

DOSS SANT'AGATA IN TRENTO

An evolutionist approach to architecture and landscape

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ABSTRACT

Doss Sant'Agata is a hill near Povo (Trento, Italy) that has been forgotten for decades but of very ancient anthropization, on which over time the most various settlement experiences became embedded. A castle was built in 13th and 14th century, hill's slopes were cultivated until the 1970s, and nowadays the only survived architecture is the St. Agatha Church, likely built in the 16th century, a small but meaningful palimpsest where both the actions of men and nature are matched. The roof of the church, which was seriously damaged, prompted the local community to take action to safeguard the entire site; then the collaboration between inhabitants, the University and various bodies of the Autonomous Province of Trento has allowed the development of a participatory, pragmatic and sustainable project for a systemic requalification of such a complex historical heritage.

KEYWORDS

adaptation, memory, evolution, knowledge, valorisation project

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Landscape, together with historical, artistic and archaeological heritage compose «[...] a full and perfect unity, whose parts enlighten each other, link to a horizon of rights and are (rather, can and must be) essential ingredients of democracy» (Settis, 2017, p. 6). The full realization of a place occurs when all its parts are put in the condition of dialogue, acquiring values recognizable by society. The possible result is, therefore, a system capable of catching and interpreting change, adapting to it without compromising its own identity.

When Norberg-Schulz (1979, p. 18) writes that «[...] the history of a place should be its self-realisation», he is referring not only to the fact that a cultural landscape is such if it shows a clear balance between physical space and anthropic activities; he rather points the most important aim of the design process, that is to catch what is 'present as a possibility' to transform it in what «[...] is revealed by human action, enlightened and preserved in architecture works which are at the same time old and new». In this way, we can build an anthropological place which is concurrently a principle of meaning for those who live it, and a principle of intelligibility for those who observe it.

An archaeological and epochal place | Doss Sant'Agata is nowadays a promontory with no role in the landscape and urban context of Trento. The hill rises about 100 metres upon the vast plateau where the small towns of Povo and Villazzano are located and, although overlooking the entire city of Trento, is not immediately recognizable from it. Though, among the most common thesis about the etymon of the ancient toponym of Trento, Tridentum (Bortolameotti, 1989), intended as Latin term composed by 'tri', the root of 'tres' (three), and 'dens' (tooth), there is one particularly interesting. Indeed, there is the association by metonymy with three teeth of as many hills (Doss Trento, Doss San Rocco, Doss Sant'Agata) which «[...] rising as a triangle around the city, three teeth tighten it among their jaws» (Mariani, 1673, p. 38). Moreover, on Doss Sant'Agata a castle had taken place since 1208 to 1375, considered one of the most important castles of the hilly area east of Trento, of which only sporadic traces remain (Possenti et alii, 2013).

The urbanization of Povo, small rural town until the 1960s and now part of the hinterland of Trento and headquarters of the University's scientific centre, has caused in the last forty years a progressive and relentless abandonment of the hill, previously used on the slopes for extensive subsistence agriculture. A common story for many parts of Italian territory, despite for the fact that the St. Agatha church rises on the tallest point of the hill (Figg. 1-4), an architecture dated so far to 1566 (the date is engraved on the architrave of the front door) and attested explicitly in 1579 in the Acta Visitalia. The church is the only preserved building on the whole hill, and it is paradigmatic about the conservation status of the entire site, as well it is a meaningful architectural and archaeological palimpsest.

Unfortunately, the relevance of this strategic site of extraordinary historic impor-



Fig. 1 | B. V. Corona's chapel, Povo, Painting with the Doss Sant'Agata in the foreground (XVIII century).



Fig. 2 | Albrecht Dürer, Trient (1495).



Fig. 3 | Peter Anich, Blasius Huber, Atlas Tyrolensis (1774).

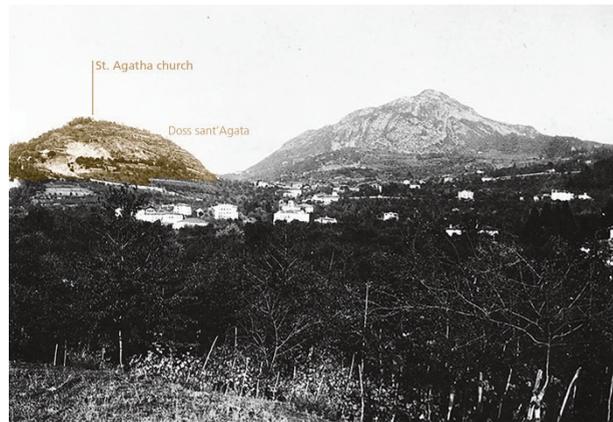


Fig. 4 | Panorama of Povo (Private archive, 1906).

tance, that is the protagonist of the genesis of the presumable toponym of the city, has not prevented either avoided the decay and the abandonment. It becomes spontaneous to wonder why a hill that once saw a church, a castle system, many agricultural terraces shaped by dry stone walls and cultivated by the population on the south-western side, as well as a forest used as a hunting reserve on the north-eastern side, can now be entirely covered by a blanket of vegetation, mostly spontaneous, which conceals and confuses both morphologies and peculiarities. This query and the will to set a strategy to reply to the current situation have oriented the direction of the research.

The system determined by hill-church-town was preliminarily investigated by transposing it into the field of meaning and depicting it using the semiotic triangle, which best allows grasping the variation in the relationship between place and user as a function of time and boundary variations. The three vertexes of the triangle, the symbol (the perceived mark), the thought or reference (the concept assigned to the symbol) and the referent (the subject which decodes the symbol according to the thought) are variable in time (Ogden and Richards, 1923). As one of the three vertexes changes, the plan they identify consequently varies, which constitutes the richness of meaning of the case study. This triangle is then inherently subjective and, for a specific place (the symbol), we assist to the presence of a different subject (the referent) and then to the attribution of different value systems (the thought).

Once the first field of investigation was established, we wanted to move the research to another field that could allow an easier definition of the identity of the system. Sergio Giovanazzi has identified, starting from the work of Martin Heidegger and the thoughts of Vittorio Ugo, three founding concepts of which he calls 'architectural regionalism' (Giovanazzi, 2006). The first concept, 'tópos' (place), defines the architectural space and configures its own and characteristic elements that allow establishing its limit and peculiarities. The second one, 'arkhé' (principle, foundation) is the «[...] primary principle that every culture builds as its foundation and which belongs



Fig. 5 | St. Agatha Church towards the east (credit: F. Giampiccolo, 2018).



Fig. 6 | St. Agatha Church towards Trento (credit: F. Giampiccolo, 2018).



Fig. 7 | St. Agatha Church towards the plateau of Povo (credit: F. Giampiccolo, 2018).



Fig. 8 | St. Agatha Church, zenithal view (credit: F. Giampiccolo, 2018).

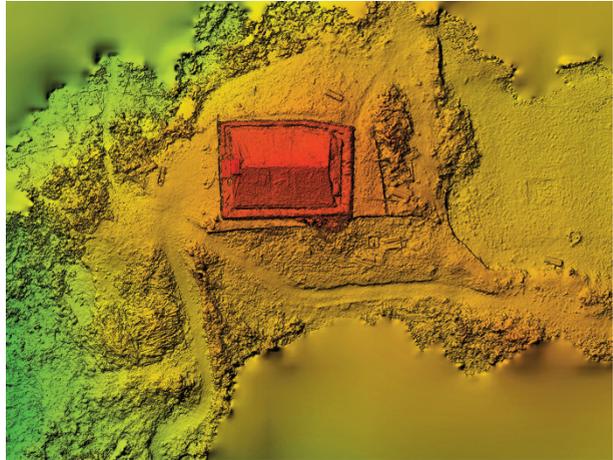


Fig. 9 | DEM (Digital Elevation Model) elaboration of zenithal views acquired by drone (credit: F. Giampiccolo, 2018).



Fig. 10 | St. Agatha Church with the new roof (credit: F. Giampiccolo, 2019).

to it as the primary source of its forms» (Ugo, 1997, p. 128): it is physically identifiable in the way of living (feature of a particular region) and in the forms that nature takes on in places. Somehow, opposed to the previous one is the third concept, 'epoch', intended as the organic system of culture, mentality, ethic and society as present and detectable in their era.

At a careful glance, Doss Sant'Agata is recognizable and detains a precise own identity (and so it is a *tópos*) developed from the critical and continuous relationship between *arkhé* and the anthropic processes of every epoch. The history of Doss Sant'Agata and the succession of mutations in the ways of inhabiting the hill can be read and interpreted in an evolutionary– or rather, adaptive – logic of Darwinian kind (Massari, 2010). The present stratification is the result of continuous changes of the boundary conditions (physical, social, economic, etc.) to which humans react, from time to time, adapting and rethinking spaces and ways of the living landscape.

The diachronic process was roughly stopped with the 'arbitrary' intrusion of an extraneous situation (the urbanization of Povo), when the fast change of the boundary conditions, of the 'epochal' type, in fact, led to the abandonment of the dialogue between the human being and the *tópos* that he helped to define in the past. A dialogue that, as Martines wrote, is difficult to promote and re-start, because «[...] if a temporal distance has intervened to split the object or the context's fragment from the urban environment, interrupting the interactions interweaved in the vitality of the historical processes, then an estrangement is produced between the city and this exhumed fraction of it» (Basso Peressut and Caliarì, 2019, p. 49).

New assets determined by anthropic factors have underlined a poorly resilient attitude of the whole system. Particularly, the lack of structured knowledge and information system did not allow users to know, recognize and actualize the identity and the values owned by Doss Sant'Agata. The result was the need to develop an intervention strategy that would allow the mitigation of the effects resulting from the change; therefore, a strategy that complies with the purpose of architecture to link the past with the future through the project.

Shared strategies for reactivation | The principle according to which the conservation of historical heritage finds its justification in the value that is attributed to this heritage, explicitly expressed in the Nara Document (ICOMOS, 1994), is universally accepted. At the same time, it is equally clear that if a cultural asset is not considered as such, that is, it is not recognized as a witness to precious values, then it will not attract human and economic resources aimed at preserving it (Sposito and Scalisi, 2018). It was mandatory to act in Doss Sant'Agata holistically and systemically, with different instruments and time horizons, capable of solving the critical issues previously underlined. In a short and medium-term perspective, the need was identified to reconnect the community of Povo to the hill and the church, to rediscover the possibility of daily use of the hill and regain possession of its ruins loaded of memories. Especially considering the church, the aban-



Fig. 11 | Extraction of mortar samples
(credit: F. Giampiccolo, 2018).

donment and advancement of spontaneous vegetation had generated the decay and the subsidence of a part of the roof which, no longer guaranteeing protection from atmospheric phenomena, risked compromising the conservation of the building (Figg. 5-7).

The necessity to find the economic resources to replace the roof encouraged the birth of a committee – named ‘A town, its hill, its church’ – which took charge of seeking financial resources in the social and economic local community. This was important to start a reconnection among Doss Sant’Agata and its territory, but it was valuable as well because in continuity to a tradition of efforts and work typical of the community of Povo. Many times in the past the inhabitants acted at their own expense to maintain and restore the church (1769, 1859-61, 1893, 1962, 1983). Moreover, the community ‘ab immemorabili’ carries out a procession to the hill twice a year.

The intervention proposal lies in a methodological approach that radically distances itself from past operations, made as answers to the emergency and conducted in the cheapest way by unskilled manpower. The need for correct, effective, durable and sustainable (in materials, in expenses and in maintenance) actions has promoted a multidisciplinary strategy in which various competencies could meet. Then, after the



Fig. 12 | Emerging wall structures during archaeological surveys conducted by the University of Trento (credit: F. Giampiccolo, 2019).

Fig. 13 | St. Agatha Church, north front: castle structures emerged during excavation surveys financed by the Autonomous Province of Trento; dense cloud obtained through the structure from motion.



Fig. 14 | St. Agatha Church, south front, inner: castle structures emerged during excavation surveys financed by the Autonomous Province of Trento; 3D model obtained through the structure from motion.

preliminary phase of finding the economic resources, a research team from the University of Trento and the University of Padua joined the committee.

The commitment of the University of Trento was addressed preliminarily to the construction of the cognitive and informative apparatus to better understand the current stratification of the artifact (De Angelis D'Ossat, 1982). The historical and archival research was followed by the architectural and territorial survey (Figg. 8, 9), the design and construction of the new roof (Fig. 10), the extraction of mortar samples from the masonry apparatus (Fig. 11), the beginning of an archaeological campaign on the plateau on the top of Doss Sant'Agata, to discover the possible presence and dimension of the castle, and which relationship it might have with St. Agatha Church (Fig. 12). The drone survey allowed the recognition of a terraced perimeter at a quite constant height, that could be the boundary of the castle. The know-how of the University of Padua has allowed to carry on archaeometric analysis on samples and to detect at least three different phases of St. Agatha Church (Artioli, 2010).

The first results of scientific investigations were shared with the community: soon the interest raised, both among the people, which step by step is now visiting the hill and spontaneously is funding the committee, and the institutions, like the Autonomous Province of Trento. The latter, through the Superintendence for Cultural Heritage, has funded a preliminary archaeological campaign focused on St. Agatha church, which seems to stand on a pre-existent foundation. The final information results reveal a stratification that is difficult to understand due to the richness and variety of elements

to which it is still not possible to give a temporal and functional collocation (Fig. 13, 14). The stratification is the outcome of the subsequent adaptations of the system (Fig. 15), it bears witness to how «[...] in every historical moment human action, in particular, the act of building, has arisen as a fulfilment of present needs, in some way grafted in the wake of the past ones when their permanent validity could be recognized and projected towards the future, but only where a current expectation of advantage could be hoped for» (de Rubertis, 2010, p. 86).

The will to contribute according to a logic of continuity with the historical outcome leads to the development of a project that favours the adaptation of the system directly deriving from the knowledge that of this system is gradually being acquired.

A future for the ‘upper town’ of Povo | Nowadays we are witnessing a rereading of the role of architecture in a functionalist and performance key, driven by widespread awareness of the urgent need to answer effectively (and efficiently) to climate change (Purini, 2016). After bad experimentations and results, the request for ‘participation’ in the architectural project seems already closed, in the hope of its rapprochement with the common feeling. The periodic surfacing of new stimuli and emergencies implies a constant forcing of the practice of architecture towards the fulfilment of a certain goal. This kind of design is the son of the fragmentation of needs and knowledge, as well as the absence of a unitary vision. Then, it follows the risk of a self-referential conception, disconnected from *tópos* and *arkhé*, that can lead only to episodic outcomes which are bounded to fast ageing and disaffection. The countless buildings produced in the second half of the twentieth-century bear witness to this, today considered as sick and unresolved portions of our cities.

If a palingenesis is appropriate for Doss Sant’Agata, it must, therefore, be guided by other principles: a truly effective and resilient response requires us to refer to architecture as an expression of history, a conscious expression of how knowledge and memory of the *tópos* and *arkhé* produce the subsequent adaptations of the epoch. In fact, «[...] the ascertainment of ‘you are what you have been’ is not only a linguistic calembour nor just a refined intellectual suggestion, it is the awareness that current reality is nothing more than the product of history, of changes and alternate human events» (de Rubertis, 2008, p. 59). Both in the analytical study phase and in the project synthesis, the ambition was, therefore, to articulate the different and variously intervened instances and competences in an organic unity and centrality aimed at enhancing the identity of the place. The *fil rouge* that links the various specialities has consisted both in safeguarding the *genius loci*, which generated the Doss Sant’Agata *tópos*, and in making it easy for everyone to understand, since «[...] only when we understand our places, we will be able to participate creatively and contribute to their history» (Norberg-Schulz, 1979, p. 202).

This intervention methodology has found a natural application consequently to the analysis of DEM (Digital Elevation Model) surfaces, generated by territorial surveys



Fig. 15 | St. Agatha Church, section; ortho images obtained through the structure from motion.

Fig. 16 | Project proposal for Doss Sant'Agata.

conducted by UAV with techniques borrowed from the ‘structure from motion’. The discretization of these surfaces shows that on the complex and jagged orography of the hill it is possible to trace a mainly stationary perimeter, which seems to be, if not the perimeter of the walls, the one of the fortified area. Along this perimeter, there are a series of points that allow you to establish uncommon visual relationships between the church, Povo and the city of Trento.

The consequent design outcome consisted in highlighting the perimeter as the threshold between the fortified system, or the ‘upper town’ of Povo, and the underlying forest and agricultural areas. Historically, the threshold is a key element of the project, since spaces are perceived in the dimension in which they are delimited and, in this sense, crossed and experienced (Furlong, 1999). The operation also makes sense from an etymological point of view: the area is conceived as a park which, like the terms ‘hortus’, finds its Latin etymology in an enclosed and circumscribed space, which therefore finds its definition and completeness in its perimeter. The sense of tracing the threshold, therefore, acquires importance and makes the summit park – understood in the most varied meanings, from archaeological park to recreational park – a well-defined and recognizable space (Fig. 16).

The area does not suffer changes in the orography of the terrain, which is kept unchanged, thus allowing to preserve the archaeological remains that may be present underground. In the same way, the paths, made with a limestone pavement resting on a bed of sand, will have a minimal footprint and will ensure that the excavation necessary for the installation does not exceed 30-40 cm of depth (the first useful depth for the finds archaeological is generally more than 50 cm). It follows that in the area it will be possible to promote and carry out archaeological excavations such as those already underway which, instead of harming the system, will become protagonists, highlighting the evolving dimension of the palimpsest and thus providing a significant opportunity for enriching knowledge (Fabrizzi, 2015).

The forest in the north-eastern area of Doss Sant’Agata will remain unchanged, while the agricultural terraces, nowadays invaded by tall trees, will be gradually converted to urban gardens, in continuity with similar successful experiences recently experienced by the Municipality of Trento. Part of this project will be carried out in 2020 with the contribution of the Autonomous Province of Trento, by the Service for Employment Support and Environmental Enhancement (SOVA), once the replacement of the church roof has been completed in 2019.

Conclusions | This experience demonstrates how today knowledge and design can be effectively supported by a body of innovative methodologies and tools, such as drone photogrammetry and archaeometry. On the other hand, the different approaches require wise and shared coordination, so that the information model adheres to the work ‘authentically’, or better, is constantly conditioned by it. It is the architectural artifact, in its materiality, that directs the definition of the interpretative systems and the theo-

retical choices that legitimize the intervention, systems and choices that will necessarily refer both to quantitative measures and qualitative parameters.

The management of complexity and its arrangement in an adaptive resilient strategy configures an open ending, in which the architectural project is, though its completeness, an opportunity for knowledge and further design (Moneo, 2000). The imminent redevelopment of Doss Sant'Agata and the protection of the church allow the full usability and understanding of the anthropological place, «[...] principle of meaning for those who live there and principle of intelligibility for the observer» (Augé, 1993, p. 51), promoting at the same time the identity value and a renewed integration in the urban system of Povo. Finally, if the archaeological evidence is confirmed, Doss Sant'Agata can play a preeminent role in historical and cultural research, returning to be a reference for the entire city of Trento.

Thus deviating from a merely finalized reading of the project, the outcome of the research is to favour the 'self-realization' of which Norberg-Schulz speaks and with which we started our reflection: the place must preserve its identity through changes, keep in the making without denying its own past and only in this way it can aspire to last forever. The proposed experience, therefore, aligns with the evolutionary interpretation of changes, seen as phases of that process that always selects the most suitable solutions to meet new needs. «The progressive adaptation of the conditions of hospitality offered spontaneously by nature to the changing of human needs, and then the transformation of the first results, through further and often unexpected reuse solutions, highlights the unexpected originality of the changes that have occurred, but also the lack of finalized connection for all the modification stages» (de Rubertis, 2008, p. 14).

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