*, 16(1), pp. 1-13. doi: 10.1080/13602365.2011.557897

Polak, P. (2009) *Design for the other 90%*. Available at: <https://www.designother90.org/> (Downloaded: 13 June 2015).

Qleibo, A. (2011) *The Semiology of the Palestinian Face The Dichotomy of Private versus Public Space*. Available at: <http://archive.thisweekinpalestine.com/details.php?id=3502&ed=198&edid=198> (Downloaded: 14 January 2018).

Qleibo, E. (2006) 'Advocacy and Space in Ethnographic Writing', *Jerusalem Quarterly*, 27, pp. 59-64.

Qleibo, E. and Mohana, A. (2009) 'Negotiating Survival: The Impact of Israeli Mobility Restrictions on Women in Gaza', in the Institute of Women's Studies, *Review of Women's Studies*. Bir Zeit University, pp. 23-40.

Qur'an, Surat An-Nur (The Light):35 (2016) translated by Mustafa Khattab. Book of Signs Foundation (1st edition).

Randall, D., Harper, R. and Rouncefield, M. (2007) *Fieldwork for Design: Theory and Practice*. Springer.

Rapoport, A. (1969). *House Form and Culture*. Englewood Cliffs, NJ: Prentice-Hall.

Real Estate Japan (2017) *How Much Living Space Does the Average Household Have in Japan?*. Available at: <https://resources.realestate.co.jp/living/how-much-living-space-does-the-average-household-have-in-japan/> (Accessed: 9 April 2019).

Ren, X. (2017) *Hybrid Building and Hybrid Practitioner: Understanding and Transforming Chinese Rural Villages through Architecture of Social*

Engagement. PhD thesis, University of Sheffield. Available at: <http://etheses.whiterose.ac.uk/18929/> (Accessed: 17 June 2018).

RIBA (2011) *Guide to Localism Opportunities for architects Part two: Getting community engagement right*. Available at: <http://www.fluidoffice.com/wp-content/uploads/2014/01/0420-RIBA-Guide-Part-2.pdf> (Downloaded: 4 July 2017).

Riessman, C. K. (1993) *Narrative Analysis: Qualitative Research Methods*. Thousand Oaks: SAGE.

Robinson, G. E. (2008) 'Palestinian Tribes, Clans, and Notable Families', *Strategic Insights*, 7(4).

Roy, A. and Crane, E. S. (eds.), (2015) *Territories of Poverty: Rethinking North and South*. Athens: University of Georgia Press.

Roy, S. (2016) *The Gaza Strip: The Political Economy of De-development*. 3rd edn. Washington, DC: Institute for Palestine Studies.

Rudofsky, B. (1964) *Architecture Without Architects*. New York: Doubleday.

Saito, Y. (2017) *Aesthetics of the Familiar: Everyday Life and World-making*. Oxford University Press.

Saito, Y. (2007) *Everyday Aesthetics*. Oxford: Oxford University Press.

Sanderson, D. and Burnell, J. (2013) *Beyond shelter after disaster: practice, process and possibilities*. Oxford: Routledge.

Sanya, T. (2016) 'PARTICIPATORY DESIGN: AN INTERSUBJECTIVE SCHEMA FOR DECISION MAKING', *Archnet-IJAR, International Journal of Architectural Research*, pp. 62-74.

Scha, R. (1998) *Art, Chance and Algorithm: Towards an architecture of chance*. Available at: <http://www.remkoscha.nl/wiederhaE.html> (Accessed: 3 July 2015).

Shahin, M. (2005) *Palestine: A Guide*. 2nd edn. Northampton: Interlink Books.

Shelter Cluster (2011) 'Guidelines for the Reconstruction and Rehabilitation of War Affected Individual Housing in the Gaza Strip – Palestine – January 2011'. Available at: <https://www.sheltercluster.org/palestine/documents/shelter-guidelines-gaza-jan-2011> (Accessed: 20 October 2014).

Shelter Cluster (2016) *Lessons Learned from Gaza Shelter Response*. Available at: <https://www.sheltercluster.org/palestine/documents/lessons-learned-gaza-shelter-response> (Downloaded: 9 November 2016).

Shelter Cluster Palestine (2017) 'Key Figures'. Available at: https://www.sheltercluster.org/sites/default/files/docs/one_page_factsheet_may_2017.pdf (Accessed: 7 September 2017).

Shelter Cluster Palestine (2018) 'Inter-agency Shelter Survey on Substandard housing conditions in Gaza'. Available at: https://www.sheltercluster.org/sites/default/files/docs/research_report_substandard_conditions_survey_final_june_2018_0.pdf (Accessed: 20 May 2018).

Shelter Cluster Palestine (2019) 'Shelter Cluster Factsheet'. Available at: https://reliefweb.int/sites/reliefweb.int/files/resources/one_page_factsheet_april_2019.pdf (Accessed: 11 April 2019).

Shelter Projects (2016) 'Gaza (PALESTINE), 2014-2016, Conflict (Case study)'. Available at: http://shelterprojects.org/shelterprojects2015-2016/SP15-16_A28-Gaza-2014-2016.pdf (Accessed: 17 November 2017).

Sprake, J. (2003) 'Mapping Boundaries: Reading Everyday Urban Text'. In: *Techn: The Design Wisdom, 5th European Academy of Design*. Barcelona, 1st April.

Steele, J. (2005) *The Architecture of Rasem Badran: Narratives on People and Place*. Thames and Hudson.

Tayob, H. (2018) 'Subaltern Architectures: Can Drawing "Tell" a Different Story?', *Architecture and Culture*, 6(1), pp. 203-222. doi: 10.1080/20507828.2017.1417071

Terreform (2015) *Open Gaza Project*. Available at: www.terreform.info/open-gaza (Accessed: 11 January 2016).

Tolan, S. (2018a) 'ARGUMENT: Israel's About-Face on Gaza', *Foreign Policy magazine*, 21 November. Available at: <https://foreignpolicy.com/2018/11/21/israels-about-face-on-gaza/> Accessed (29 December 2018).

Tolan, S. (2018b) 'Gaza Water Crisis', *PRI's Environmental News Magazine*, 26 October. Available at: <https://www.loe.org/shows/segments.html?programID=18-P13-00043&segmentID=3> Accessed (29 December 2018).

Turner, J. (1976) *Housing by People, Towards Autonomy in Building Environments*. London: Marion Boyars

UCSD (2016) *Teddy Cruz*. Available at: <https://visarts.ucsd.edu/people/faculty/teddy-cruz.html> (Accessed: 25 August 2016).

UN Women (2011) 'Who answers to Gazan women? An economic security and rights research'. Available at: <http://www.unwomen.org/en/digital-library/publications/2011/11/who-answers-to-gazan-women-an-economic-security-and-rights-research#view> (Accessed: 7 January 2018).

UNCT, (2012) 'Gaza in 2020: A Livable Place?'. Available at: <https://www.unrwa.org/newsroom/press-releases/gaza-2020-liveable-place> (Accessed: 27 November 2015).

UNCT, (2017) 'Gaza Ten Years Later'. Available at: <https://www.un.org/unispal/document/gaza-ten-years-later-un-country-team-in-the-occupied-palestinian-territory-report/> (Accessed: 2 September 2017).

UNEP (2009) *Environmental Assessment of the Gaza Strip: following the escalation of hostilities in December 2008 – January 2009*. Available at: https://postconflict.unep.ch/publications/UNEP_Gaza_EA.pdf (Downloaded: 21 August 2015).

UN-HABITAT, (2014) 'Gaza Urban Profile, Gaza Crisis'. Available at: <https://www.humanitarianresponse.info/en/search?search=Gaza+Urban+Profile+> (Accessed: 15 January 2015).

Upton, D. (2002) 'Architecture in Everyday Life', *New Literary History*, 33(4), pp.707-723. doi: 10.1353/nlh.2002.0046

Walliman, N. (2001) *Your Research Project – A Step-By-Step Guide for the First-Time Researcher*. London: Sage.

Ward, P. (2012) 'Self-Help Housing Ideas and Practice in the Americas' in Sanyal, B. et al. (eds.) *Planning Ideas That Matter: Livability, Territoriality, Governance and Reflective Practice*. MIT Press, pp. 283-310.

Ward, P. et al. (2011) 'Self-help housing policies for second generation inheritance and succession of "The House that Mum & Dad Built"', *Habitat International*, 35, pp. 467-485. doi: 10.1016/j.habitatint.2010.12.005

Wates, N. (2000) *The Community Planning Handbook: How people can shape their cities, towns and villages in any part of the world*. London: Earthscan.

Weinthal, E. and Sowers, J. (2019) 'Targeting infrastructure and livelihoods in the West Bank and Gaza', *International Affairs*, 95(2), pp. 319-340. doi:10.1093/ia/iiz015

Weinthal, E. et al. (2005) 'The Water Crisis in the Gaza Strip: Prospects for Resolution', *GROUND WATER*, 43(5), pp. 653-660. doi: 10.1111/j.1745-6584.2005.00064.x

Weizman, E. (2015) *Forensic Architecture: Notes from Fields and Forums*. Available at: <http://continentcontinent.cc/index.php/continent/article/view/219> (Downloaded: 29 October 2016).

Weizman, E. (2007). *Hollow land: Israel's architecture of occupation*. London, UK & New York, NY: Verso.

Weizman, E. and Dietrich, C. (2000) *Austrian Housing Project, Khan Younis, Gaza*. Available at: <http://www.arch-urb.at/tag/austrian-housing-project-architekt-johannes-fiedler/> (Downloaded: 11 March 2006).

White, S. (1996) 'Depoliticising Development: The Uses and Abuses of Participation', *Development in Practice*, 6(1), pp. 6-15. doi: 10.1080/0961452961000157564

Wiersma, W. (1986) *Research Methods in Education: An Introduction*. Boston: Allyn and Bacon.

Wigglesworth, S. and Till, J. (1998) 'Table Manners', *Architectural Design*, 68(7), pp. 31-35.

Woods, L. (1997) *Radical Reconstruction*. New York: Princeton Architectural Press.

List of Illustrations and Credits

Chapter 1

Figure 1.1: An example of a construction site in the Gaza Strip; and without being equipped with hard hats or lifelines, semi-skilled bricklayers peer down while putting another row of cement blocks. Source: Salem Al Qudwa, 2010.

Chapter 2

Figure 2.1: The Ibn Othman Mosque is located in the Shejaiya Quarter, and is the second largest mosque in Gaza City, after Al Omari Mosque. Source: Salem Al Qudwa, 2016.

Figure 2.2: The current Gaza Strip map and the buffer zone that extends along the entire northern and eastern perimeter of Gaza, bordering with Israel, as well as the southern border with Egypt. Source: OCHA 2015.

Figure 2.3: The Gaza Strip timeline. Source: Salem Al Qudwa based on different sources, 2018.

Figure 2.4: The buffer zone, 'the No-Go Zone', has tightened the Israeli chokehold around Gaza's small strip of land. By Léopold Lambert, 2014: geographicaliminations.com/category/law/page/3/

Figure 2.5: Palestinians crossing over the demolished border fence with Egypt at Rafah, southern Gaza. Photo by Mohammed Saber, epa/Corbis, 2008.

Figure 2.6: Men selling cabbages and potatoes in the market of the Nuseirat refugee camp in the middle of the Gaza Strip. Photo: Paul Jeffrey, ACT Alliance.

Figure 2.7: Homeless shelter in a UN school to house internally displaced persons. UNRWA, 2014.

Figure 2.8: A light in darkness. A girl lighted a candle inside her house during a power cut in Jabalya in the northern Gaza Strip. Gaza's lone power plant shut its generators due to a fuel shortage. Photo: Mohammed Salem, Reuters, 2013.

Figure 2.9: A child and elderly man fill water containers at public multi-faucet sinks in the Gaza Strip. Water is purchased from Israel's national water company. Photo: Muhammad Sabah, B'Tselem, 2014.

Figure 2.10: An NGO staff members helping technical team in one of water and agriculture projects northern the Gaza Strip. Photo: ARIJ, 2015.

Figure 2.11: A partially damaged housing units in a five-story apartment building that is still inhabited despite being targeted in Khan Younis, the Gaza Strip. Source: Salem Al Qudwa, 2013.

Figure 2.12: An owner of a destroyed building is sharing his plans and vision for his house which he had rebuilt by himself using reinforced concrete with strong foundations and columns. What he said (the above subtitle) reflects a sense of hope and everyday resilience. Source: Film stills from Al Jazeera Documentary Channel, 2012: <https://youtu.be/Jp2UcV2Ldaw>

Figure 2.13: At the beginning of 2015, this was the only house completely destroyed during Israel's summer 2014 assault that the UN had rebuilt. Photo: Adel Hana AP, 2015.

Figure 2.14: A Gazan built a small one-room shelter for his family using the rubble of his house, which was bombed in August 2014. This was the only solution for his family. Life is getting even more unbearable. He is hoping for one thing: reconstruction! Photo: Anas al Baba, Oxfam, 2015.

Chapter 3

Figure 3.1: A local builder bathing in natural light. Source: Salem Al Qudwa, Al Shouka, 2011.

Figure 3.2: A week's supply of flat bread rounds prepared in a room used for the purpose during the day and for the children's sleeping quarters at night. Source: Salem Al Qudwa, Beit Lahia, 2007.

Figure 3.3: Household items designed and made with a focus on timeless functionality. Source: Objects of Use, Oxford: www.objectsofuse.com

Figure 3.4: Looking at Art. Source: Colours magazine number 87.

Figure 3.5: Hands of self-builders and makers of daily objects. Source: Salem Al Qudwa, 2016.

Figure 3.6: Salvaged damaged breeze blocks after destruction from a totally damaged building in the Gaza Strip. Source: Salem Al Qudwa, 2015.

Figure 3.8: A collective of rural and marginalised environments: a depart from traditional forms of space configuration using affordable building materials to design with a view to accommodating inter-generational families. Source: Salem Al Qudwa, Gaza, 2011.

Chapter 4

Figure 4.1: Structure for the Rehabilitation of Damaged Houses Programme in the Gaza Strip. Source: IRPAL, 2011.

Figure 4.2: Distribution of the project beneficiary households across the Gaza Strip. The number of damaged houses and population are according to OCHA statistics. Source: IRPAL, 2011 (Redrawn by the researcher in 2015).

Figure 4.3: A child's drawing on a hot corrugated metal sheet is reminiscent of a typical child's dream of a good house with familiar elements. The stories of the children living in Al Shouka (Rafah) and the shelter project team willing to give them hope and happiness. Source: Salem Al Qudwa, 2009.

Figure 4.4: Soil is sandy and/or clay in Beit Lahia (left) and Al Shouka (right). Source: Salem Al Qudwa, 2010.

Figure 4.5: Basic materials such as tin sheeting with barbed wires are used for fencing in rural and marginalized areas of Beit Lahia and Al Shouka. Source: Salem Al Qudwa, 2010.

Figure 4.6: Scrap-built homes without proper access to water and sanitation services in Beit Lahia (left, a hole for the toilet rather than a bathroom) and Al Shouka (right). Source: Salem Al Qudwa, 2009.

Figure 4.7: The entitlement of every beneficiary was identified through a social and technical assessment carried out by the Social Worker and the Architect/Civil Engineer. Source: IRPAL, 2009.

Figure 4.8: Researcher's sketches which show recording the requirements of each household. Source: Salem Al Qudwa, 2009.

Figure 4.9: A house before (left) and after rehabilitation (right) and the adding of a new bathroom. Source: Salem Al Qudwa, 2009.

Figure 4.10: Sketch notebook and concrete were the media of communication at site. Source: Salem Al Qudwa, 2010.

Figure 4.11: Basic architectural plans and sections - A bedroom with a bathroom unit, and a kitchen bathroom unit. Source: Salem Al Qudwa, 2015.

Figure 4.12: An exploded axonometric to show the layers of the basic housing unit.

Figure 4.13: The project offered low-cost housing solutions for poor communities. Even the project's budget was limited, some units rendered and painted taking into consideration the future horizontal extension (rough render for external wall and smooth render for interior wall). Source: Salem Al Qudwa, 2011.

Figure 4.14: Possible horizontal extension in rural areas in Gaza and protecting the extended family fabric while maintaining simplicity with regard to home construction. Source: Salem Al Qudwa, 2012.

Chapter 5

Figure 5.1: Affordable housing for immigrant neighbourhoods using hybrid materials. Source: Estudio Teddy Cruz, 2016.

Figure 5.2: The researcher photographing during architectural site-work in Gaza after the 2014 Israeli attacks. Photo credit: Emad Badwan, 2015.

Figure 5.3: Map of affected areas after the 2014 attacks. Source: UNITAR, 2015.

Figure 5.4: Permanent and temporary hybrid materials at one of the Gaza rural houses.

Figure 5.5: The researcher with a white board in the process of sketching the narrative of the interviews, to engage the participants, and to encourage conversation. Photo credit: Mohamed El-Reefi, 2016.

Figure 5.6: The participants, a father and son, using a chalk board for drawing the plan of their dream house. Source: Salem Al Qudwa, 2016.

Figure 5.7: Participatory design sessions using different techniques and inviting key family members to participate (left). After an intense conversation and design discussion, an example of a house design sketches that drawn by a self-builder with a brief cost estimation for a permanent house (right). Source: Salem Al Qudwa, 2016.

Figure 5.8: The problems tree with keywords and real problems facing the households. Source: Shelter Cluster, 2016.

Figure 5.9: Axonometric drawings showing alternatives for the adjacency of kitchens and bathroom in different rural houses. Source: Salem Al Qudwa, 2017.

Figure 5.10: Spatial strategy with collaged everyday activities developed by the researcher based on photos he took for his design-based project (Chapter 4) and from other places in Gaza while conducting his fieldwork (Chapter 6). Adding the animal elements (chicken and donkey) and a house pocket garden, the collage proposes the differences in improving external finish material for Gaza buildings where the change is easier as the building grows. Source: Salem Al Qudwa, 2017.

Figure 5.11: Beirut balconies by Lola Claeys Bouuaert. Source: Aghasi, 2013.

Chapter 6

Figure 6.12: Tea break at a construction site in the Gaza Strip. Source: Film still from Al Jazeera documentary on Gaza, 2012: <https://youtu.be/Jp2UcV2Ldaw>

Chapter 7

Figure 7.1: Male youth invited to a focus group meeting regarding camp improvement priorities. Photo by: Khalil Adwan, UNRWA, 2015.

Figure 7.6: A local builder talking about his experience about alternative housing solutions in relation to building materials. Source: Film stills from Al Jazeera Documentary Channel, 2012: <https://youtu.be/Jp2UcV2Ldaw>

All analysis illustrations in Chapter 6 and architectural drawings in Chapter 7 are © the researcher: Salem Al Qudwa (except where stated otherwise). Architectural drawings for the design project were drawn with the assistance of Ms. Haya Barzak.

List of Tables

Table 4.1: Project information. Source: IRPAL, 2009.

Table 4.2: Category of the damaged houses in the Gaza Strip. Source: OCHA, 2007.

Table 4.3: Cost Estimate per housing unit. To include comparison between normal cost and minimal cost. Source, Salem Al Qudwa, 2013.

Appendix A: Rehabilitation of Damaged Houses Project Drawings (2011).

Appendix B: Consent Forms (2016).

Appendix C: Gaza's House Design Prototype Drawings (2019).