PROJECT

Between Function and Environment: A Day Care Center for People with Alzheimer's Disease

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The Day Care Center for People with Alzheimer's Disease in Benavente (Spain), designed by studioVRA (Ruben Garcia Rubio & Sonsoles Vela), arises from the aging of its region's population. When designed, there was no proven scheme for this typology. Therefore, the first task was to understand the logic of this type of building and crystallize it into an architectural scheme.

The design began with a specific study of the building's main user: a patient with different degrees of Alzheimer's. In reality, the matrix of the typical patient of the future Center is very heterogeneous. It varies from cases with severe cognitive disorders and reduced mobility to other cases of specific and sporadic treatment within their regular life. Also, an analysis of the pioneering treatments for Alzheimer's disease was taken and they were confronted then with different experts in the sector (doctors, psychologists, users...). The conjunction of all the treatments analyzed, with specific types of patients expected for this Center, highlighted a "person-centered approach" model with special attention to the cognitive (psychological) and mobility aspects in the design.

Once the general model was established, a second investigation was commenced on the architecture related to Alzheimer's.

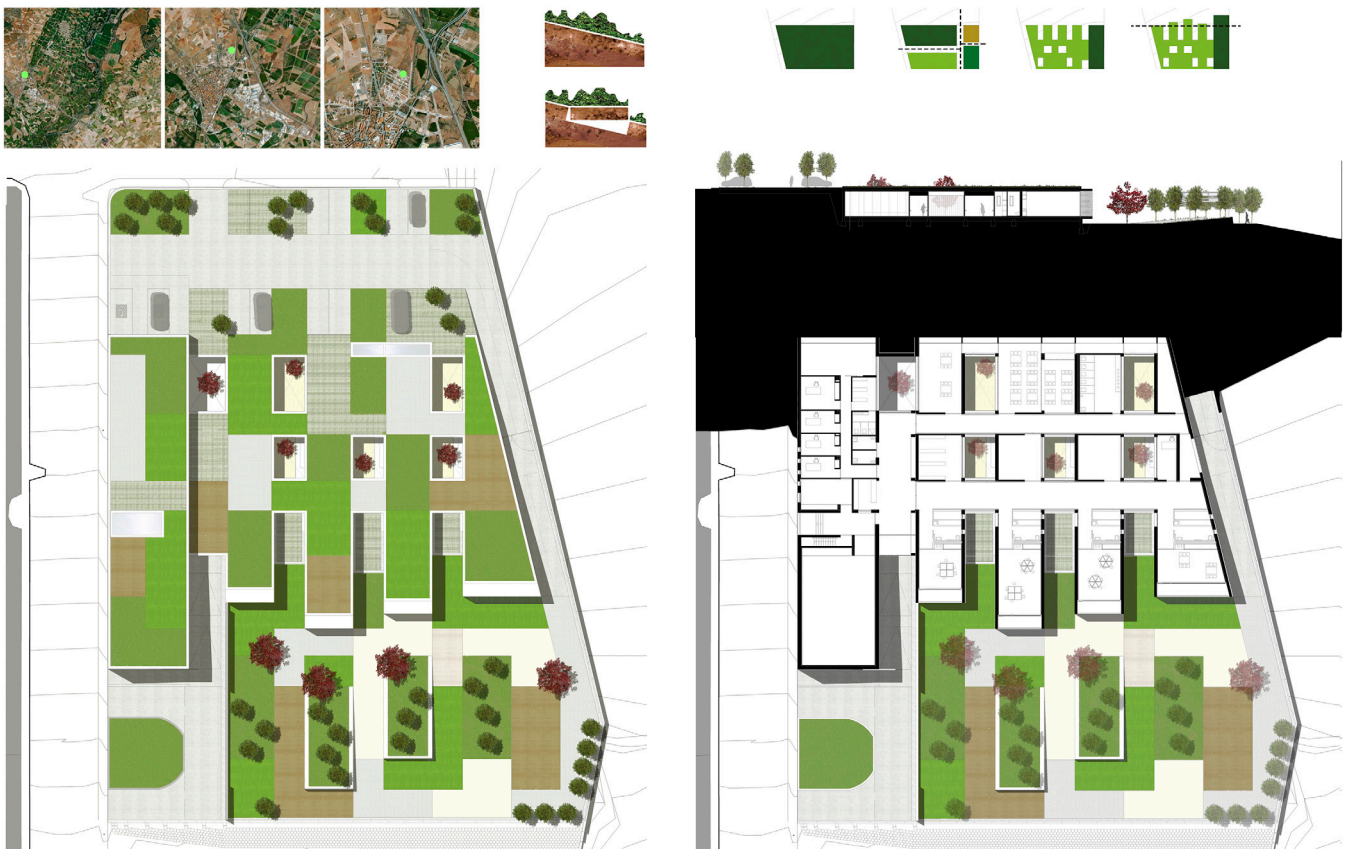

Figure 1. Site aproximation; Concept Schemes; Roof Plan; Cross Section; and Ground Floor. studioVRA.

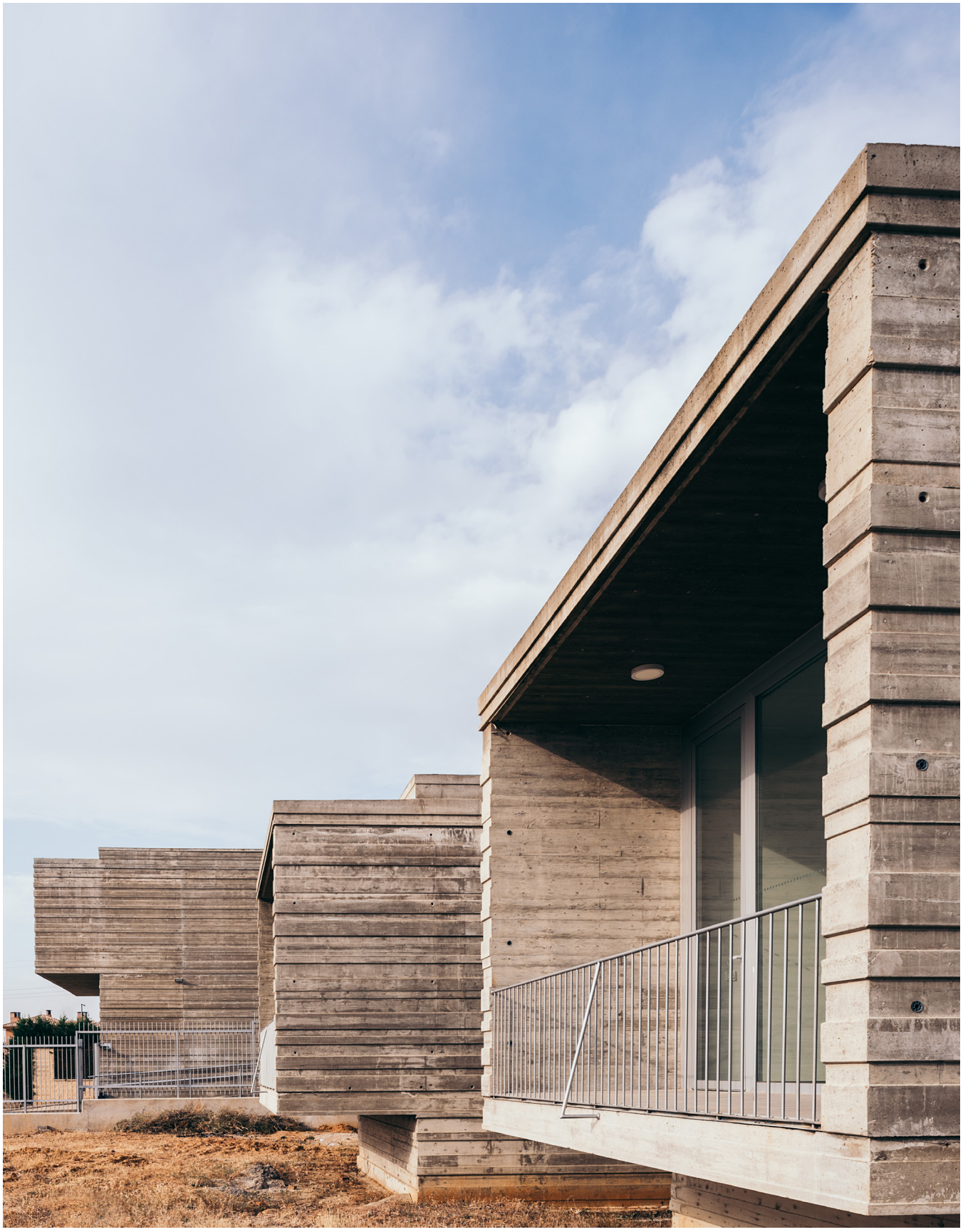

Figure 2. Detail View of the Classrooms. Javier Bravo Photography.

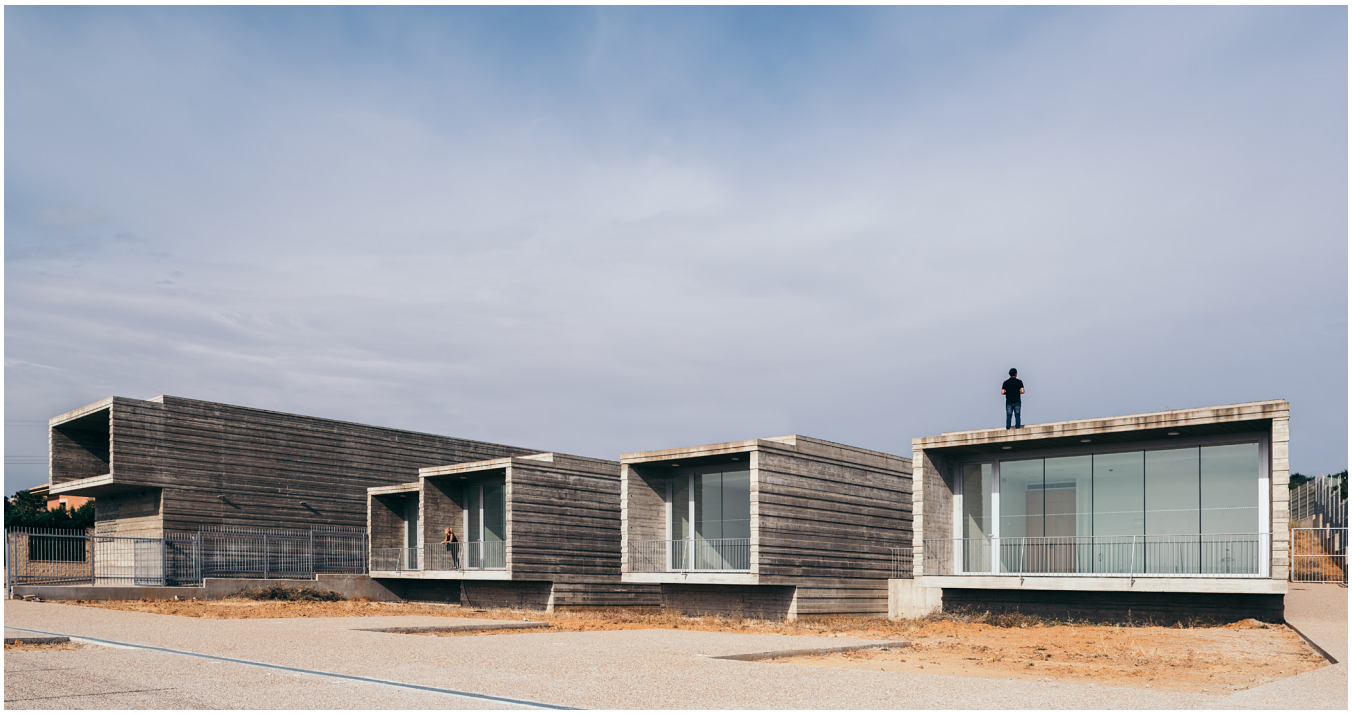

Figure 3. General View from the Main Courtyard. Javier Bravo Photography.

This investigation studied general buildings and day centers at both levels, theoretical and practical. Many active Centers, included the National Research Center of Spain, were visited. However, none responded to the architectural model looked for, an *ad-hoc* design for a day care center. For this reason, the authors promoted and chaired the 1st National Conference on "Alzheimer and Architecture," where architects and staff from different day centers in the country discussed about architectural models and therapies.

The Center's location within a double boundary situation (territorial and urban) was another essential starting point. On the one hand, Benavente is located on the periphery of the great Castilian plateau. That is why the area is endowed with a particular topography, between hills, valleys, and plains; and also has a historical condition of crossroads, as some of the main roads and rivers of the country pass close to its limits. On the other hand, the plot is also located within a municipal boundary area, on a hill with a steep slope between a residential expansion area and farmland. This situation encouraged the design to establish a strong relationship with both the exterior spaces and the context, which is crucial when designing for people deeply rooted in their environment as most the future users will come from rural contexts where agriculture and livestock are essential activities.

The above-mentioned concepts motivated the positioning of the building in the upper part of the plot. This action can be read architectonically as a stratum that rotates and tears the slope to create a new plain area. Then, in a second movement, part of that stratum rises another level vertically to protect the building on its urban front. While from the patient's point of view, this movement serves to take advantage of the altitude difference between the upper and the intermediate area of the plot (3.5m). Thus, all the spaces of the day center can be developed on a single floor, as the upper floor only contains secondary spaces, with the main access through the middle part of the plot. Therefore, a continuous horizontal movement is facilitated for the users, without major changes in elevation or stairs, even within a steep slope plot.

Special attention was paid to the user's cognitive (psychological) features once the design had addressed the user's main motor skills aspects. To do this, the day center's main spaces were divided into four large areas, according to cognitive, use and privacy levels. The private spaces, those designed for the patients, were articulated around two wide corridors, which are the main spaces, and sponged with courtyards, thought of as open classrooms. In reality, all the spaces are organized following the sequence of use of the center in order to enhance the user's orientation and cognitive part. Thus, the patient's movement not only shapes the building but allows a simultaneous and independent use of the different areas, plus the advantage of all its resources.

All the interior spaces have been designed according to the specific needs of people with Alzheimer's disease. For this reason, those elements that help to qualify the space and make it more recognizable and comfortable for the patient are of great importance. One example can be the main classrooms. In this case, the spaces intensify the relationship with the exterior by opening an entire classroom side. These elements

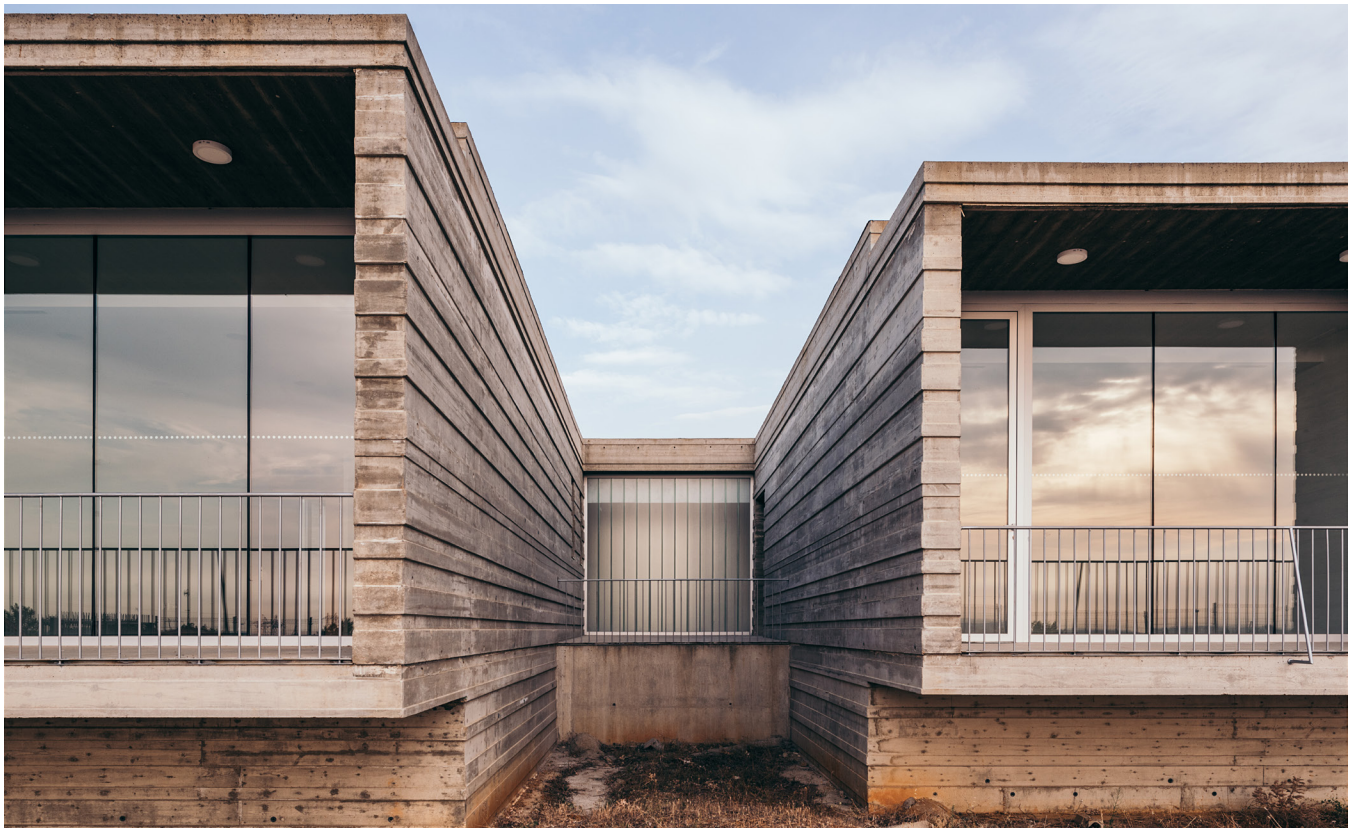

Figure 4. Detail View of the Classrooms and External Courtyard. Javier Bravo Photography.

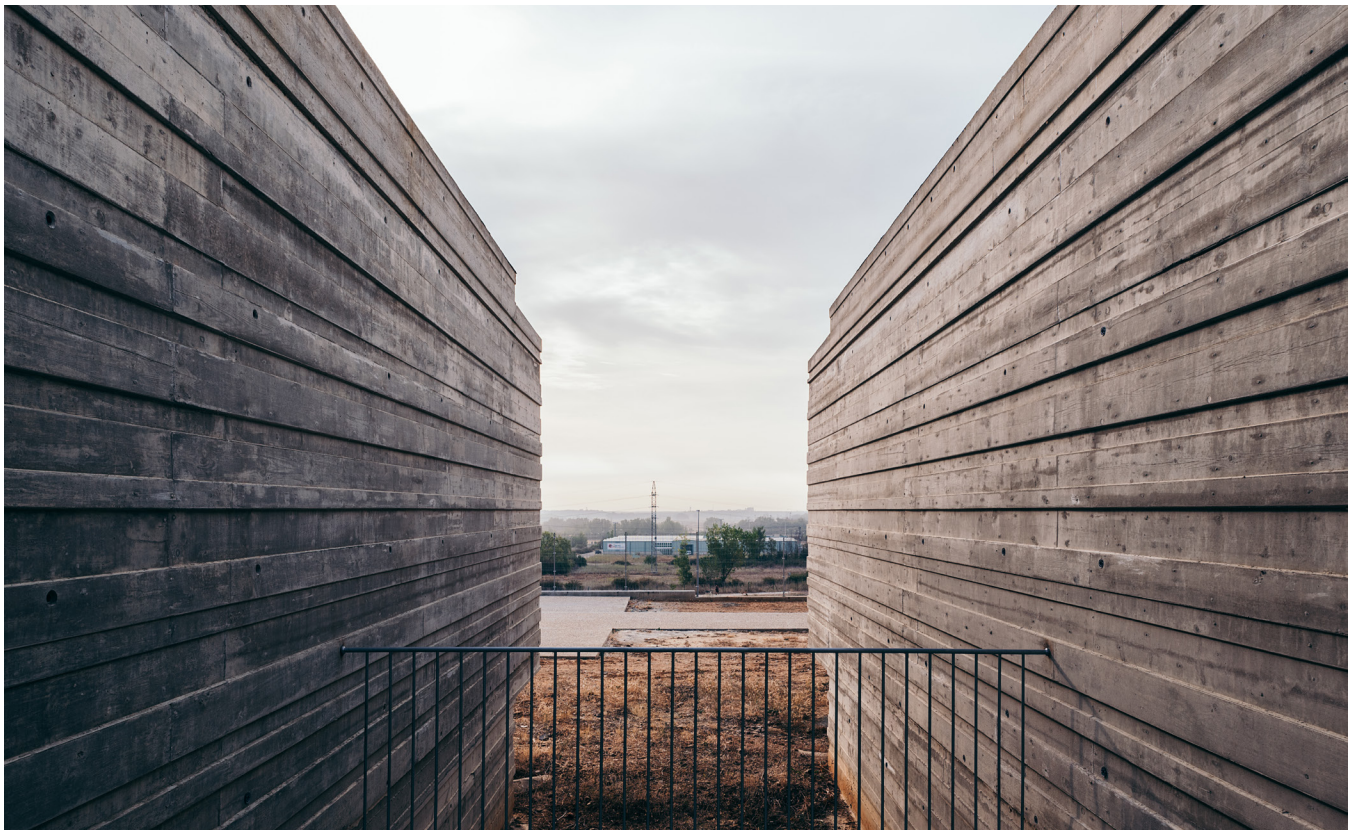

Figure 5. Detail View of the Classrooms and External Courtyard. Javier Bravo Photography.

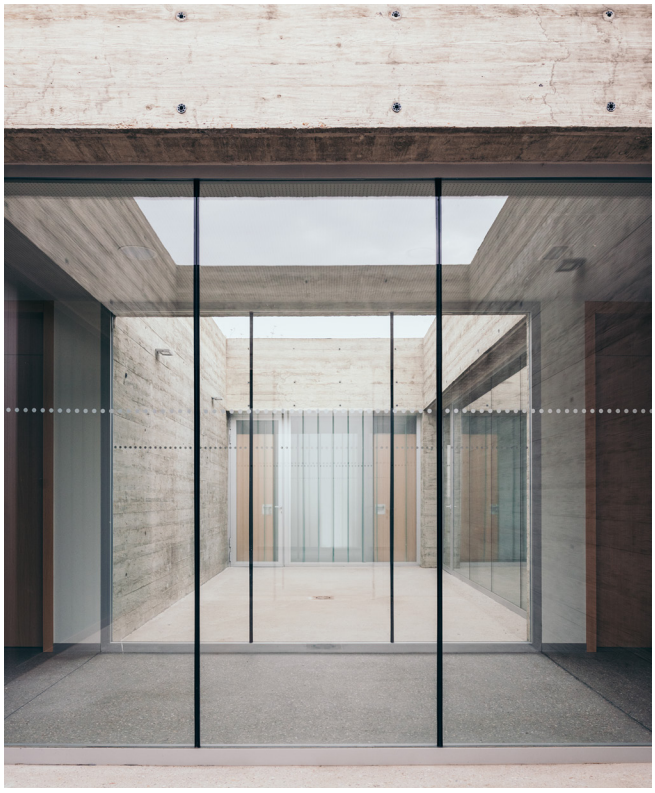

Figure 6. Sequence Courtyards-Corridors. Javier Bravo Photography.

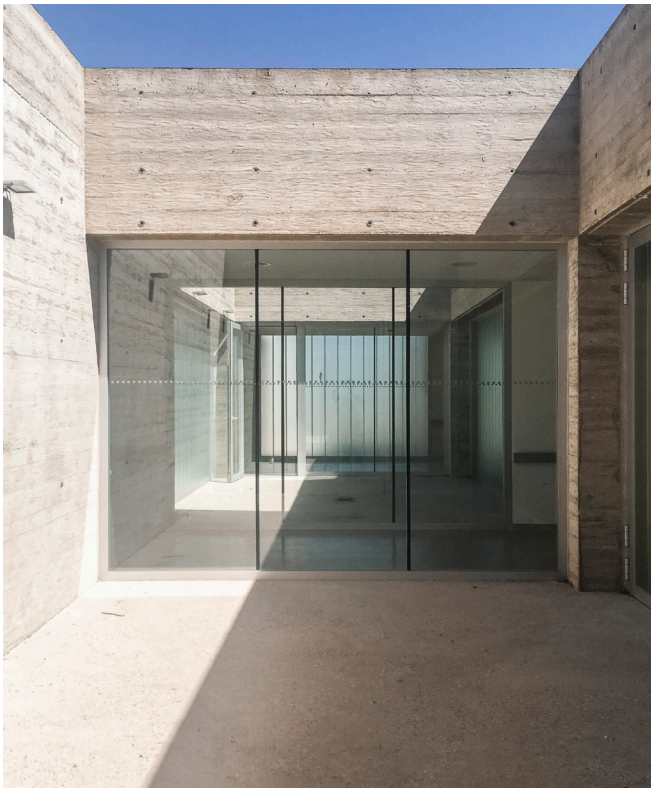

Figure 7. Sequence Courtyards-Corridors. studioVRA.

allow working therapeutically with the landscape from an interior space. For instance, with activities that relate what the users are seeing through the opening to their memories. Consequently, architecture is used as another therapeutic tool.

The myriad of patios and external spaces is another important example of the exterior-interior relationship. These elements provide natural light and ventilation to all the spaces in a semi-underground building. The light also helps in the user's orientation due to their positions and dimensions, which is important when having patients with low visibility. In addition, the control of the brightness due to the chosen palette of light and warm materials helps to calm the patient psychologically.[1] The external spaces also allow activities to be accomplished outside. This is a crucial psychological aspect in the center's design and operation, as most of the patients come from a rural environment with a strong connection with open-air spaces. Thus, these areas encourage therapeutic activities outdoors but are always controlled due to their size and position within the building.

Other episodes of a specific design, but not limited, are the continuity of railings in the corridors, to promote a security feeling; the great difference in the color and texture of the materials between the floor and the wall, to help with the sensation of stability; the lack of direct vision of the secondary doors in the two corridors, so security is assured and escapism not encouraged; the texture of the both indoors and outdoors pavements, to encourage orientation and improve mobility; the different dimension of classrooms, patios or corridors, to support the orientation; or the careful design of the surfaces to avoid protrusions in both on walls and on floors, to promote smooth and continuous mobility of any user with a cane, walker, or wheelchair.

After the first year of use, the design hypotheses have been confirmed positively by the users. The staff has confirmed that the organization and proportion of the spaces, along with the light treatment, "have contributed to the patients' psychological well-being and to reduce behavioral disturbances" of 90% of the patients.[2] The design has also developed "cognitive aspects such as orientation in space" and has favored "personal autonomy" in 85% of the patients. This initial evaluation has also highlighted the corridors and external spaces' specific design as a significant element for their new therapy and, in general, the design has allowed "to carry out the different processes of care and stimulation of the patients, more comfortably and efficiently."

ENDNOTES

1. "Concrete: Alzheimer Day Care Center," *AV Proyectos*, no 89 (November 2018): 52-53. "Day Care Center for People with Alzheimer's Disease," in *CIAB8, 8th International Congress on White Architecture* (Valencia, Spain: Editorial Universidad Politecnica de Valencia), 302-09.
2. An evaluation report has been developed by the staff of the Day Care Center based on the observations obtained between June 2019 and June 2020.

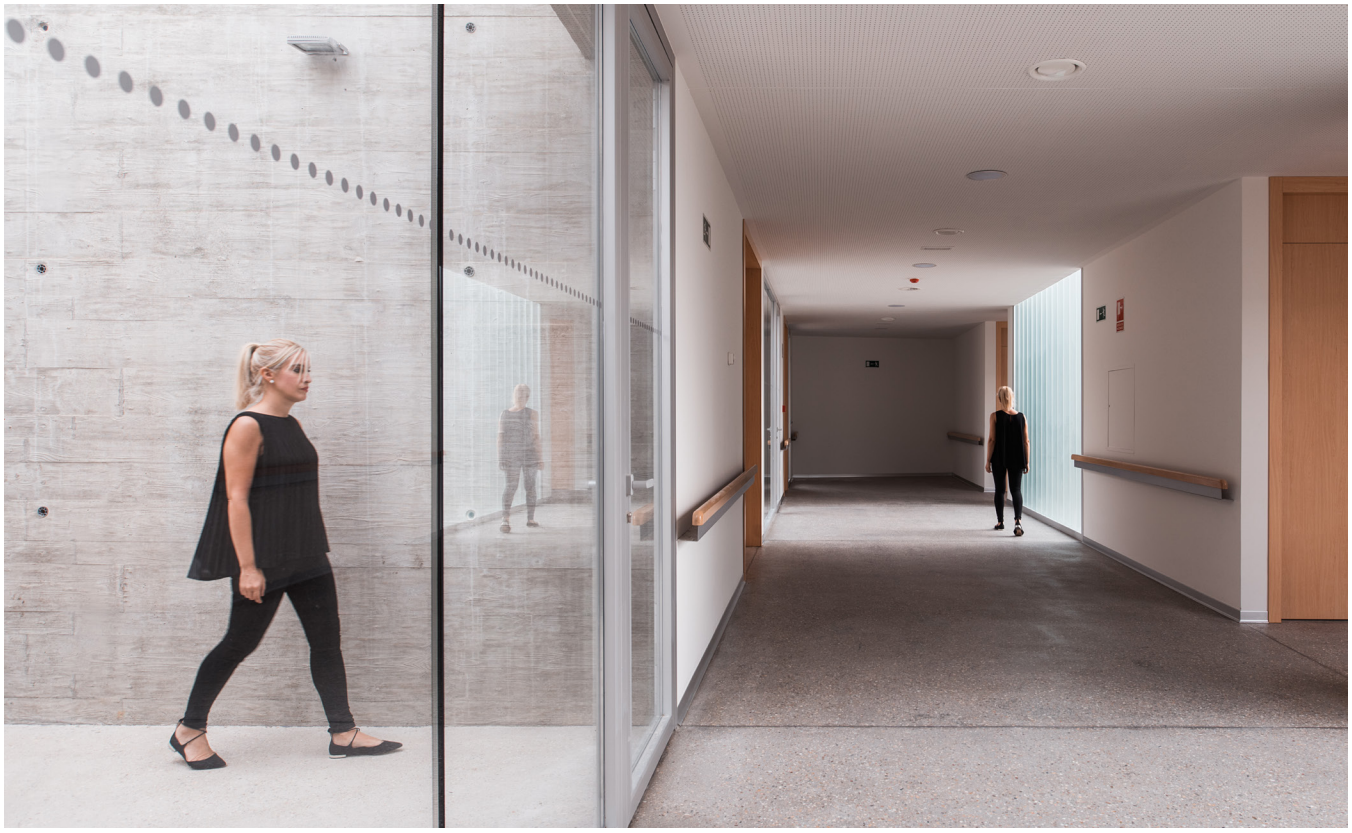

Figure 8. View of the Main Corridor. Javier Bravo Photography.

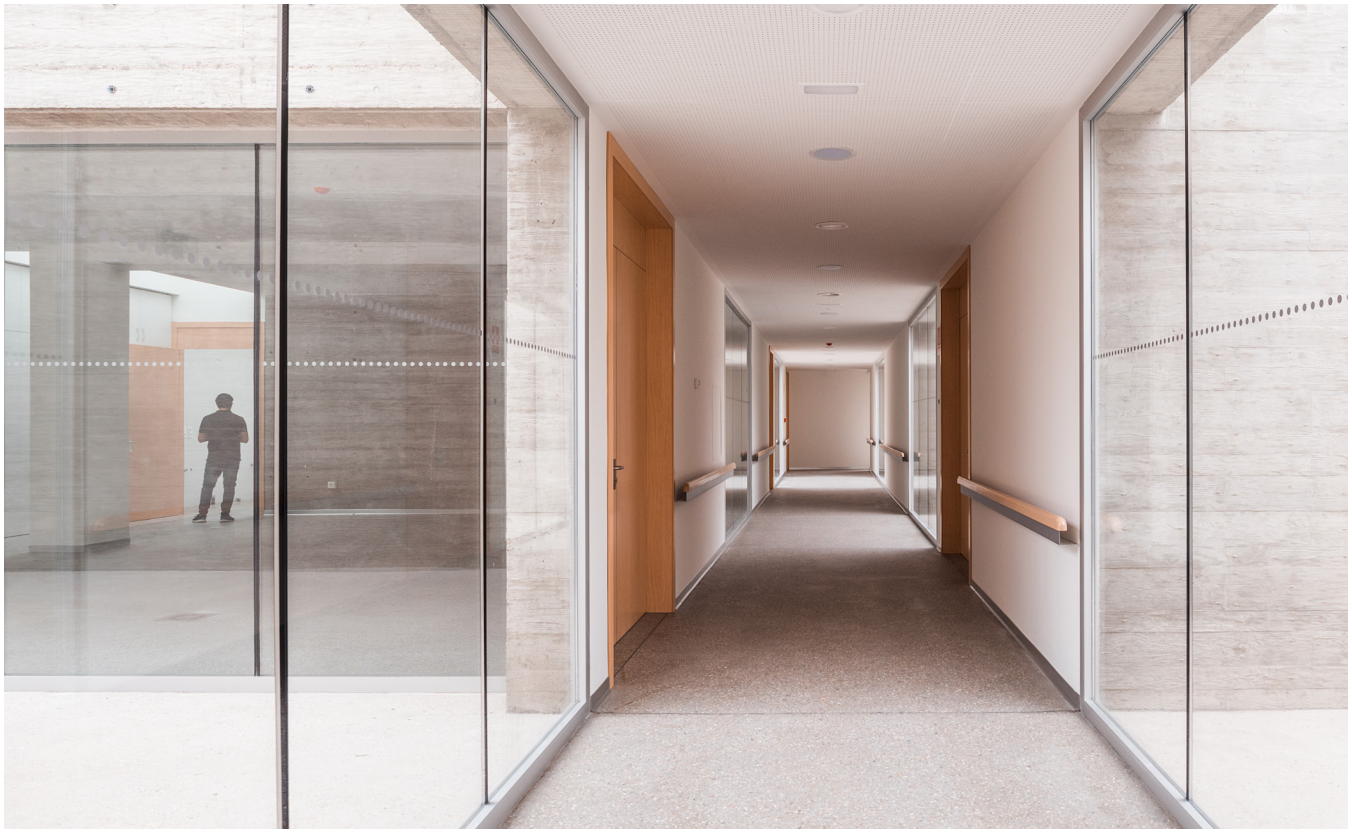

Figure 9. View of the Main Corridor. Javier Bravo Photography.