Tectonics of Resistance. Craft Intelligence, Natural Stone and Contemporary Architectural Design in Lessinia Ruralities

This article investigates how local materials and construction knowledge can inform contemporary architectural design through the case of Lessinia, a mountain region north of Verona. Its architectural and landscape character emerged from the relationship between a singular geological condition and the constructive intelligence developed around Pietra della Lessinia and Rosso Ammonitico. The natural stratification of these stones, especially the availability of large slabs requiring limited transformation after extraction, generated an architectural culture in which material properties, craft practices, construction systems, spatial organization, and landscape form became interconnected. The study draws on a research, teaching, and third mission project on the regeneration of rural settlements. Field observations, archival detection, design explorations, and historical and contemporary projects show how inherited construction knowledge can become an operative resource. The concept of tectonics of resistance identifies approaches that oppose the reduction of local stone to decorative cladding or folkloristic imagery, grounding design in material specificity, constructive coherence, craft intelligence, and critical transformation.

Keywords: *Lessinia, stone tectonics, craftsmanship, architectural design, rural regeneration*

Introduction A Critical Return to Material Intelligence

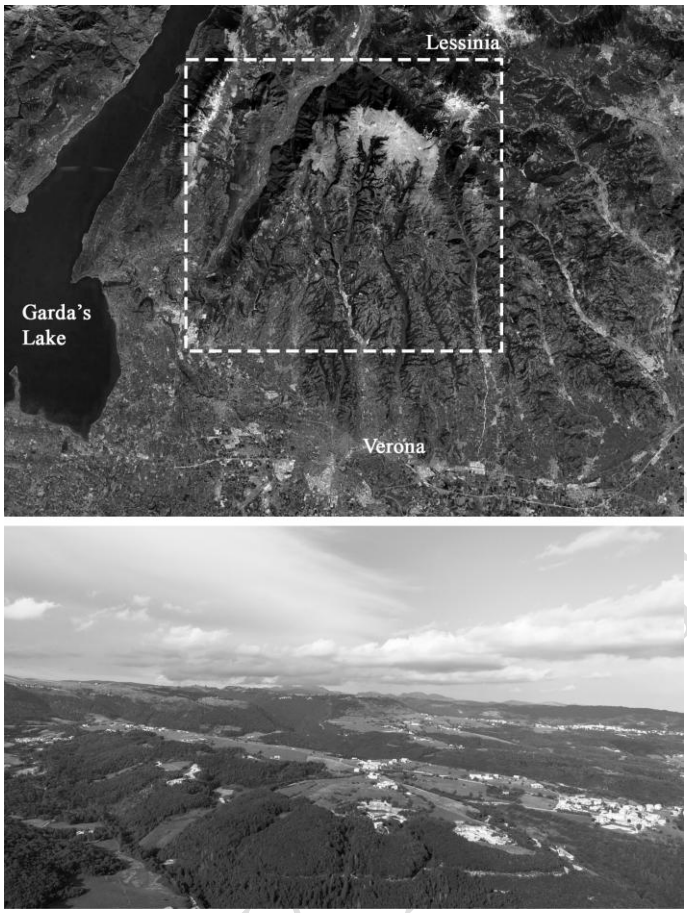
Contemporary architectural culture is experiencing a season of great interest in matters. Far from being a minor change of taste, it reflects a deeper disciplinary displacement caused by ecological pressure, energy awareness, the fragility of global supply chains, the exhaustion of image-based architectural production, and the growing need to reconnect construction with places, workers, materials, and cycles of maintenance. Words that had long seemed peripheral to avant-garde discourse, such as craft, joint, stone, and durability, are living a wave of interest in certain media, professional practices and academic circles (AMO and Koolhaas, 2020). This interest is not immune to risks, such as that of becoming another stylistic cycle if architecture treats materials as image components rather than as systems of knowledge. The question is especially sharp in rural territories. Rural architecture is often admired for its coherence and rootedness, but it is also frequently commodified and consumed as an image, as was noticed already one century ago by Pagano and Daniel (1936). Local materials have increasingly ceased to be understood as active components of a tectonic culture. In many cases, regulations, market expectations, and tourism-oriented narratives have reduced tradition to a matter of appearance, while overlooking the technical knowledge that originally generated it. This creates a tension between image and construction. At the very moment when part of the

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international architectural debate is giving renewed attention to material culture, low-carbon construction, and craft-based knowledge, many rural contexts risk losing the operative intelligence through which local materials once acquired architectural meaning. Materials and artifacts are then increasingly interpreted through market availability or standardized product catalogs, rather than through a deeper understanding of their constructive potential. This paper addresses this relatively wide phenomenon through the case of Lessinia, the mountain region north of Verona (**Error! Reference source not found.**) where Scaglia Rossa, commercially known as Pietra della Lessinia or Pietra di Prun, and Rosso Ammonitico, commercially known as Rosso Verona, have shaped a distinctive rural landscape. The research question revolves around a biunivocal relation between rural context and contemporary architecture, specifically how architectural disciplines can contribute to regeneration processes in rural contexts, and how rural contexts, in turn, can nourish the discourse on contemporary architectural teaching, research, and practice. Lessinia is considered here as an open laboratory that can significantly contribute to the discourse on architecture and its relation to matter, form, settlement, ecology, and culture. This within a historical moment where smartness and intelligence are words that have been partially stolen from the architectural glossary by mainstream digital and automated narratives. This does not mean that digital tools, artificial intelligence, robotic fabrication, or computational optimization are irrelevant or harmful, but that other forms of intelligence, embedded in material culture and construction practices, should also be taken into account. These are often spontaneously offered by nature and carry carbon footprints that are extraordinarily lower than those of products and objects born from the optimization and standardization of supply chains, processes, and ways of thinking. The paper explores whether these tectonics of resistance can nourish the cultural debate that contemporary architecture is currently undergoing. Lessinia offers a powerful ground for this discussion because its architecture emerged from the coincidence between a geological condition and a craft civilization. Pietra della Lessinia, more than Rosso Ammonitico, is geologically stratified in layers that can be extracted, transported, and used as prefabricated panels with limited transformation. Historically, this condition produced walls, roofs, pavements, thresholds, window frames, fences, basins, troughs, cisterns, and paths. The vertical use of stone slabs fostered the development of a rich constructive alphabet that, with the transformations of the building industry over recent decades, has often been reduced to a decorative apparatus. Its architectural relevance today goes beyond a heritage value and addresses also contemporary sustainability through a material that, in certain applications, behaves almost as a natural prefabricated panel.

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Figure 1. *Top: location of Lessinia, north of the city of Verona and east of Lake Garda. Bottom: bird view toward East capturing the sequences of ridges of the so-called middle Lessinia, the middle area with the highest concentration of traditional hamlets*



Source: author, 2026

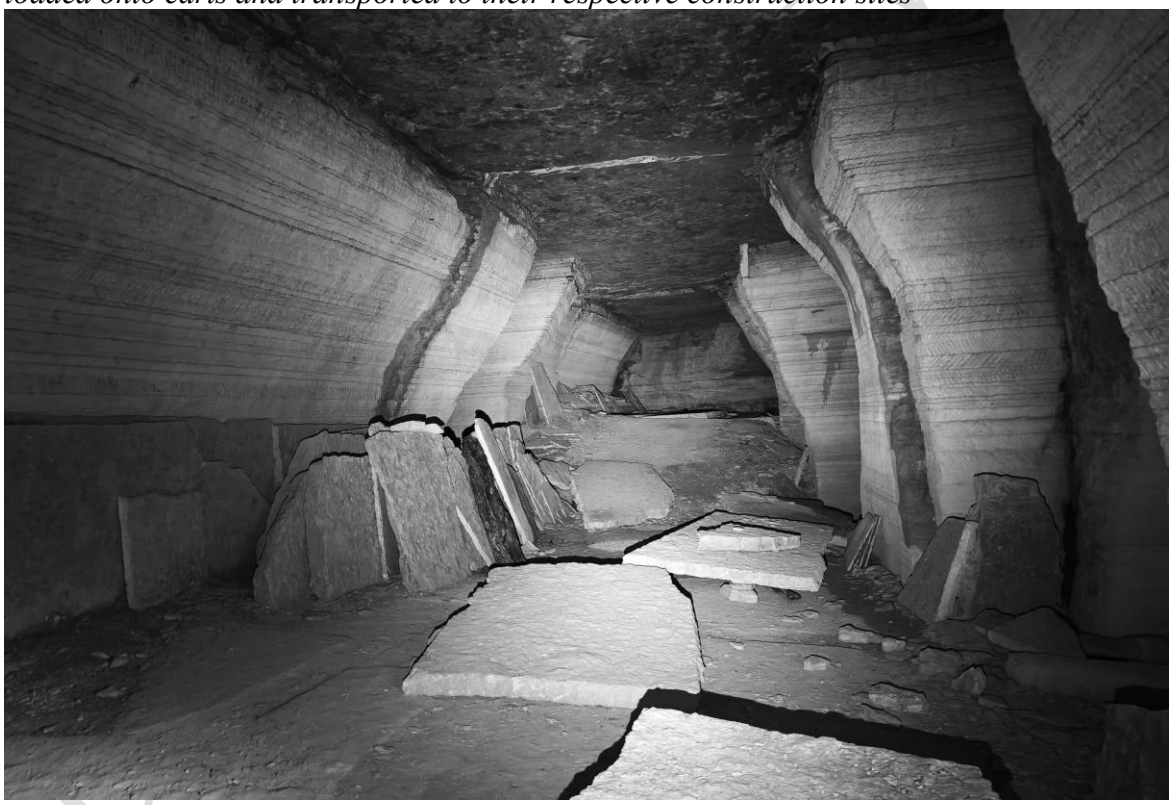
The Case Study Material Identity and Landscape Layers in Lessinia's Transformation

Lessinia's architectures and settlements embody both historical heritage and collective identity. In the past, they played a crucial role in the stewardship of the landscape, providing essential ecosystem services. Today, however, they are increasingly affected by underutilization and abandonment, phenomena leading to collapses and cultural losses in general raising urgent questions about their future (Valdinoci, 1990, Pavan, 2011, Pavan, 2021). The distinctiveness of Lessinia's building culture lies in the widespread use of local stones, namely Pietra di Prun and Rosso Ammonitico (Bassotto et al., 2022). Due to the region's unique geological conformation, these materials not only inspired ancient builders to develop a specific construction syntax (Magagnato et al., 1982; Turri et al., 2003; Pavan, 2026), but also became crucial defining traits of the landscape itself. The availability of large stone slabs, which could be peeled

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directly from the mountain without cutting blocks, was made possible by a thin layer of clay separating the stone's 73 horizontal strata (**Error! Reference source not found.**). From geological formation to building material, this peculiar natural stone can be envisioned as the *iconema* (Turri, 1998) of Lessinia, a deep and continuous connection between the soil and its human transformations. The term, formulated by geographer Eugenio Turri, refers to the smallest visually recognizable unit of a landscape's identity, a recurring element that carries both symbolic and perceptual significance.

Figure 2. *Extraction workshop inside the so-called Modena Quarry, Prun Village, where, following the law that prohibited underground quarrying, all hypogeal quarries, including those of Prun, were abandoned. The already extracted slabs are still clearly visible, leaning against the rock, ready to be loaded onto carts and transported to their respective construction sites*



Source: author, 2024

This natural condition made these stones highly ductile and durable. Their adaptability enabled a wide range of uses across the architectural and agrarian landscape. As Vincenzo Pavan notes, "the slab as monolith becomes the distinctive trait of Lessinia's architecture and landscape" (Pavan, 2008). Righetti interpreted these elements as part of a broader relation between popular culture and architectural space (Righetti, 1989). Pavan observed that, layered stone masonry assumes unique connotations especially in Western Lessinia compared to many European mountain traditions but the essential trait of Lessinia's building culture is embodied by the monolithic slab crafted to apply

to buildings and open spaces (Pavan, 2009). Indeed, Pietra di Prun (or Lessinia Stone) has not only been used for roofs and walls, but also for delineating property boundaries, identifying public spaces, and retaining terraced agricultural land. These uses illustrate how stone culture in Lessinia has been developing as both a structural and symbolic device within a broader landscape grammar that had its own evolutionary traits but also exposed contaminations with other cultures, such as the timber one's brought by German populations (the *Cimbri*) since the Middle Ages. In this sense, architectures and hamlets have been acted as semantic units, landscape markers that most effectively express the specificity of Lessinia's architectural and construction knowledge. Like natural rock outcrops, they punctuate the rolling terrain, embodying what Christian Norberg-Schulz would have describe as a clear expression of the *genius loci*. He found that in these farmhouses "things really seem to be in their right place and every element, due to the indisputable verticality or horizontality, contributes to a play of forms that is natural and balanced, reflecting the fundamental vocation of stone architecture to the contrast between supporting structure and supported load" (Norberg-Schulz, 1996: 73) (**Error! Reference source not found.**).

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Figure 3. *The vertical use of stone slabs becomes the regulating element of the Lessinia landscape*



Source: author, 2024.

From Stratified Stone to Vernacular Tectonics

The architectural grammar of Lessinia emerged from the direct encounter between a singular geological condition and a long history of manual quarrying. In Lessinia, stone extraction was one of the forces that shaped settlements, landscapes, technical knowledge, and local identity. The territory of Sant'Anna d'Alfaedo, where quarrying activity remained exceptionally dense even in recent times, makes this relationship particularly evident (Legambiente, 2025). Historically, Lessinia Stone, or Prun Stone, was extracted mainly through underground galleries, where quarrymen followed the natural bedding of the mountain. These galleries were at once extraction sites, temporary workshops, storage spaces, and subterranean architectures generated by excavation. The use of each stone bed depended on the specific qualities: thickness, color, resistance, workability, and expected use, so that each quarry had several levels of extraction to better meet the market's demands. The traditional extraction process relied on a precise sequence of gestures. After preparing the quarry face and opening a low working cavity, quarrymen cut channels around the selected

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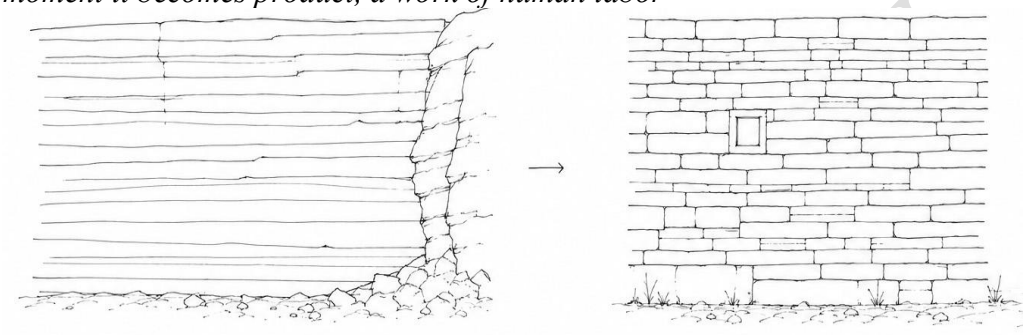
portion of rock and inserted metal wedges along the natural joints between the layers. Heavy hammer blows were then used to guide the detachment of stone along the geological bedding. The skill of the worker lay in reading the sound, resistance, and movement of the material, understanding when the slab had separated and how it could be moved without fracture. Levers, rollers, inclined beams, and carts allowed even very heavy pieces to be shifted and lowered. In this sense, quarrying was less an act of imposing form than one of recognizing the latent geometry already present in the mountain. Over time, this process produced large gallery quarries whose organization, working levels, pillars, water points, but especially linear configuration and circulation paths have often been compared to basilica-like interiors or, as written by Vincenzo Pavan, “monuments” (Pavan, 2001: 89) and “labor cathedrals” (Pavan, 2002: 23). These spaces preserve both material and immaterial heritage: they are carved voids, but also records of gestures, tools, judgments, rhythms, and empirical knowledge transmitted through practice. The closure of underground extraction in the twentieth century interrupted this culture, but the quarries remain evidence of a refined relationship between geology, labor, and construction. Echoes of these relationships still appear above ground in the buildings and hamlets of Lessinia (Valdinoci, 1988; Pavan, 2008). Thin clay interlayers, regularly spaced within the limestone beds, made the stone naturally divisible into slabs, almost as if geological time had prepared it for construction. Unlike stones extracted as blocks and later sawn, Prun Stone could be detached directly as flat elements. This created an unusually direct passage from mountain to architecture: extraction, transport, adjustment, and assembly formed a continuous material chain. Local builders transformed this condition into a tectonic culture, using slabs for walls, roofs, pavements, fences, thresholds, lintels, benches, troughs, and water devices. The slab became the elementary unit through which buildings and open spaces were organized, becoming *de facto* the iconic and tectonic landscape element. These tectonics can be framed in two categories. We define the first category as “systematic tectonics,” referring to the set of technical solutions that recur in Lessinia’s buildings and have, over time, shaped what we now recognize as a distinctive language of Lessinia’s vernacular architecture. We refer in particular to the connection between rock beds when they are still part of the mountain but already suggest constructive modalities that become apparent in the walls perfect layerings (

1), and to the use of the large stone slab as a kind of prefabricated element, laid to enclose and cover buildings, including not only huts or animal shelters but sometimes also residential buildings; to corner solutions designed to counteract horizontal thrusts; and to all those elements related to the organization of open spaces, from paved courtyards to the low walls that delimit properties, as well as furnishings, from tables and seats to sinks, fireplaces, and everything that could be assembled through planar elements. A paramount example of systematic tectonics is Contrada Vaona, previously surveyed by Pasotto and Pavan (Turri et al. 2003) (**Error! Reference source not found.**). We define the second category as “exceptional tectonics,” referring to solutions that express

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constructional ingenuity in episodic forms and that did not become rooted as widespread techniques or languages. In Lessinia, two paradigmatic examples come from two stables: the Campilonghi Stable and the Modesto Stable. The Campilonghi Stable is a magnificent building, used during the summer grazing season, constructed with vertically laid slabs of Rosso Ammonitico. It is a rare example of walls clad with Rosso Ammonitico slabs to improve the general performance of the stone structures (Pavan, 2011) (**Error! Reference source not found.**).

Figure 4. *The Lessinia stone creates a unique bond between the physical state of the stone in the moment it is still rock, part of the mountain, and in the moment it becomes product, a work of human labor*



Source: author, 2026.

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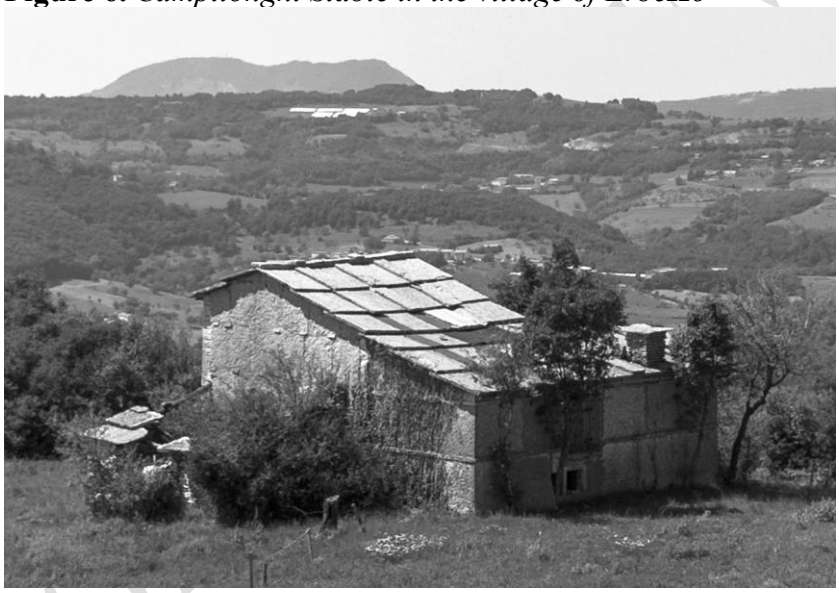
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Figure 5. *Contrada Vaona is a mirable examble of Lessinia systematic tectonics*



Source: the author, 2024

Figure 6. *Campilonghi Stable in the village of Erbezzo*



Source: author, 2025.

The Modesto Stable is built with large Rosso Ammonitico slabs placed vertically on edge and joined with coarse lime mortar, it translates into stone a logic close to *blockbau* carpentry. At the corners, the slabs are crossed and interlocked in a way that recalls timber joints more than ordinary masonry, producing a kind of petrified carpentry. Its functional layout, with stable below and hayloft above, belongs to ordinary rural practice, but the precision of its construction and its integration with a semi-underground icehouse reveal a broader environmental and economic intelligence. Ice collected in winter from a nearby pond was insulated with straw and leaves and preserved for later use or sale, linking architecture, agriculture, climate, and exchange with the lowlands.

UNDER PEER REVIEW

The building, attributed to Michelangelo Paggi and his son Modesto Paggi, shows how the "pre-cut" nature of the stone did not merely simplify construction, but suggested architectural invention (Comencini, 2004; Caviasca, 2008) (**Error! Reference source not found.**).

Figure 7. *Modesto Stable in the village of Roverè Veronese*



Source: author, 2025

Methodological Position

The methodology combines field participant observation and critical desk interpretation oriented to discuss contemporary design frameworks. The article is rooted in a research, teaching, and third mission project that involved Politecnico di Milano, the Municipality of Sant'Anna d'Alfaedo and the Consortium for the Valorization of Lessinia Stone (Consorzio Tutela Pietra della Lessinia). The project has developed through visits, design studios, thesis work, discussions with local stakeholders and with experts of Lessinia's architecture, and exchanges with architects working on comparable issues of rural regeneration and material culture. The methodological premise follows the idea that architectural research revolves around the project for architecture (EAAE, 2022; Verbeke, 2013). The EAAE Charter on Architectural Research recognizes the plurality of architectural research methods and the capacity of design to generate knowledge through different methodological tactics including drawings, models, prototypes, spatial hypotheses, and critical synthesis. At the same time, the regeneration of rural territories takes into account architectural design's heteronomy and involves a plurality of entities and stakeholders, from public administrations (Municipality of Sant'Anna d'Alfaedo) to cultural associations (Association La Malga, managing the ancient gallery quarries in Prun Village), from development agencies (LAG Baldo-Lessinia) to public

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institution (State Archive of Verona) to private actors (Professional Chamber of Architects of Verona). In this sense, design research is understood as a mediating practice: it translates demands between technical and cultural instances, soliciting possible revitalization scenarios. The research, teaching and third mission project developed in Lessinia originated from a twofold inquiry into the contribution of architectural disciplines to regeneration processes in rural contexts and, conversely, into the capacity of these contexts to inform contemporary architectural teaching, research, and practice. Within this framework, design disciplines are understood not only as service providers, but also as beneficiaries of the material and cultural intelligence embedded in rural territories. Lessinia's building culture was approached not as a picturesque object but as a system of relations. In this sense, the project operates as a third mission tool. It brings university research into contact with municipalities, local development agencies, consortia, archives, quarry associations, professional chambers, and local inhabitants. It also creates a space for discussing realized projects and unbuilt proposals as new recovery and development possibilities in territories marked by inertia, like mountainous ones.

Renewing the Relationship Between Lessinia Stone and Architectural Design

The renewed attention to the geological foundations of Lessinia's built heritage has opened up new possibilities for contemporary architectural practice. Over the past fifteen years, this debate has developed along three main design orientations. Although differing in their degree of experimentation, all three address the ways in which local materials and construction knowledge can inform both the recovery of existing buildings and the design of new ones, turning Lessinia into a laboratory for contemporary forms of inhabiting remote areas. The questions they raise extend across a series of apparent dichotomies: from the preservation of architectural image to its transfiguration; from volumetric addition to subtraction; from continuity to the reinvention of interior layouts; and from the reinterpretation of established construction systems to the formulation of new tectonics and architectural languages. These three orientations can be understood as both sequential and mutually influential design attitudes, while also identifying three distinct poles within contemporary architectural discourse. I propose to define them as protecting tradition, the international gaze, and reinventing tradition.

Protecting tradition

The first orientation is represented by local architects working primarily on the conservation and adaptive reuse of historic buildings. Their projects generally remain close to the principles of restoration, seeking to preserve the material and spatial qualities of existing structures while accommodating new functions (Valdinoci, 1992). Instead of proposing an explicit reformulation of

UNDER PEER REVIEW

vernacular architecture, these interventions safeguard buildings received from the past and reinforce their cultural legibility. This position echoes Paolo Righetti's repeated appeals for the protection of Lessinia's traditional building culture, which he documented extensively (1989). If we consider the interventions and proposals developed during the 1990s, the prevailing approach was that of philological restoration, based on comparisons with presumed original states of the buildings. This approach also allowed for demolition and reconstruction in a historical style, justified by the aim of restoring the buildings to an assumed original condition. These cases were advanced through photomontages that elucidated methodological proposals consistent with the principles of philological restoration (Forlati and Tinazzi, 1997) (**Error! Reference source not found.**).

Figure 8. *Contrada Strozzi is one of the examples illustrated in the essay by Forlati and Tinazzi (1997) elucidating their theoretical approach to hamlets' recovery. Left: Contrada Strozzi in 1997; middle: Contrada Strozzi in the design proposal by Forlati and Tinazzi; Contrada Strozzi today*



Source: left, Forlati and Tinazzi 1993, right, author 2024

Considering realized projects, Guido Pigozzi's work on several rural buildings and hamlets provides a representative example. His restoration of Contrada Bortoletti concerned a complex that possibly dates to the fourteenth century and partially collapsed in 2002 after a prolonged period of neglect (Zambaldo, 2009 and 2011). The project involved removing incongruous additions, reopening previously concealed arched windows, and reintroducing the historical technique of marsh-thatch roofing, *canel* in the local dialect (**Error! Reference source not found.**). The intervention followed a predominantly philological approach, selectively removing later transformations to recover a condition considered particularly expressive of the settlement's traditional construction knowledge. Its relevance lies in preserving the architectural image and, at the same time, in assigning new uses to existing spaces, replacing deteriorated components, and introducing limited alterations without compromising the building's inherited character. A comparable position can be identified in the work of Blocco18 at Gorgusello, where a neglected portion of a historic hamlet was converted into a bed and breakfast. The complex had gradually changed through successive additions and alterations that obscured the configuration of the seventeenth-century fabric. The principal building consisted of a three-storey residential volume connected to adjacent properties and incorporated two vaulted stables from different periods, surmounted by a double-height hayloft. The project proceeded through a careful

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process of material removal and spatial rediscovery. Plasters, wall coverings, paints, and other later finishes were stripped away to reveal the constructional history embedded in the masonry. This operation uncovered former passages between rooms, blocked openings, stone arches, and finely worked elements that had disappeared from view. These traces were not treated merely as archaeological evidence; they became active components of the new spatial organization. The intervention may therefore be interpreted as a return to the building's material origins undertaken through contemporary design decisions, rather than as an attempt to reconstruct an allegedly immutable historical state (**Error! Reference source not found.**).

Figure 9. *Detail on the "canel" traditional new roof in the restoration project of Contrada Bortolotti by Guido Pigozzi, 2020*



Source: author, 2025.

Figure 10. *Bnb in Contrada Gorgusello, where the cleaning actions have uncovered ancient openings and lost traces. Project by Blocco 18*, 2024



Source: courtesy by Blocco 18.

Always in the thread of conservation and critical restoration, it is possible to place the project by the office Clusterlab, which designed the recovery of a former stable and hayloft in Contrada Baltieri as a holiday house. Built in 1952

with local materials and simple techniques, the structure was adapted through selective repair instead of comprehensive replacement. Existing masonry, timber elements, roof components, and weathered finishes were retained whenever they remained technically effective. Incompatible additions, including deteriorated cement joints and bituminous layers, were removed. Structural improvements included façade ties, reinforced foundations, and additional supports for the timber floors and roof. A large south-facing window increases natural light, solar gain, and visual connection with the valley. Ventilated cavities were introduced to control moisture within the intermittently occupied stone building. Reused chestnut beams, lime-based plaster, timber floors, and oxidized metal details reinforce the material continuity between old and new. The intervention avoids both nostalgic reconstruction and conspicuous contrast, proposing a restrained form of adaptive reuse in which contemporary solutions support, rather than erase, the atmosphere of the rural settlement (Brunelli, 2018).

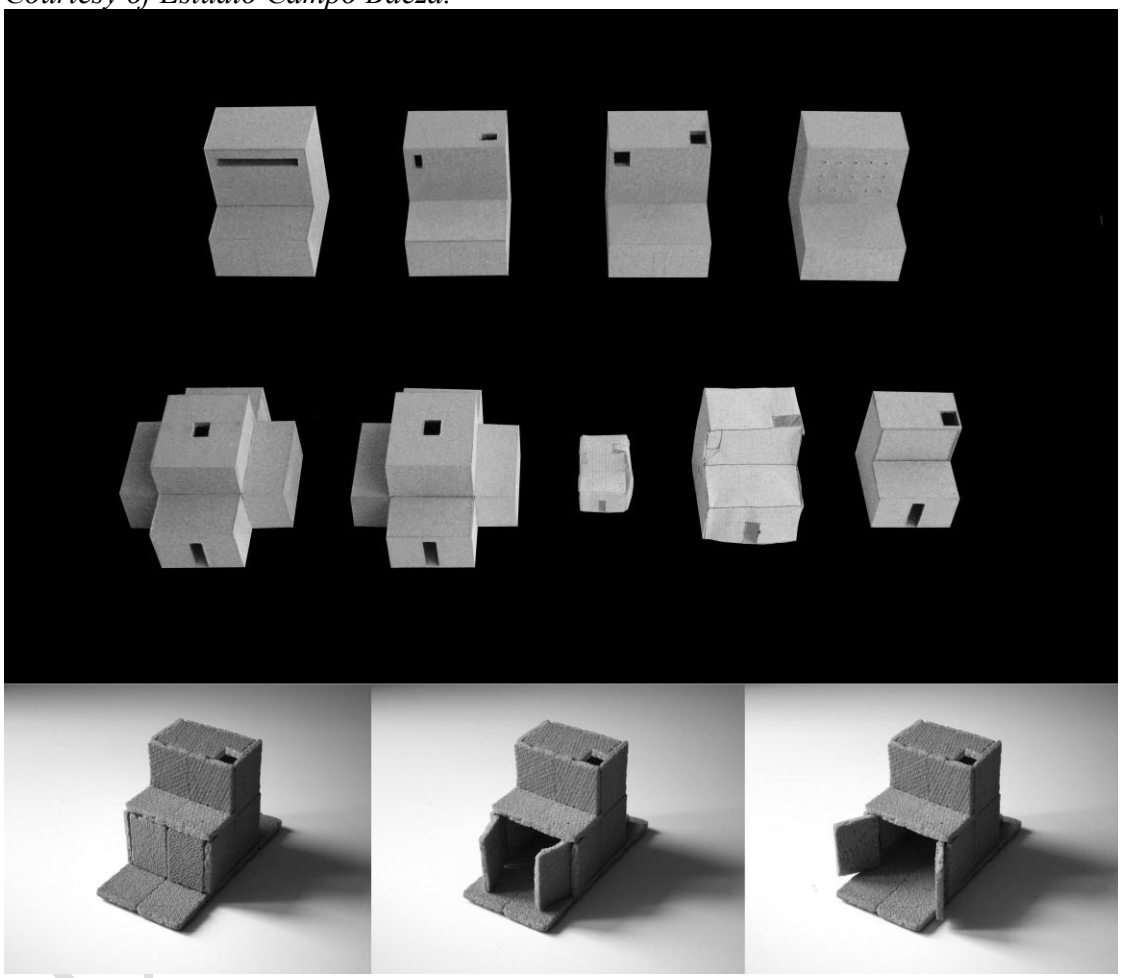
The international gaze

A second orientation emerged through the involvement of internationally recognized architects in Marmomacc (since 2016 Marmo+Mac) Fair, the major Verona-based event devoted to stone extraction, processing, and architectural application. Over time, the fair has become an important meeting point between the stone industry and architectural culture, particularly through the International Award on Stone Architecture, which recognizes innovative uses of stone in built projects (Architetture di Pietra, 2007). Three recipients of the award, Antón García-Abril, Alberto Campo Baeza, and Kengo Kuma, visited Lessinia with the award's curators, encountering the ancient quarries of Prun, the rural hamlets, and the high-altitude pasture landscapes. These visits brought them into direct contact with the close relationship between the stratigraphic properties of local stone and the construction systems refined over generations. Their responses resulted in three architectural proposals, developed to different degrees and subsequently examined by Alberto Vignolo (2022). Although none was constructed, the projects remain relevant because they demonstrate how Pietra della Lessinia might support contemporary architectural experimentation without depending on the formal imitation of vernacular buildings. Alberto Campo Baeza's proposal for a chapel is especially significant. The project was conceived for a monk who spent the summer months in Lessinia with a small religious community. The design process investigated both the specific qualities of the site and the traditional use of large stone slabs, combined with Campo Baeza's sensitivity for architectural composition of forms' purity. Several versions explored enclosed geometric volumes assembled from vertically positioned elements, directly recalling one of the most characteristic construction techniques of the region. In its final formulation, the chapel brought together several recurring themes in Campo Baeza's work. Its exterior was conceived as a compact and stereotomic body, while the interior introduced a more articulated condition through a suspended stone ceiling. Light entered through a square opening above, transforming the heavy material envelope into

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a setting for contemplation. The project did not reproduce a traditional rural type. It isolated the vertical slab as a fundamental constructional principle and relocated it within an abstract architectural composition. In this way, an inherited material technique was detached from its former utilitarian program and employed to address spiritual experience, spatial concentration, and formal experimentation (**Error! Reference source not found.**).

Figure 11. Pr*oposals for a chapel in Lessinia by Estudio Campo Baeza, 2013. Courtesy of Estudio Campo Baeza.*



Reinventing tradition

The third orientation is represented by local and national practices using Lessinia stone as the starting point for new tectonic and architectural research. Often developed by younger offices, these projects engage directly with the physical properties, constructional possibilities, and cultural associations of the material. Casa Luce by Studio Wok and Larun House by Zarcola Architetti exemplifies this approach. Casa Luce forms part of the transformation of

Contrada Campan, an old building in western Lessinia, realized with the traditional ordered layering of stone masonry (Source: author, 2026.

1), into a mixed-use complex containing residential accommodation, a restaurant, and an inn. The project moves beyond a strictly conservation-based strategy and understands the existing masonry as an active interface between different periods. To meet contemporary functional and regulatory requirements, the original four-story building was reorganized over three levels. This produced a deliberate discrepancy between the new internal floors and the position of the historic openings. Instead of concealing this incompatibility, the architects made it visible through the insertion of new, sharply defined openings without conventional stone surrounds. One of them frames a view towards Monte Baldo from a façade that, according to local typological conventions, would generally have remained closed. The intervention therefore treats the irregularity and incremental transformation of rural façades as an operative precedent. Vernacular architecture is interpreted here not as a fixed formal model, but as the material outcome of continuous adaptation. The construction of the new openings also required a precise structural procedure. Portions of the existing wall were progressively dismantled, while reinforced concrete elements were cast within the cavity between the two stone faces. This solution allowed much of the original masonry to remain in place while meeting current structural requirements. The project also adopted an extensive strategy of material recovery. Stone slabs removed from roofs and floors were reused for thresholds and internal surfaces, while timber beams and floorboards were catalogued, repaired, and reinstalled. The building effectively became a source of its own construction materials, allowing physical components and traces of former uses to participate in its new architectural identity (**Error! Reference source not found.**).

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Figure 12. *Casa Luce by Studio Wok. The project is under construction, but it is already possible to distinguish the large opening that, breaking the continuity of the building short wall, will frame the Monte Baldo Mountain*



Source: the author, 2026

Larun House, in Tregnago, follows a different but complementary direction. The project develops a more explicitly tectonic interpretation of Lessinia stone. On the northern façade, vertically arranged and dry-assembled slabs form a screen that refers to local construction practices while also contributing to the bracing of the internal timber structure. The slabs are supported by timber elements, suspended above the surviving wall, and connected through steel joints. This system produces an architectural language based on the interaction of materials with contrasting characteristics. The visual and physical weight of the stratified stone is set against the lightness, transparency, and flexibility of the timber frame. Stone is therefore no longer understood as a nostalgic cladding or as a passive decorative finish. It becomes a structural and spatial mediator capable of regulating enclosure, light, and the relationship between the building and its surroundings. Casa Luce and Casa Larun demonstrate two distinct ways of working critically with inherited material culture. The former transforms existing masonry through selective subtraction, structural insertion, and the

reuse of recovered components. The latter extracts a traditional constructional principle, the vertical stone slab, and incorporates it into a hybrid system of timber, steel, and dry-assembled stone. In both cases, innovation emerges from a close understanding of the material rather than from the reproduction of familiar images (**Error! Reference source not found.**).

Figure 13. *Casa Larun by Zarcola Architetti. The use of vertical stone slabs revives ancient tectonics in a contemporary way*



Source: the author, 2025.

These projects indicate that the continuity of Lessinia's building tradition depends first on recognizing the specific qualities that produced it. Such recognition, however, cannot be limited to preservation. It must also support informed experimentation with the large stone slab and with the broader tectonic knowledge associated with it. What was historically determined by scarcity, subsistence, and economic necessity can today become the basis of a construction culture that advances the discourse on architectural sustainability from an environmental, economic, and cultural point of view. The three orientations outlined above define a spectrum extending from careful conservation to explicit architectural experimentation. Between them lie unrealized proposals that yet influence the discourse on the contemporary use of traditional draftings theoretically and speculatively, demonstrating how an ancient material can generate advanced architectural languages while responding critically to contemporary programs, regulations, and modes of construction. Recalling Pagano and Daniel's critique of the reduction of vernacular forms to ornamental signs, it is possible to infer that, almost a century later, the projects examined here suggest an effort to overcome similarly superficial applications of stone. They can be associated with what Bjarke Ingels has described as a possible "renaissance" of structural stone (2025), or more cautiously, as evidence of renewed interest in the material's constructive agency. In Lessinia, this process may provide a productive basis for architectural innovation,

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allowing local building culture to be critically absorbed and reinterpreted via projects fitting in the contemporary milieu. This point finds significant confirmation in the recent exhibition "On Stone. Learning from Lessinia" curated by Joseph Grima in the framework of the 2026 Marmo+Mac Fair. During the opening talk, Grima stated that "Lessinia is an open-air laboratory (…) In this region stone is not one material among others but the very grammar of dwelling (...) It is an architecture built through minimal subtraction, where the distance between extraction and use is measured in kilometres and the life of a building in centuries (...) The exhibition reflects on the value of this history in an age defined by the impact of new technologies and new approaches: numerically controlled cutting, the reuse of dismantled elements, research into recomposed materials. What emerges is an unexpected continuity, in which technology does not replace traditional knowledge but extends its reach, returning value to what the industrial chain has learned to treat as waste. In other words, Lessinia is the demonstration of how stone and its use in architecture can be deeply and sustainably inscribed in the geology of this territory and in the practices that have developed upon it. To look at Lessinia is to recognize, within a circumscribed perimeter, a model of material economy that global industry must now attempt to rebuild from scratch (Fig. 14)."

Figure 14. *On Stone. Learning from Lessinia. Exhibition curated by Joseph Grima during the 2026 edition of Marmo+Mac in Verona*



Source: the author, 2026

PREVIEW

Tectonics of Resistance

The issue raised at the outset concerning the artificial use of local materials and building techniques can also be observed in the architecture produced in Lessinia over recent decades. During this period, it was often assumed that the mere use of local materials, detached from historical knowledge and from any effort at contemporary reinterpretation, was sufficient to establish continuity with the architectural heritage of the region. It is worth recalling, however, that this heritage frequently bears witness to conditions of poverty, hardship, and subsistence. Only today, through an often romanticized understanding of the past that overlooks those difficult living conditions, is it viewed with nostalgia or idealized as the expression of a more authentic way of life. This attitude is made all the more contradictory by the fact that most of those who endorse such views usually prefer to live in modern houses that remain largely indifferent to the spatial, material, and constructional principles of traditional architecture. A particularly telling example is the use of the characteristic slabs of Rosso Ammonitico, whose traditional (un)finishing has been abandoned in favor of more precise finishing. Modern cutting systems produce attractive, regular stones with perfectly smooth and sharp edges, the exact opposite of the irregular profiles obtained many decades ago. Those irregularities, however, preserved the natural quality of the stone, which appeared still embedded, in a sense, within its original geological layer and harmoniously connected to the natural environment. Today, the artificial perfection of these cuts has severed this intrinsic connection, making the architectural interventions of certain modern restorations appear conspicuous and contrived and limited to a decorative status. The design attitudes outlined in the previous paragraph reveal a strong interest in exploring the tectonic and expressive potential of local stone. They move beyond the superficial use of stone as decorative cladding to investigate the aesthetic and compositional matrix that can emerge when stone slabs are conceived as naturally prefabricated panels. This field of exploration may be described as tectonics of resistance. Tectonics of resistance is here intended as a way to decipher an unparallel building culture, playing *de facto* as the iconic and tectonic landscape element. Here, tectonics should be understood not only as construction techniques, but as the cultural and expressive meaning produced by the way a building is made. This interpretation recalls Semper's distinction between stereotomic mass and tectonic assembly (Semper, 1989), later developed by Frampton as a "poetics of construction" in which material, structure, and architectural meaning become inseparable (Frampton, 1995). Lessinia stone exposes a peculiar status, pertaining both to the world of mass, gravity, and ground, yet its slabs often behave like pre-assembled components. They are stereotomic in origin and tectonic in use, a condition that also resonates with Campo Baeza's distinction between the rooted continuity of the cave and the articulated lightness of the hut (Campo Baeza, 2012). The term tectonics emphasizes the relation between material, structure, assembly, and expression. A tectonic approach asks how a building stands, how elements meet, how forces become visible, how materials age, and how construction communicates

ONLY FOR REVIEW

meaning. Tectonics of resistance means resisting the reduction and seduction of architecture to generic assemblies, applied identities, short-term images, and sustainability slogans detached from material reality. Resistance adds a cultural dimension. It is a constructive form of resistance because it works by proposing alternatives. In Lessinia, those alternatives arise from the creative use of local stone, the reinterpretation of craft operations, and the transformation of rural settlements through contemporary programs. The concept also reframes the relation between nature, building materials, and design. The resistance opposes generic, standardized, and globalized supply chains and design services to conversely trace explorative uses and crafts, recognizing latent material potentials at a time when the discipline is tempted to equate intelligence with computational abstraction alone. Therefore, Lessinia's tectonics of resistance do not refer to a defensive attachment to the past or to a rejection of contemporary architecture. It explores the possibility that specific material cultures can resist the flattening of design into image, regulation, or optimized supply. These tectonics do not indulge in a-critically applying stone cladding to create a picturesque continuity with the surroundings and a past permeated by structurally different building dynamics and opportunities. They resist the temptation of style and go in depth exploring what can be the role of stone as a building material used in such a unique way like in Lessinia in the past and today, in a historical moment marked my globalization, deterritorialization, fragmentation of supply chains, and confusion between functionality, aesthetics and architectural critical reinterpretation. In resisting, they put forward proposals that may provoke common sense and mainstream economies, and by testing nonconventional solutions, they push the frontier of contemporary architectural debate. Systemic and exceptional tectonics, like those traced in Lessinia's building tradition, can be reinvented leveraging the sustainability of Lessinia stone supply chain that generates impressively low carbon footprints. As prefabricated-by-nature panels, the slabs can find countless uses as structural and expressive materials if the designer or building is brave enough to *betray* local traditions. In the editorial for issue 166 of Area, Vincenzo Latina describes the architect as an interpreter of existing architectural fabric, capable of introducing new layers into inherited structures through a continuous negotiation between difference and adaptation. From this perspective, intervening on an existing building resembles rewriting a text: preservation, transformation, and reuse all depend on acts of interpretation that inevitably modify what is transmitted. Latina develops this argument through the Italian term *tradurre*, derived from the Latin *traducere*, meaning to carry something across or make its meaning accessible. He also links it to *tradere*, the root shared by *tradizione* and *tradimento*. These three terms, tradition, translation, and betrayal, form what he calls the three "Ts" of reuse. Reconstruction becomes a passage from an inherited condition to a contemporary one, in which every transformation produces a different balance between continuity and alteration. Architects, like literary translators, cannot preserve the original unchanged; they must reinterpret it so that it can remain intelligible and operative in a new context. Latina further associates these terms with the idea of trading, understood as negotiation. This

UNDER PEER REVIEW

notion is especially relevant when dealing with heritage, whose transmission is both necessary and potentially damaging. Because inherited structures are materially and culturally vulnerable, their future depends on a critical process of negotiation capable of reconciling conservation and transformation with contemporary use.

Limits and Future Research

Three limits must be acknowledged. First, the structural and technological possibilities of contemporary Lessinia stone need specific testing. The historical use of slabs proves a long empirical confidence in the material, but contemporary architecture must comply with different regulations, safety standards, insulation requirements, seismic conditions, and comfort expectations. Research should therefore connect architectural design with structural engineering, material testing, building physics, and construction detailing. The most interesting question is not whether old solutions can be repeated, but how their underlying logic can be translated. A roof made of stone slabs in the nineteenth century and a contemporary stone roof or facade assembly do not belong to the same technical environment. They can, however, share a principle: the slab as a durable, legible, and minimally transformed component. Second, the craft dimension should be documented before it is further weakened. Quarrymen, stonecutters, masons, local entrepreneurs, and restoration practitioners still possess knowledge that is rarely written down. They know how bedrocks behave, how defects appear, how slabs should be selected, how the stone responds to finishing, where it can be pushed and where it must be respected. This knowledge is not opposed to scientific testing; it should guide it. An atlas of contemporary Lessinia stone craftsmanship, combining interviews, drawings, photographs, digital scans, and technical sheets, would allow the project to build a bridge between empirical culture and contemporary experimentation. Third, the regulatory dimension deserves attention. Many rural and mountain building codes protect traditional images by prescribing visible features such as stone roofs, frames, colors, or proportions. Such rules can prevent destructive interventions, but they can also reduce tradition to a banalized list of to-do and not-to-do things. The risk is that architecture becomes stylistically recognizable but tectonically trivialized. Future research could examine how regulations, manuals, and incentives could support more intelligent uses of stone, allowing contemporary expression when the project demonstrates critical continuity with material tradition, monitoring how buildings continue the chain of relationships that makes historical awareness meaningful in the contemporary millieau.

Conclusion

The case of Lessinia suggests that rural building cultures can contribute to contemporary architectural practice when their material knowledge is treated as

ONLY FOR REVIEW

an active design resource. The connection between geology, craftsmanship, construction, and architectural expression provides a precise framework for reconsidering the role of local stone in contemporary design. The notion of tectonics of resistance defines this position. It identifies an architectural attitude grounded in material specificity, constructive coherence, and the capacity to generate architectural form and language through the logic of production (in this case extraction) and assembly. In this perspective, resistance operates through design choices that preserve the intelligibility of materials and building processes while opening them to new spatial and expressive possibilities. The projects discussed in the article outline different ways of translating inherited knowledge into contemporary architecture. Their shared contribution consists in shifting attention from the visual reproduction of vernacular architecture to the reinterpretation of its material and tectonic principles. Stone becomes an active component of the project, capable of structuring relations between envelope and structure, heaviness and lightness in the form of critical continuities and transformation. This approach also clarifies the role of tradition within contemporary practice. Tradition acquires relevance through interpretation, selection, and transformation. Its continuity depends on the capacity of architecture to reactivate embedded forms of intelligence and to convert them into new construction systems, architectural languages, and ways of inhabiting rural territories.

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UNDER PEER REVIEW

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