

Small Scale Outdoor Architecture with Large Scale Impact in Palestine

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Abstract

Life quality, social interactions and the liveability level of cities can be strongly improved by using outdoor small scale architecture as a tool for urban transformation. Structures like these have great potentialities in those territories where geographical and political limits determine a stagnant use of urban area. Palestine represents a perfect example of a territory where small scale outdoor architecture can enhance social interaction and cohesion, taking advantage of small and unused outdoor spaces. With very few facilities to take care of individuals with disabilities, as well as very few outlets for leisure where families can find support or simply relate to each other, the southern West Bank society barely absorbs the burden originated from a great number of people with disabilities that often are isolated within domestic walls and left at the expense (morally and financially) of their families. Based on extensive research and fieldwork, this paper shows how contemporary microarchitecture can integrate with traditional Palestinian Society taking into consideration the concerns of people with disabilities, of their families and of women that look after them. The aim of the project was to contribute to the advancement of Persons with Disability rights, through a participatory planning method that could enhance their roles in the rural communities.

The paper focuses and analyses 3 outdoor small scale structures realized with local materials and technologies in the Hebron Governorate under the project of an Italian architecture team named Arcò. The results are put into comparison with a broader literature on outdoor architecture including other geographical contexts with particular attention to the relationship between outdoor comfort and how spaces are used. Namely environmental comfort simulations are used to highlight the benefits of investing in these types of structures. By focusing on the 3 case studies with the specificity and the limits of the Palestinian context the paper conveys a broader message on how to take advantage of the potentialities that some urban spaces have also in western and industrialized context. The background purpose goes beyond Hebron case studies and aims at replacing civil society at the centre of the city, employing architecture to improve citizenry glue and social cohesion. Microarchitecture projects are indeed the new frontier to transform the territory, however fragmented it may be, into catalysts for social, economic and political change.

Keywords: Outdoor architecture; Inclusive design; Comfort; Palestine; Small scale architecture

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1. Introduction

Focusing on three case studies in the Hebron Governorate in Palestine, this paper will show how small scale outdoor architecture can be used as a tool for urban transformation, improving social interaction in three communities and enhancing the opportunities of Persons with Disability (hereinafter PwD's). The quality of outdoor space is crucial for social relations, directly influencing the life of inhabitants, activating social opportunities, or as integration mechanisms. As these projects aim to enhance social interaction and cohesion, the participative process that brought to the realization of the intervention as well as outdoor comfort zones that the architecture creates will be considered as critical elements. Case studies demonstrate how small scale architecture can critically contribute to the transformation of urban areas, sometimes encouraging an increase of a civic sense or of a community affinity. As Giancarlo Mazzanti says during his interviews, Architecture should have a social inclusion role in order to improve life-style factors and competitiveness in deteriorated environments, and promote a social wellbeing. With his architecture in Bogotá (Figure 1, 2), Mazzanti is not only interested in changing the life style of the inhabitants but also their way of thinking, inducing actions, encouraging people to behave and generating new relationships.

2. Disability in Palestine

According to the 2011 disability survey [1], about 7 % of the population in the Occupied Palestinian Territories (OPT) suffers from some kind of disability (wide definition) and 2,9% from severe disability (narrow definition). Gaza and West Bank have similar percentages. The most common disabilities are those ones that affect the mobility capabilities, but other types are also widespread (visual, additive, mnemonic and a variety of disabilities that affect the ability to communicate and learn). The Hebron Governorate is



Figures 1, 2. Forest of Hope, photo credit Jorge Gamboa, courtesy of El Equipo de Mazzanti

one of the territories with the highest percentage of PwD's, just after the Jenin Governorate. Disabilities in Palestine have various causes. Disabilities that affect the mobility capabilities for example are caused by the following reasons: Congenital 11,2%, Birth related 8,3%, Illness 42.8%, Aging 12.8%, work injury 3.2%, Traffic accidents 2,7%, Other accidents 8,8 %, conflict related 4,0%, others 6,2%. Although the percentage of People with Disability in the OPT is similar to the average of the rest of the world (according to the World Report on Disabilities about 15% of the world population lives with some kind of disability and 2,9 % lives with severe disabilities) [2], more than one third of PwD's in Palestine does not go to school, one third of them abandons their studies because of physical and, or social barriers [3]. Half of them are illiterate and many, especially women, are subjected to discriminating treatment and barely can find an employment [4]. The Disability Law No 4, 1999 is a milestone in ensuring equal opportunities in the OPT but its applicability is obstructed by numerous factors. The highly fragmented territory, the presence of architectural barriers, the lack of awareness and inadequate economical resources can be considered as some of the most evident causes that prevent the condition enhancement of PwD's. But also the insufficient number and the geographical position of structures with qualified personnel, as well as insufficient transportation services are pejorative factors.

The Palestinian Society is often incapable of fulfilling the requirements of the disability law and largely dependent on foreign aid. Most of the services that involve PwD's are carried out by international organizations, civil society organizations and NGO's.

3. Context criticality

The analyses carried out in three selected communities by the local organization Health Work Committees

(HWC), identified the following barriers and limitations contributing to the minimal access of PwD's to spaces of social participation:

- Limited availability of comprehensive community-based support services, compromises the living conditions of PwD's and places a considerable pressure on their families, who are unable to respond effectively to their needs without the necessary orientation and assistance. Insufficient or inadequate rehabilitation and support services, in turn, have a deeply negative impact on the autonomy of PwD's and result in isolation, exclusion and passivity.
- Lack of access to education, and especially the virtual inexistence of professional and vocational training, results in the absence of employment opportunities of PwD's. Without these opportunities, not only the autonomy of PwD's but also their role in their families and communities is severely limited.
- Physical and environmental barriers in public spaces and buildings further exclude PwD's from participating in the life of their communities and contribute to their confinement. Accessibility is not guaranteed in existing structures and it is yet to be effectively incorporated as a mandatory principle in new building plans.
- Widespread stereotypes that still inform the image society imposes on PwD's, who are infantilised and pictured as passive individuals in need of help rather than as valuable members of their communities who can contribute to their development. This discriminatory image constitutes a powerful symbolic barrier, which not only minimizes the chances of meaningful inclusion, but also has a profound impact on the way PwD's see themselves.

The development of the project provides PwD's with the opportunity of directly contributing to their communities' transformation. Indeed, improving accessibility not only impacts their ability to use public spaces and buildings and challenges exclusion, but also improves the mobility of other vulnerable groups, such as older people and women who also suffer the consequences of non-inclusive urban planning. The implementation of the project is led by an architect, working in close cooperation with the CBR team – Community-Based Rehabilitation workers (hereinafter, CBR). THE CBR workers are employed by the municipalities but work within the framework of the project) and the involved PwD's in order to ensure the quality and adequacy of the work. Reinforcing this scheme, the CBR team's physiotherapist, with an extended background on professional and vocational training, is included in the implementing team for this component.

In order to maximize the impact of this result, students of the Polytechnic University of Hebron and engineers from the municipalities are also involved in the Accessibility Assessment and Improvement scheme.

The project aims to improve knowledge on Accessibility Assessment and increase the number of persons with and without disabilities participating in the Accessibility committees and Accessibility works by the end of the project.

4. Three case studies

The selected case studies deal with different and specific design issues, with the common thread of enhancing conditions for People with disabilities and outdoor comfort. They are all part of a bigger project that includes other interventions that here are not mentioned, realized between 2015 and 2016. The project has been conceived as a collaboration between four entities: the international NGO MPDL (Movement for Peace), the Italian architecture office Arcò (Architecture and Cooperation), the Palestinian

Organization Health Work Committees and the Hebron Polytechnic University. The aim of the project was to contribute to the advancement of the rights of Persons with Disability, as well as to their enhanced participation in three rural communities in the Hebron Governorate (Beit Ummar, Saer, and Idhna), as a means towards the emergence of a more equitable, accessible and inclusive civil society. Indeed, the action seeks to facilitate and encourage the active involvement of this otherwise blatantly excluded group in the design and implementation of strategies aimed at improving their access to their rights.

Moreover, while PwD's are the main target of this project, its impact has been maximized through the involvement of three additional groups:

- Twenty students from the Polytechnic University of Hebron, who are trained in Accessibility and assist the project's architect in the design and planning of the interventions.
- The municipalities' engineers, who assist in supervising the process.
- Local workers, who are selected to support the implementation of the works.

By involving these groups, the project aims at increasing general knowledge on Accessibility criteria and commitment to take them into consideration. Additionally, working alongside PwD's in these processes, these participants experienced inclusion and stereotypical images will be challenged. The project realizes a ground-breaking experience in Beit Ummar, Saer and Idhna, through which PwD's have the opportunity to demonstrate their ability and willingness to overcome stereotypes and become active players in society while contributing to their communities' development. Finally, the project includes a strong self-advocacy component, which multiplies its impact through a participatory strategy of communication and visibility aimed at raising awareness on Disability rights and inclusion.



Figure 3, 4. PwD's playground in Idhna



Figure 5. Entrance to the Clinic in Saer, courtesy of ARCò

5. Activities and method

The on-site part of the project developed during one year, starting in Beit Ummar in September 2015 and continuing with Saer and finally Idhna. The activities were alternately delayed or rushed by the difficult context of conflict and unstable security conditions.

What follows is the list of the activities undertaken in chronological order, with a special focus on the details of the participatory planning.

"Constitution of Accessibility committees to participate in the Assessment process": PwD's interested in participating in the Assessment component were identified and selected according to two main criteria: the balanced participation of women with one or more disabilities and the adequate representation of different forms of disability. The committees were composed of five PwD's in each of the communities, Arcò's architect (Arch. Elisa Ferrato and arch. Timothy D. Brownlee worked as Arcò's project managers), the CBR workers, the physiotherapist and technical representative of the local authorities.

"Capacity-building sessions on Accessibility Assessment and Improvement for Accessibility committees": In order to provide the Committees' members with an adequate basis of knowledge, four training sessions of four hours were implemented by Arcò's architect in each community, presenting basic concepts on Accessibility in a clear and practical way and using examples of real barriers in the communities. Of special importance was the identification of various types of barriers that impede adequate autonomy of persons with diverse disabilities, as well as the acknowledgement of other elements of urban planning that affect the use of the space by other vulnerable groups such as older people and women.

"Lectures at the Polytechnic University of Hebron on Accessibility and selection of twenty students to accompany the Accessibility Assessment and Improvement Plans (hereinafter AAIP)": in order to include the students of the Polytechnic University of Hebron in both the AAIP components, Arcò's architect delivered two lectures for the Architecture and Engineering students. These lectures were focused on raising awareness amongst future professionals on the importance of considering Accessibility criteria within their work.

"Suggestion of three case studies in each community": the Accessibility Committees and the Municipalities presented to the students three case studies (three buildings or three urban areas) that are of significant importance for the community of PwD's. The students, divided up into groups, chose two of these case studies for further development.

"Detailed Accessibility Assessment of public spaces and buildings (field visits and urban planning analysis)": the students assessed accessibility and identified obstacles in public spaces and buildings through field visits and urban planning analysis. The students met the local authorities, who were helpful and transferred maps, lists of public buildings and their floor plans. Throughout this process, led by Arcò's architect, they were also in direct contact with PwD's in order to include first-hand information on the use of space by PwD's.

"Focus groups with women and older people on their Accessibility needs and priorities": at least ten women and ten older people in each community contribute to the Accessibility Assessment through focus groups led by the architect from Arcò to ensure that the barriers that determine their use of the public space were also taken into account in the Assessment and Improvement scheme. The focus groups were heterogeneous in terms of different conditions, ages, etc.

The focus groups were led by an architect from Arcò, who was the facilitator and the note taker, with the support of an interpreter from HWC and an external minute taker. The participants were asked to introduce themselves in order to stimulate the interaction. Then the photo stimulation technique was applied, as images are typically considered the best vectors to convey information about architecture, activities, social interactions happening in the moment of the shooting in an urban environment [5]. Images are both objects to be collected and instruments [6]. Therefore, in this project the architect both collects and analyzes images. As in Harper [7] images are used to explore the meaning that a person or a society gives to specific locations, and they also contribute to the exploration of how specific places work, with references to spatial practices, implicit or explicit, social relationships, power relations etc. The participants were asked to assign a score to each place pictured in the images, according to its accessibility level. Then the facilitator asked the group to comment on the scores assigned and the motivation of that evaluation. In this way all the places selected as case studies and a few more selected by the architect during her survey of the town are commented.

"Transmission of focus groups results to the students": the information emerging from the focus groups, about issues encountered by PwD's in the communities and obstacles they face in their built-up environment, was transmitted to the students in order to improve their projects.

"Development of the AAIP and presentation to local authorities": as an outcome of the Accessibility Assessment process, an AAIP was developed under the supervision and final edition of Arcò's architect in each community. The AAIP were handed to the municipalities to serve as a guide for inclusive urban planning, to

identify the barriers that prevent PwD's access to public spaces and buildings.

"Selection of Accessibility Improvement interventions considering priorities of PwD's, women and older people": after the AAI Plans have been completed, 2 architectural interventions in each community for the removal of key barriers were selected by the committees in each community, taking the feedback from focus groups into account.

"Selection of PwD's to participate in the Accessibility improvement works": the completion of the design and the planning of the building works done by Arcò allowed its architect, in coordination with the physiotherapist, to identify the tasks suitable for the inclusion of PwD's. PwD's interested in participating were evaluated and selected according to their specific skills by the architect and the physiotherapist, ensuring as much as possible the representation of diverse forms of disability. Fifteen PwDs in each community were then hired to participate in the building works, in accordance with the construction company needs.

6. Design and construction works

The case studies have in common building materials and construction technologies that belong to local know how. Since the project had to be completed in a short amount of time and with a limited budget Arcò had previously analysed the possibilities that the territories offered in order to find and classify easily reachable materials that could be delivered quickly. The recurring materials were: tubular profiles, walls made of stones and wire mesh, bamboo mats, recycled barrels, polycarbonate panels and wood. The main design and construction phases were:

- Design phase with the PUH students: Arcò worked on the final design and working drawings putting together the data provided by the Municipalities and the raw ideas developed by the students;
- Tender and contract of building company: Workers and contractors from the communities that were willing to work in this pilot experience and open to fully include PwD's were prioritized in the tender procedures;
- Execution of the works: Arcò's Project Manager was responsible for the supervision of the accessibility works with the direct involvement of the municipalities' engineers who have also participated in the identification. The architect and the physiotherapist worked closely together, aiming at ensuring that the fifteen selected PwD's made the most of this capacity-building opportunity (Figure 6, 7, 8).

All of the design phases have been carried out with a specific attention towards PwD's needs, applying the basis that the Convention on the rights of PwD's [8] expresses at an international level. Articles 19 (living independently and being included in the community), 20 (work and employment), 27, 29, 30 (participation in political, cultural and recreational life of the community) were particularly applied during the different phases of the project. Thus, the idea of Universal Designing was not only intended as abiding by the architectural requirements of accessibility but especially as a participating event with the communities.

The architectural aesthetic result was also part of this universal designing phase, in which aesthetic quality and sensory experience are two integrating elements, as mentioned by Ahmet [9]. Arcò also gave great attention to the types of materials, of surfaces and colours in their projects, in order to help especially those that have physical, visual and mental disabilities. The PwD's playground in Idhna (Figure 3, 4) is specifically designed for children with disabilities. The main idea at the basis of this project can be summarized with Woollen's words [10]: "...the term inclusive, when applied to an outdoor play space, can be seen to have three dimensions to it. One is that disabled children should be able to play in a space; the second is that disabled children and non-disabled children can play together in the space; and the third is that families can also be in the space". In light of this project the playground has actually turned out to be a gathering point for the community since its construction phase and especially afterwards.

The covering system made of tubular elements and polycarbonate and bamboo panels is a recurring element in all of the projects, adapting each time in various ways to the different conditions, providing protection from the elements and shade during the hot season.

The entrance to the Saer's Clinic (Figure 5) is a covered outdoor waiting area that works in a direct relationship with the indoor functional layout. Previously the indoor hallway served as a crowded waiting room decreasing the usable space in it, whereas the outdoor space in front of the entrance was unused and could be easily transformed. In addition, the clinic didn't have a toilet for PwD's: Arcò's project refurbished an unused small indoor room into a new PwD's bathroom.

The entrance to the Municipality in Beit Ummar (Figure 9, 10, 11) is a covered path that eliminates the architectural barriers, and particularly a 1,80 m height difference between the street level and the entrance to the building. Even in this case, the outdoor space is now used as a covered outdoor waiting area.

The projects selected for this paper are placed in an outdoor environment that matched existing buildings, acting as "buffer zones" between the inside and the



Figure 6, 7, 8. Use of local materials, such as tubulars and bamboo mats, recycled barrels and gabion walls, courtesy of ARCò



Figure 9, 10, 11. Entrance to the Municipality in Beit Ummar, courtesy of ARCò

outside, thus allowing for expansion of the available indoor space on the outside, partially unloading the indoor environment. The case studies have similar shading devices but very different solar exposure, according to the relationship between the site and the pre-existing building. The following environmental simulations analyse the outdoor UTCI (universal thermal climate index) index before and after the interventions for each one of the three case studies. The UTCI combines air temperature, thermal radiation MRT, relative humidity and wind speed, through a resultant expressed in centigrade. It indicates how users perceive the outdoor conditions and it can be a useful instrument to study outdoor comfort. All of the three case studies feature at least a 2°C UTCI temperature reduction during the worst case scenario, from the 12th to 18th of August.

This was an unexpected result for the north exposed case study, the PwD's playground (Figure 12) which was already partially effected by the shadings of the pre-existing building. When the device is "south-placed" like with the Beit Ummar Municipality case study, it acts in an even more effective way with a 3.5°C UTCI temperature reduction (Figure 15).

The shading systems used in the three case studies is a passive device capable of working on the outdoor space actively, enhancing considerably its liveability level. This is particularly true when outdoor conditions are unfavourable which means, for the Palestinian climatic zone, during the summer. As shown with Figure 13, the conditions remain unvaried during the spring and the autumn (Figure 12, 13, 14, 15).

7. Conclusions

Describing the designing method used by Arcò in the Hebron case studies, this paper aims at finding a way to "re-place" civil society at the centre of the community as a general planning method that could be used elsewhere. The purpose of this paper is to think about new designing approaches based on effective and participative processes as indispensable parts of the project, especially when the expected outcome is the improvement of citizenry glue and social cohesion. This paper sheds light on the new frontiers that small scale architecture interventions offer in contexts that are politically and socially fragile, and geographically

fragmented like the West Bank. Small scale interventions represent a tool that can improve the living conditions of people acting as a support for new integration and inclusion mechanisms, or as part of a bigger urban acupuncture strategy, capable of generating a set of welcoming locations [11].

In the case studies that are here taken into account, small scale interventions allow vulnerable people like individuals with disabilities to access public spaces that were previously limited to them. This implies that these interventions not only enhance the living conditions and opportunities of these people but they are beneficial to the whole society, as they relieve families of the burden of being left alone when taking care of individuals with

disabilities. Therefore, small scale interventions like the ones presented in this paper represent a precious and effective tool that can have positive impacts even in contexts like the West Bank where change is strongly desired but extremely difficult to implement.

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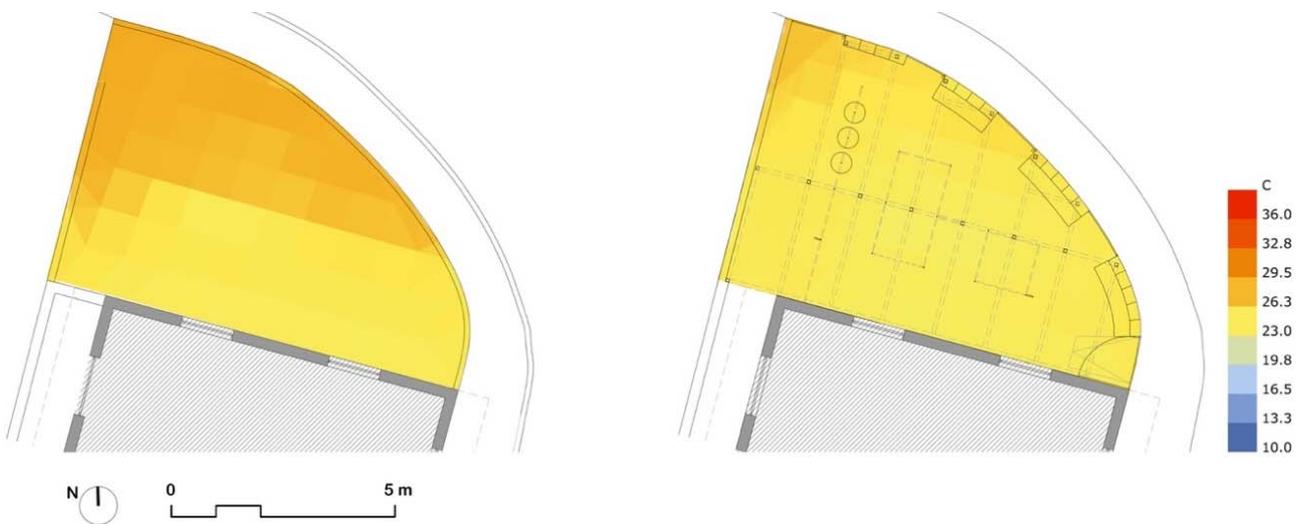


Figure 12. PwD playground in Idhna during the extremely hot week (12th – 18th of August), average UTCI before = 25°C and after = 23°C

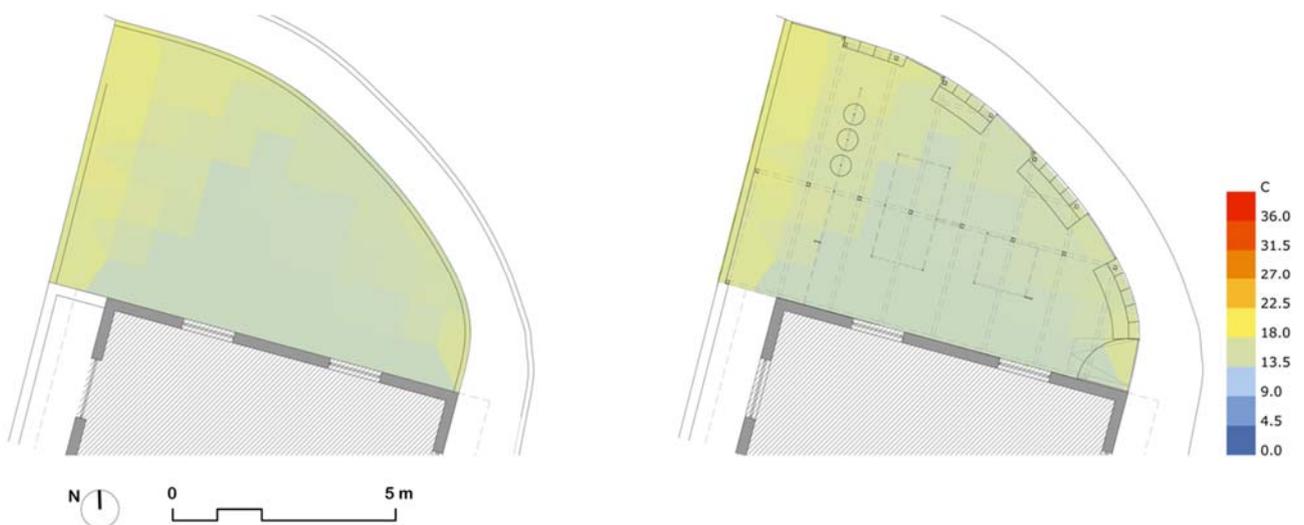


Figure 13. PwD playground in Idhna during the typical week (19th – 25th of November), average UTCI before = 13°C and after = 13°C

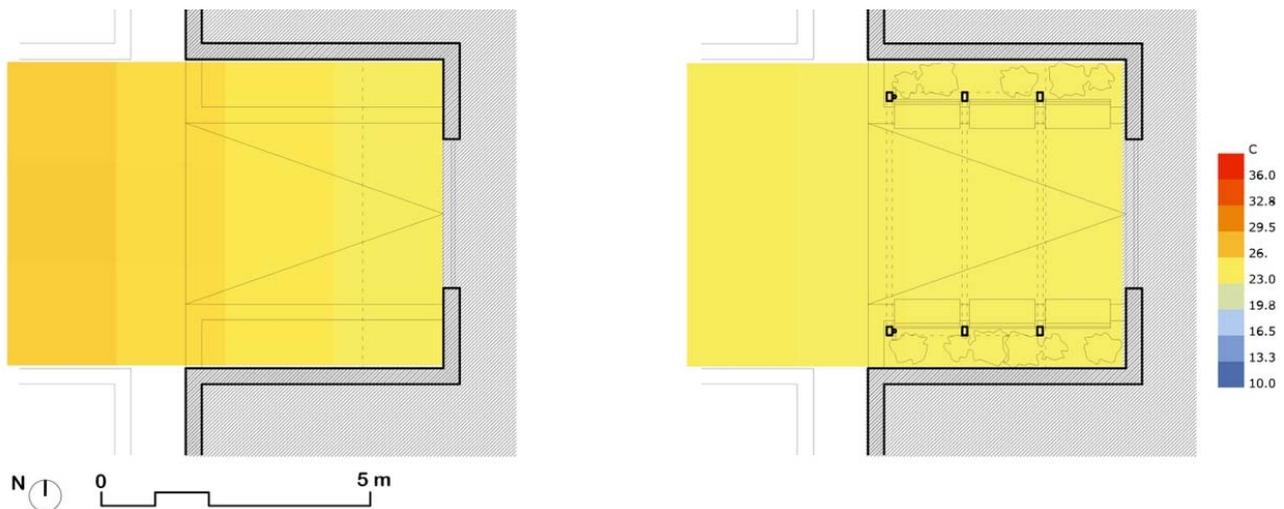


Figure 14. Entrance to the Clinic in Saer during the extremely hot week (12th – 18th of August), average UTCI before = 24°C and after = 22°C

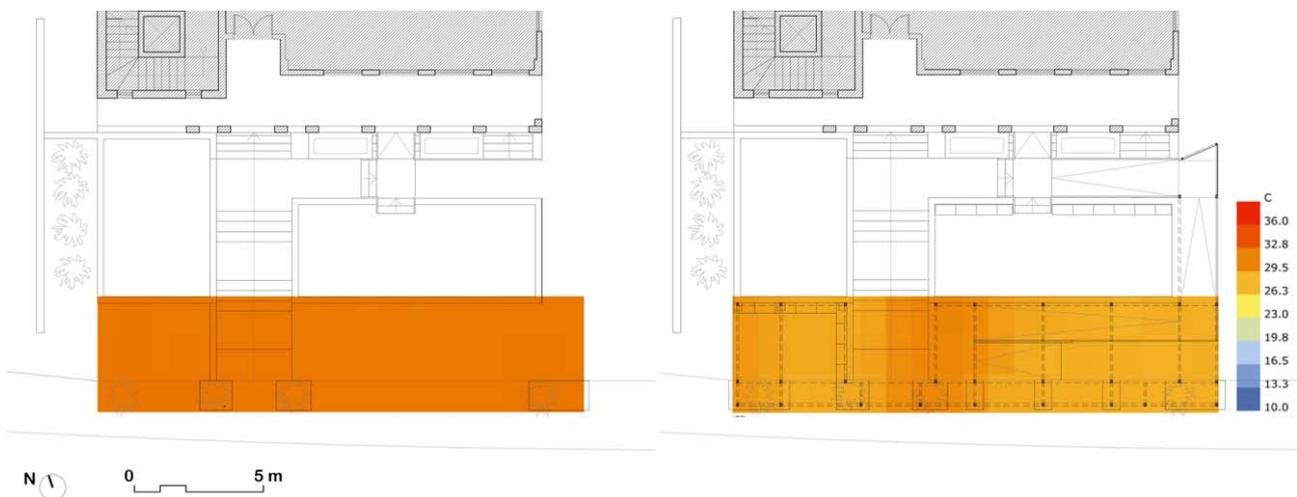


Figure 15. Entrance to the Municipality in Beit Ummar during the extremely hot week (12th – 18th of August) average UTCI before = 30.4°C and after = 27.2°C

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