



From the Recognition of the Identity Values to the Definition of Urban Regeneration Strategies. The Case of the Military Landscapes in Cagliari

Anna Maria Colavitti^(✉) , Alessio Floris , Andrea Pirinu , and Sergio Serra 

University of Cagliari, 09122 Cagliari, CA, Italy
amcolavt@unica.it

Abstract. The reuse of former military assets, or those in process of decommissioning, represents a topic of relevant interest for the scientific community, that involves different research fields, from restoration to urban planning. The issue is not limited to the design of a project of reuse and redevelopment for a specific area or building, but requires an integrated planning approach aimed at defining a framework of strategies for the regeneration of urban and territorial contexts, which are the result of socio-economic and settlement processes strongly affected by the historical military presence. In the territorial context of the Region of Sardinia, and in particular in the city of Cagliari, there is a wide range of military assets, which, due to the downsizing of the needs of national defence, is actually underutilized or dismissed. Even after ownership has been transferred to local authorities, former military assets are often in a state of long-term abandonment. Often located in the most strategic contexts with high environmental and landscape value, these areas have been excluded for decades from collective use and fruition, significantly affecting the development of the surrounding settlements. The military presence has in fact produced different outcomes, depending on the extent of military sites and the socio-economic context of reference. Often, they have carried out indirect actions that have led to opposing effects, sometimes positive, such as preserving environmental and natural resources or increasing job opportunities, or negative, such as irreversible landscape transformations or environmental pollution. Within an integrated land-use strategy for a sustainable growth of the community, the definition of new uses requires that public institutions follow a multi-objective decision-making process, which should include the active participation of all public and private actors. The paper focuses on the methods of analysis and representation of military urban landscapes, through a diachronic reconstruction of the settlement development and the recognition of the factors and conditions imposed by the military presence. In particular, we reflect on the need to preserve the identity of military landscapes in the definition of strategies for the regeneration of the settlement and territorial heritage but, at the same time, to offer new uses and facilities for the community, in order to increase the quality of urban life.

Keywords: Military landscape · Former military assets · Identity values

1 Military Landscapes and Identity Values

Military heritage is the result of stratification of past ages and settlement dynamics that give it a historical value and a dimension of authenticity. Moreover, it often falls in areas of environmental and landscape value, representing a resource of collective interest.

In Italy there is growing attention to the military heritage, built since the Unification of Italy, at the same time as public buildings with different functions, supporting the organisation of the new state structure. Decentralised state administration facilities are often buildings of considerable architectural, landscape, symbolic and identity value, bearing witness to collective and individual memories. The disposed military heritage is characterised mainly by constructions realised between the two centuries, up to the 1930s, based on the reproduction in different territorial contexts of codified models and architectural languages and styles, also with the application of technological and organisational innovations in building production [1].

The extension of mandatory conscription to the entire country made it necessary to build new complexes to house the troops, often using convent and religious structures. The growth of European and Italian cities, generated by industrial development, overcame the confines of the ancient walls that marked the limit between urban and rural areas to follow new urban design methods, characterised by wide avenues for the circulation of motor vehicles and railway tracks along which new military settlements were located, as part of a system of main and minor strongholds, to give the national territory a homogeneous organisational structure. The barracks were often located outside the urban settlements contained by the city walls, both for hygienic and economic reasons, but still located nearby to avoid excluding soldiers from urban life.

In large cities, barracks and military settlements were used within the urban fabric to ensure public order. During the twenty years of Fascism, barracks were located around the perimeter of historical cities, along the now almost demolished walls, on the main communication and railway routes. In cities with military strongholds, such as Cagliari, entire military quarters were often built for strategic reasons.

During the Second World War, there was a need for additional space for military operations and exercises, with preference given to locations outside the cities to reduce the vulnerability of the urban fabric to air attacks. In the post-war period, there was a radical rethink of the distribution of barracks, with a reduction in the size of technical units and a greater distribution throughout the territory, although the existing structure of military property did not allow for complete renewal.

The locational, dimensional, functional, and architectural conditions of military settlements, which we still find in our cities today, are the result of the application of a series of codified technical and operational criteria for design and construction.

Although cities are organisms in continuous transformation and evolution, satellite imagery makes it easy to identify military installations in the urban fabric and in the territory, thanks to their typical and recognisable shape, highlighting the intrinsic value of the buildings and the significant potential for recovery. Often the barracks have remained unchanged over time, even when the surrounding context has been profoundly transformed by building development and infrastructural processes [2]. The buildings that make up the military areas (barracks, penitentiaries, arsenals, training

areas, depots, fortresses and warehouses) take on particularly heterogeneous configurations, both because of their technical and highly specialised nature and because of their state of conservation and different levels of maintenance.

It is a heritage of public areas characterised by settlement forms, economic values, symbolic meanings, and evolutionary processes closely linked to the characteristics and history of the local contexts in which they are located.

Public ownership of the areas represents a new opportunity compared to the reuse of private brownfield sites, due to the high strategic potential to address relevant urban issues for land management, such as the reduction of land take by recovering the built environment and enhancing the system of open spaces and collective facilities.

At the same time, these perspectives are conditioned by the approach of the public administration, in particular the central state administration represented by the Ministry of Defense, which often follows different technical and financial logics and conveniences compared to the needs of local authorities whose task is to govern the territory.

The main aspect on which this work wants to focus is that most of the areas, structures and buildings, military sites that are returned to the community, incorporate a historical character, even if not monumental, and are the result of long processes of sedimentation, reuse and transformation of pre-existing structures, given their belonging to past historical eras.

Military settlements acquire a value linked to the nature of the places and are repositories of symbolic meanings rooted in local imagery that limit the possibilities of reuse, reconversion, possible demolition and replacement. Some military areas are nowadays incorporated and integrated into the consolidated fabric of the cities, which have been progressively built around the defensive structures. In other cases of more recent military areas, located outside the inhabited centres, they have lost their original function and their peripheral nature, to remain rather as extraneous areas to the urban fabrics that incorporate them, in the densest parts or at their margins. The paper analyses the impact of the military presence in the process of settlement development in the city of Cagliari, also through a critical reading of the urban evolution from the origins of the military stronghold to the progressive decommissioning of the unused public heritage.

The territory offers the possibility of a systematic application of the different methodologies of survey and representation currently in use, each of which brings different interpretations that contribute to the description of the characteristic signs of a palimpsest of considerable historical, cultural and landscape value.

The final reflections focus on the need to recognise and interpret the stratification of identity values of consolidated military landscapes in the elaboration of scenarios for the reuse of the heritage and urban and territorial regeneration.

2 The Case Study of the City of Cagliari

2.1 The Impact of Military Presence on Settlement Development

The events that have involved the city of Cagliari have inevitably influenced its development and defined its shape, produced by a process of systematic modification, mainly determined by contextual, historical and contemporary needs of a military nature. A

large number of military garrisons and architectures, which fall both in the suburban area and in the consolidated settlement fabric, characterise the landscape of Cagliari, testifying to the important strategic role historically exercised by city, due to its favorable location in the Mediterranean [3].

The origin of this process can be traced back to the conquest of the hill of Castello by the Pisan army in 1214 and the consequent need for defence, which led to the construction of the city walls and the system of towers guarding the main entrances to the settlement [4].

The latter correspond to the 'Porta Maestra' or 'Porta dei Leoni' to the south-east, the 'Porta dell'Elefante' to the west, and the 'Porta di San Pancrazio' to the north, which still mark out the landscape of the city of Cagliari, delimiting the district of Castello and allowing a reading of the stratifications that contribute to defining its urban layout.

The strengthening of the city's fortifications gradually involved larger areas, due to the growth of further villages close to the walls, such as those of 'Stampace', 'Villanova' and 'Marina', originally known as 'La Pola', which were progressively incorporated within the defensive structure, with the construction of further garrisons [5].

The process of modification of the defensive structure and, consequently, of the morphology of the urban layout, proceeded uninterruptedly for centuries, due to the succession of new requirements arising from the changing geopolitical context, the recognition of the autonomy of the Kingdom of Sardinia and technological innovations. In the 18th century, the defensive system, by then outdated and oversized compared to actual needs, was subject to significant transformations and progressively destined to new functions.

In 1858, architect Gaetano Cima drew up the first urban development plan for the city of Cagliari, which was finally approved in 1861. Among the numerous interventions, only a small part of which was actually implemented, the plan provided for profound changes to the system of fortifications, but not their complete demolition, both for reasons related to their ownership, as they did not belong to the city, and for the recognition of their identity value, which did not prevent the achievement of the objectives set by the plan [6]. In 1866, with a Royal Decree, the city was officially removed from the list of military strongholds of the Kingdom, authorising the demolition of the defensive walls and active fortifications, sanctioning, in fact, the birth of what we can consider contemporary Cagliari [7]. From this moment onwards, there has been a sequence of operations aimed at integrating the historical defense system into the urban structure in functional terms, with the consequent allocation of its components to new uses, which have gradually been absorbed both in their physical dimension within the city and in their collective dimension, in recognition of the historical and identity value of these artifacts. The need to defend and protect the territory of Cagliari has involved not only the historical centre, but also coastal and peripheral areas in relation to the consolidated centre. Three areas can be identified with a strong presence of military facilities: the promontory of Calamosca and Sant'Elia, the hill of Monte Urpinu and the area of the former military airport of Elmas. In particular, the area of Sant'Elia and San Bartolomeo hills, originally called Is Mesas, and its extension towards the sea, now known as Calamosca, have been characterised by intense construction activity, exemplifying the different declinations assumed by the defensive system that have followed one another historically, due to their

strategic location. The militarisation of these areas has historical roots, dating back to the Aragonese period, when, among others, the 'Torre del Poetto', 'Torre di Calamosca' and 'Torre del Prezzemolo' were built, while the origin of the 'Torre di Sant'Elia' could be traced back to the Pisan period [8, 9]. The dynamics of military infrastructures in these contexts increased further in relation to the new needs that emerged after the Unification of Italy and in particular in the period between the two world wars, for which it was necessary to provide additional garrisons, which were realised through the strengthening of the existing military heritage and the construction of new structures, proportionate to the new strategic needs and technological innovations introduced by the process of armaments development. In this sense, it is worth mentioning the 'Fortino di Sant'Elia' and the 'Fortino di Sant'Ignazio', whose construction dates back to the last decade of the eighteenth century, which, after being used to defend the hill and the Bay of Cagliari in general during the Savoy period, were gradually removed from their original function, to be reused, with substantial changes, during the Second World War [10]. In addition, the San Bartolomeo-Calamosca area was characterised by the construction of an articulated system of military facilities, due to additional locational needs arising from the emergency dictated by the world wars and the introduction of military mandatory conscription. In particular, many structures were built, such as the Mereu barracks, the Ederle barracks, the Cascino barracks and the Monfenera barracks, as well as support structures for military functions, such as the Logistics Park of the Navy, Campo Rossi and the firing range, and a series of depots, warehouses, batteries, stations and lodgings, which contributed to the formation of a true military ecosystem that still characterises the area nowadays. At the same time, two military areas were built in the Monte Urpinu area, which housed the fuel depots of the Air Force and Navy, including office buildings and accommodation. The consolidation of the military nature of these areas was favored by the Fascist regime's decision to grant full jurisdiction over military areas to the army, effectively excluding local authorities from the possibility of regulating their processes, a condition that persisted for a long time until the State law on the new regulation of military servitudes of 1976 [3]. Moreover, in this historical period, Cagliari's urban development was negatively conditioned by the lack of planning, despite the attempts attributable to the Plan of 1931, on the basis of which the master plan for the urban centre and its expansion areas was drawn up and approved in 1941, but never actually applied due to the bombing of the city in 1943. Following this event, the plan nevertheless constituted the basis for the elaboration of the Reconstruction Plan, drawn up in 1944 and approved in 1947, whose guidelines, although founded on the principles of the previous document, were mainly calibrated on the need to solve the emergency that had occurred, giving less importance to the regulation of the expansive growth of the city. The General Regulatory Plan (GRP) of 1962 by Mandolesi, definitively approved in 1965 and subsequently updated in 1977 and 1983, following the issuing of Regional Decree no. 2266/U (Floris Decree), overlooked the condition of constraint, dictated by military use, of large portions of Cagliari's territory. The urban planning tool focused mainly on the management of the city's transport system, failing to effectively regulate the expansive thrust produced by land rent and building speculation [7]. In addition, military areas are largely omitted from the plan documents, probably on the basis of recognised strategic and military secrecy requirements, or indicated as 'expansion areas'

and ‘green areas linked to public buildings’, despite the fact that they had already been built for a long time. It cannot be ruled out that the plan itself considered the military function of some areas to be outdated and consequently assumed a new use for them, including them within the expansion areas. Following the intensification of the expansive dynamics, especially from the 1960s onwards, we have witnessed the formation of entire districts surrounding the areas occupied by military servitude, such as the districts of Sant’Elia, Sole, La Palma, Monte Urpinu and partly of the district of Poetto, which have been shaped by the presence of the military infrastructure.

The Region of Sardinia, as part of a consultation procedure with the Ministry of Defence, has completed a census of military areas and buildings in the territory [11]. As far as the city of Cagliari is concerned, the survey certified the presence of 50 military sites, covering a total of around 200 hectares, of which 70% is located in the area of Calamosca, Sant’Elia and Poetto.

All of these areas are currently undergoing an intensive process of disposal, due to a reduction in military requirements and the recognised importance of these areas, which requires them to be used for the benefit of the community.

2.2 Strategies for the Regeneration of the Military Landscape of Calamosca

The peculiarity of the Cagliari case study lies in the location of the military areas to be redeveloped, mostly concentrated on the Calamosca promontory, a landscape context characterised by territorial invariants and important environmental components, in a condition of perpetual mixture with the product of historical territorialisation processes due to defence requirements.

The buildings in this area are characterized by different types and legal status. Some of them have been in disuse for a long time, but are still owned by the Ministry of Defense, others have already been transferred to territorial authorities and are waiting for a new functional destination. Other assets, such as the former firing range of the Italian Army and the Fort of Sant’Ignazio, can potentially be disposed of because they are no longer useful for institutional purposes, and it is planned to transfer them to the Region, in accordance with the procedures provided for by the special regional statute. Other assets, such as the ‘Campo Rossi’ sports facility and the Ederle and Cascino barracks, will be disposed of following the implementation of specific programme agreements between the State and local authorities. In addition, there are a large number of assets that have been disused for a long time, for which it is hoped that they will be put to a new use in order to unlock their potential and counteract the progressive deterioration in which they are lying, which is not only a waste of resources but also a cost to the community. These areas, historically considered peripheral and isolated from the city context, which were characterised above all by the presence of agricultural and productive settlements, as well as by the presence of the military, were progressively reached by the development of the settlement of Cagliari and gradually incorporated into the urban fabric, although they remained mainly ‘excluded’ in functional terms, due to their military use. At the same time, the condition of constraint determined by the military use has also allowed, even if only in part, the containment of anthropic pressure on these contexts, which often fall in areas of landscape and environmental value, contributing to their preservation and protecting them from the process of urbanisation. The areas

affected by military servitudes or adjacent to them are characterised by the presence of large areas with a medium-high level of naturalness, representing almost 40% of the military areas in the municipalities of Cagliari and Elmas. Despite these assumptions, the issue of regenerating disused or potentially disused military assets is not given due importance within urban and territorial development policies. Due to the strategic relevance of these areas at a metropolitan level, the local administrations of the vast area have initiated forms of inter-institutional collaboration during the joint drafting of the Inter-municipal Strategic Plan (ISP), through the activation of operational technical tables. The result of this coordination was the preparation of a strategic document that is structured according to actions aimed at rationalising and strengthening the system of services and urban welfare, through the relocation of military functions of the regional capital to peripheral areas of the metropolitan area, in order to make usable the supply of areas and buildings to accommodate services, equipment of collective interest and social housing [12]. It is necessary to consider that the municipal urban planning regulations, currently in a condition of uncertainty due to the lack of adaptation to the regional landscape tool, could represent an opportunity to express concrete strategies for the reutilization of the areas owned by the Ministry of Defense that are disused or for which conversion to civilian uses is planned. The current Municipal Urban Plan (MUP) identifies the homogeneous GM zones (areas for military equipment) and the GM* zone (areas for military equipment with a forecast of disposal) as areas for transformation and, in recognition of their urban relevance, indicates a series of provisions and standards in order to encourage their disposal and new use for civil and social uses, through implementation tools that favor the concert between the various bodies and stakeholders involved. In addition, specifically for the GM* areas included between the Poetto coast and the Su Siccu area, reuse scenarios and design solutions are defined, which foresee the urban redefinition and the reconversion of the use of buildings for integrated social housing and the establishment of a tourist accommodation center, as well as the strengthening of leisure facilities, entertainment and support to the Sant'Elia Urban Park. It is clear, therefore, the need for a further process of integration, after the one that has characterized the historical military infrastructure, which involves the military areas whose functions have persisted until contemporary times, in order to facilitate the reorganization territory and constitute a 'useful resource for the satisfaction of the needs expressed by local communities, which cannot ignore the historical, identity and collective values that can be recognized, because of the role that these areas have covered in the development of the settlement of the city of Cagliari.

In a favorable historical moment, coinciding with the launch of the Strategic Plan for the metropolitan area and the adaptation of the Municipal Urban Plan (MUP) to the Regional Landscape Plan (RLP), it is hoped that these addresses find concreteness in projects of reuse and re-functionalization that take into account the value of use of the assets and the characteristics of the historical, cultural and landscape context in which they are located.

2.3 Interpreting and Representing Landscape Transformations: The Sant'Elia Urban Park

The development of digital technologies and systems of survey and representation of the architecture and the territory contribute to the constitution of digital databases of high scientific value able to support the operative choices related to the ability of modification and conservation of places. In addition to the need for in-depth knowledge of the values and criticalities of a complex system, the ability to communicate the signs and forms that characterize the urban contexts, giving them a character of uniqueness that comes from the history of long term and then from the overlap of events that have redesigned the relationships between the physical and human components, acquires considerable importance. Expressing and sharing these signs becomes fundamental for the understanding and awareness of people who live in places because it favors the acquisition of a “new” consciousness, the first step for its protection and an essential contribution to preserving this memory.

Viollet Le Duc associates the relationship with architecture with the dialogue with nature as both can be subject to the same analysis and the same geometrical investigations [13]. If we accept this statement and use the operative guidelines suggested by the structuralism movement to define an operative methodology, “we can think of breaking down the landscape into its constituent parts to classify them and then recompose it to understand the relationships that link the different parts and each of them to the whole” [14]. Decomposing the landscape to understand it, reading the diversity (therefore the uniqueness), representing the signs that persist and define its forms and, in some ways, direct/condition the transformations linked to formal and informal action. This can be the contribution of the Sciences of representation within a multidisciplinary debate.

Drawing, within the process of study, becomes the crosscutting tool that can connect the different disciplines thanks to the ability to produce synthetic readings based on complex elaborations or because of direct perception of places. The reading, carried out in an approaching way, through a gradual path of careful attention, becomes the instrument able to find specific details, a “dominant” element and then to reach synthesis and summary drawings from the points recognizable only at the end of the journey, as real landmarks of urban perception. This path, carried out at different levels of reading to analyse and represent the marks of the urban landscape, enhances the perceptive component belonging to people who are involved and live the places. A direct understanding of the places requires a sliding scale and a full immersion in the landscape. It also needs a pedestrian role of the observer with a horizon line at a human level, characteristic of experiencing the city and is part of it [15]. The integrated application of different methodologies of survey and representation to the context of Cagliari, and in particular to the area of Calamosca and Sant'Elia, offers an output composed of images that enrich and complete, with a very subjective component, a cartographic knowledge. It currently can rely on aerial shots and aerial-photogrammetric representations that “give back an image conceived as a two dimensional idea [16]. It highlights the organization of the urban fabric and its relationship with the territory, in an overall view (Fig. 1), “an image far from the reality that perceives the human eye and the sensations that accompany the one who walks through the city” [17]. The maps and the zenithal views are indeed useful

tools for a reading of the urban form, defined by the physical elements, recognizable as a predefined design difficult to refer to the perception.

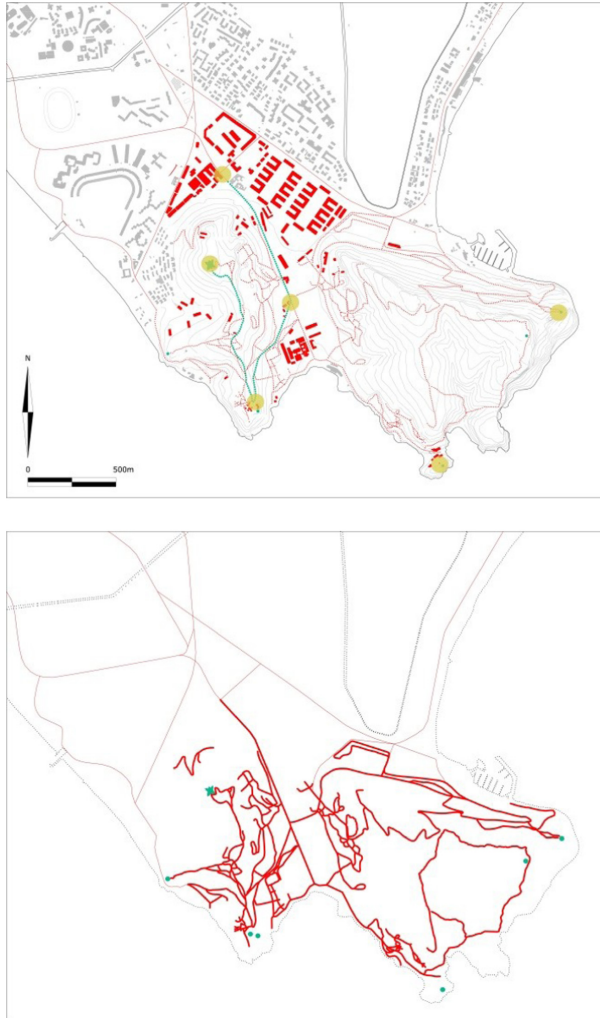


Fig. 1. Graphic elaboration on an aero-photogrammetric basis of the “military” SIGNS in the area of the Urban Park of Sant’Elia, constituted in particular by a dense network of paths with a strong naturalistic value that connect spaces (natural and artificial such as the former firing range created by the quarry activity) and “strongholds of urban perception”, nodes of a path “on a human scale” and terraces on the landscape (drawings by Andrea Pirinu).

On the other hand, the views give back the visual image by fragments chosen, selected, and allowing immediate recognition of the places (Fig. 2). The images clearly express how the significant presence of military buildings has not compromised the strong “naturalness” of the place, which still preserves accessible spaces and wide views

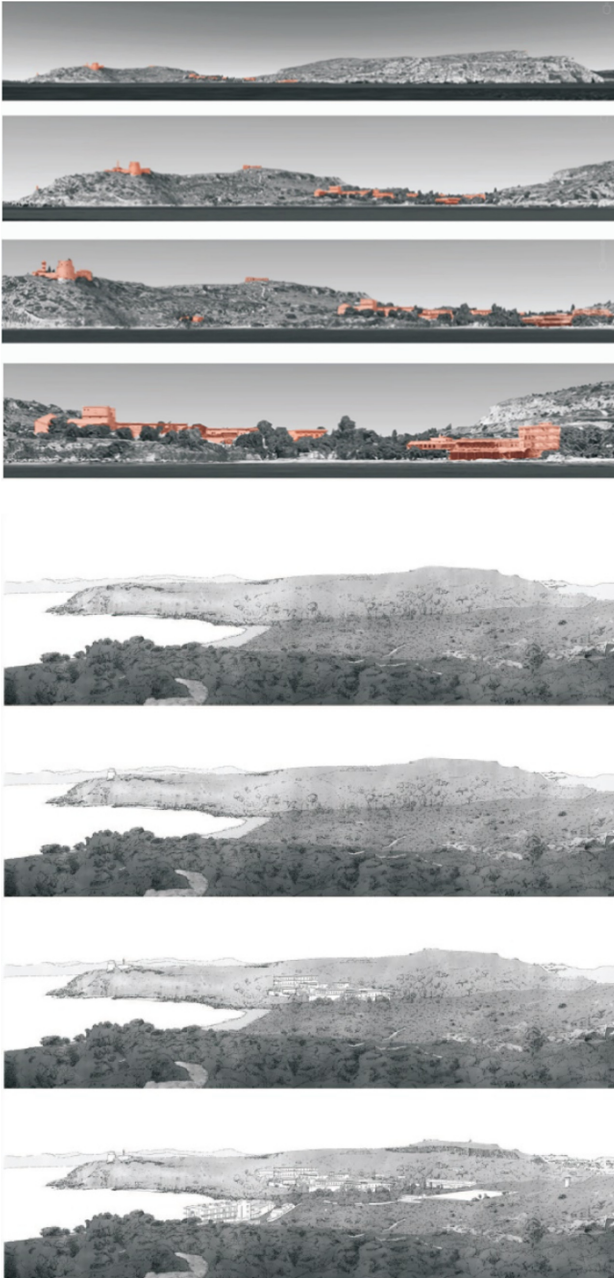


Fig. 2. Re-elaboration on photographic basis. View from the sea approaching the coast and diachronic reading of the landscape transformations in the area of Calamosca (drawings by Andrea Pirinu, Giancarlo Sanna).

of the surrounding landscape. So the views, and more generally the drawings made in on the scene, integrate the information of the cartography in “a shift of scale that adds the third dimension to the architecture, leading back to the man also the greater human dimension” [16].

The urban landscape is composed of multiform images and dynamic relationships in which the boundary between description and interpretation of phenomena becomes elusive and no longer defined [18]. In this sense, the contribution of Drawing is realized with the definition of an image composed of a series of signs (Fig. 3) that captures different features, hidden glimpses, forgotten and rediscovered, historical views that can be reinterpreted, enhanced, and protected. The action of drawing with quick lines or reasoned synthesis, from a tool of registration, becomes a way of pre-vision design. To do this, however, it is necessary to overcome the “cultural derailment” [19] that derives from the current “primacy of accuracy over expressive clarity”, reducing the considerable amount of information offered by digital databases and achieving representations that can communicate - even and especially to a wide audience - values and critical issues of a common heritage.



Fig. 3. Mosaic of graphic readings. Itinerary across the places, approach to the architecture and views towards the city and the landscape context (drawings by Andrea Pirinu).

3 Conclusions

The contemporary urban landscape is the result of the continuous transformations that have marked modern society and its dimension of multi-layered system requires specialized and integrated skills necessary for a careful analysis and management of the dynamics in action. The case study of the metropolitan city of Cagliari allows to reflect on the opportunities that emerge from the integration of the issue of former military sites in a framework of urban and territorial regeneration policies that take into account the identity value of these contexts, which were generally excluded from urban dynamics due to their original functions.

The military presence has driven long-lasting processes of territorialization that have generated settlement contexts characterized by a sum of material and immaterial values that can be recognized in the local collective consciousness.

The paper focuses on the role that this real estate asset, inherited from the military presence in the territory, could assume within a broad strategy for territorial regeneration, overcoming the approach to the recovery limited to the assignment of a new use destination to the existing built heritage.

The analysis of the evolution of the urban fabric, also through the representation of the different phases that have affected the urban development of the context in question, allows to chronologically reconstruct the origin of military sites and their gradual involvement within the urban dimension of Cagliari. The interpretation of the process of territorialization and urbanization underlines the cultural and identity components that qualify the military landscape and acquire greater relevance in the collective consciousness of the settled community.

Every strategy aimed at overcoming the situation of stasis in which disused military properties fall must necessarily consider the dynamics on which the development of these areas and their relationship with the existing city are based, but especially the consequences of their possible transformation, considering their role in the common memory [20].

The geographical location and typological characteristics of these areas are evidence of how the public administration, in the military form, has inspired processes of territorialization through the development of spaces that over time have certainly taken on a material connotation but, an aspect not to be overlooked, also of a symbolic nature [21].

The relationship between these areas and the reference context gives a dimension of authenticity to each urban and territorial context involved, characterized as a fundamental prerequisite for any regeneration goal.

To this regard, an analytical approach is necessary to reconfigure the relationships between these areas and the surrounding territory, which is the first step towards the introduction of new uses and functions of local interest, concerning the specific contexts. These conditions should be achieved through the cooperation of different stakeholders, both public and private, whose coordination can be facilitated by the drafting of planning tools that provide a certain and shared basis to regulate the satisfaction of the demands of the settled community [2]. Finally, the actions should combine economic profitability, recovery and virtuous reinterpretation of these heritages to redefine the structure and organization of certain parts of urban or territorial systems [1], calibrating the decision-making process, preparatory to the determination of new uses and functions, following

the “memorial value” assigned to these areas, whose recognition takes on a collective and non-physical dimension [22].

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