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The international context of Community health centers

Abstract

From the second half of the twentieth century to today, the architectural design of healthcare facilities has undergone notable changes. New elements and value criteria have been added to the architectural component, especially in recent decades, which do not only include form and function. These “new values”, reevaluating past experiences and adhering to a humanistic vision of reality, together with recent technological discoveries and new methods of treatment and care, influence the design choices of contemporary health centers. This article first analyzes some examples of healthcare architecture, in many respects similar to those of the Health and Community House in Italy, from the last fifteen years in the international context. In selecting the cases we tried to broaden our gaze to a global scale and in particular to developing countries, underlining the characteristics and peculiar qualities of these contemporary architectures designed to provide healthcare services close to the population.

Keywords

Health care centers — Healthcare typologies — Architecture for healthcare

In recent times, the theme of architectural spaces for health has received particular attention. The close connection between the design of a decentralized healthcare facility and the social fabric in which it is situated prompts multiple reflections. Just as the dynamic influence of evolving elements triggers the reorganization of design logic and generates new approaches within it, it leads to identifying mechanisms that induce change and promote more dynamic and problem-solving interpretations, capable of anticipating needs and evolutionary directions (Henry, Winkelman. 1972). The construction of basic care healthcare facilities has entered a new phase characterized by the rapid increase in urbanization and the improvement of global medical technology (Li & Yang 2021). The development of the medical model and the expansion of medical technology have led to a greater need for development also in terms of planning and architectural design. The aging population and the increasing quantity and variety of diseases are generating new care needs that must correspond to adequate architectural environments (Li & Yang 2021). With no small difficulty, architectural design, traditionally linked to the hospital typology alone, manages to meet the needs of a health and social development that, by its nature, is influenced by the variables of different local contexts.

In this article, we will attempt to provide an initial overview of the architectural design of such spaces worldwide in recent years, through an analytical perspective capable of highlighting the positive aspects regarding the community significance of healthcare architecture, which goes beyond mere curative medical service. One thing to reflect on is how well the building fulfills its role as a public service in the surrounding

**Fig. 1-2**

MASS Design Group, Family Health Center on Virginia, USA, 2021

Courtesy of MASS Design Group. Image © Iwan Baan

environment. This problem can be examined from three perspectives: first, how architecture morphologically relates to that of the surrounding structures and in general to the characteristics of the place; second, how aware one is of the potentialities of the environment to which the project refers; and third, how suitable and flexible the project is to the requirements and constraints of the condition in which it operates.

The first selected case concerns the Family Health Center, Virginia, USA (MASS Design Group, 2021), a surely interesting example in the field of healthcare construction. The project references the typical morphological characteristics of typical single-family houses in American settlement culture while increasing their dimensions. For example, inside, the reception area shows the domestic comfort of a large double-height living room.

The reassuring external appearance reflects the archetype of the house with a sloping roof. Particular attention has been paid to the central reception area as a planimetric node between the two parts of the building. The gable roof of the Virginia Family Health Center is replicated on every part of it so as to be in continuity with the landscape of the East McKinney neighborhood, Texas, enhancing its typified village image. Despite the traditional conception, to allow for future expansion, the building's layout is still designed to develop on the west side of the site (Di Nardo 2021).

This project is a costly investment for the community. Also for this reason, wanting to contain the size of the structure, the project team took architectural cues from the context, including the Dogtrot-style Texan houses that feature multiple buildings connected by a corridor and a common roof. The result is a two-story structure articulated in two bodies, with clinical services in one and community services and facilities for staff in the other.

The project team has changed the way patients experience healthcare by reinventing waiting areas as “different experiences of a home”. The clinic's architecture strongly emphasizes the use of natural light and windows that offer views of the outdoor landscape and natural areas to make patients and their families feel at home. In an attempt to reduce patient anxiety, the number of reception and waiting areas is designed to resemble a domestic environment where dining areas are included, as well as areas for work and play.

The Municipal Health Centers San Blas + Usera + Villaverde, Madrid, (Estudio Entresitio, 2010), are certainly among the most interesting examples in terms of adaptability and compatibility with the built urban fabric, even through the use of a modern language and a particular cel-

Fig. 3-5

estudio__entresitio, Usera, Villaverde and Sanblas, Public Healthcare Center. Madrid (2005-09 Usera; 2007-10 Villaverde; 2005-07 Sanblas).

Courtesy of estudio__entresitio. Photo credits: Roland Halbe



**Fig. 6**

Kaunitz Yeung Architecture, PAMS Healthcare Hub, Newman 2001.

Courtesy of Kaunitz Yeung Architecture. Photo credits: Robert Frith

**Fig. 7**

ASA Studio, Rugerero Health Center 2017.

Courtesy of ASA Studio.

lular structure typology. A trilogy of typological versions that, although sharing the same formal configuration system, are perceived as different. The Sanitary Center called “3*1” is a building based on principles of evident autonomy of spatial form, with a floor plan similar to that of the other cases but made with different materials and where the light predominantly comes from above. In fact, each of the three Centers is developed on a single floor with a mix of spaces open to the public and operational illuminated through the modular arrangement of several small courtyards. For further aspects, reference is made to the descriptive intervention of Estudio Entresitio present in this issue of FAM.

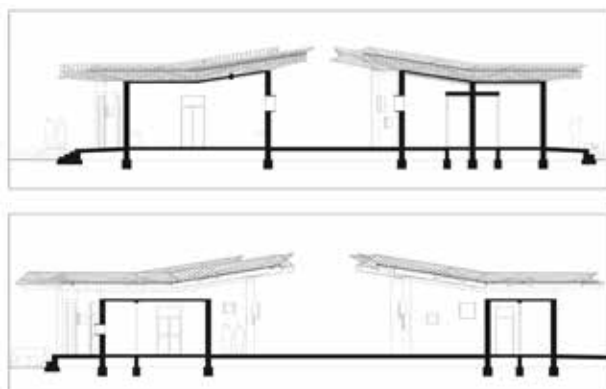
Another example of a typology linked to environmental factors is that of architecture that derives distinctive elements from the culture of indigenous populations in native areas. One of these buildings is the result of the Pams (Puntakuru Aboriginal Medical Service's) Healthcare Hub project in Newman, Australia (Kaunitz Yeung Architecture, 2020), in a region where the presence of the Aboriginal population prevails. Although this building has been constructed in recent years, instead of a design derived from Western characteristics and patterns, the designers attempted to create architecture adhering to indigenous reality using formal references, symbols, and building materials from the local culture. The aim of the designers is also to create a construction whose realization is economical but aesthetically valid and distant from the references of standardized architecture albeit of high quality. For further aspects, reference is made to the descriptive intervention of Kaunitz Yeung Architecture present in this issue of FAM.

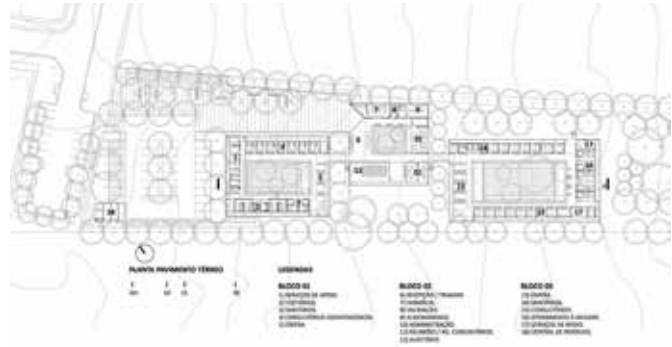
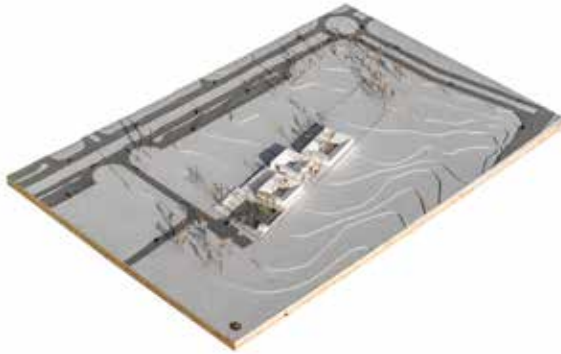
The Rugerero Health Center, Rubavu, Rwanda (Activesocialarchitectu-

**Fig. 8-10**

Kéré Architecture, Centre for Health and Social Welfare, Laongo, Burkina Faso 2012-14.

Courtesy of Kéré Architecture.



**Fig. 11-14**

Saboia+Ruiz Arquitetos, Primary Healthcare Center - UBS Parque do Riacho, Brazil 2021.
Courtesy of Saboia+Ruiz Arquitetos. Photograph: Leonardo Finotti

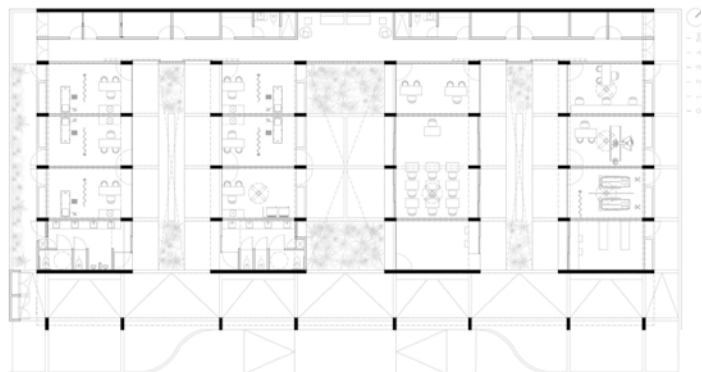
re, 2017), is another example of a decentralized healthcare nucleus conceived for the local population. The intervention, in the African environment, stands out for how it draws elements from the variations present in the culture and typology of local settlements. The structure encompasses some basic hospital activities, thus defining an important community reference center. It takes on the typical form of public space within a village, with distinct elements designed to promote urbanity through the design of an aggregating open space. For further aspects, reference is made to the descriptive intervention of ASA Active Social Architecture present in this issue of FAM.

Also in Africa, another project of significant interest concerns a surgical clinic and healthcare center in Léo, Burkina Faso, designed by Francis Kéré (2017). This architect, born in West Africa with university education in Europe, seems to want to express optimism even in the most difficult housing and social conditions, demonstrating that the realization of democratic and universally valuable architecture is possible (Baratto 2022).

The project creates an inclusive atmosphere of healthcare institutions using ten modular units for dynamic and welcoming spaces, reducing costs and speeding up construction. The clinic has a simple but efficient modular layout that allows for growth. The building is developed around an external central corridor that mimics the typology of the road passing through the inhabited center.

The units are equipped with large overlapping roofs to efficiently collect rainwater, thus ensuring one of the fundamental prerequisites for health and well-being in a region with only three months of rain per year (Kéré 2014).

In the UBS Parque do Riacho Primary Health Care Center in Brasília, (Saboia+Ruiz Arquitetos, 2021), inserted into the broader context of that capital city which interprets the modernist language, the project develops

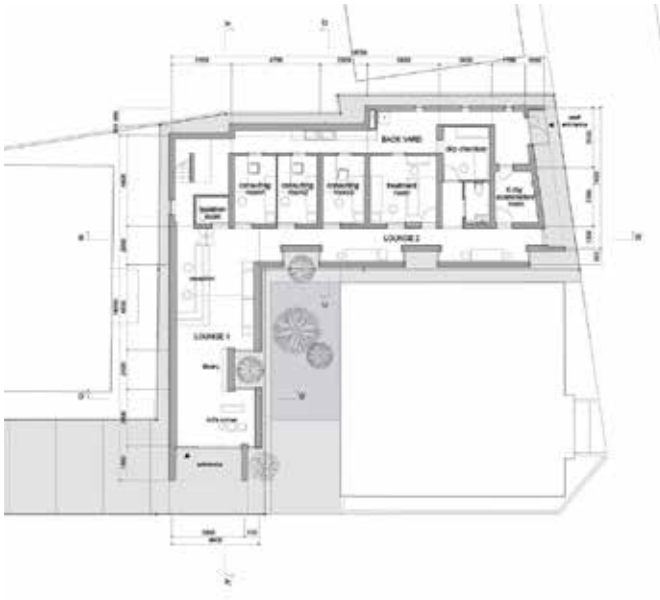
**Figg. 15-17**

Kiltro Polaris Arquitectura + JC Arquitectura, N1 Health Center, Escárcega, Mexico, 2022.
Photograph: Cesar Béjar, Oscar Hernández

from an introverted logic layout formed by the repetition of courtyards connected by a covered path, each of which is assigned a specific function. The courtyards determine protected spaces from the strong winds of the region, also providing shade and isolation from the outside. Great importance was given to the theme of waiting rooms in this solution, despite being designed before the Covid-19 pandemic, as the connection of the courtyards with the waiting rooms ensures optimal ventilation. The complex presents undeniable architectural and aesthetic quality through spaces characterized by transparencies and diaphragmatic effects between interior and exterior, with shadow play caused by the particular sunshades on the facade. In fact, it is a double-layer facade so as to create an intermediate space used as a corridor for connecting medical studios and other service spaces (Moreira, 2021).

Another interesting case from various perspectives is the N1 Health Center in Escárcega, Mexico (Kiltro Polaris Arquitectura + JC Arquitectura, 2022). It has been designed on a single level, taking into account the climate and local housing culture, which have led to the adoption of outdoor waiting areas protected by the overhangs of the roofs capable of providing substantial shaded areas. The layout design is comb-shaped, with open courtyards alternating with enclosed volumes. Although the distribution paths are external, they are protected from the sun thanks to the cantilevers of the concrete roofs. The rationality of the typological structure combines with a language of constructive essentiality that effectively interprets the public function of the structure.

The healthcare architecture of the Centro de Salud N1 reveals a certain brutalist declination in terms of language, using modern materials such as reinforced concrete and designed structural elements. The intervention ensures that the 798 sqm area is adaptable to the diverse needs of

**Fig. 18-20**

hkl studio, Asahicho Clinic, Chiba, Japan, 2015.
Photographs: Shinkenchiu Sha, Tetsu Hiraga

contemporary Mexican mid-sized cities (Maju 2022). The logical clarity and simplicity of the Centro de Salud N1 are evident in the way the architects describe the project: “It is a clinic open to the city and, through a series of versatile recesses and central courtyards, it offers access to basic health services” (Kiltro Polaris Architecture + JC Architecture).

In the context of the Far East, we find the Asahicho Clinic in Chiba, Japan (hkl studio, 2015). An undisputed example of aesthetic, typological, and functional quality that subtly integrates among residential buildings, adapting to the high density of the morphological fabric typical of many Japanese urban contexts.

This medical center is designed to blend in with the surrounding residences on the outskirts of the city using a plastic conformation based on the silhouette of a linearly replicated house. Almost to disguise the size and function of the building, the Tokyo architect has created a sequence of sharp arches of varying heights that resemble the pediment of a house. This technique has been frequently used for healthcare buildings (Mairs 2015). The examination rooms are positioned at the back of the building, in the arm parallel to the street to allow for greater privacy, while a double-height reception space occupies the wing of the building perpendicular to the street.

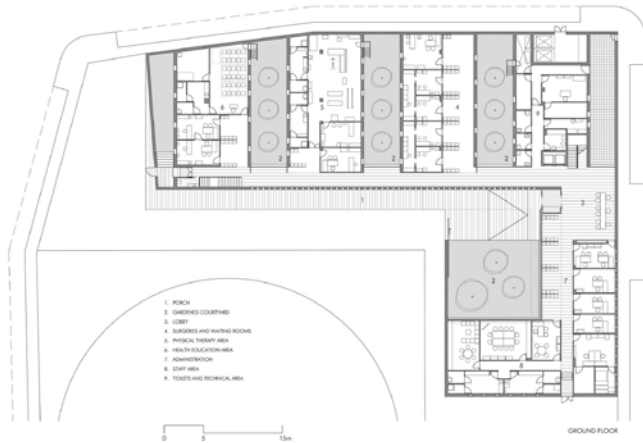
The transition from the welcoming entrance to the waiting space unfolds at double height and reduces the feeling of pressure from the dense surrounding environment.

Another interesting project concerns the Gibrleón Health Center in Gibrleón, Spain (Javier Terrados Estudio de Arquitectura, 2020), built to

Figg. 21-22

Javier Terrados Estudio de Arquitectura, Health Center at Gibralfaleón, Spain, 2020.

Photographs: Fernando Alda



provide a tranquil and protected environment in the peripheral area of this Andalusian town, incorporating plastic values of a Mediterranean-toned urban architecture. The project was influenced by the “L” shape of the plot and the adjoining outdoor amphitheater of strong collective significance, considering the location at the southern limit of the city center. The approach path is defined through a slight setback of the facade on the western side of the building constituting a protective portico.

The citizens were indirectly involved through a department of the Ministry of Health of the regional government, which collected issues related to the performance, requests, and complaints of existing health centers and their users. The functional program was developed by public employees working at the Ministry of Health, considering the demographic profile of the area and medical specialties.

The design process focused on a basic layout with a clear circulation scheme, a progressive gradient of privacy, and flexibility in the use of outpatient and office spaces. The center was built using a standard brick-clad envelope with a cement/double-layer structure due to budget constraints (Javier Terrados Estudio 2023).

The Nye Vardheim Healthcare Center in Randaberg, Norway (NORD Architects + 3RW Architects, 2014-2020) draws inspiration from the urban character of the old type of Norwegian village called Grend, combining various healthcare programs and functions that, through green courtyards for a welcoming pedestrian pathway, are placed in a small group of houses capable of conveying the sense of a micro-community.

The center offers a wide range of functions, including elderly residences, medical visits, and therapeutic activities, and is realized through a plurality of buildings with a solid construction consistency using natural stone. The complex envisages aggregation between the built parts through courtyards, recreational gardens, and greenhouses, thus creating an

**Figg. 23-25**

NORD Architects + 3RW Architects, Healthcare Center in Randaberg, Norway, 2020.
Courtesy NORD Architects + 3RW Architects

atmosphere denoted by greenery and warmth (NORD Architects).

Future institutions will draw inspiration from this concept of a village that combines the therapeutic facilities of a large complex while reproducing the sense of well-being of a home (Aasarchitecture 2017). An intervention that has become a reference point for the municipality and a new way of developing and rethinking healthcare institutions in modern welfare societies (Nye Vardheim by NORD Architects 2014).

The currently unrealized project of the Urban Community in Thessaloniki, Greece (Fiore Architects, 2019), is an example of integration between different functions in the urban context capable of creating a neighborhood center.

The aim of the municipal authorities was to redevelop an urban area to create a functional and aesthetically pleasing system of buildings, aggregated through the longitudinal space of the pedestrian street, satisfying the needs of residents and creating a public green space. The building complex aimed to be a model for the organization of public functions, including healthcare, in open dialogue with the city to which they are intended.

**Fig. 26**

Fiore Architects, Healthcare Center in Thessaloniki, Greece, 2020.
Courtesy Fiore Architects.

The project aimed to create an urban landmark, a public intervention mindful of the historical past of the Toumba neighborhood and at the same time of its modern, lively face as a city area. The concept of the urban center is interpreted through the aggregation of service buildings, designed to function together and independently, contributing to facilitating accessibility for residents, especially the most vulnerable including people with disabilities. The project also aimed to requalify the urban landscape and contribute to urban greenery, inviting visitors and the local community to interact and work together (Fiore Architects, 2023).

In conclusion, among the examples we have briefly analyzed, some use the metaphor of the house as a semantic matrix of the project, including the Virginia Health Center, Randaberg, and Asahicho Health Center. Others have developed their role at the micro-urban scale, integrating various functions and attempting to create a neighborhood center for local residents, as in the Urban Randaberg center, Thessaloniki, or the health center in Burkina Faso. Further projects have fundamentally worked on the architecture of a single building, albeit through articulated typologies, based on an innovative and avant-garde definition of a community-oriented health home, as in the cases of Madrid but also Gibrleón in Spain and Brasilia, or on the correct interpretation of the culture and climate of a region, in various ways as in the cases of the Mexican N1 health center, the Pams clinic in Newman, or the Rugerero Health Center in Rwanda.

All these examples confirm that international design research on this topic is at the forefront and remains in progress. It is not surprising that South African architects are using artificial intelligence in their projects, in an attempt, perhaps only seemingly paradoxical, to decolonize the country's architectural heritage to incorporate indigenous culture and traditions (Dirk et al. 2023).

As intermediaries between the home and the hospital, community health centers are essential in the care chain. In the future, their importance in rapidly changing healthcare systems is expected to increase. This poses a series of new problems and questions for architects tasked with designing these healthcare facilities in addition to hospitals. A perspective that motivates the experimental choices made today capable of shaping the healthcare and assistance expectations of the society of the next twenty years.

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