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Conoscenza, conservazione e valorizzazione
del patrimonio architettonico
Rivista del Dipartimento di Architettura
dell'Università degli Studi di Firenze

Knowledge, preservation and enhancement
of architectural heritage
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Kepi i Rodonit, Albania, Detail of the deterioration of a bunker belonging to a special defensive structure
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Sustainability, Semantics and Contradictions in Heritage conservation: the case of concrete bunkers

Susanna Caccia Gherardini
susanna.cacciagherardini@unifi.it

Department of Architecture,
University of Florence, Italy

opposite page

Fig. 1

Tale, Albania,
Medium-sized bunkers called
pike zjarri, part of a special
defensive structure
(photo by P. Lagani, 2026).

Abstract

Sustainability in heritage conservation emerges today as a contested and evolving paradigm rather than a fixed operational principle. Reconstructing its genealogy from the 1931 Athens Conference to UNESCO policies, the study highlights tensions between universal ambitions, cultural asymmetries, and unstable epistemological foundations. Restoration is interpreted as a critical and interpretative practice shaped by specific historical, material, and cultural conditions. Through the concepts of recognition, responsibility, and “exception as rule,” conservation appears as a process of selection and negotiation rather than the application of universal criteria. The case of Albanian reinforced-concrete bunkers exemplifies these contradictions. Built during the communist regime, these structures challenge conventional notions of heritage based on authenticity and shared value. Their abandonment, reuse, and musealisation reveal tensions between memory, trauma, and contemporary transformation. Within this framework, sustainability in restoration must engage with the life cycle of artefacts, considering permanence, decay, reuse, and environmental impact as interconnected cultural processes. Sustainability thus becomes a critical practice capable of revealing the contradictions between conservation, transformation, and collective memory

Keywords

Heritage conservation; Sustainability; Restoration theory; Dissonant heritage; Bunkers.

In contemporary heritage discourse, sustainability is no longer a marginal concern but a dominant and often unexamined paradigm. Its widespread adoption has profoundly reshaped both theoretical frameworks and conservation practices, yet its meaning remains unstable, contested and frequently under-theorized. Rather than functioning as a clearly defined concept, sustainability operates as a flexible and ambiguous category, whose authority often exceeds its analytical clarity. In the field of cultural heritage, this condition becomes particularly evident, as sustainability is increasingly invoked as a guiding principle, often together with the concept of the life cycle of architecture, without being supported by a coherent theoretical framework. In this sense, it must be understood not as a neutral category, but as a critical concept that requires a deeper historiographical and epistemological analysis¹.

¹ See Paola Bordoni in this volume, *Architettura e restauro nella parabola della sostenibilità. Miti, illusioni e geni di un paradigma | Architecture and restoration in the parable of sustainability. Myths, illusions and the genesis of a paradigm*, pp. 76-87.



A first step in this direction consists in reconstructing the genealogy of sustainability within the broader framework of international cultural policies. The interwar period represents a decisive moment in this process, particularly through the activities of the Société des Nations and its institutions of intellectual cooperation (Caccia Gherardini 2024a). These structures promoted a transnational approach to culture, based on the idea that knowledge exchange could foster peace and stability among nations. However, this project was deeply marked by an elitist and top-down conception of culture, in which universal values were assumed to be definable within restricted circles of intellectuals, revealing an inherent tension between internationalism and cultural hegemony (Guieu 2012).

The Athens Conference of 1931 must be understood within this framework as a pivotal moment in the institutionalization of an international discourse on heritage conservation. Rather than producing a unified doctrine, the conference functioned as a platform of negotiation, where different disciplinary perspectives, national traditions and professional roles converged without being fully reconciled. The very structure of the conference – based on comparison between legislations, practices and technical approaches – highlighted the absence of a shared epistemological foundation. Far from stabilizing conservation principles, the discussions exposed the plurality of interpretative frameworks and the difficulty of translating them into universally applicable criteria (Caccia Gherardini 2025a).

It is precisely in the text of the Conclusions of *La Conférence d'Athènes sur la conservation des monuments* of 1931 that the term *heritage* seems to become consolidated, particularly in aspects related to international collaboration (Article VII)². While the term *patrimoine* does not appear in the index of the volume – where one still finds *monuments d'art et d'histoire* or *monuments historiques* – it recurs very frequently throughout the contributions, inflected and qualified in various ways: from *patrimoine artistique*, repeated several times from the introduction onward, to *patrimoine collectif des Nations* in different speeches, and *patrimoine commun de l'humanité*³.

However, it is above all the correspondence and the *Procès-Verbaux* of the Conference, today preserved in the UNESCO archives in Paris, that underline the consolidation of the term within the dialogue among intellectuals, professionals, and scholars involved in the debate. Confirmation of this process is provided by Michela Passini's 2018 work on the possible anticipation of the expression “heritage of humanity” and on the role of Euripides Foundoukidis, Secretary General of the OIM and driving force behind the Athenian initiative. Indeed, during the Conference, Foundoukidis referred to “a new conception that has been emerging for some time and that tends to consider certain artistic monuments as belonging to the common heritage of humanity,”⁴ echoing reflections developed in the French milieu by figures such as Destrée, Luchaire, and Focillon. These reflections had already emerged during the XI International Congress of Art History held in Paris in 1921, which was also recalled in the construction of the *Conférence sur la conservation des monuments* as a precursor moment for debate on an international scale⁵.

The Athenian conference was in fact intended to «unify the measures of classification, safeguarding, protection and conservation of monuments in the different countries»⁶, as well as to offer «a general survey of the problems of conserving monuments of art and history [...] an international programme of study»⁷.

It is precisely in Athens that historical reflection and regulation prove far from consequential to one another, and this shift is not merely semantic (monument, common, universal), but rather generates – and is generated by – different practices and, above all, different theories of value concerning memory.

² «The Conference, convinced that the question of the conservation of the artistic and the archeological property of mankind is one that interests the community of the States, which are wardens of civilization». OFFICE INTERNATIONAL DES MUSÉES 1933, *La conservation des monuments d'art et d'histoire*, Publication de l'Institut de Coopération Intellectuelle, Imprimerie Polyglotte Vuibert, Paris, p. 450. It should be emphasized here that E. Foundoukidis himself, a central figure in the events surrounding the Conference, personally undertook to ensure the wide circulation of the Conclusions; see, by way of example, the list of recipients: *Envoi des documents*, Fonds IICI, 1921–1954, Subfonds OIM, Sous-série conference Monuments 1931, OIM.60.1931, OIM.61.1931, 27 November 1931. UNESCO Archives, Paris.

³ Philippe Sabot in *Lire «Les mots et les choses» de Michel Foucault* (Presses Universitaires de France, Paris 2014) outlines an approach for addressing a problem situated at the intersection of semantics and grammatology.

⁴ This text reprises a ‘radio address’ in which Foundoukidis announced the programme of the Athens Conference. Cited in PASSINI M., *La Conférence d'Athènes sur la conservation des monuments d'art*, in ARNOUX-FAMOUX L., KOSMANADAKI P. (eds.) 2018, *Le double voyage: Paris-Athènes 1919-1939*, École française d'Athènes, Athens.

⁵ *Avant-propos in La conservation des monuments d'art et d'histoire...*, cited above, pp. 7-8.

⁶ Marcel Nicolle 1931, *Suggestions en vue du programme de la conférence d'Athènes*. Fonds IICI, 1921-1954, Subfonds OIM, Sous-série conference Monuments 1931 OIM, VI, 17, A., UNESCO Archives, Paris.

⁷ Letter from E. Foundoukidis to Paul Clement, 5 August 1931. Fonds IICI, 1921-1954, Subfonds OIM, Sous-série conference Monuments 1931, OIM, VI, 17, 31.67B, UNESCO Archives, Paris.



The conference must be read in relation to the broader project of intellectual cooperation promoted by the Société des Nations, in which cultural heritage was mobilized as a tool for international dialogue, but also as a means of asserting cultural primacy. The aspiration to define a ‘universal’ heritage, shared by humanity, emerged within a context shaped by geopolitical tensions and unequal power relations, revealing the political dimension underlying ostensibly neutral conservation principles. In this sense, the Athens Conference did not resolve the contradictions of restoration theory, but rather formalized them, establishing a framework that would remain inherently unstable (Caccia Gherardini 2024b). The transition from these interwar experiences to UNESCO did not resolve these tensions, but instead extended them on a global scale. The foundation of UNESCO in 1945 marked a decisive moment in redefining the relationship between culture, development and environment, amplifying the universalist ambitions already present in the Athens debates. Culture was framed as a driver of peace and development, and heritage as a shared resource to be preserved for future generations. However, this model continued to rely on the assumption that common values could be defined through institutional consensus, reproducing the same epistemological tensions that had emerged in the interwar period (Leveau 2017). These contradictions became increasingly evident in the second half of the twentieth century, as the model of development promoted by international institutions revealed its limits. The linear association between progress, growth and well-being led to

Fig. 2
Golem, Albania,
Medium-sized bunkers
called *pikë zjarri* (photo by M.
Tanganelli, 2026).

environmental degradation, social inequalities and cultural homogenization. Within this context, sustainability emerged as a response to the crisis of these paradigms, introducing a more complex understanding of limits, interdependencies and long-term processes.

From a semantic perspective, sustainability remains a highly unstable and contested concept. Its widespread diffusion across disciplines has led to a proliferation of meanings, often disconnected from coherent theoretical frameworks. Terms such as 'green', 'eco-friendly' or 'sustainable development' are frequently used in a generic and uncritical way, contributing to the dilution of the concept and to inconsistencies in both theory and practice (Biffi et al. 2023; Bordoni 2025).

The literature reveals the coexistence of multiple and sometimes conflicting interpretations of sustainability. While some approaches emphasize its integration into technical and environmental performance criteria, others highlight its broader cultural, social and political implications. This plurality reflects the absence of a unified theoretical framework and confirms the need to interpret sustainability as a dynamic and context-dependent concept. In the field of heritage conservation, this ambiguity becomes particularly significant. The integration of sustainability into preservation practices has occurred relatively recently and remains characterized by a lack of conceptual clarity. Historically, conservation developed within frameworks that privileged authenticity, material integrity and historical stratification, often independently from environmental concerns. The encounter between these traditions and sustainability has therefore generated tensions that remain unresolved. Recent research has highlighted the limits of transferring sustainability criteria from the construction sector to heritage conservation. While concepts such as energy efficiency, material optimization and environmental impact are central to contemporary design, their application to historic fabric raises complex questions. Interventions aimed at improving performance may conflict with the preservation of material authenticity or alter the historical character of the built environment (Bordoni 2025).

The emergence of 'green conservation' reflects an attempt to address these issues by integrating environmental considerations into restoration practices. However, the absence of shared methodologies and evaluation tools reveals the difficulty of translating sustainability into a coherent operational framework. The risk is that sustainability is reduced to a set of technical solutions, neglecting its broader cultural and historical dimensions.

In this context, sustainability must be understood as an open and critical field of inquiry, rather than as a fixed set of principles. Its integration into heritage conservation requires a reflective approach, capable of engaging with its historical genealogy and its conceptual ambiguities. The legacy of the Athens Conference makes clear that the attempt to define universal criteria for conservation has always been confronted with the plurality of cultural contexts and interpretative frameworks (Zambas 2021).

Ultimately, sustainability in heritage conservation cannot be reduced to technical prescriptions or normative guidelines. It must instead be approached as a critical practice, aware of the historical construction of its own categories and capable of addressing the tensions between universal ambitions and situated realities. In this perspective, sustainability does not resolve the contradictions of conservation, but reveals and reframes them, opening new possibilities for understanding the relationship between heritage, environment and society.

Restoration as Paradox: Exception, Recognition and the Case of Concrete Bunkers

The integration of sustainability into heritage conservation cannot be fully understood without addressing the theoretical foundations of restoration, and particularly its inherently



paradoxical nature. As emphasized in contemporary restoration theory, the discipline is not governed by stable and universal principles but by a continuous negotiation between conflicting values, interpretations and objectives. In this sense, restoration must be understood as a critical practice, in which theory and action are inseparable and in which each intervention represents a unique case that resists standardization.

One of the central contributions of recent theoretical reflections lies in the concept of 'exception as rule'. Rather than considering the exception as a deviation from a norm, this perspective suggests that restoration operates precisely through singularity. Each intervention is conditioned by specific historical, material and cultural circumstances that cannot be fully captured by general principles. The attempt to reduce restoration to a set of fixed rules risks neglecting this fundamental condition, transforming a critical discipline into a purely technical procedure.

The expansion of heritage in contemporary society further reinforces this condition. The process of patrimonialisation has progressively extended the field of what is considered worthy of preservation, including not only monumental and exceptional artefacts but also ordinary buildings, landscapes and immaterial practices. While this expansion has the merit of bringing to light previously neglected forms of heritage, it also generates a critical problem: the loss of selection criteria. When everything becomes heritage, the very possibility of restoration as a specific discipline is put into question.

Fig. 3
Fig. 3 Kepi i Rodoni, Albania,
Complex of small-sized
bunkers called *qender zjarri*
(photo by P. Lagani, 2026).

This situation leads to one of the most significant paradoxes of contemporary restoration: the coexistence of the necessity to preserve and the impossibility of preserving everything. Restoration must therefore operate through a process of selection, which inevitably involves the exclusion of certain values in favour of others. This process is not neutral but reflects the cultural and social context in which it takes place, highlighting the interpretative nature of the discipline (Caccia Gherardini 2025b).

At the core of this process lies the concept of recognition. As emphasized in theoretical reflections, there can be no restoration without a prior act of recognition, through which an object is identified as heritage and attributed specific values. This recognition is both cognitive and interpretative, involving the identification of historical, aesthetic and cultural meanings. At the same time, it is also a decision-making process, as it determines the future of the object and the form of intervention to be adopted.

The importance of recognition is closely linked to the concept of responsibility. Restoration does not simply involve the preservation of material objects but implies a responsibility toward the future, particularly in relation to the transmission of heritage. As highlighted in philosophical reflections, responsibility is not limited to past actions but extends to the foreseeable consequences of present decisions. This shift from a retrospective to a prospective understanding of responsibility is particularly relevant in the context of sustainability, which emphasizes the need to consider long-term impacts.

However, the integration of responsibility into restoration also introduces new tensions. The need to protect fragile and perishable realities must be balanced with the recognition of their dynamic and evolving nature. Heritage is not a static entity but a process that is continuously reinterpreted and transformed. Restoration, therefore, cannot aim at freezing objects in time but must engage with their ongoing transformation.

Another crucial aspect of restoration theory concerns the relationship between language and practice. As highlighted in recent studies, the language of restoration has become increasingly fragmented and specialized, often losing its connection with the underlying theoretical framework. The proliferation of technical terminologies and procedural approaches risks obscuring the critical dimension of the discipline, reducing it to a set of operational techniques.

This fragmentation of language reflects a broader crisis of theory, in which the connection between words, reasons and actions becomes weakened. Without a coherent theoretical framework, restoration risks falling into what has been described as a form of 'naive empiricism', in which decisions are based on practical considerations without a critical understanding of their implications. In this sense, the recovery of a reflective and critical language is essential for maintaining the theoretical integrity of the discipline.

In conclusion, restoration emerges as a discipline defined by paradox, in which exception becomes the rule and in which each intervention requires a continuous negotiation between competing values, temporalities and epistemologies. The concepts of recognition, responsibility and transmission provide a theoretical framework for understanding this condition, emphasizing the centrality of critical judgment and interpretative agency. Within this perspective, sustainability cannot be reduced to a normative or prescriptive model but must be understood as an open field of inquiry, capable of exposing the inherent contradictions embedded in heritage practices.

This condition becomes particularly evident in the case of Albanian reinforced concrete bunkers, whose patrimonialisation problematizes the very boundaries of what is recognized as heritage. Produced through an extensive state-driven campaign of bunkerization during the communist regime, these structures materialize a regime of



fear, control and ideological isolation rather than a conventional historical narrative. Their massive and capillary diffusion across the national territory transforms them into a form of infrastructural landscape, where political ideology is sedimented in concrete and spatialized at a territorial scale (Virilio 1991).

In contrast to traditional heritage categories grounded in notions of authenticity, continuity and shared value, Albanian bunkers operate within the domain of dissonant and ‘uncomfortable’ heritage. They resist processes of stabilization and consensus, precisely because they embody a past that remains unresolved and, in many cases, actively contested. Their status oscillates between rejection and appropriation, erasure and reinterpretation. While some are abandoned and allowed to decay – absorbed into the landscape as mute and ambiguous ruins – others are subject to processes of adaptive reuse that risk trivializing or neutralizing their historical charge through commodification and everyday domestication (Terragni 2021).

Institutional attempts to reframe these structures within an official heritage discourse further reveal the limits of conventional conservation paradigms. The transformation of bunkers into museums, such as BunkArt 1 and BunkArt 2 in Tirana, constructs a curated narrative of the past, translating spaces of control and surveillance into consumable experiences of memory. However, these interventions do not resolve the underlying tensions; rather, they expose the friction between memory and representation, between

Fig. 4
Tale, Albania,
Abandoned bunker
(photo by P. Lagani, 2026).



Fig. 5
Tale, Albania,
Medium-sized bunkers
called *pikë zjarri*, part of a
special defensive structure
(photo by P. Lagani, 2026).

trauma and its exhibition. Public reactions – including protests and acts of vandalism – demonstrate that these sites cannot be fully assimilated into a neutral or shared heritage framework, as they continue to operate as politically charged and affectively unstable spaces (Vokshi et al. 2021).

In this sense, the recognition of Albanian bunkers as heritage cannot rely on the conservation of material authenticity alone, nor on the production of coherent narratives. Instead, it depends on their capacity to sustain conflict, to embody contradiction and to function as sites of critical engagement. Their heritage value lies precisely in their resistance to closure, in their ability to disrupt linear histories and to challenge the assumptions underlying heritage discourse itself (Stefa et al. 2012, Hackman 2019).

From the perspective of sustainability as a category closely connected to the theme of the life cycle of artefacts, this condition introduces a radical shift. Albanian bunkers, like much of contemporary heritage, highlight how the concept of sustainability in restoration can be unstable and controversial. It appears necessary to reconsider sustainability as a critical practice – a practice that does not resolve contradictions, but renders them visible, negotiable and, ultimately, productive. Within this framework, the preservation of meaning cannot be separated from the persistence of conflict, and the conservation of matter becomes inseparable from the continuous redefinition of its cultural significance (Guidi 2006).



Bunkers and Conservation: Toward a Critical Perspective

The integration of sustainability into restoration practices does not simply introduce new criteria but challenges the theoretical foundations of the discipline itself. As the expansion of heritage and the processes of patrimonialisation have demonstrated, restoration can no longer rely on stable and universally accepted values but must engage with a plurality of interpretations that are historically and culturally situated. The difficulty of defining what should be preserved, and according to which criteria, represents one of the central problems of contemporary conservation.

In this context, the theoretical contributions that emphasize the paradoxical nature of restoration acquire particular relevance. The notion of ‘exception as rule’ highlights the impossibility of reducing restoration to a set of predefined principles, stressing instead its character as a critical and interpretative practice. Each intervention is shaped by specific conditions that require a contextual response, making generalization both necessary and insufficient. Sustainability, when applied to this framework, does not resolve this tension but rather amplifies it, revealing the limits of prescriptive approaches and the need for flexibility and critical judgment.

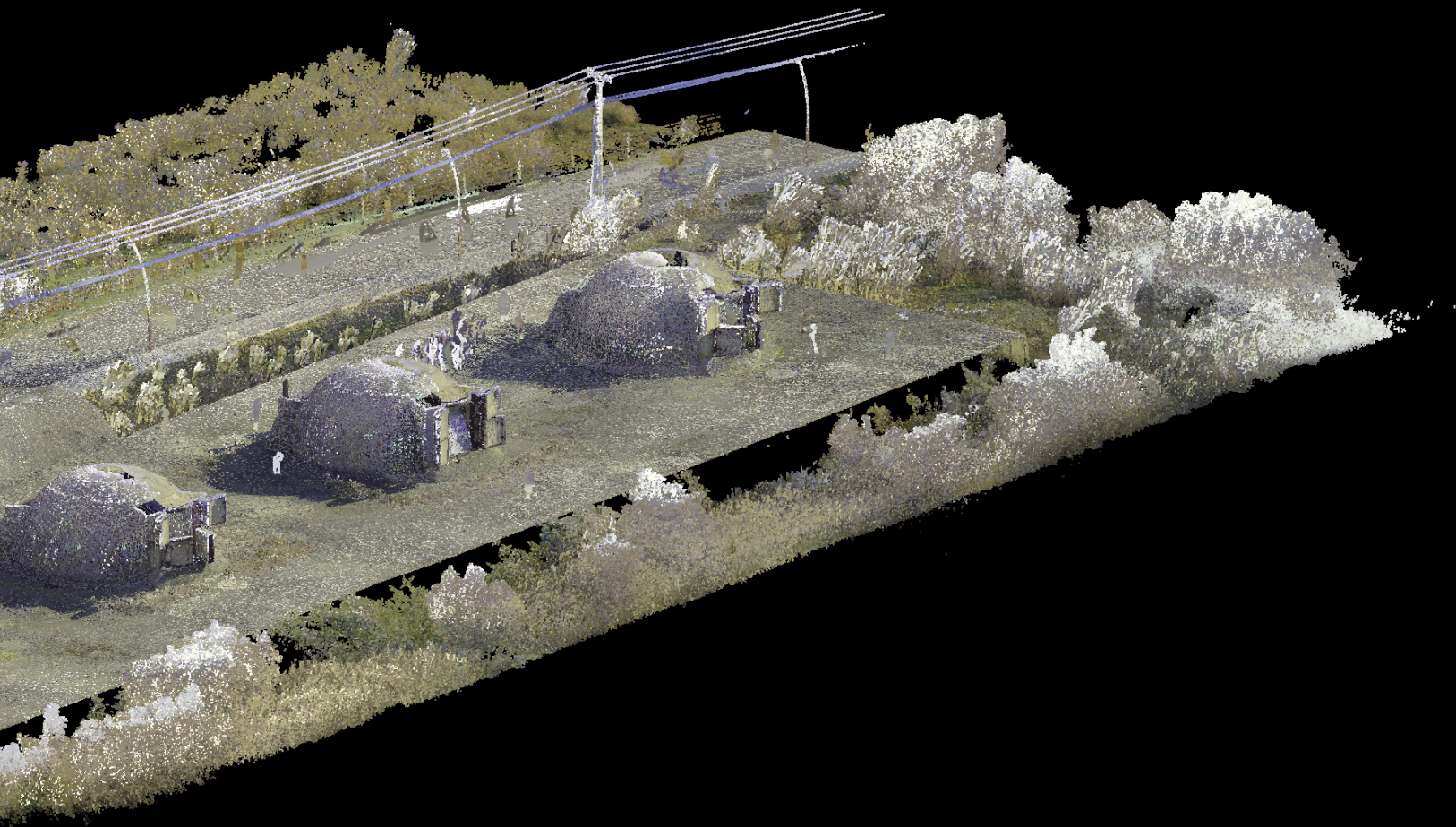
The concepts of recognition, responsibility and transmission provide a valuable framework for addressing these issues. Restoration is fundamentally based on the recognition of values, which determines what is considered heritage and how it should

Fig. 6
Tale, Albania,
Medium-sized bunkers called
pike zjarri, part of a special
defensive structure (photo by P.
Lagani, 2026).

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Fig. 7
Tale, Albania,
Point cloud of a special
defensive structure, isometric
view and West elevation
(acquisition by F. Tioli,
processing by P. Pignanelli).





be preserved. This recognition is not neutral but involves interpretative choices that reflect the cultural and social context in which they are made. Sustainability reinforces this dimension by introducing a temporal perspective oriented toward the future, emphasizing the responsibility of present actions and their long-term consequences.

However, this shift toward the future also raises new questions. The emphasis on sustainability can lead to the extension of preservation practices without necessarily clarifying their objectives, generating a tension between the need for conservation and the necessity of selection. The impossibility of preserving everything makes it essential to establish criteria, yet these criteria remain inherently unstable and contested.

The case of concrete bunkers exemplifies these tensions in a particularly revealing way. Rather than representing a deliberate act of monumentalization, as in the case of designed interventions, the bunkers constitute an involuntary and diffuse landscape, generated by a state-driven process of militarization and ideological control (Virilio 1991; Bennett 2017). Their transformation today – through processes of abandonment, reuse and musealisation – challenges traditional notions of restoration, demonstrating that preservation does not necessarily occur through reconstruction or formal conservation, but through reinterpretation, displacement and even conflict (Bennett 2020; Kinnear 2020).

Operating at the intersection of visibility and erasure, material persistence and shifting meanings, these structures expose heritage as a dynamic and contested cultural process rather than a stable entity. Their massive materiality ensures their physical survival, yet their significance remains unstable, continuously renegotiated between memory, trauma and contemporary use.

The case of the bunkers clearly demonstrates how contemporary heritage today requires interpretative tools capable of moving beyond purely technical or normative approaches. Their widespread presence throughout the territory, the symbolic and political complexity that characterizes them, and the profound heterogeneity of their material conditions all demand a reflection that intertwines conservation, sustainability, and adaptive reuse within a unified yet critically open methodological framework (Schofield, Cocroft et al. 2021).

From this perspective, the construction of a critical mapping of the bunkers appears both preliminary and indispensable. This should not be understood as a mere quantitative inventory, but rather as a cognitive instrument capable of restoring the plurality of their meanings, the transformations they have undergone over time, and the different relationships they have established with territorial, social, and landscape contexts (Cocroft, Thomas 2003). Identifying, classifying, and interpreting these structures means reconstructing not only their geographical distribution and typological characteristics, but also their conditions of conservation, their layers of use, and the processes of abandonment, adaptation, or functional transformation that have redefined their role within the contemporary landscape (Bravaglieri 2021).

Such a process of knowledge must necessarily include an in-depth analysis of the life cycle of the materials and construction techniques that characterize these artefacts. In this sense, sustainability cannot be reduced to a set of performance or energy-related parameters borrowed from the contemporary building sector but must instead be approached as a critical issue connected to the permanence of matter, processes of decay, the possibility of reusing existing structures, and the environmental impacts generated by their transformation or demolition. The extraordinary quantity of concrete employed in the construction of the bunkers, together with their capillary diffusion throughout the territory, makes it evident that any intervention strategy must confront environmental, economic, and cultural issues that are deeply intertwined (Petruzzi, Petriccione 2019).

opposite page

Fig. 8
Tale, Albania,
Tower of the special
defensive structure
(photo by P. Lagani, 2026).





Fig. 9
Kepi i Rodonit, Albania,
Detail of the deterioration of a
bunker belonging to a special
defensive structure (photo by S.
Caccia Gherardini, 2025).

The bunkers represent complex testimonies, charged with traumatic memories, political conflicts, and still unresolved identity-related meanings (Macdonald 2009). For this reason, their reuse cannot be approached exclusively as a functional or economic problem but requires the definition of guidelines capable of relating the conservation of matter, the persistence of meaning, and the transformation of use. In the absence of a shared critical framework, the risk is twofold: on the one hand, the banalization of these artefacts through interventions that erase their historical and symbolic specificity; on the other, their progressive marginalization and decay.

Defining reuse strategies compatible with conservation therefore means recognizing the value of these structures not only as architectural objects, but also as cultural and territorial devices whose complexity requires interdisciplinary approaches and flexible interpretative tools. In this sense, the development of guidelines for the reuse of bunkers should not constitute a rigid and universalizing model, but rather an open field of critical experimentation, capable of engaging with the specificities of local contexts and with the different material, social, and memorial conditions that these structures still express today (Bennett 2020; Kinnear 2020).

More broadly, the case of the bunkers demonstrates how sustainability applied to contemporary heritage cannot be understood as a stable or neutral category but must be continuously redefined considering the tensions between conservation, transformation, and memory. It is precisely within this critical dimension that restoration practice may rediscover its role today, not as a discipline aimed at the simple resolution of contradictions, but as a tool capable of making them visible, negotiable, and productive within the contemporary debate on cultural heritage.

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