

# EBD

Evidence  
Based  
Design



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## Journal 1: Aged Care

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evidence-based strategies  
for the design of aged care  
environments

# PDF Capabilities

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## Interactive Capabilities

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### Design Strategy 1F: Priming

It is hypothesized that orientation strategies based on implicit not explicit memory, can potentially enable residents to move between destinations, without having to think about how to get from one place to another. Priming is defined as the use of repetitive stimuli to produce a non-cognitive response. Strategies could include the use of short, looping circulation paths, a unique sequence of unobtrusive route identifiers and nodes with clear lines of sight to the next destination.

### Design Strategy 1G: Light and Sound

Provide adjustable lighting zones to allow flexibility in lighting levels based on the needs. (Refer to principle 4D for more detailed information) Reduce reverberation time through the use of absorptive materials.

G

Click on dot ● to enlarge image/diagram/photo, use ✕ to close.

**Effective Orientation Scenario**

**Sound**

The scale of individual social spaces can have a significant impact on noise levels. In addition to main social areas, provide free access to alternative 'niche' spaces, for residents to 'self-select' levels of sensory stimulation.

**Light**

In larger social areas, residents can choose between areas of differing light qualities. In smaller social areas and bedrooms, residents have the ability to adjust the amount of direct or indirect light present within certain spaces (Adjustable Zones).

F

Roll over on colour code [red] to reveal category of research (quality). Assisting the reader to understand the limitations of each piece of research.

E

Strong supporting evidence resulting from an accumulation of reliable research undertaken in an architectural context. Design strategies have moved beyond the hypothetical and have been shown to be effective.

Reliable theory, high impact, been adopted in architecture strategy.

Click on superscript number [19] to reveal notes and literature references. References include links to original publication websites where available, saving the reader valuable time.

F

[19] Mondon, K., Gochard, A., Marque, A., Armand, A., Beauchamp, D., Prunier, C., Jacobi, D., de Toffol, B., Autret, Camus, V., Hommet, C. (2007) Visual recognition memory differentiation in dementia with Lewy bodies and Parkinson's disease dementia. *Journal of Neurology, Neurosurgery & Psychiatry* 78(7).

G

Click on superscript number [19] to reveal notes and literature references. References include links to original publication websites where available, saving the reader valuable time.

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●EBD Journal: 1

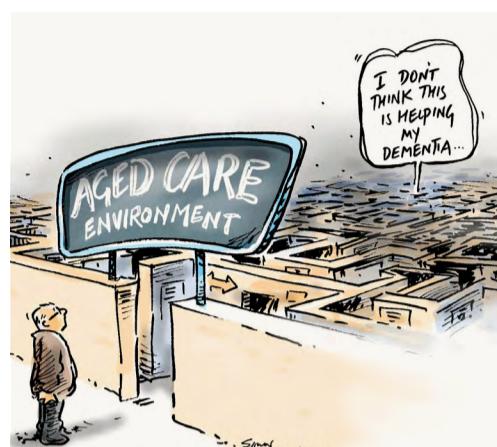
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- 6. Private – Public



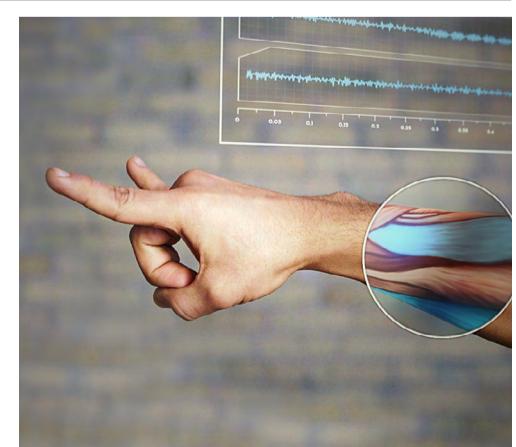
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### Case Study 2: The Dementia Competence Centre in Nuremberg – A Review of the Spatial Design Marquardt, G.

### Article 2: “Smart Homes”: Digitally Augmented Residential Settings to Support Aging. Demiris, G.



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# Design Principle 01:

## Facilitate Orientation

**The importance of appropriate wayfinding strategies, designed to suit the needs of residents, cannot be overstated.<sup>1</sup>**

For mobile people with dementia, wayfinding decisions are based on environmental information that is readily accessible, moment-by-moment, as they move along a path. Plan configuration can therefore support or impede orientation, having a significant impact, not only on quality of life for residents but also staff workload and operational costs. Disorientation can create stress leading to agitated and aggressive behavioural responses. Residents who cannot identify paths to desired locations have exhibited anxiety, confusion, mutism and even panic. It is apparent that unique environments are preferable to repetitive ones, however, excessive complexity can also lead to disorientation.<sup>2</sup>

# 1

Image: © iStock/Getty

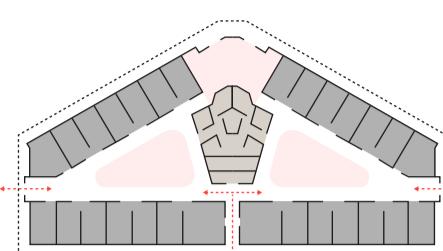


## Design Strategy A: Layout

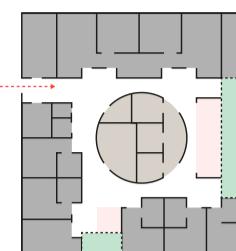
Create a simple network of differentiated but visually connected spaces. Smaller, open plan, 'cluster' layouts are best suited to dementia care units. They provide mobile residents with a direct line of sight from their bedroom door to adjoining destinations such as dining, living and outdoor spaces. The shared social space may not have to be fully contained and can be integrated with access to walking paths, private nodes and outdoor areas.

# A

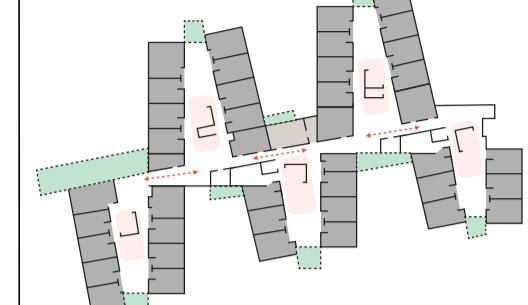
### Clustered Layouts:



Corrine Dolan Center, Ohio 1991

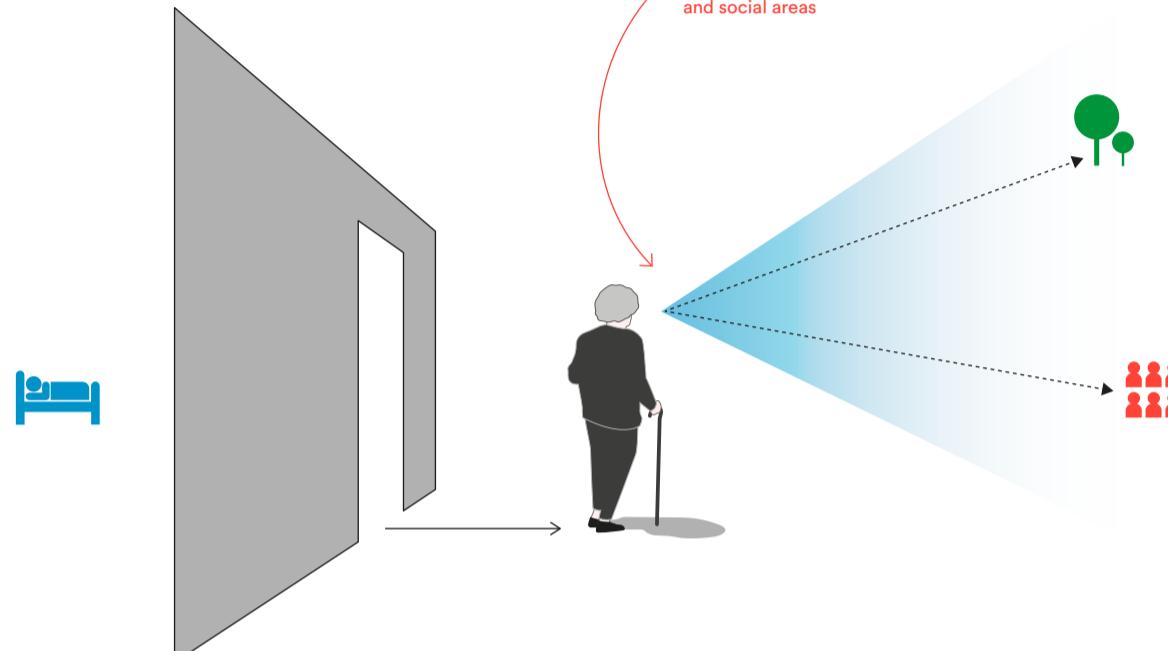


Nuremberg, Germany 2006



Virranranta, Finland 1992

### Line-of-sight



**Legend**

- Bedrooms (Grey)
- Social Spaces (Pink)
- Staff Facilities (Grey)
- Outdoor/Garden (Green)
- Controlled Exits (Red dashed arrows)

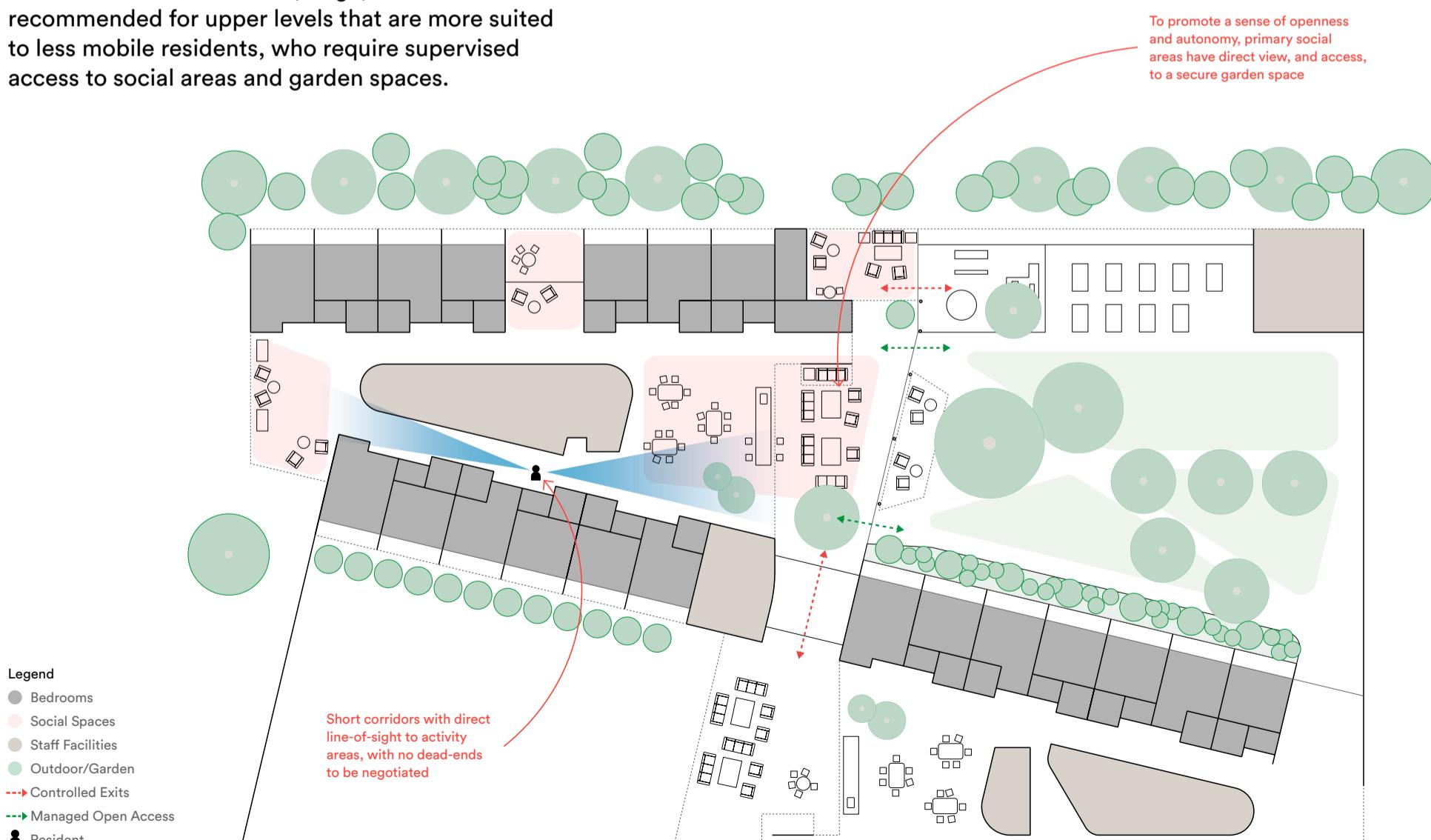
The tendency to become lost is shared by almost all patients with Alzheimers Disease (93%), however this is not just related to memory impairment, it reflects an inability to consciously link recognized scenes with locations in the environment.<sup>3</sup>

Smaller, open plan, "cluster" layouts can produce higher levels of orientation and reduced behavioural disturbances than larger "Communal" facilities.<sup>4</sup>

## Prototype Plan: Dementia Care Unit

# G

Neighbourhood model: 12–15 beds arranged around social and staff areas. Suited to mobile residents with dementia. A sheltered, large, external deck is recommended for upper levels that are more suited to less mobile residents, who require supervised access to social areas and garden spaces.



# Home and the Familiar: Lessons from Montemurlo.

Case Study One

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Dr Darragh O'Brien

C1



Image: Pietro Savorelli

In the dry hills of Montemurlo, above the medieval town of Prato, Italy, Ipostudio's Residential Aged Care Facility grows comfortably from an historic, agricultural landscape, characterized by the traditional dry stone terraces of the region.

## Montemurlo Aged Care Facility Overview

### Credits

Architects:  
ipostudio architetti

Client:  
Azienda Sanitaria Locale  
4 Prato

Program:  
Health Centre and  
houses for elderly people

Photography:  
Pietro Savorelli,  
Jacopo Carli,  
Ipostudio Architetti

### Consultants

Structural Engineer:  
Niccolò De Robertis  
- aei progetti srl

Environmental systems:  
Paolo Pietro Bresci e  
Leopoldo D'Inzeo  
- Consilium srl

Contractor:  
Restructura soc coop arl  
- S. Arsenio (SA) Staccone  
spa Costruzioni Generali  
- Roma

Construction supervisor:  
Nicola Freddi - STS spa  
- edificio al grezzo  
assisted by Elisabetta  
Zanasi Gabrielli  
- ipostudio architetti.

**This difference between an open and closed environment is perhaps nowhere more critical than in residential aged care.**

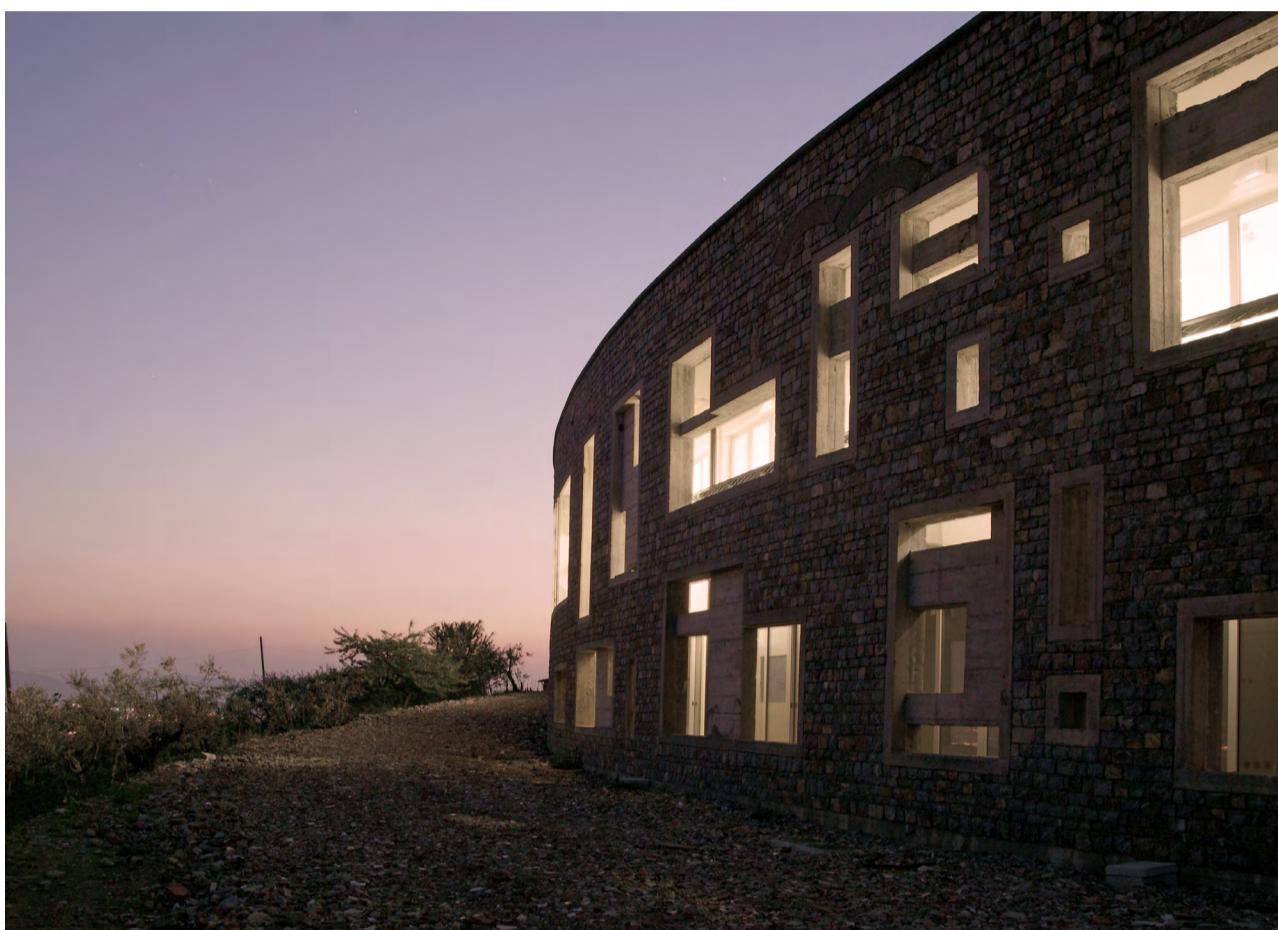


Image: Jacopo Carli

#### From The Architects

For the Design of Residential Care Facilities, the monastic analogy becomes extremely interesting and useful. The convent... is constituted as a city block, identified as an articulated and complex structure of spaces where the placement of private space is inversely proportional to the degree of accessibility. In the monastic structure it is also possible to identify three spatial systems that are useful when considering the organisation of a Residenza Sanitaria Assistenziale (RSA): public space represented by the Church and the cloister of catechumens; collective but private space constituted by the refectory, the aula magna and General Services structures; the private space of the cells.

However, there is another fascinating aspect of monastic typologies that might be interesting for the purposes of analogy: the wealth and the articulation of the outdoor spaces that are distinguished depending on their location in the structure and their relationship with the interior spaces. All this can be a valid interpretation of a clearly expressed general concept which says that taken together, the solutions must configure a living organism of residence-scale where, in addition to domestic spaces, there are areas dedicated to social relations.

**Extract From:**  
Arbizzani, E and Di Giulio, R. (eds.), *Health Assistance Residences-design and realization*, Maggioli editore, Rimini



Villa Medici di Belcanto  
Image: Ipostudio

A protected group of ancient trees, existing rural buildings and a unique landscape became the conceptual generators for this project. For the architects, the site is intrinsically connected to the history of place, "a survivor of new farming techniques that, elsewhere, have reshaped the soil profile".

The architecture is reminiscent of the farmyards and walled villages we associate with the Tuscan landscape. Appearing to support an elevated yard populated by independent structures, a single, punctuated stone wall presents itself to the valley and the city beyond, its curved profile resonating with the contours of the land.

The idea of context is crucial here, not only to the quality of the architecture but also to the purpose for which it exists. Montemurlo is offered as case study for two significant issues that are critical to the design of any residential aged care facility, anywhere in the world: The first being the concept of Care Facility as Home and second, the manner in which residents are connected with each other and the world beyond. This difference between an open and closed environment is perhaps nowhere more critical than in residential aged care.

Montemurlo is home to forty elderly residents who share the facility with approximately 10 day care visitors. Equal numbers of high and low care residents are accommodated separately across two levels—below the entry "yard" with its free-standing pavilions—in the volume formed between the wall and the slope of the hill. The whole complex is arranged in a radial grid overlooking the valley.

IPO Studio drew their inspiration from a combination of archetypes: the Convent and the Farmyard, both being relevant, not only in the context of the Tuscan hills, but also because they contain highly specific communities that are, by necessity Heterotopian<sup>1</sup>—places that are simultaneously open and closed—and therefore highly relevant to the unique circumstances of a residential aged care facility. The merging of these references became critical, not only to the architectural aesthetic, but also to the organisation of functional areas. The farmyard ("aia"), characteristic of Tuscan farmhouses, inspired the idea for a sort of rural "piazza" that provides access to the facilities that are open to external guests: the day care centre, places of collective life (offices, kitchens and the place for worship) and the main entrance.



Rural House in Tuscany.  
Image: Ipostudio