

DANIELA PITTALUGA

FABIO FRATINI

(édité par/by)

**CONSERVATION ET MISE EN VALEUR
DU PATRIMOINE ARCHITECTURAL ET PAYSAGÉ
DES SITES CÔTIERS MÉDITERRANÉENS**

CONSERVATION AND PROMOTION OF ARCHITECTURAL AND
LANDSCAPE HERITAGE OF THE MEDITERRANEAN COASTAL SITES

ripam

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Ce livre est un ouvrage collectif, dont les contributions ont été élaborées à partir de la conférence RIPAM 7, organisée à Gênes du 20 au 22 septembre 2017 par le DAD - Département d'architecture et de design (Université de Gênes) en partenariat avec le CNR-ICVBC Institut national de recherche, Institut pour la conservation et la mise en valeur du patrimoine culturel de Florence).

This book is a collective work, with contributions developed starting from RIPAM 7 conference, organized in Genoa, 20 to 22 September 2017 by the DAD - Department of Architecture and Design (University of Genoa) in collaboration with the CNR-ICVBC (National Research Council, Institute for Cultural Heritage Conservation and Valorization, Florence).

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Daniela Pittaluga et Fabio Fratini ont travaillé ensemble sur les textes initiaux (comprenant les sections “Qu’est-ce que le RIPAM?” et “Conférence RIPAM 7”, les remerciements et les index) et sur les descriptions des thèmes et sous-thèmes (sections A et B et sous-parties). Cependant, Daniela Pittaluga a écrit les parties en français et Fabio Fratini a écrit les parties en anglais, ils sont auteurs de certains articles et les éditeurs de la partie restante.

Daniela Pittaluga and Fabio Fratini worked together on the initial texts (including sections “What is RIPAM?” and “RIPAM 7 Conference”, acknowledgements and indexes) and on the descriptions of the themes and subthemes (section A and B and subparties). However, Daniela Pittaluga wrote the parts in French, and Fabio Fratini wrote the parts in English. They are authors of some articles and editors of the remaining part.

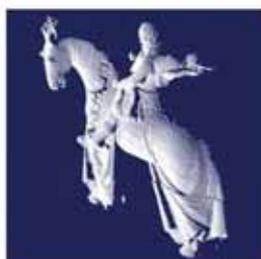
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We wish the best for the RIPAM people, to continue over time this excellent exchange channel and opportunity for meeting, progress and friendship. With the new secretary Mounsi Ibnoussina (Caadi Ayyad

University Marrakech) another event already took place in Constantine (Algérie) on December 12th–13th 2018, the RIPAM 7 intermédiaire, and the new RIPAM 8 conference in Rabat (Morocco) is approaching, November 20th–22nd 2019, see you there.

Daniela Pittaluga and Fabio Fratini

Coastal towers: project of conservation and development of the “Saracen tower” in Arenzano (Genoa)

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Summary. During the XVIth, several coastal towers were built in strategic points along the Ligurian coastline to defend it against Turkish-barbaric incursions¹. These areas were continuously attacked and often unprepared villages were ransacked and razed to the ground. One of the major problems for the Republic of Genoa was citizens being abducted, enslaved, and sold, which reduced the amount of taxes the central government was able to collect. In order to combat this dangerous phenomenon, around the second half of the XVIth century, the villages that did not have an efficient defence system yet, were urged by the Republic to build one as soon as possible. The defensive system was based on being able to spot enemy ships in time, quickly spreading the alarm along the coast, in order to save people and goods before the enemy ships reached the shore. Today these defensive towers, built to spot and communicate threats, together with bastions and castles, built to fight the enemy and protect the population, constitute a rich historical and architectural heritage to be reclaimed and valued. The Republic assigned the task of building and organising the fortification system to officials or military captains, who recruited the workforce and managed the work and the contracts with builders. The defensive structures were built with different shapes and characteristics, according to their location and use: bastions and towers had a square, circular, or polygonal plan with scarp walls or other structural features, depending on whether they were defensive, sighting, or signalling towers. Defensive towers, located along the coast, were used to resist the enemy while watchtowers were built on mountains or headlands to spot the enemy and signal the threat to the village and to the other instalments in sight. At the end of the sixteenth century, the defence network in Liguria was constituted by many fortified structures, working as an incredible deterrent for enemies coming from the sea. In western Liguria, near Genoa, there were several watchtowers in visual contact with one another. For example, in the area of Arenzano, the so-called “Saracen tower” and the Panaggi tower² (which does not exist anymore) were both watchtowers located at high points along the coast to defend the village, together with two bastions³ built near the shore, which also no longer exist.

¹ DE MAESTRI 1971; CALVINI, SARCHI 1980; FEDOZZI 1988].

² The first memory of this tower dates back to 1344: it stood on the terrace of Panaggi and was in visual contact with the towers of Savona and Noli to the West and the Lantern of Genoa to the East. So it was very important in the defensive system of the entire Ligurian gulf.

³ There were the “Pizzo castel”, whose location is witnessed by two valuable records of XVIIIth century of the cartographer Matteo Vinzoni, “*Pianta delle due*

Key-words: coastal towers, project, conservation, development.



Fig. 01 : Overview in the village of Arenzano of buildings used in the XVIth century by inhabitants as defense, sighting and warning of danger (Google Maps)

The "Saracen tower" in the coastal village of Arenzano is the only tower left as a reminder of the village's turbulent past, as suggested also by its name⁴ (tower of the Saracen).

Riviera della serenissima Repubblica di Genova" and "*Il Dominio della serenissima Repubblica di Genova*", and an ancient bastion erected near the beach with the permission and the contribution of the Senate of the Republic after the Turkish-barbarian raid of 1559.

⁴ The term "Saracen" is generically indicating the enemies from the East, in fact with them they identify the Turkish-barbarian predators that in the XVIth and XVIIth century have upset and revolutionized our territory, but also the pirates that in the last century have made extremely risky any maritime activity in the Mediterranean basin.



Fig. 02 : Exterior view of the southwest corner of the "Saracen tower"



Fig. 03 : Exterior view of the north front of the "Saracen tower"

Currently, the tower cannot be accessed due to a lacking staircase system and is in a state of abandonment, but a number of sections suggest the possibility of restoration. The tower is located within the city, but is surrounded by the park of the Sanctuary of the Infant Jesus of Prague - destination of around 50.000 pilgrims every year - and it benefits from the infrastructure and the services of the sanctuary. Even if the tower's owners are not planning to restore it, the Arenzano City Planning

2015, integrated with the “Studio Organico d'Insieme”, is planning to restore the tower and make it accessible for visitors. The tower has a square plan and is structured on four levels, each covered by a barrel vault with pavilion headings, except for the top floor with its timber pyramid roof covered with slate slabs, which was built in 1995. The external profile is slightly slanted resembling a scarp with the prevalence of voids over solids and it has lost nearly all of its plasterwork. The bearing walls are made up of split –faced stones, which are irregularly placed, with many brick fragments and abundant lime mortar and sea sand. The walls have a certain regularity only in the points around the corners in order to allow the angular anchoring between the perimeter walls and good structural integrity from the tower, which is guaranteed by the system of forged iron tie-rods binding the walls on all floors, thus avoiding their overturning outside the plane. Until now, little historical information could be collected on the “Saracen tower”. Some local researchers maintain that it was built in 1560, others claim it was rebuilt in the XIXth century, however sources are sparse and controversial [DELFINO 1986, p.20, p.13]. In 1559, Arenzano was sacked by Turkish-barbaric scavengers and, to resist possible future attacks, the inhabitants had the tower built [DELFINO 1986]. In the following centuries, it was not necessary to defend the village from potential enemies anymore, therefore the tower lost its purpose and was abandoned until the XIXth century, when it was included in the property of the Marquess Alessandro Pallavicino, who started its restoration. Another floor was added to it, alongside an external brick staircase enabling access to the first floor. Since 1959, the tower was owned by the Carmelite Friars, who bought a wide portion of land (including the “Saracen tower”) from the Pallavicino family, in order to guarantee a respectful environment around the Sanctuary. However, they were not interested in the tower, which was never used nor maintained. Due to the abandonment, several elements are in danger, even if the refurbishment of the roof in 1995 helped delaying this decline. The main problems of the tower⁵ are connected to its direct exposure to atmospheric agents. This leads to a progressive erosion, which is only superficial in some parts and heavy in others, affecting the covering mortar (now extremely patchy) as

⁵ These events are categorized through the reading outline provided by the UNI11182/2006 “*Materiali lapidei naturali ed artificiali. Descrizione della forma di alterazione – Termini e definizioni*” which allowed the adoption of a broadly shared reference and the creation of an indispensable lexical language for those who work in the field of conservation and recovery of the constructed.

well as the mortar bed and in parts also the bricks. This causes joints and mortar beds to be stripped bare and the pulverisation of a number of elements in the window jambs. Biological and vegetal colonisation is also occurring in addition to this degradation, as the tower is located in a green area nearby a wood. Moreover, stone and brick elements are missing in specific points of the tower; the joining metal parts are corroding; the mortar (classified through the scheme provided by the norm UNI 11182 2016) is disintegrating in the lowest part of the tower in direct contact with the ground and superficial sediment is accumulating on its surfaces.

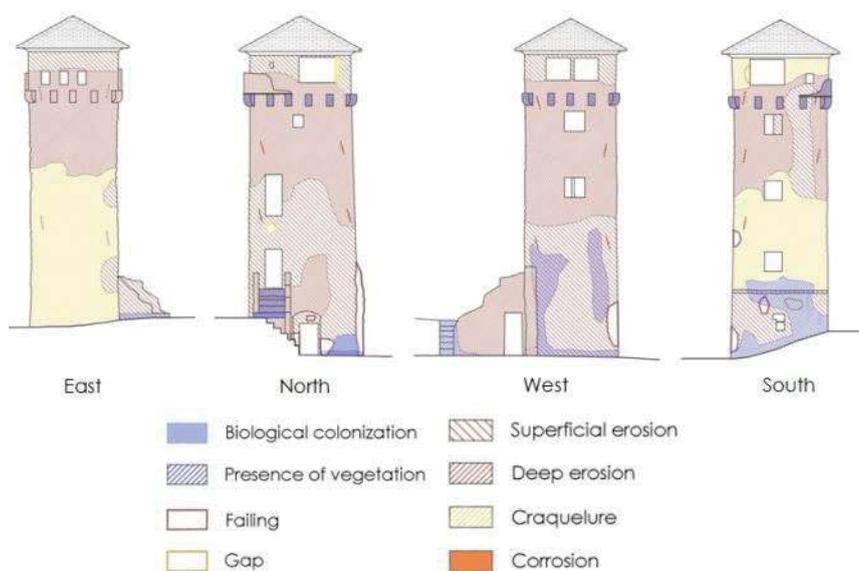


Fig. 04 : Diagram of the main alterations and degradation forms on the side walls of the tower

On the first floor, which is partially interred as well as more humid and degraded, it is possible to see portions of arches and walls, which from a stratigraphic point of view, date before the main structure and might be the remnants of an older tower. The difficulty to gather written sources was partly overcome through archaeological studies, which mainly employed the mensiochronologic absolute-dating method [PITALUGA 2009] used to date some brick elements and parts of the external stonewalls, which are integrated with the bricks. Thanks to the

archaeological and dating observations, in addition to the relatively recent roof covering, some medieval pre-existing sections on the ground floor were identified. Additionally, the following elements could also be observed: a late XVIth century phase, which resulted in relevant internal changes to the tower (some vaults, partition walls and staircases), and a XIXth century phase, during which one floor was added as well as an external staircase to access the first floor (probably connected to the interventions requested by the Marquis Pallavicino).

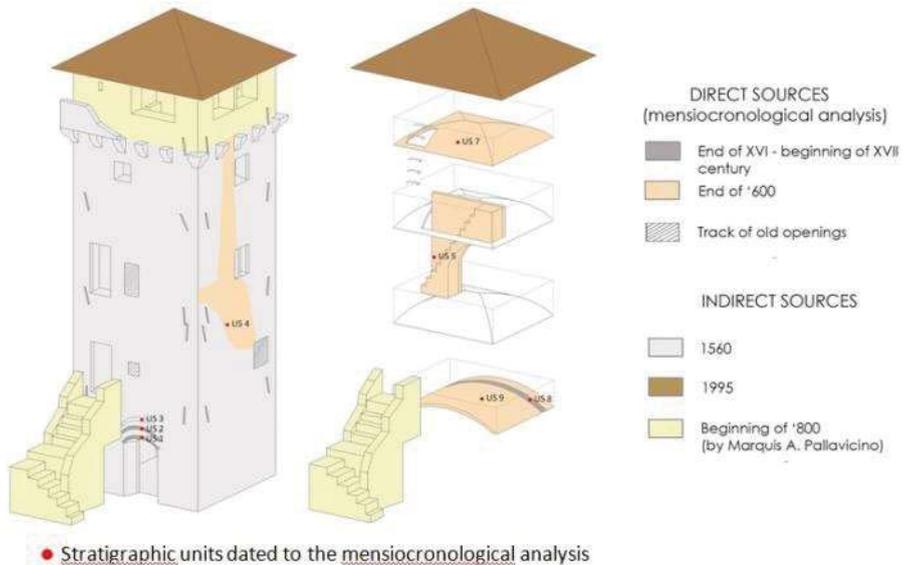


Fig. 05 : Three-dimensional model of the tower: perspective view of the northwest side and image of the interior and exterior elements of the tower (horizons and vertical connections)

This interesting tower is the only example left in the area of Arenzano, after Castel del Pizzo was demolished at the end of the XIXth century to build the railway as well as the "Panaggi tower", demolished in 1968 to build new residential buildings in the Pineta area. The uniqueness of the "Saracen tower", the indications of the City Planning, and the desire of both council and citizens to preserve it and reuse it, were the basis of the project conducted between 2016 and 2017. Its owners, who were apparently not interested in restoring it, but at the same time concerned about its costs and future management, were in any case open to new solutions and were willing to make available any information needed to define the project. The first part of the project followed a more "classical"

approach in assessing the building's history, archaeology, structure, materials, decay and instability. In choosing the future purpose of the tower, during the second part of the project, the local population was actively involved to share opinions about its use. It was useful to interview people belonging to various categories of possible visitors. For example, the citizens of Arenzano believe the tower has great potential for its historical and architectural relevance, however many complain about its current state of abandonment. A group of passionate land researchers founded the "Saracen tower" association, a non-profit organisation seeking to protect and pass on the history as well as the formal and material consistency of Arenzano. The Association takes its name from the tower itself and it highlighted the lack of interest shown by its owners as well as the lack of a specific use for the tower. The Carmelite Friars, owners of the tower, understand this concern, but are worried for the cost of a potential restoration project as well as for the future management of the tower. The Sanctuary of the Infant Jesus of Prague is already an attractive religious and cultural pole, but it could be interesting to broaden its potential appeal to tourists. The staff of the tourist office in Arenzano listed the tower among other architectural and landscape sites in critical conditions. Arenzano is a well-known tourist destination, especially in summer as seaside resort, but also during the year as the starting point for hikes in the Beigua Regional Nature Park⁶, the biggest park in Liguria, which is located behind the residential area of the city and was recognised by UNESCO in November 2015 within the prestigious UNESCO Global Geoparks list. Due to these considerations, it seemed useful to start a public-private collaboration to implement the Sanctuary (which already has its tourism structure and dedicated services) and the Beigua Park, as some paths are located by the watchtower. In this sense, the tower could be used to signal the access to the Park, by adding an info point, which is currently missing. Moreover, a Sanctuary shop could be placed inside the tower and managed by the Carmelite Friars to sell local products, which could then be consumed in the adjacent garden. This solution could meet the Carmelite's economic needs for the restoration

⁶ This area extends over a total of 39.230 hectares, involving several municipalities, including the municipality of Arenzano, featuring a rich and varied geological heritage with a spectacular "natural balcony" made up of mountains overlooking the sea and a hiking network that develops for about 500km. Some of these paths start right at the "Saracen tower", such as the "english trail" linking the village with the "Monte Reixa" belonging to the Apennine arch.

project and the management of the tower as well as our necessity to put all the various players of the project in contact. The watchtower, being the last in the area of Arenzano, could become a landmark in religious, cultural and landscape tourism as well as for hikers, raising interest among all different categories of users.

The watchtower is a testimony of defensive architecture in the XVIth century and a historical pluri-stratified trace. Therefore it must be preserved in its formal, material and constructive features, which contrast with any invasive use that would require an extensive structural apparatus. Therefore, the criteria for the project were that of "minimal intervention", in order to preserve and enhance the tower not just as an exhibition space, but as the object of the exhibition itself. Its limited dimensions (each floor has a surface of about 10m²) and the desire to maintain its shape and stratifications do not allow complex exhibitions, therefore only a few interactive panels can be installed. Each floor could be used to develop a different theme, leading the visitor to enjoy, on the last floor, the view of Arenzano and its coastline. The tourism services already available in the area of the Sanctuary of the Infant Jesus of Prague could be used also for the tower and, being located within the park of the religious structure, the green area surrounding the tower could be adequately furnished for tourist purposes. The tower is a visible landmark within the territory that could gather the attention and interest of tourists. There will be an info-point on the ground floor to visit the tower and the nearby Sanctuary. The info-point will also sell local products and religious artisan giftware. On the first floor, there will be a presentation about the Beigua Park and its natural characteristics with additional information on the possible hikes. The second and third floor, internally connected with a brick staircase, will tell the history of the watchtower and the defensive system in Liguria from the Middle Ages to the XVIth century with reference to the Saracen and Turkish-barbaric incursions in Liguria. The last floor, which was built in the XIXth century with wide windows, opening on the surrounding landscape, could provide panoramic binoculars alongside a guide to spot the main natural and architectural landmarks. In order to produce a project that would preserve and enhance the tower, it was important to counterbalance the potential offered by the tower's context with the area's limitations and the tower's deficiencies. The main issues were the absence of some vertical connections (in particular between the first and second floor and between the third and fourth floor) and the need to conform to safety

standards without altering the existing passages' shapes, materials and their visible stratigraphic marks. The staircase system is in such poor condition that the watchtower is currently inaccessible: the external staircase connecting the ground floor to the first floor, which would allow access also from a road adjacent to the tower, is almost entirely demolished; the staircase between the first and second floor is missing. Currently the second floor can be reached only using a temporary metal ladder, placed there by the owners. The other floors are connected internally. The third floor is accessed through a very steep brick staircase with slate treads, while the last floor is accessible by a staircase anchored to the wall with metal rungs, making also this vertical connection difficult to use.

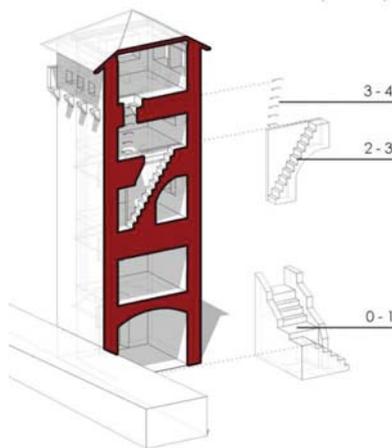


Fig. 06 : Three-dimensional model of the tower with existing vertical connections

Therefore, to make the tower accessible, it is necessary to design vertical connections allowing users to fully enjoy visiting the tower. The project firstly calls for the substitution of the existing external staircase connecting the ground floor to the first floor, and secondly the construction of a new external staircase additionally connecting the second floor as well as the fourth floor, thus separating the visits on floors used for different purposes. In order to achieve the least invasive intervention possible (but at the same time reversible and recognisable), the project focused on studying the stairs collocation, assessing all the available solutions without exception. The decision was made to add an external staircase, because an internal one would have taken up most of the available space on the floor. Moreover, the external staircase solution met the desire to maintain

the vaults, which would have necessarily been interrupted by the insertion of new internal passages. A subsequent analysis studied the external sides of the tower to find the right position that would minimise the impact on the tower and would allow us to use pre-existing openings, thus reducing further interventions. The north side shows both these characteristics: on the first and second floor, there are already two openings with adequate dimensions, while on the last floor the existing window would have to be lengthened. Demolition work would be limited to the XIXth century staircase (which is already compromised), the wall portion under the window on the fourth floor and one of the tower's brackets.

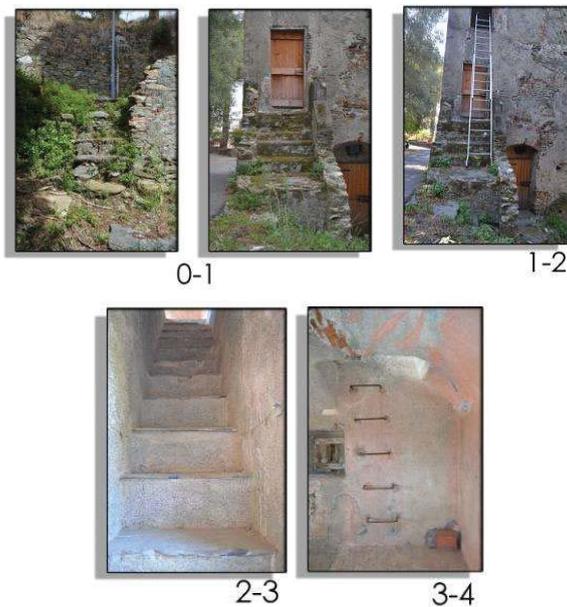


Fig. 07 : Pictures of existing vertical connections

The formal, material and structural characteristics of the stairs were analysed taking into consideration different design solutions. After several attempts, the staircase connecting the second and fourth floor was designed as a spiral staircase with gangways connecting it to the various floors. The choice was dictated by its smaller dimensions and because it aesthetically suited better the square plan of the tower. To connect the ground and first floor, the staircase differs from the design of the original staircase in its ramp connecting the road with the ground floor: its curvilinear shape (supported by a central structure that runs the entire

length of the staircase) harmoniously leads the visitor into the garden, mimicking the shape of the spiral staircase.

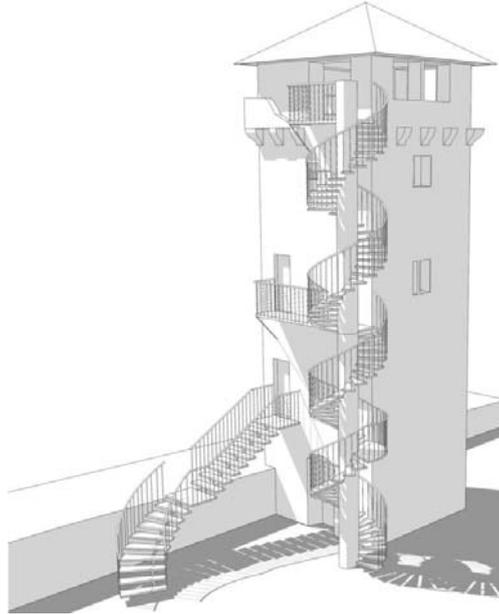


Fig. 08 : Three-dimensional image with north-west view of the tower, where new vertical connections emerge

Both staircases were designed in steel, which could be brushed or treated like corten steel. To allow visitors to understand the structure and its stratifications while walking up the tower, with the least possible invasive interventions, the steps are designed without risers, and the treads and connective gangways are in a rhombus metal mesh to avoid visually obstructive surfaces. The structure of the staircase is based on a central pillar that transfers the weight loads to the foundations and it has a circular hollow section with a 50 cm diameter. The various elements of the staircase (treads, landings and gangways) are welded onto this pillar. The staircase occupies 216 cm of space, the minimum possible considering that its ramps must be 80 cm wide. In the final project, each element was shaped and verified in their limit, ultimate and serviceability states, in order to guarantee the safety standards with regards to ordinary and seismic stresses. The adopted regulations refer to the Ministerial Decree dated 14/08/2008, containing the Technical Norms for Construction, which was

integrated with the indications in the CNR-DT 207/2008 document, regarding the instructions to evaluate the action and effects of wind on constructions, and the Circular Letter n. 617 date 02/02/2009 with the instructions on how to apply the Technical Norms for Constructions. Thanks to the spiral staircase, floors are connected, but at the same time, independent from one another and visitors can enjoy the view and appreciate the external walls of the tower while walking up. The preservation of external and internal surfaces aims to preserve and enhance this historical artefact, maintaining, where possible, all its elements, even when partly damaged. Disinfestation will be necessary to reduce the micro-macro vegetal organisms on the external walls of the tower. Cleaning work will also be necessary on all surfaces and will be carried out manually with brushes and nebulised water and, in specific parts, with absorbing clay packs to remove superficial deposits and stains. All steel elements should also be brushed and treated with special corrosion inhibitors. Additionally, mortar will be applied to the junctions and mortar beds in the wall sections subject to intense erosion, realised with lime mortar, carefully applied in recess with respect to lithic and lithoid elements. Some sections will require some touching-up of the walls to fill in missing parts or to integrate the eroded bricks. The rendering left on the external walls will be consolidated and protected with plasterwork to seal it. Several interventions will focus on single elements or small portions of mortar, with particular attention paid to maintain the current state of the structure and prevent water infiltration, which would trigger further degradation processes.

Finally, the work also involved the requalification of the garden where the tower is located by tidying up the greenery, inserting urban elements and explanatory panels in order to introduce visitors to the tower and invite them to explore its spaces all the way up to the panoramic view on the top floor.



Fig. 09 : Example illustration of the north face of the tower with various conservation interventions

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Les RIPAM (Rencontres Internationales du Patrimoine Architectural Méditerranéen) sont à la fois des rencontres et un réseau de personnes et d'institutions qui travaillent pour la connaissance et à la conservation du patrimoine architectural et urbain méditerranéen: Meknès (Maroc) en 2005, Marrakech (Maroc) en 2007, Lisbonne (Portugal) en 2009, M'sila (Algérie) en 2012, Marseille (France) en 2013, Monastir (Tunisie) en 2015. La septième conférence RIPAM «Conservation et valorisation du patrimoine architectural et paysagé des sites côtiers méditerranéens / Conservation and promotion of architectural and landscape heritage of the Mediterranean coastal sites» a été organisée à Gênes le 20-22 septembre 2017 par le DAD (Département d'Architecture et Design, Université de Gênes) et le CNR-ICVBC (Institut de Conservation et de mise en valeur du Patrimoine Culturel du Conseil National des Recherches de Florence, maintenant CNR-Institut des Sciences du Patrimoine Culturel).

Ce livre contient les travaux de recherche menés depuis Ripam7 sur la conservation et la mise en valeur du patrimoine architectural et paysager des sites côtiers de la Méditerranée. Il part ensuite de la définition du paysage côtier et des transformations que le paysage lui-même a souffert au fil du temps, dans la région méditerranéenne pour arriver ensuite aux spécificités du patrimoine architectural de ces mêmes régions. Différentes théories et approches méthodologiques sont comparées. La deuxième partie de l'ouvrage décrit les stratégies de conservation et de valorisation et présente des interventions dans différentes parties des côtes méditerranéennes (des côtes italiennes aux côtes françaises et portugaises, puis aux côtes marocaines, tunisiennes, algériennes, israéliennes, turques, grecques et syriennes).

The RIPAM (French acronym for International Meetings on Mediterranean Architectural Heritage) are both meetings and a network of people and institutions working to the knowledge and the conservation of the architectural and urban Mediterranean heritage: Meknes (Morocco) in 2005, Marrakech (Morocco) in 2007, Lisbon (Portugal) in 2009, M'sila (Algeria) in 2012, Marseille (France) in 2013, Monastir (Tunisia) in 2015. The seventh RIPAM conference "Conservation and enhancement of the architectural and landscaped heritage of coastal sites Mediterranean / Conservation and Promotion of Architectural and Landscape Heritage of the Mediterranean coastal sites" was organized in Genoa, 20-22 September 2017, by the DAD (Department of Architecture and Design, University of Genoa) and the CNR-ICVBC (Institute of Conservation and Promotion of Cultural Heritage of the National Research Council of Florence) now CNR-ISPC (Institute of Heritage Sciences) .

This book contains the research work done since Ripam7 on the conservation and promotion of the architectural and landscape heritage of Mediterranean coastal sites. It starts with the definition of coastal landscape and the transformations that the landscape itself has undergone, over time, in the Mediterranean area Then it addresses the specificities of the architectural heritage of these same areas. Different theories and methodological approaches are compared. In the second part of the book, conservation and promotion strategies are described with interventions carried out in different parts of the Mediterranean coasts (from the Italian coasts to the French and Portuguese coasts and then to the Moroccan, Tunisian, Algerian, Israeli, Turkish and Greek coasts till the Syrian territory).