Archnet-IJAR: International Journal of Architectural Research

# Designing and building in a fragile context: the recovery of the primary school in Wadi Abu Hindi, Palestine

Alessio Dionigi Battistella
*Department of Architecture and Urban Studies | DAStU, Polytechnic University of Milan, Milano, Italy, and*
Riccardo Montanari
*Department of Human Sciences for Education "Riccardo Massa", University of Milan-Bicocca, Milan, Italy*

Received 30 January 2024
Revised 10 April 2024
1 May 2024
Accepted 10 May 2024

## Abstract

**Purpose** – The recent convergence between architecture and cultural anthropology has laid the foundations for a methodological approach that is attentive to both local specificities and the role of design. Starting from the analysis of the recovery of the primary school in the Bedouin camp of Wadi Abu Hindi in Palestine, the article intends to outline the role of the architect as a participating observer. It highlights how acting directly in the context of intervention guarantees a more effective response to local needs within spaces marked by strong conditions of inequality and marginality.

**Design/methodology/approach** – The methodology employed consists in using the ethnographic approach to collect qualitative data. The choice of this methodology stems from the intention to directly involve local actors in the design and execution phases.

**Findings** – The role of the architect as a participating observer within critical contexts shows how the activity of design is not simply limited to designing solutions but consists above all in the anticipation of all the critical aspects that may emerge in the practical execution of the works. The active participation and the adoption of a holistic outlook allow to find targeted solutions and ensure careful listening to the local needs.

**Originality/value** – The originality of this article consists in using an interdisciplinary approach between architecture and cultural anthropology, considering the architect as a participant observer.

**Keywords** Vernacular architecture, Appropriate technologies, Self-construction, Applied-research methods, Circular architecture, Architectural anthropology

**Paper type** Research paper

## 1. Introduction

Since the end of the Second World War, and continuing to the present, architecture has moved closer and closer to the study of the cultural factors that influence the built space (Lawrence and Low, 1990). This interest is mainly expressed in vernacular architecture, which represents a thriving reservoir of ideas and techniques to engage and rethink the role of architecture in response to sustainability needs. This is because, beyond their non-pedigreed identity, "all forms of vernacular architecture are built to meet specific needs, accommodating the values, economies and ways of life of the cultures that produce them" (Oliver, 1997, p. II). The importance of the



*Funding:* This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Archnet-IJAR: International Journal of Architectural Research
Emerald Publishing Limited
2631-6862
DOI 10.1108/ARCH-01-2024-0035

study of vernacular architectures lies precisely in their responsiveness and adaptability, not only to environmental problems, but also to cultural and economic needs. Starting from these aspects, namely the interest in the agency of social and cultural factors in shaping the built environment, architecture finds a connection with another academic discipline: cultural anthropology. Cultural anthropology research focuses on the holistic study of humanity, particularly on the scientific study of cultures, wondering what culture is. The term culture, considered as concept, was used for the first time by the British anthropologist Edward Burnett Tylor in *Primitive Culture* published in 1871. He defined it as the complex whole which includes knowledge, art, morals, law, custom and any other capabilities acquired by man as a member of society. Since then, and until the 1950s of the 20th century, more than 160 definitions of culture have been worded by anthropologists who experienced difficulty in finding a common definition (Kroeber and Kluckhohn, 1952). However, we'll take as a start Paul Oliver's definition:

> I defined "culture" as the totality of values, activities and products, including buildings, of a society which give meaning and direction to the lives of its individual members. Culture is learned and is not transmitted genetically. A culture is a society whose members share such a totality (Oliver, 2006, p. 60).

This brief introduction has offered a theoretical background regarding the terms culture and cultural anthropology to underline how architecture and anthropology, if placed in dialogue, can provide useful tools to understand the complexity of each society. This aspect has been highlighted, for example, in the recent volume *Architectural Anthropology: Exploring Lived Space* (Stender *et al.*, 2022), in which the authors showed how "planning is enacted situationally, as a way not of predetermining what is to follow, but of assembling or pulling together the wherewithal to be able to launch into the future with a reasonable chance of success" (Ingold, 2022, p. XVI). In recent years, the increasingly strong convergence between these two disciplines has laid the foundations for a methodological approach that is attentive to local specificities than to the role of design. Starting from these recent developments, the article intends to outline a designing approach that, brings together the ethnographic qualitative method of participant observation, with the role of the architect as a participating observer. In addition to that, we'll try to highlight the importance of working and acting directly in the territory to guarantee a more attentive response to local needs within spaces marked by strong conditions of inequality and marginality.

In the following pages, the focus will be on the methodology applied for a project of recovery, in specific, the one regarding an existing primary school in the Bedouin camp of Wadi Abu Hindi [1] realized in 2010 (Plate 1). This project was commissioned to the Italian cooperative of architects *ARCò* by the Italian NGO *Vento di terra* and the local *Jerusalem Beduin Cooperative Committee*. The main objective was to improve the architectural conditions of the primary school with few economic resources, therefore enhancing life of Al-Jahalin people (Bimkom, 2013) who inhabited the camp. The choice of this case study derives from the increasingly urgent need to adopt a design perspective responsive to those fragile and marginal contexts in which local needs are often ignored or not recognized by the authorities and the market logic.

The potential of the architect as participating observer will be featured in the following pages. This choice stems from the urgence to understand the territory, its climate and the materials present in it, as well as to listen to the requests expressed by who inhabit this land, with the purpose of designing and building "with" and "for" the local community. The structure of the article, starting from a theoretical premise, continues with the different phases of development of the project and its impacts. The description of the context at issue is not limited to the climatic aspects and of building materials, but also to cultural elements which play a key role in the designing and execution phases. Indeed, as in this case, the choice of implementing guided self-construction requires a direct confrontation with inhabitants and their social structure, being the architect able to adapt to the local context.

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**Plate 1.**
Overview of the primary school in the Wadi Abu Hindi Bedouin camp, Al Azarije, East Jerusalem, Area C

The present research and methodology were carried out by two Western scholars: the first, designed, worked and managed this project directly in Italy and in the field; the second one, giving his anthropological background, dealt with the study of the relationship between built environment and culture, to reflect on the following questions: What are the consequences of the use of the participant observation in the different architectural phases? Could this method improve the design project and how? The articles will try to answer to these questions, starting from the data recollected by the architect during the fieldwork, between 2009 and 2010.

## 2. Theoretical premise

The convergence of interests and perspectives between architecture and cultural anthropology is the result of the significant social and ideological transformations that took place during the 20th century. With the crisis of modernism, whose architectural principles were based on rationality and universality, there was an increasing attention to the social and cultural contexts in which architecture was inserted. Since the 1980s, the growing interest of many architectural scholars in existential phenomenology, which stressed the temporality and experience of personal existence as the framework for analyzing the human condition, has contributed to the transition to qualitative approaches focused on the sensory experience of objects and the individual and cultural differences. This "ethnographic turn", pointed out by Stender *et al.* (2022), is clearly visible in contemporary research on architecture and design, which emphasizes the need to analyze architecture as a dynamic process in which human and non-human actors are involved (Latour and Yaneva, 2008). From the anthropological perspective, instead, we can observe "spatial, material, ontological and post-humanist turn", namely the criticism of the anthropocentric view used by social theorists in favor of perspectives that consider the reciprocal relationship between human and non-human (Descola, 2014; Latour, 2005), which has led to growing interest in design, architecture and the built environment. The paradigmatic changes introduced, for example, by the theory of the actor-network, as well as the concept of *agency*, have marked a "homecoming" of anthropology, turning the attention to the same environments more familiar to the architects. Thus, the increasing attention of architects and urban planners to social sustainability and the direct involvement of users has opened forms of collaboration with anthropology and related disciplines.

In essence, over the past few years, the awareness on how every built structure is not simply a material object has increased. By means of its form and its presence, the building is able to generate, incorporate and shape cultural meanings, social relations and technical skills appropriate for its context. As highlighted, by Rapoport (1969), given a specific climate, the availability and constraints of local materials and the level of technology, what decides the configuration of a dwelling and shapes spaces and their relationships is the vision that people have of the ideal life. The built environment thus reflects many sociocultural forces, including religious beliefs, family or clan structure, social organization, way of earning a living and social relationships between individuals. The house, the village and the settlement express the fact that societies share some generally accepted life goals and values.

However, if it is true that buildings take shape from the reproduction of a specific cultural imagery, it is also necessary to highlight how their physical presence generates social relationships with the members of the society within which they are placed. This reciprocal influence shows that buildings are to all intents and purposes social actors with their own *agency* (Appadurai, 1986; Gell, 1998): objects possess their own transient nature that incorporates ideas, values and social status. "Things", like other social actors, are able to prescribe models and codes of behavior in relation to the context that produces them. Indeed, as Latour (2005) argues, objects participate in our humanity, inserting themselves into social networks.

Thus, constructed forms are not only the result of inter-individual relationships, but are part of that complex web of relations which constitutes both psychic and collective individuation, or what Simondon (1989) has called transindividual. Certainly, buildings have a symbolic value, reifying ideologies and feelings, just as they are also influenced and modified by climatic forces, by the availability of materials and technologies. To these aspects we must add the transindividual component that intimately connects individuals, technologies, materials, objects and the environment. It is the technical objects, as well as its products, that crystallize and concretize human gestures within an associated *milieu*, arising from the encounter and interpenetration between the properly technical and cultural environment and the natural one. Thus, the construction and design process must be considered as a continuous form of material individuation that does not depletes all existing possibilities, recognizing the constantly changing processual nature of buildings.

In doing so, the architect possesses within itself the methodological potential of anthropology, namely participatory observation. However, as pointed out by Ingold: "In many fields today including architectural design and urban planning, 'participation' is a mantra of good practice, yet it remains a panacea if it is not transformative for all parties" (2022, p. XVI). In adopting this term, restoring its methodological potential, it is necessary to take up the reflection of Ingold himself (2013) for whom participant observation is not a simple technique of collecting data on an object of study, but is to be considered in analogy to the relationship between apprentice and master. Indeed, what emerges is how the anthropologist and, in this case, the architect learn from the situations in which they find themselves involved. Participant observation thus becomes a vital process, a dynamic learning procedure starting from the contexts in which one lives and operates. Through a practical engagement with the world aimed at change, the goal of this active position is to reflect both on the possible spaces for action and on the critical conditions of contemporaneity. This stems from the current need to overcome:

> the current aridity of real spatial experiences – those involving the body and the real environment – together with the massification of building's production, [which] has reduced the architects' capacities of spatial thinking, leaving the floor to other disciplines to take the field (Briata and Postiglione, 2023, p. 45).

Moreover, it emerges from Ingold's position that theory and practice are not different stages, as the act of thinking takes place in direct involvement with the practices located in each ecological context made up of materials, flows and forces. From the interaction with

materials, tools, environment and social actors, the construction and the design of a building are to be regarded as practices that provide creative solutions through concrete techniques.

## 3. Local context and preliminary survey

The primary school project in the Bedouin camp of Wadi Abu Hindi was promoted by the Italian NGO *Vento di Terra* and the local *Jerusalem Beduin Cooperative Committee,* whose objectives were to involve the local community in decision-making processes to make the new buildings architectural elements in which the inhabitants can identify. Underlying the project, the most important values to be consider were the awareness about children's fundamental rights related to education and health, and the necessity for a safe, clean and energy-efficient building. In addition, the existing school building was located near Al Dis Abu, the largest landfill in the area, which made the hygienic conditions of the community very critical and directly affecting the health of the inhabitants and of the livestock [2].

The precarious conditions of the Al-Jahalin population emerges also from their own history; indeed, before settling in the Wadi Abu Hindi camp, it was expulsed from the Negev desert area by the Israeli army between 1948 and 1950. After a period of traveling between Bethlehem and Hebron, they settled in the area from Jerusalem to Jericho. Thereafter, due to Israel's occupation of the West Bank in 1967, the access to their pastures was increasingly restricted militarily (Bimkom, 2013). Indeed, this entire area was declared a closed military zone in a regulation issued by the Israel government at the beginning of the 1980s and renewed in 2007. After the *Oslo II Accord*, an agreement between Israel and Palestine officially signed in 1995, the territories in which the Al-Jahalin live were declared Area C, entailing the infrastructure construction and supervision done by Israel over the Palestinians inhabitants. Israel strictly limited settlement, construction and development in Area C, and ignored the demand of the population. The political strategy forced residents in rudimentary living conditions: "They are denied any legal avenue to build homes or develop their communities, so they face the constant fear that their homes might be demolished, and that they be expelled and lose their livelihood" (B'Tselem, 2013, p. 5). Up to the present, because of the militarization of the space, the possibilities of movement, grazing and dwelling remain challenging. An example of this could be seen in the demolition's orders issued in 1997 for buildings in the community; as recalled by testimonies, during this year the entire location; site was demolished, water tanks were confiscated and flocks were impounded, leaving the residents without dwellings and water for two weeks. As a result of these continuous forced displacements, the Al-Jahalin, pushed into the vicinity of the Jerusalem-Jericho Road, settled in the current Wadi Abu Hindi camp, in the hills occupied by the Israeli settlements of Ma'ale Adumim and Qedar.

The settlement of Wadi Abu Hindi, being not legally recognized by the Israeli authorities, not only has been severe limitations on access to services, but has not even been allowed to build infrastructure, housing, or public institutions. The settlement is still completely devoid of essential services, as the Israeli authorities exercising full control do not provide electricity or running water. Access to water itself is sometimes prohibitively expensive due to the excessive costs demanded to the Palestinian villages. In addition, the regulations imposed by the Israeli military authorities do not allow the construction of permanent buildings, making the use of conventional materials impossible. These critical issues can well be observed in the various attempts at school construction for the children of the community. The first attempt dates back to Abu Yousef, the *mukhtar* (the elected leader) of the community; he decided to construct this tin building, which was soon demolished by the Israeli authorities. Subsequently, after a second reconstruction, it was demolished again and, in 1997, when it was rebuilt, a petition was submitted to the Israeli Supreme Court to protect the school from future demolitions; it was finally accepted.

Starting from these premises, and after the collection of €45.000 donated by *MCA Mario Cucinella Architects*, *CEI* (Conferenza Episcopale Italiana), UNICEF and UN OCHA (United Nations Office for the Cooperation of Humanitarian Affairs), the Italian cooperative of architects *ARCò* was selected for the consulting and project development. Due to the fragile local conditions, and the shared goal of the NGO *Vento di Terra* and the local community, the dialogue with *ARCò* was centered on the principles of equal dialogue between all the parts involved, especially to meet the local needs. For these reasons, the architects decided to observe the local context working on site to have a holistic knowledge of the places and the community. Thanks to direct confrontation with the local context that "the *architects' filter* is in action, when all his/her (tacit and explicit) knowledge is engaged and immersed with people, places, and practices. Here bodily experience is not an option but the fundamental requirement to produce your own *knowing*" (Briata and Postiglione, 2023, p. 36). Through this production of knowledge with a processual component, architecture and its manifestations become bearers of both stories, people and buildings, and living testimonies of environments that, in their real physicality, can be experienced, explored and understood personally.

Through the initial participation in the life of the settlement, the architects started an intercultural dialogue which consisted in listening to the territory and the local actors. Indeed, since this germinal phase, attention has been paid to all the social and material aspects, reconstructing the interweaving of the different components that characterize the local fabric. From an analytical perspective, the process of designing and executing the works is "distinguished by a fascination with materials and structures, with surfaces and atmospheres, and with the fashioning of a multisensory environment that can become a place of habitation for both human and non-human beings" (Ingold, 2022, p. XIV). This is because the construction of every building raise question about materials and the environment to the inhabitants, who need to be heard and answered by architects.

Going back to the climatic conditions, we have to take in considerations also the arid-dry climate that characterized the desert area: long hot and dry summers with average temperatures around 32° degree, and short and cool winters with temperatures around 15° degree. The existing building of the school was made of sheet metal, and this caused high internal temperature during summer; this weather required a reflection on the solutions that could be adopted to ensure climate efficiency. As a result, the research focused on the analysis of the materials, natural or reusable, available in the territory and the availability of suppliers present in the surrounding areas. This process provided a detailed picture of the possibilities and constraints imposed by the climate and the budget available for construction. A prime example was the use of available soil in the territory, which became an innovative solution for the efficiency of facilities.

At the same time, this encounter with the local context allowed a better understanding of local daily life and the availability of manpower to carry out the work. Indeed, the social structure among the Al-Jahalin [3], during the project period between 2009 and 2010, was strongly hierarchical and based on patrilineal succession. The community, structured on extended families (*hamula*), presented itself as governed by an elected leader, the *mukhtar*. These aspects, as we will see, were central in the executive phase, in fact work had to maintain balanced relationships within the community, to avoid frictions among the society.

## 4. Design process

### *4.1 Vernacular architecture and appropriate technologies*

The preliminary collection of data in the fieldwork was followed by the design phase, which took place in Italy and was completely redesigned to respond to the needs of residents; indeed, as observed by Latour and Yaneva (2008), the space drawn on paper is a world apart from the one in which real buildings are built and inhabited. For these reasons, it is essential to

understand the complex social relationships between individuals and *milieu*, as well as to identify the ways in which culture is incorporated and reproduced in practice within different social networks. In doing so, the designing phase wasn't limited to the analysis of the context as a complex and dynamic reality, but it also considered people's experience.

Thus, the design phase was conceived as a continuous and collaborative process in which people and materials are involved in a complex network of ecological relationships. Starting with this awareness, the distinction between pedigreed and non-pedigreed architecture has given way to a design process that draws its generative potential from the social, economic and environmental relationships in which all participants are involved. These aspects are fundamental since they emphasize the need to break with constructive practices imposed that do not meet the local needs. Certainly, the input of local knowledge has been supplemented by vernacular architecture, which is able to rethink and compare construction solutions from similar contexts. As Pardo (2023) noted:

> The main attributes that characterize vernacular architecture are: (1) the use of local materials; (2) a planimetric design adapted to the climatic and topographical conditions; (3) the use of construction techniques and aesthetic resources, transmitted and readapted over time; and (4) the active participation of users and local craftsmen in its design and construction (2023, p. 2).

These architectural typologies built by non-architects are still present today in response to uncertain and precarious socioeconomic conditions in the urban (Simone, 2018) and non-urban (Watson, 2019) landscapes of the Global South. In addition, the materials produced and processed locally according to centuries-old traditions are able to respond to specific territorial conditions and to suggest construction techniques, as the use of raw earth to guarantee appropriate levels of thermal comfort. Indeed, this natural material is known for its high thermal inertia (Oliver, 2006), which allows it to delay overheating during hot days and release heat at night, when the temperature drops.

To further explore this convergence between native and non-native architects, we could mention Francis Kéré's works in his Burkinabe hometown Gando, or the METI School in Bangladesh designed in 2007 by the Germans architects Anna Heringer and Eike Roswag. Both these cases share with the study presented here, the common commitment to go beyond the walls of social disparities, improving the quality of the living conditions, optimizing the available resources. In brief, these aspects are linked directly to what Ismail Serageldin (1997) called "architecture of the empowerment", granting to the disadvantaged the same involvement in the process as the rich corporate clients. In the case of the primary school in Wadi Abu Hindi, the level of technology required for building and maintaining the facility is perfectly adapted to the users, by using familiar materials and techniques.

The building's design has incorporated vernacular forms from external contexts with similar climatic characteristics, with the aim of introducing innovative and alternative solutions in a specific context by intermingling different techniques with local materials. At the same time, the design focused on possible solutions to ensure better thermal inertia, natural ventilation and more daylight in the interiors, while maintaining the volume of the building. Indeed, the new roof, made of sandwich panels, raised and tilted with respect to the existing corrugated sheeting, has made it possible to create openings in the new ceiling, ensuring adequate diffused lighting and optimize natural ventilation. Furthermore, due to the constraint imposed by the Israeli authorities to maintain the existing volume and materials, the external walls were screened with river reed mats [4] to prevent the existing sheet metal walls from overheating (Plate 2), and a layer was added to the interior of the school in earth mixed with straw (Plate 3).

In addition, the design focused on the adoption of technical solutions that are accessible to the local community, energy-efficient and thermally comfortable. For the

**Plate 2.**
Details of the screening of the existing sheet metal walls with river reed mats

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**Plate 3.**
Construction site area for the preparation of the mixture of earth and straw

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perimeter walls, it was decided to reinterpret the Pisé or Rammed Earth technique [5] while for the internal walls that divide the classrooms, the Adobe technique. Both these techniques of installation were simple and rapid and could be easily learned by the workers.

In other words, the focus of this project has been on the application of those intermediate technologies described by Schumacher (1973) as people-centered technologies capable of developing and providing continuity solutions to the contexts in which they are applied. The ethical and aesthetic objective of caring for spaces, as in the case of the school, are achieved by reducing the environmental impact and by guaranteeing autonomy in the technical decisions. Within contexts characterized by few economic resources and high unemployment

rates – with 80–90% of the residents having no income (Bimkom, 2013) – construction sites represent places where it becomes possible to train new workers and produce forms of emancipation from a subaltern condition (Minuchin, 2016).

*4.2 Translation from theory to practice*

The design phase, starting from the drawing, focused on a 1:2 scale prototype, to identify potential critical points for subsequent on-site execution. First, the planning forecasts the possible factors determining the positive or negative outcome of the work. Second, the greatest efforts consist in simplifying the project and executing it, as well as in overcoming the barrier between what was theorized and designed and the practical gestures. As observed by Ingold (2013) the act of building is not the imposition of a preconceived form on a substance, but the ability of realizing the immaterial potential in a world in the making. For these reasons, theory and practice are not to be considered as two different and distinct parts, because the act of thinking takes place in direct involvement with materials, nature, flows and forces.

To understand this, the anthropological concept of *embodiment* is crucial. It shows how the relationship with culture goes through the body, implying unconscious and automatic processes of gestures, postures, behavioral patterns, forms of manipulation, habits, uses. As observed by Bourdieu (1972), each individual has his or her own *habitus*, i.e. he or she has a "mental environment" made up of internalized cognitive structures, perceptual and action patterns shared by all members of a group to which he or she belongs. The *habitus*, in essence, is inscribed in the body and shapes the *modus operandi* of the subject. Knowledge is to be considered as essentially practical and being the result of an "automatic" process; it does not encompass its own principles and for this reason, a greater effort is required by the architect who is placed in a liminal zone, within which he must simultaneously translate the practical gesture into the theoretical element. Finally, the design phase is guided by the awareness that knowledge is generated in practice, through an attunement that is at the same time sensory, perceptual and emotional (Ingold, 2000).

The difficulties encountered in the description of each practical procedure consist in expressing what Polanyi (1958) has described as "tacit" knowledge, which escapes written prescriptions and is understood only through examples because it is based on knowledge that cannot be expressed through language. As Gatewood (1985) has observed, the cognitive organization of work actions is based on unreflective behavioral categories:

> By reflecting upon these actions, I am able to recognize the existence of psychological events and episodes that would otherwise go unnoticed. Further, I am capable of formulating linguistic expressions to designate these hitherto unconscious flows of thought and action. But both the recognition and the labelling are capabilities independent of the actions themselves (1985, p. 215).

Starting from Polanyi's pioneering analysis, Collins (2010) reflected on tacit knowledge, analyzing and classifying what makes it non-explicit. As observed by the author, if we have an Italian-language cookbook that explains how to properly make lasagnas, the book is just an object or a physical thing, not a meaningful thing. So, according to Collins, "the right way to describe the book" is as follows: An individual owns a book that affords the interpretation by some Italian-language speakers as a set of instructions for cooking lasagnas. This aspect leads us to the reflection made by architects during this phase on how to make something that could afford in a different and non-Western context.

Therefore, to cope with the difficulty of overcoming the barriers between different cultures and to simplify the executive phases, a manual [6] was compiled during the design phase. The volume, composed mainly by images, photos taken during the construction of the prototype and graphic summaries, is the result of the efforts to translate theory into practice, passing through a simplification capable of providing quick and effective constructive solutions to

the local context and not being limited exclusively to the specific intervention. In addition, the manual provided an alternative intermediary through which both language difficulties were overcome, and the procedures clarified. This is because, as observed by Briata and Postiglione (2023), architects' communication is especially graphic and, today, images are increasingly used as tools of knowledge and not just as a means of final representation. Indeed, the emphasis on the relationship between drawing, observation and architecture shows how architecture is not only a question of form or construction, but a way of questioning the world, a dialogic and communicative form. In the specific case of the manual, its graphic language speaks and communicates at a practical level that can overcome language barriers.

The reasons that lead to adopt a graphical language derive from the fact, as observed by Collins, that "looking at an artifact, then, is somewhat similar to looking at a picture of an artifact—it has to be interpreted before it represents anything. And looking at a picture is like looking at a diagram, which is in turn like reading a description in words" (2010, p. 40). In this case, even though a picture or a book have no meaning within themselves, the manual's functions are to afford the interpretation of a set of instructions for the execution of the work procedures.

## 5. Executive phase

The construction phase for the school's rehabilitation took place during the summer break. It required intense working days, made more challenging by extreme weather conditions and the coincidence of Ramadan. First, the local workforce was selected by the *mukhtar* and the local Beduin committee, sharing the decisions with the NGO *Vento di Terra* and involving, above all, those who had more need of working, as well as some family members of the *mukhtar* himself. The distribution of tasks was based on an initial division to assess individual attitudes and manual skills, subsequently making compromises with social hierarchies. Second, moving on the factual construction, it was necessary to provide to the facility internal isolation. The existing sheet metal of the perimeter walls was used to create the formwork to be filled with the straw and earth mixture. Wooden uprights were then anchored to the existing structure, onto which a mat of river reeds was placed. The decision to use this matting stemmed from the necessity to contain the mixture of earth and straw, that provided the inertia and insulation performance, and to allow the subsequent setting of the lime plaster. The initial solution to tie the mat to the uprights was to fasten it with nails or staples, but the thrust of the filling caused the mat to detach. The solution to this problem was identified by the analysis carried out during the execution, together with local workers. The initial fastening was replaced by the use of wire, which made the structure integral (Plate 4). The resolution that has been found represent an excellent illustration of the choral action within the construction space, in which architects and local workers dialogue and collaborate in solving tangible problems.

Therefore, to maintain the balance of the constructive dimension, the architects had to consider the social structure of the settlement. Indeed, the participation of the *mukhtar*'s sons in the work required not only a further distribution of the work, but also a greater attention to limit internal frictions. For example, one of the workers who directly participated in the evaluation and use of wire to tie the mat to the uprights did not receive any credit for his work from the other members of the society, because of his lower social status. Despite this, his strong manual skills guaranteed him the assignment of the most complicated tasks. The positioning adopted by the architects in this episode, as in other cases, was to not interfere directly with the local social organization, to prevent potential risks of internal conflicts. By using simple techniques, local materials and the best workers' skills, the architects provided, as in the case of the socially marginalized laborer, those

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**Plate 4.**
Finding solutions for the fixing of the mat to the uprights

practical tools useful both to play a central role in the project and to find employment opportunities in the future.

The sharing of the construction space is an excellent representation of what has been observed in the theoretical section. In fact, the technique, the materials and each individual active in the work phases have been involved within a plot of psychic and collective individuation. The spatial and temporal sharing of the construction site has created social bonds far beyond mere working relationships. The respect and participation of the architects themselves in the Islamic practice of Ramadan, if on the one hand has led to physical difficulties in the execution of the works, on the other hand, has guaranteed cohesion between architects and the local community. Indeed, this initial integration between the two groups was followed by an invitation to celebrate the wedding of a son of the *mukhtar* (Plate 5).

In addition, the daily sharing of a precarious context caused by the constant threat of intervention by the army, required the architects to operate undercover, creating a connection capable of overcoming social and cultural barriers. The status of the foreigner has been redesigned, leading to a local openness and acceptance that recalls in some respects the events described by Geertz (1972) in Bali. Indeed, the initial difficulties encountered by the American anthropologist in establishing relations with the natives were overcome when they participated to the local traditions of cockfighting, even if forbidden by the law, and then fled together with the natives following the police raid. The day after this event, Geertz discovered that the entire village had opened and accepted him into the community. Although the two contexts are different, there is a similarity directly linked to architects' capacity of adaptation to native practices and the risk-sharing, revealing the importance of active participation not limited to the construction context.

From a certain point of view, it can be argued that the working techniques and the presence of Western architects have leveraged the subordination of the Al-Jahalins, however this represents a superficial reading of the execution of the work. The architects, in this case, proposed solutions, that were carefully evaluated by the community, and not imposed on them. In addition, working actively instead of just directing the works, built strong bonds of

**Plate 5.**
Food distribution during the wedding banquet

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reciprocity. The practical action and the sharing of the same efforts of the local workers led to the reduction of the aura of authority of the architect. Moreover, the translation of theoretical knowledge into practical and concrete actions has made it possible to overcome the limits of graphical representation. To conclude, the execution phase consisted in the concretization of the design phase, namely the union of sustainable construction techniques, architectural skills and local knowledge to enhance the living conditions of the most marginal social classes, by promoting spatial justice.

## 6. Conclusions

In the present article, the role of the architect as a participating observer within critical contexts shows how the activity of design is not simply limited to find solutions but consists, especially, in the anticipation of all the critical aspects that may emerge in the practical execution of the works. Active participation, as well as the adoption of a holistic outlook, not only allows the search for targeted solutions – as in the case of soil use – but also ensure the best environmental decisions. Because of the precariousness of the housing of the Al-Jahalin and the environmental and health conditions, to ensure a successful outcome of projects, it is fundamental to study and work directly in the field of action. In addition, the collaboration between architects and local communities has also made it possible to build strong social ties. Indeed, three years after the completion of the renovation works of the school in Wadi Abu Hindi (Plates 6 and 7), the local community has requested a further intervention to rebuild three school buildings by adding a playground. Thus, the positive result of the first intervention has led to new collaborative forms to enhance the socio-cultural context.

The present case study has been elaborated by an author that worked directly in the field and one who observed and studied from outside the territory. As argued by Clifford (1986), the act of writing about cultures and in this case about architecture is the result of processes of selection made by the authors. The authors have attempted to limit the personal involvement; however, a political position could be overlooked in this article, due to the sharing, through participant observation, of the same conditions of locals. This aspect is also

**Source(s):** Figure reproduced with permission from ©Andrea and Magda

**Plate 6.**
Exterior view of the recovered classrooms

**Source(s):** Figure reproduced with permission from ©Andrea and Magda

**Plate 7.**
Interior view of one of the recovered classrooms

directly connected to the ideological positions that are part of our *habitus*. This case study is based on an "architecture of the empowerment", that attempts to grant to the poor the same respect and involvement in the process as the wealthy people. Indeed, despite the lack of economic resources, the project has shown how the materials and the level of technology required for building and maintaining the school can be adapted to the users and to the environment in which they reside. By way of conclusion, the role of the architect as participating observer could be worthwhile in both contexts, Western and non-Western. However, as reported by Ingold, we should be aware of the risks: "In many fields today including architectural design and urban planning, 'participation' is a mantra of good practice, yet it remains a panacea if it is not transformative for all parties" (2022, p. XVI). Some

open questions can emerge from these chapters: should the ethnographic method be part of the architects' learning process and should architecture be taught to anthropologists? Could an interdisciplinary approach be more effective to people who live in critical contexts? Which other methods and practices – apart from participant observation – could alleviate the condition of marginalized and unheard communities? Evidently, further analysis must be undertaken to understand how the relationship between architects and anthropologists can build interdisciplinary knowledge and how the participant observation could enlighten new meanings and designs, but questions unanswered can be thought-provoking and lead to new consciousness.

## Notes

1. The Bedouin camp is in Al Azarije, East Jerusalem, Area C. Being in Area C, as we will see, do not permit to the local community to build permanent settlement with a constant possibility of demolition by the Israel authorities.
2. The cattle represented the main source of livelihood for the semi-nomadic and pastoral society of the Al-Jahalin.
3. For a better understanding of Al-Jahalin's culture and social structure see Khalil (2009).
4. The river reed mats were bought in the city of Nablum situated at 100 km from Wadi Abu Hindi.
5. Pisé or Rammed Earth is a construction technique in which subsoil is compressed and mixed within a vertical formwork to form the walls of a building. Sometimes, as in the case presented here, the clay mass can be lightened by adding chopped straw and dried grass. The subsoil is added layer by layer, rather than all at once. Compacting each lift ensures even compression across the entire wall section (Gangarao *et al.*, 2020).
6. The manual is available at: http://www.ar-co.org/it/progetti/realizzati/deserto/index.php

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## About the authors

Alessio Dionigi Battistella holds a PhD in architecture engineering and is an assistant professor of building technology at Politecnico di Milano (DAStU). He is also the President of ARCò – architecture and cooperation (ar-co.org), overseeing sustainable design and applied research activities in the humanitarian field. Additionally, he serves as a member of the Scientific Committee for the Postgraduate Masters Program "Circular Architecture – Shapes and Methodologies of Circular Architecture" at Scuola di Architettura e Design, Università di Camerino. Furthermore, he is a member of the Scientific Committee for the Postgraduate Masters Program "Design for Development: Architecture, Urban Planning and Heritage in the Global South" at Politecnico di Milano. In recognition of his expertise, he was awarded the Italian Fellowship in Architecture and Urban Design (2021) by the American Academy in Rome.

Riccardo Montanari is a PhD student in cultural and social anthropology at the University Milano-Bicocca, Italy. His research is oriented around the sustainable architecture, the interdisciplinary dialogue between architecture and cultural anthropology and the construction work. He conducted auto-ethnographic research on the building context and currently deals with the Italian construction sector and the housing sustainability in the post-earthquake context in the Marche region. Riccardo Montanari is the corresponding author and can be contacted at: r.montanari2@campus.unimib.it