HERITAGE 2022 - International Conference on Vernacular Heritage: Culture, People and Sustainability
September 15th-17th, 2022 Valencia, Spain
Doi: https://doi.org/10.4995/HERITAGE2022.2022.15285

Protection and reuse of a forgotten heritage: the Parmesan cheese buildings. Notes for a widespread museum in the lower Reggio Emilia plain

Stefania Varvaro[1]
[1]Politecnico di Milano, Milano, Italy, stefania.varvaro@polimi.it

Topic: T4.4. Management and maintenance of vernacular architecture

Abstract
The content of this proposal is a reflection on the landscape of the low Reggio Emilia plain and on the material traces still present in the area linked to the artisanal production of Parmigiano Reggiano (Parmesan) cheese dating back to the 1700s and 1800s. We refer, in particular, to the agricultural system related to the production of forage and high quality grass to obtain the so-called "white gold", i.e., milk—the raw material for making cheese—and to the architectural buildings used for artisanal dairy production. These structures, called caselli*, are much more numerous in the province of Reggio Emilia (the "Dairy Register" of 1911 lists 711* caselli*), compared to Parma and Modena, despite the fact that Parmigiano Reggiano has always characterized the economy of all of these areas. This kind of architecture is characterized by buildings of reduced proportions with a central, square or polygonal plan, structurally set on a central pillar around which the processing phases of the cheese production were organized. With perimeters of the buildings defined by brick walls, which bear weight on the edges, and characterized by a light and ventilation system, known as* gelosie or *"jalousies" paneling on the sides, they are an embodiment of valuable constructive knowledge. The brick-grid infills, or "jalousies", designed to calibrate air and light, become essential components for the production of cheese. Starting from the idea of a widespread museum in the area, related to H. de Varine's thought on the ecomuseum, some design guidelines are established for the enhancement of this production tradition and its agricultural landscape. The rapid evolution of dairy technology on the one hand, and the changes in the territory on the other, have compromised the interpretation of a system that in the tradition of knowledge, techniques and materials had characterized a territory for at least two centuries.*

Keywords: *agricultural landscape of the plain; Parmesan cheese building architecture; widespread museum.*

1. Premise: circumscribing the Parmesan area and the *caselli* territory

The starting point of a clear understanding of a territory is fundamental for framing how the production of Parmesan is a constitutive part of the Emilian agricultural design. What is left of a heritage of material culture linked to the artisanal way of producing Parmesan is presented not only in the cheese production buildings, but in the whole agricultural system that supported the craftsmanship of Parmesan: the fields cultivated for fodder, their extension and size (proportional to the capacity of the companies for milk production), the collection of milk and its transport, the art of making cheese, and the traditions associated with it. Knowing these interconnected networks makes it possible to enhance a heritage that affects the material and immaterial history of two centuries of a vast territory and which finds its character of physical recognition in the *caselli*.

The geographical area of Parmesan production corresponds to an area between the Po and the Tuscan-Emilian ridge, in the provinces of Parma, Reggio Emilia, Modena and Bologna. The territory of Parmigiano Reggiano, which extends from the plain to the hills to the Apennine Mountains, was (and still is, in part) recognizable for its landscape with its unique and characteristic morphology, a mosaic: various soil types with multiple crops growing and coexisting next to woods and strips of uncultivated land. These are the places where particular environmental and climatic conditions proved to be optimal for the production of Parmesan cheese.

This paper focuses attention on the structures of the cheese buildings as highly developed architectural elements and characterizing an articulated production system capable of drawing that physical link between the family, the community and the land that was worked, between the rural residence and the agricultural context. In the Po Valley, there has been a gradual upheaval suffered by the ways of life that were an integral part of that structure of the territory and its economic and social organization. The new landscape of industrialized agriculture is almost continous with the growing urban development that branches off a widespread city and is distributed along the farm roads, which in the meantime have been paved, widened, and lined with warehouses.

It is a landscape that has undergone major and rapid transformation since the post-war period, including road infrastructures, new railway lines, such as high-speed railways, the consequent abandonment of the more marginal ones, the reclamation works, the implementation and the redesign of the irrigation system, and the spread of intensive agriculture and its mechanization. All these have entailed structural changes to the agricultural landscape of which the production of Parmesan has been an integral part for centuries.

The abandonment of the dairy structures of the cheese buildings is, together with the design of the fields, the most visible part of the transformation that has taken place. Pazzagli points out that 'abandonment is not all the same', but all its gradations have in common the lack of models of life and relationships that he summarizes with the term 'disorientation' and which have led to an ungoverned modification of the landscape, much to its detriment.

The *caselli* are small buildings, dedicated to the artisanal manufacture of Parmesan cheese that spread from the end of the 18th century to the beginning of the 19th century, in the limited territory of Reggio Emilia, Parma and Modena. These buildings had several specific recognizable characteristics: reduced proportions; a square or polygonal plan, set on a large central pillar around which the cheese processing phases were organized; a weight-bearing structure of brick pillars; and grid infill patterns, called *gelosie* or "jalousies". These "jalousies" allowed the air to circulate and mediate the extreme heat of the cheese production, creating a filtered environment, while modulating the light that flowed inside. However, it was only in the province of Reggio Emilia that the *caselli* with these specific recognizable characteristics were present in large numbers.

In the high and low plains, where the production of Parmesan is greater, there is a high concentration of these cheese buildings. The "Dairy Register" of 1911 lists over 700 *caselli* in the province of Reggio Emilia.

2. The *caselli*

The first *caselli* of the mid-18th century were simple constructions with a wooden structure. When in the second half of the 19th century, the production of Parmesan increases, the producers begin to need specific architectures that are functionally related to the processing: brick boxes are introduced, offering adequate ventilation and the possibility of lighting a fire inside. These structures were built in a rural environment and were closely linked to the farm for the produc-

tion of milk and the reuse of the waste derived from cheese production in pig breeding. The distribution of these buildings throughout the territory was dictated by the need for milkmen, who transported milk on their shoulders or on hand-pushed carts, to make their trips as short as possible. The place where they chose to build the constructions met specific requirements: it had to be easily accessible, near a crossroads or at the convergence of several roads.

The *caselli* became nodal points of the territory. They faced the road to be more visible and had a front space that could be used as a loading zone. They were as important for economic organization as they were for social life. The *casello* was configured as a place of meeting and information sharing for the population, so much so that the civil and ecclesiastical authorities used it to post their notices.

It was part of the building system that made up the dairy; the *casello* was used for the storage and processing of milk, the *salatoio* was where the cheese was salted, and the *casera* was used for the first seasoning or aging of the cheese. The cheese building could be isolated or merged with the residence and have an adjoining or separate salting room.

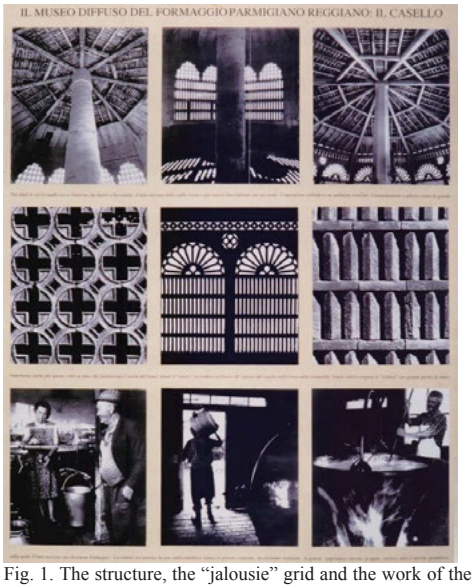

Fig. 1. The structure, the "jalousie" grid and the work of the *caselli* interior. (Stanislao Farri, 1979)

Before the arrival of a stable architecture suitable for its production, the cheese was cooked on a temporary hearth, set up outdoors, with a central support to hang the boiler. This was sheltered by perimeter screens and a roofing system, both supported by wooden poles. This pattern takes on a stable form in the brick building. They mainly have a central plan: polygonal (hexagonal or octagonal) or square. The square one is more archaic than the polygonal one, which in addition to ensuring a more immediate recognition of the dairy, improved its functionality in the distribution of work spaces and increased the ventilation capacity, making the direction of the wind less decisive.

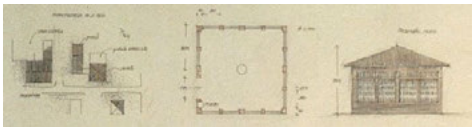

Fig. 2. Location of *casell*o in the system of rural buildings: square type. (drawing made by the author of this paper)

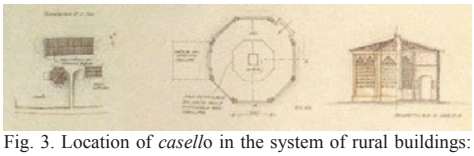

Fig. 3. Location of *casell*o in the system of rural buildings: polygonal type. (drawing made by the author of this paper)

In most cases, the increased productivity involved the construction of additional spaces to the original volume of the building, progressively marking the decline of artisanal production and the introduction of an industrialized process.

Analyzing the dimensions of the plans and the elevations of the remaining *caselli*, it can be seen how, in those built from the second half of the 19th century, the measurements are often linked by proportional relationships. "Osteria Vecchia" in Casalgrande, "Margone" in Scandiano, and "Giardiniera" in Roncadella, are octagonal blocks in which the internal divisions of each elevation are based on geometries articulated on the figure of the square, on its decomposition through diagonals and medians, and on the size of a single brick, taken as a modular unit of measurement.

In the quadrangular Roncina building, the height and width dimensions are linked by the geometric ratio 1:2, the elevation being equal to half of the plan.

In all the cheese buildings, the materials are local ones linked to traditions widely used throughout the Po Valley: terracotta, wood and stone. The brick used for both the structural and finishing parts prevails, providing a porous and transpiring material very suitable for the needs of this architecture. The ductility of the clay allows intervention on the finished element by cutting or smoothing, and allows a great variety of shapes even in the grids and in the pieces that compose them.

In the *caselli* structure, a very important element is the central pillar. It has a circular or square section, and large dimensions as the beams of the roof converge on it from the corner pillars. A metal bracket was inserted into the pillar, which allowed the *caldera* to be suspended over the fire.

The *caldera* is the copper boiler in which the milk was cooked. The *fornacella* is the hole dug next to the central pillar where the fire was lit, circumscribed by a wall about 90 centimeters high that protected the dairyman from the fire. The cover is made in such a way as to facilitate the dispersion of fumes.

The rafters, arranged radially, support the tiled roof. All the elements of the roof structure were generally made of oak. In order to increase the ventilation of the room, tiles were not always placed between the cover system and the wooden structure.

Sometimes, to prevent dust and debris from falling on the milk containers placed on the shelves close to the walls, the tiles were interposed only in the peripheral part of the roof. Another architectural element functional to the aeration of the cheese building is the turret that takes up the shapes and proportions of the building on which it stands and repeats the perforated holes with the "jalousies". Dictated by the need for functionality, the turret became a decorative element. The owners of the cheese buildings used this opportunity to further characterize their company. Pinnacles, chimneys and small terracotta figures placed at the top of the roof fulfulled the same purpose. Even the windbreak grills, derived from the strictly functional need to make the environment as permeable to air as possible, became decorative and characterizing elements. One of the purposes of the "jalousies" was to break the wind gusts that could have altered the climatic equilibrium of the environment. Ventilation was necessary for the nocturnal decantation of the milk and during the cooking phase it helped to keep the fire lively and also helped to eliminate smoke.

There were no particular heating requirements because the cheese building wasn't used in the winter months. Due to the chemical composition of the milk, linked to the feeding of the animals that varied according to the seasons, production went from April to November. Even though the "jalousies" contributed to making the environment airier and, therefore, cooler in the summer months, during the day, the temperatures inside the *casello* became very high. Thus, rows of trees were planted at the right distance to shield the sun during the hottest hours of the day.

The windbreak elements of the "jalousies" could be oriented so as to favor the rapid exchange of air and the rotation of the fumes inside. The grids also responded to the purpose of regulating the light appropriately; harsh lighting would have been harmful to the processed products and the dim light helped to keep away the insects that would have been attracted by the light. The "jalousies" were in terracotta, with the most archaic ones in wood. Only in S. Michele della Fossa is there still an example of grates of the latter type.

As far as the grids are concerned, each building has a different formal solution. In addition to the modular elements used being quite varied, the way of composing them also changes. The great variety of combinations is their characteristic.

The elements that made up the grids of the *casello* were often purposely manufactured either by modifying the bricks currently produced, or by using molded pieces. The shapes are the most varied: from the small columns spread in the middle and lower plain in the northeast, to the "crosses and circles" motif, from the four-leaf clover framed by a lozenge to the "S" arranged alternately in straight and inverted form.

At the end of the 19th century, dairy production changes and, progressively, it passes to an industrial type of production. Several factors will lead to the development of the most modern social dairies and to the abandonment of the cheese buildings. These factors include the need for greater hygiene during all stages of processing, and the impossibility of containing more modern machinery due to the scarcity of space. As a result of these factors, the transition is made from an artisanal production model to an industrial one, which becomes more scientifically and technically adequate, profitable and competitive. With the industrialization of the Parmesan cheese production process, the larger and more modern steam stations replaced the wood-fired ones which, abandoned or destined for often incompatible uses, began to undergo a process of decay. Then what Andrea Emiliani called, 'the drama of the transition towards the cultural model of industrial civilization' took place, which as he affirms, saw the steep decline and death of a particular way of relating to, and caring for, the things of daily life. Unfortunately, the generational passing-down of know-how also ceased then. There was a rupture in the profound transmission of artisan knowledge, which is not a subordinate and secondary science, but the "other culture", the practical one, never written and, as such, inherited from generation to generation from the hands and from the pragmatic intelligence of humankind. Among the more than 700 cheese buildings listed in the "Dairy Register" of 1911, only about 85 remain.

3. An enhancement proposal. The Caselli Park: itineraries in the museum of the Reggio Emilia plain

The *casello*, as an open architecture, in continuous osmosis with the outside, is a characteristic element of the landscape and a fundamental stage in a dense network of connections linked to the places where milk and, therefore, cheese are produced. An enhancement project must consider not so much the *casello* as architecture in itself, which will need a specific conservative restoration, but the *casello* as architecture in the territory. A widespread museum project is proposed, capable of speaking for the agricultural-productive history of a territory. The perimeter and extension of the area of interest can be understood through a continuous process of updating; however, initially the choice falls on the Reggio Emilia area where the concentration of cheese buildings is greatest: the area between the Po and the municipalities of Novellara, Correggio, Bagnolo in Piano and Reggio Emilia.

Factors of primary interest for the constitution of the Caselli Park include the attractive role of the provincial capital, and the existence of significant natural resources and valuable architectural assets that are in complete abandonment. Furthermore, the condition of environmental degradation due to the presence of the industrial and exhibition areas of Mancasale, and the environmental-ecological directives of the Bagnolo Master planning, constitute important factors in terms of potentiality and criticality. On the one hand, the aim is to restore functionality and its own recognizability to each cheese building; and on the other hand, articulated plots are woven to recover the readability and understanding of the whole territory. By consulting the regional landscape plan and the territorial government plans of the municipalities mentioned previously, the proposal is a park system that

revolves around Bagnolo in Piano, in which the *caselli*, through the widespread museum of Parmesan cheese, become a guiding and unifying thread.

The intent is to build a network of paths that interpret the territory and its development, while recovering a potentially strategic area since it is located at the center of a series of points of architectural and naturalistic environmental interest. Bagnolo in Piano is located in a central position with respect to significant points of the territory: Reggio Emilia to the south, Correggio to the west, Novellara to the northeast, and the Po to the northwest. Paths are designed that follow guidelines already specific to the area and make them useful again through the creation of three countryside parks: the Canalazzo Tassone-Crostolo countryside park, which flows into the Po; the Strada Vecchia countryside park that connects Bagnolo to Novellara; and the old Campagna park.

The Caselli Park becomes an opportunity to solve existing criticalities and put into a planned system the projects already in place: the recovery of the Reggio-Guastalla railway line, the involvement of the Sun Cycle Route (Verona-Bologna-Florence), the Correggio cycle paths, the high-speed bypass, the environmental recovery areas of the brick-production furnace of Fosdondo, the project for the enhancement of the Po and the project of a naturalistic cultural interpretation path of the Reggio Emilia canal. The numerous studies concerning the Park area involve different portions of the territory and have been formulated at different times and by different bodies with the result of a lack of communication with each other. The Caselli Park has, among its objectives, enhancing continuity by synergistically linking the different aims.

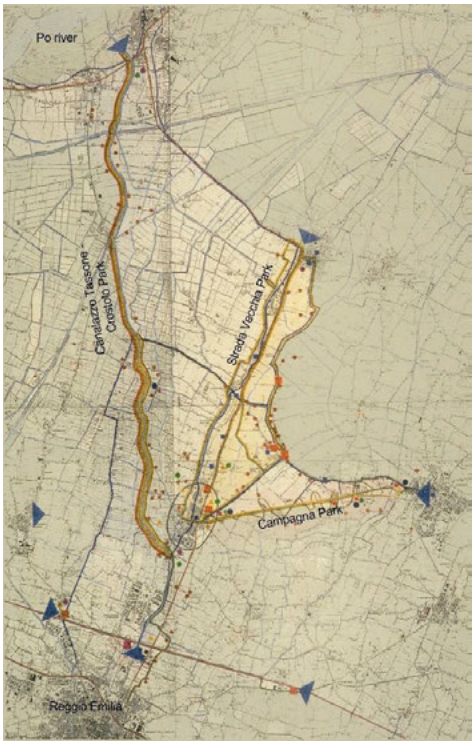

Fig. 4 Caselli Park Map: a territorial museum experience.

First level: the three lines along which the three different parks develop are established. This includes the Canalazzo Tassone, with an environmental and naturalistic character; the park along the Reggio-Guastalla state road, with a historical and architectural character; and the one along the Bagnolo-Carpi railway, with a playful character.

Second level: the intersection of the three theme parks in Bagnolo in Piano becomes the hinge of the system.

Third level: the access points to the Caselli Park are chosen. These are as follows: to the south from Reggio Emilia, through the cycle paths of the city; to the east and west, the accesses from the motorway rest areas of Sesso and Dinazzano, where two *caselli* become stages of the

widespread museum of Parmesan cheese; and to the north, the preferential access is from the Po, through the pedestrian and cycle paths along the Crostolo-Tassone stream. In this way, the Caselli Park is connected to the Po cycle path and to the Po Project.

Fourth level: the two horizontal connections are established: to the north, the Guastalla-Correggio state road; and to the south, the cycle path that leads from Sesso to Dinazzano.

The superimposition of these four levels on the territory creates the backbone of the Caselli Park. The widespread museum of Parmesan cheese is developed across the three countryside parks, constituting a unifying element for them, interpreting the environmental and cultural context in which the *caselli* themselves were first built and then evolved.

The cheese buildings inside the Caselli Park represent the stopping points of the widespread museum of Parmesan cheese; there are seven in all (the transformed ones) and they constitute a privileged observatory.

The museum, in fact, is not intended as a fenced reserve, but as a reality open to the whole territory affected by the presence of the cheese buildings. Those who visit the widespread museum receive the tools to recognize and understand the other 78 *caselli* present in the Reggio area. The seven recovered cheese buildings become a bike rental, a small museum, an audiovisual space, an educational laboratory, two refreshment places and an information space.

The Caselli Park offers a a form of enhancement and protection of the agricultural landscape and its architecture, together with a model of local development through a responsible experience of a territory. It is a journey through the knowledge of ancient traditions linked to one of the most profitable and consistent forms of the economy of the Emilia-Romagna region currently present, a sort of bridge between past and future. It ranks as a possible ecomuseum of Parmesan cheese consistent with the principles of the strategic Manifesto of the Italian Ecomuseums. This ecomuseum could stand together with other experiences such as the Cervia Salt Mines, Terre Salentine, Argenta, Parabiabo, Gemona Water Ecomusuems, etc., as museums that unite the places of production to the constructed landscape in which they are located.

4. Conclusion

The territory is no longer conceived as a container of isolated ineffable monuments, rather it is seen as a system of goods and objects connected to each other, and only in this way understandable.

The cheese museum is an open-air museum of material culture. Visiting this museum, one learns about the fabric of works and forms that can be read as signs of the history of a culture.

Going through the widespread museum of Parmesan cheese implies discovering the material culture linked to the *caselli*: the artifact, its history and its territory. In so doing, the visitor regains possession of the testimonies of the past, made alive and current again.

Fredi Drugman, architect and professor at the Politecnico di Milano, one of the first theorists of the widespread museum concept, said "(...) I think that museums, some museums serve precisely this: to strengthen, as far as their limited sphere of action allows, the sense of belonging (...)". These are words that underline the profound value given to the history of work, of communities, to all those events that can constitute an experience of knowledge.

It means being able to know a landscape as a visible manifestation of current uses and of those that have followed over time by reading that palimpsest of signs that make up the wealth of the territory.

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