

Three Bioarchitecture Projects

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Abstract

Current urban law often hinders a real human-centered design, which focuses on clients' needs, sociality, and the environment, including care for future building dismissal. This reinforces a selfish artistic attitude, where architects prefer to mark the world with their individual creations rather than serving their human and non-human fellows. Here, three successful projects inspired by the principles of Italian bioarchitecture are presented.

Keywords

Bioarchitecture, Italy, Torre del Chiavicone, Casa Canali, Montebabbio

Introduction: The Civic Deadlock of Architecture

The post-war construction industry does not compare with the one that preceded it. As architect, Ugo Sasso used to say, "We go to cozy trattorias or breweries located in old stables, but it is unthinkable that the current stables can become trattorias or breweries tomorrow."

Let us reflect on the distance between ancient cities or towns in Italy that we consider beautiful and welcoming and compare it with the distance between two modern districts that we consider just as beautiful and welcoming. We immediately realize the huge gap that separates them. Yet, the new buildings greatly exceed the old ones. Statistical data show that Italy's 47 million inhabitants had 37 million rooms in 1951. However, in 2011, inhabitants grew to 60 million and had 116 million rooms after 60 years. While the population increased by 27%, the housing stock grew by 213%.

So many magazines and newspapers have

talked about "that new building," and so many municipal administrators would like to include the famous architect who designed it among their trusted advisors. However, how does such an object fit into the context? Lately, design produces architectural objects that fit not only in a place but also elsewhere in the world. Such is its conflicting detachment from the city they penetrate. More and more often, these objects are no longer simple architectural artifacts. Rather, they rise to art status and get projected into an imaginary of perfection and unquestionability. Architects become demiurges. They do not dialogue with places and prefer the spectacularization of the work for the sake of amazing the public. The everyday dimension of architecture, for the most part consisting of buildings for all people, is forgotten.

No one thinks any more of the fact that a city is made up of parts, but that these parts also constitute a whole. Cities like Bologna, with their arcades and meeting places, had

become welcoming because the law required buildings to connect with a public portico. This has provided for spaces that relate people, turning the city into a living organism. Of course, every single element must have its own autonomy and uniqueness. However, its meaningfulness relies in the contribution it offers to the urban fabric through a complex network of dynamic tensions. In this sense, we should carry out new settlements gently within the context. This requires knowing how to grasp their character, relationships, and needs.

Notwithstanding, Italian urban planning legislation does not allow for, or rather prohibits, replicating in a more modern form those places that are famous in the world for their beauty or coziness. I mean narrow streets, side-by-side buildings, roadside constructions, porticoes that connect buildings, covered passageways... Unfortunately, we have been prohibited to build all of this for long!

Our planning system suffers a limit that is no longer sustainable. The principles of Law 1150 of 1942, in fact, configures the plan as a setting elaboration based on the principle of conformity rather than uniqueness or specificity. In short, it tends to homologate the areas. This anonymizes and makes the places standard and unwelcoming by erasing the territorial characteristics. The character of Italian cities is based on their historical centers rather than the suburbs that have surrounded them for several decades. Yet, paradoxically, urban planning legislation has tended to erase history.

We should carefully avoid implementing the poor and elementary elements of an exasperated geometrization and the repetition of abstract and monotonous patterns. This suffocates the imagination and numbs the five senses. Architecture should instead aim at rich and varied buildings that favor a sense of belonging.

The situation of urban planning in Italy reflects that of the country. Currently, the debate on urban planning is taking place among a few specialists because no one else

seems to care any more. In fact, the subject has become so complex and disconnected from reality that people, politicians, and economic actors do not feel it as their own matter. We must say, though, that such a worrisome situation affects not only Italy.

Sure, urban planners have their share of blame. However, the responsibility for the current urban situation is, above all, the policy makers. They have created an overlapping series of rules over the years, which hit a record high of 160,000 in Italy.

Historians say that excessive bureaucracy is a symptom of a country's decline. I hope this is not the case, but certainly, the regulatory condition in the construction and urban planning field has long been unacceptable. In fact, hyper-legislation has not prevented illegal development, damage to the landscape, and increased risks to the safety of the habitat. On the other hand, it has even favored urban sprawl. Poor legislation has reproduced itself as a virus, vomiting thousands of disparate regulations, interpretations, and sentences, often in contrast to each other. Italy is a great country that can, on the one hand, rebuild the collapsed Morandi Bridge in Genoa in a few months but be unable to fix towns like Amatrice, affected by an earthquake several years ago.

We therefore need rules that are not only restrictive but also proactive in directing investments and repairing the damage of the past. Above all, this involves a new vision plus instruments of intervention. This task does not belong to architects and engineers only, but to the entire country.

1. Torre del Chiavicone: Transforming a Disused Piezometric Tower into a House

"...They tear me off the hills to push me into a senseless labyrinth of plains, away from my route, among pigsties and mosquitoes, in the smell of wet grass where crickets live, up to a large bivouac fire at the edge of a forest. The

last fireflies that survived the extermination flit around. It is a secret gathering in Chiavicone, part of the Autonomous Val d'Enza Republic, the last independent trench of Padanian totalitarianism..." (Rumiz, 2013, pp. 205-206).

This passage from the book, *The Legend of Navigating Mountains* by Paolo Rumiz, describes the area of "the gruesome-faced Negro Dum Dum who inhabits a piezometric tower."

You cannot easily forget the artist and designer, Marco Stefanini, also known as Dum Dum, once you have met him. Born in Switzerland in 1960, he studied in Rome and at the Academy of Fine Arts in Bologna. Toward the end of the 1980s, he developed a

special interest in designing everyday objects from stone, wood, iron, and glass. After having founded *Interno & DumDum* in Bologna, he participated in the 1988 Young Artists' Biennale. Later, as a partner and artistic director, he gave life to the literary circle, *Art Café Escandalo*, in Parma. Finally, he has joined the *Dilmos* exhibition space in Milan, where he still shows objects and furniture. He came to Sant'Ilario d'Enza to illustrate his idea of recovering the old piezometric tower 30 years ago, when I was a city council member. The building had been disused for years. It was property of the municipality of Chiavicone, the place of both his and my childhood.



Figure 1: The piezometric tower in Chiavicone as seen from the east (Photo: Santi Caleca).

Figure 2 (next page, above): The tower seen from the west (Photo: Santi Caleca).

Figure 3 (next page, below): View from the bathroom (Photo: Santi Caleca).





Figure 4: Entrance pathway (Photo: Santi Caleca).

Figure 5 (right): Wooden staircase to the mezanine (Photo: Santi Caleca).

Built in the early 1900s, the tower raises as a mushroom in the open countryside. Underneath, it has a jacket well. This used to pump water to the upper reinforced concrete tank for the town until the early 1960s. The circular base supporting the cistern is made of bricks baked in the defunct town furnace and stones from the Enza stream, which flows a few dozen meters away.

The administration liked the idea of recovering such a symbolic building so that the old mushroom-shaped piezometric tower could return to life. Thus, Marco Stefanini began to make it his home by pouring out his passion, work, and the little money that he had.

Seen from a distance, the tower looks unchanged and still marks the entrance to the Chiavicone district as it used to be. But when closer, you notice a pedestrian path featuring large rocks and chinked stones on the ground;

scattered elements of land art and pieces of industrial archaeology. It is the entrance path, and it makes you understand that the old tower has become a house. Suggestion and curiosity grow as one enters it. The building features a staircase that spirals following the circular wall; a kitchen made out of rocks, and a glass porthole in the center of the stone floor that shows the 13-meter depth of the well. Standing above the well and looking up, one sees all the floors precisely because the visual telescope marked by the well was kept up to the top. The space is open and its uses are not defined. But every detail, every piece of furniture is the result of care and research. Visiting the house is a discovery. A staircase made from a tree trunk with a rope as a handrail leads to the top floor mezzanine built in recovered wood beams. The bathroom faces the living area with its curvilinear bathtub, whose large steps are covered in a mosaic. A wine damsel was inserted into a wall to let the light in. Each chair is different. No detail was missed.



The recovery materials and objects are all natural: cork, lime, copper, wood, stone, rope... A wood-burning stove manages to heat the environment, protected by very thick walls: the ground floor is ventilated, so cooling takes place by drawing fresh air from the abandoned well.

Marco Stefanini has lived in the house for several years. His daughter was born and a parrot and a dog now live there. Further details and objects from his own life experience has kept enriching the tower.

This house has a soul that speaks for its inhabitants and makes them feel good.

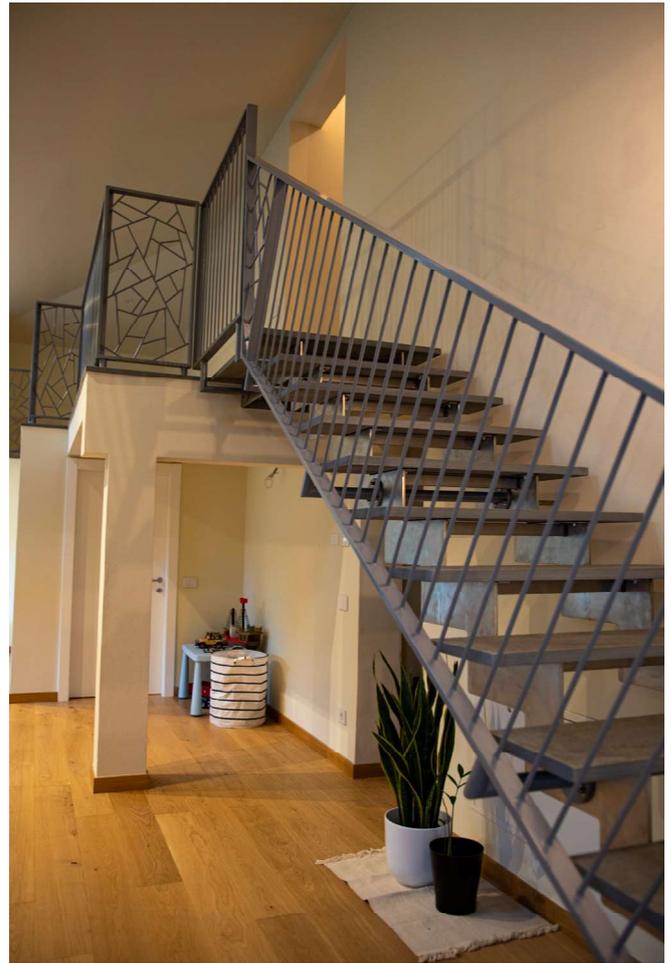
2. The Canali House: Restoring a House from the 1970s

“Our children (2 and 5 years old) entered our new house one night in September after a summer spent with their grandparents in Veneto. Leaning on the bed, the older one woke up and realized he was in the new house. He woke up his brother. Handling a reading light, they told us that they wanted to inspect the new house before going back to sleep. First, they walked the long corridor of the first floor that joins the sleeping area to what we now call the ‘big play room.’ Thus began their new life



Figure 6: Casa Canali (Photo: Agata Bertolini).

Figure 7 (right): Staircase (Photo: Agata Bertolini).



in the house in Canali, Reggio Emilia, with enthusiasm and wonder.”

With these words, Daniela Fent and Emanuele Fontana describe the curiosity and excitement of the first time in their new house. Originally built in the 1970s, the house has been heavily renovated and achieved an A+ energy classification starting from G. Mainly natural materials have been used, with a special focus on wellbeing. Today, the house offers a very high level of insulation and comfort. This includes homogeneous heating, despite its big and articulated volumes; the improvement of natural lighting; a different articulation of spaces to offer greater livability, and a direct relationship between the living area and the garden, which has become a real outdoor room.

Large and well restored, the house has positively affected the children’s lives. This is what their parents say: “In the first months,



Figure 8: Entrance gate (Photo: Agata Bertolini).

Figure 9 (right): Kitchen (Photo: Agata Bertolini).

I coordinated this project, which paid close attention to the needs of the clients. The design team included heating engineer Carlo Pagliani, designer Marco Stefanini a.k.a. Dum Dum, and architect Silvia Corradini of *Mazzali Arredamenti*.

Natural materials, such as wood, rock wool, iron, stone, natural pigments, and lime putty plaster, plus soft and low-energy technologies, are not enough to transform a bad building into a beautiful



the children played so much in their bedroom on a carpet placed between the two beds. Later, they spent time in different areas that were better defined. Playing tends to occur in the big room. While a parent irons, they play football or with cars. The living room is for playing with animals and plastic toys so as not to ruin the wood flooring. The kitchen is for homework and drawing. Thus, they use all the environments of the house. During the lockdown period, we particularly appreciated the large outdoor spaces, the interiors of the house, and their remarkable brightness. They really helped us overcome boredom, restlessness, and a sense of claustrophobia. The 900 sq m garden, of which 450 sq m are in a single rectangular lot, represents a great benefit from the house. We have already tried it out with a birthday party and a couple of barbecues. In addition, the children have a lot of fun biking or running around it. For them, the circumnavigation of the house is not short and represents a small adventure in itself, especially for little Federico.”

one. Something else is needed. No magic solution of materials and technology can transform a subpar building project in the historic center or a development on the coast into an exemplary model of sustainable development.

All it takes, and it is no small thing, is more awareness on behalf of both the client and the professional. This means thinking wisely about the place, the details, the human aspect, and the physical and psychological well-being of the user; avoiding notoriously unhealthy and problematic materials, and reflecting on what will happen in 50–100 years when our intervention will somehow be updated, destroyed, or recycled.

The risk and the limit of us architects is the lack of critical attitude toward our own work, which is so necessary in order to improve. By writing this note, I myself am taking this risk. However, by reviewing the work after a few years and interviewing the satisfied owners, I feel I can say that the project has succeeded.

3. Transforming a House in Montebabbio

This house is located in a small village in the hills of Reggio Emilia, not far from the city. It had been lost until its restoration. The owner, Antonella Dallari, assisted by sensitive, competent, and motivated workers, has transformed a house located in the heart of the village into a special house—a “house of fairies,” as they call it.

The work lasted a few years, and finally, the “rough house” turned into an organic home. The use of natural materials, in particular earth, straw, wood, and stone, combined with skillful processing, has made the environment special, almost magical. The interior spaces do not have a clear definition and the succession of volumetric variations, together with

wholly integrated furnishing elements, makes everything more free and vital.

Montebabbio is a handful of clustered houses. For some years now, the restored house has represented a qualifying, well-inserted element in this context. Here, every detail hints at the man-nature harmony by integrating the various artificial elements (buildings, furnishings, etc.) into the site’s natural environment.

The work also involved the external and common parts. The municipality supported this process by rearranging the driveway that runs along the houses of the historic core. This gave continuity to several interventions that have involved the owners of the village over recent years.

These include the recovery of the external



Figure 10: Casa Dallari in Montebabbio (Reggio Emilia), view from the portico (Photo: Valentino Franco).

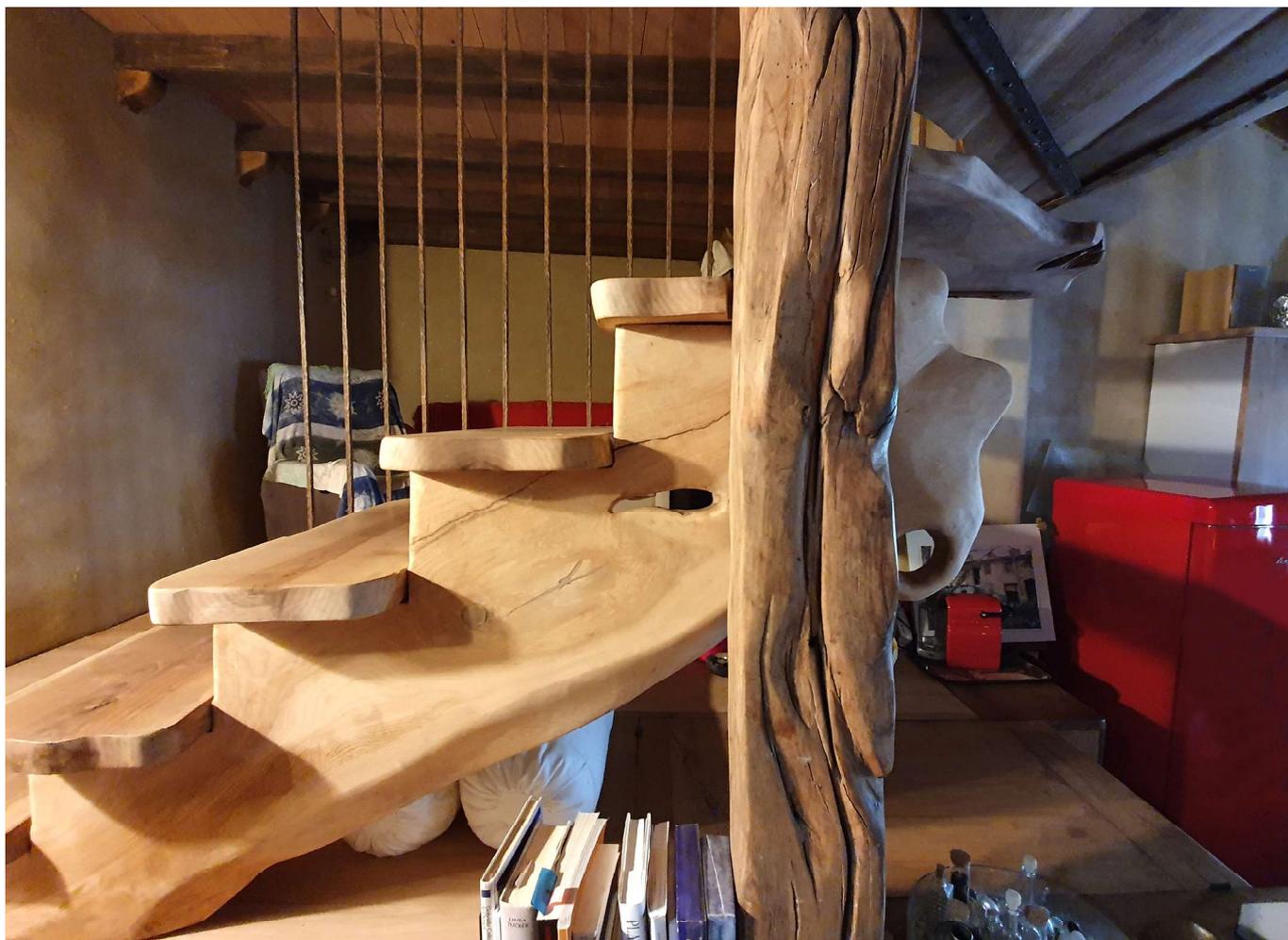


Figure 11: Wooden staircase (Photo: Valentino Franco).

oven; the construction of a small portico by recovering, cleaning, and polishing some 400-year old beams and the wrought-iron railing, which emphasizes that even the new entrance to the house can provide a life memory.

Each element is handcrafted and different from the other. This way, everything stands out but is undeniably homogeneous and harmonious.

Upon entering, you can “feel a special atmosphere”: the plaster in sieved earth, sand, and straw, selected and cleaned, make the walls breathe. Their softened shapes and relief elements give a sense of softness. The terracotta and wood floor echo the landscape, while a blue stucco was used in the bathroom (not present in the past) to recall the presence of water. I would like to describe the “house of fairies” through the following fairy tale by Giulia Calzolari.

3.1. The House of Fairies (by Giulia Calzolari)

Did you ever feel—when you first wake up—like being in a different place than where you fell asleep?

It is with this doubt that I thought: “It can’t be possible to move into a nest without realizing it!” Then the brain slowly wakes up and begins to reason: “Where could you ever be, you fool of a hedgehog? You fell asleep months ago in your den and now you must be in the same place, perhaps even in the same position!”

The smell, the light, the warmth, and the softness of this bed can only be those of a nest built with your own hands. Who better than us to take care of the places and objects of our life? Still, something told me that this