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**POLITECNICO  
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# 7 DEFENSIVE ARCHITECTURE OF THE MEDITERRANEAN

Anna MAROTTA, Roberta SPALLONE (Eds.)





DEFENSIVE ARCHITECTURE OF THE MEDITERRANEAN  
Vol. VII



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FORTMED 2018

DEFENSIVE ARCHITECTURE OF THE MEDITERRANEAN  
Vol. VII

Editors  
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## Preface

The FORTMED International Conference on Modern Age Fortifications of the Mediterranean Coast celebrates its fourth edition in Torino (18th, 19th and 20th October 2018), hosted by Politecnico di Torino, the Department of Architecture and Design (DAD), in the historical seat of Valentino Castle.

The original idea of FORTMED was that of bringing together researchers working on Modern Age Fortifications of the Mediterranean at a conference, with the aim of creating an interdisciplinary network of researchers. Indeed, the primary objective of the Conference is to exchange and share knowledge, valorisation, management, and exploitation of Culture and Heritage that developed on the Western Mediterranean Coast in the Modern Age, considering the dissemination of the results as a crucial resource to achieve the objective, led to the realization of the first Conference, held at the Institute of Heritage Restoration of the Universitat Politècnica de València (15th, 16th and 17th October 2015). On that occasion, a group of scholars involved in research on Modern Age Fortifications from the Department of Architecture and Design (DAD) at the Politecnico di Torino came to Valencia and met the research group of Pablo Rodríguez-Navarro, who chaired the Conference. Today, some of these scholars are members of the Conference Scientific Committee.

The second Conference, chaired by Giorgio Verdiani and held at the Architecture Department of Università degli Studi di Firenze (November 10th, 11th and 12th 2016), expanded the theme of the Conference to the whole family of fortifications of the *Mare Nostrum* (e.g., Spain, France, Italy, Malta, Tunisia, Algeria, Morocco, Cyprus, Greece, Albania and Croazia) but not excluding other countries, other fortifications or coastal settlements.

The third Conference, chaired by Víctor Echarri Iribarren and held at the Escuela Técnica Superior de Arquitectura de la Universitat d'Alacant (October 26th, 27th and 28th 2017), focused on Western Mediterranean fortifications, including the other Mediterranean countries and overseas fortifications (e.g., Cuba, Puerto Rico Philippines and Panama), as well as introduced the "Port and Fortification" line.

In this fourth Conference the field of interests broadens out: in space, including both Northern Europe (i.e., Sweden) and Far Eastern (i.e., China) countries; and in time, involving studies both on Middle Age defensive architecture and contemporary military buildings and settlements (from the 19th to 21st century). This means recognizing the value of Architectural Heritage to contemporary buildings (i.e., the bunkers built during the II World War) and facing new issues associated with the conservation and restoration of them. Moreover, the Conference addresses current themes (i.e., those of the reconstruction of the Defensive Architectural Heritage destroyed during the present civil war in Syria). In the hope of the proponents of the current Conference, the issue of preservation and enhancement of Fortification Heritage affirms as a place of knowledge exchange aimed at the transformation of this Heritage, from "war to peace".

Turin is a special venue for a Conference on Modern Fortifications. Turin, the capital city of the Duchy of Savoy since 1563, took shape as a “city-fortress” from those years up to the dismantling of the fortified walls and the Citadel, from the beginning to mid-19th century. In that period, military engineers and treatisers developed projects and formulated opinions about the fortified system of the city (e.g., Paciotto, Carlo Morello, Michel Angelo Morello, Vauban, and Guarini). The seat of the Conference, the Valentino Castle, Humanity UNESCO Heritage, was born during the establishing of Savoy in Turin, as the riverside residence of the Savoy family. The theme of Modern Fortifications, in the past and today characterized the researches of numerous scholars of the Politecnico di Torino from different disciplinary points of view and in an interdisciplinary perspective.

FORTMED2018\_Torino received numerous contributions. Among them, about 190 papers, written by more than 310 authors and peer-reviewed by members of the Scientific Committee, have been selected. The authors come from 19 countries (Italy, Spain, Albania, Algeria, Cyprus, Croatia, France, Germany, Greece, Israel, Morocco, Malta, Poland, Portugal, Romania, Sweden, Turkey, the United Kingdom and Venezuela). As in the auspices of FORTMED Conferences, they represent the world not only of University researchers but also independent scholars, professionals, representatives of the institutions for the protection of Cultural Heritage, volunteers and members of cultural associations, and, “last but not least”, Ph.D. and M.Sc. students, who are the future for our research.

We hope that FORTMED2018\_Torino will strengthen the bonds between researchers and create new opportunities for a more effective collaboration in knowledge, maintenance and intervention of the Fortification Heritage.

We would like to thank Pablo Rodríguez-Navarro, President of FORTMED®, for his valuable advice and constant presence during the organization phases of the Conference.

Thanks to the Advisors of FORTMED, Teresa Gil Piqueras, Giorgio Verdiani, Víctor Echarri Iribarren, and the Scientific Committee for their selfless dedication and professionalism.

Thanks to Politecnico di Torino and the Department of Architecture and Design for their constant support in the organization of the Conference.

Special thanks to the Organizing Committee, firstly to Marco Vitali, Secretary, and Program Co-Chair, for his constant and important work for the realization of the Conference, and to Michele Calvano, Massimiliano Lo Turco, Rossana Netti and Martino Pavignano, members of the Committee, for their precious collaboration.

Finally, we would like to express our gratitude to all the authors of this publication for the quality of their contributions, their attitude regarding the adequacy of the reviews and their patience throughout the editing process and registration. Without you, all this would not have been possible.

At the end of this exciting experience, we wish those who will pick up the baton as a chair of the next edition of the Conference to realize a more and more effective FORTMED2019 at the centre of the 21st century's researches on the Defensive Architecture of the Mediterranean.

Anna Marotta, Roberta Spallone  
FORTMED2018 Chairs

## Noble castles of the late Middle Ages in Northwest Italy

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### Abstract

Throughout the 1400s, the medieval landscape underwent a gradual transformation: castles, *domus*, and *palacia* evolved into palaces that represented the aesthetic taste and prestige of princes. The second half of the century saw a progression of such topic, subscribed and reinterpreted with a more complete vision, including updated lay-outs of the residences as well as the construction of new façades. The renovation of medieval castles became a dominating theme of work commissioned by the main Italian dynasties in the second half of the 15<sup>th</sup> century. Fortresses were the object of improvement work to soften the military nature of their architecture by adding new decorations and rethinking their spaces. The main dynastic families of the sub-Alpine area – the houses of Savoy, Saluzzo, and Monferrato – became the bringers of new construction projects targeted towards modernization of defensive structures and an improvement of the accommodation aspects.

**Keywords:** *architecture of power, medieval traditions, castles and palaces.*

### 1. Introduction

In the second half of the 15<sup>th</sup> century, renovation of medieval castles became a predominant topic among the main Italian dynastic families. The fortresses were subjected to an "emblematic demilitarization", with the intent to soften the defence apparatus of their architecture, by adding new decorations and rethinking their spaces (Simoncini, 2016; Beltramo, 2015c; Folin, 2015a).

The choices made by princes and princesses the likes of Galeazzo Maria Sforza and Eleanor of Aragon in Milan and Ferrara indeed followed the same philosophy in the modernization of their residences (Cavicchi & Marcolini, 2002; Boucheron, 2004; Welch, 2010; Scotti, 2015; Folin, 2015b). The transformation of the castle into a fortress updated in terms of construction and defence elements – given the rapid evolution of firearms – but, at the same time an elegant ducal palace that could hold its own in comparison with the other Italian noble courts directly involved the Milan castle, which suffered severe damage in 1450 and was immediately rebuilt by Francesco Sforza (Salch, 2000; Fiorio, M.T., 2005; Scotti, 2005; Patetta, 2005). The duke never fully betrayed

the late Gothic Lombard building tradition, and promoted new but *all'antica* architectures.

In fact, it was the fluctuations between caution and renewal ambitions that seemed to distinguish the architectural tastes of mid-1400s princes: on one hand, the attraction for innovation – including the concept of *novitas* dominating the Renaissance Humanism currents – and on the other hand the consolidated building, art, and language customs still strongly linked to the medieval tradition (Vitiello, 2004). Such renovation plans also involved the Piedmont territories, in which the main noble dynasties – the houses of Savoy-Acaia, Saluzzo, and Monferrato – became the bringers of new construction ideas targeted towards modernization of defensive structures and an improvement of the residential aspects of the castles themselves (Beltramo, 2015b).

The construction models that inspired noblemen on the territory appear to be the ones found in Fossano and Moncrivello – work of the house of Savoy – Saluzzo, Verzuolo, and certain aspects of Revello

– by the marquises of Saluzzo – and Casale – by the house of Monferrato (Longhi, 2005; Lusso, 2014).

In terms of private architecture, Piedmont boasts a large number of structures that underwent transformation in the second half of the 15<sup>th</sup> century, and the building choices adopted were similar to the aforementioned. The castles of Villanova Solaro, Lagnasco (owned by the Tapparelli), Gaglianico and Benna (by the Ferrero family), Vinovo, (by the Della Rovere), Lucento, Cartignano, Saliceto (owned by the Del Carretto), are just few of the constructions that were renovated in that age (Palmas, 1995).

## 2. Comparative analysis of the Saluzzo, Casale Monferrato, and Fossano castles

### 2.1 Defence and accommodation in the marquis construction projects: Saluzzo and Casale

In the late 15<sup>th</sup> century, the marquises of Saluzzo and Monferrato, as well as the dukes of Savoy, carried out reconfiguration operations at their court residences. The choices made by noble Piedmontese patronage were distinguished by a sharp sense of continuity and relevance of the assessments made upon involvement of artists and masons of an undoubtedly high level, producing state-of-the-art results that could put up a challenge with the main European courts (Pagella, Rossetti Brezzi & Castelnuovo, 2006; Castelnuovo, 2006).

The urban castle of Saluzzo and the marquis palace of Revello represent two significant examples of the Renaissance *modus operandi* in the renovation of medieval residences and the construction of new imposing buildings that also manifested a radical change in relationship with the urban and landscape context (Boucheron & Folin, 2011). The noticeable difference between the two structures identified using the terms *castrum* and *palacio* expresses the duality of choices implemented by the marquises, who assigned a greater coherence with the medieval tradition to Saluzzo – in the dynasty’s symbolic stronghold – and a more innovative architectural design to Revello, where the construction site of the marquis palace also brought a new urban and court identity, complementary to that of the main seat (Beltramo,

2015a). A key element of the Saluzzo construction site in the second half of the 15<sup>th</sup> century was thus a policy focused on an update of the defensive apparatus, as well as the restoration of the court residences. The vast operation encompassing military modernization, residential renovation, and functional adjustment of the Saluzzo castle (transformed into a prison in the 19<sup>th</sup> century and recently restored) was launched once it became clear that the town was central to the control of the marquis’s territory. The castle would gain new value as the main residence of the court.



Fig. 1- Saluzzo Castle, view overlooking the hillside

The doubling in size of the 1300s castle, with the addition of the porticoed outer courtyard at the front, was the result of a coordinated project that lasted throughout the final decades of the century. Work began in the later years of Ludovico I’s reign (who died in 1475): in fact, the new *turris magna seu rotonda* was mentioned for the first time in 1476. The massive round tower was placed at the northeast corner of the structure. Its existence necessarily supposes that the clearing of the new northern courtyard must at least have already begun (Beltramo, 2015a).

The 1400s architectural operations within the inner part of the castle were mainly focused on defining a new central area – the first courtyard seen upon entering the complex – available to public use, as well as renewed accommodation and defensive arrangements.

Around the quadrangular courtyard – surrounded on three sides by a portico bedecked with painted gallery – the new design added theme-based

frescoed rooms such as the *camera dei gigli* (room of lilies) along the south end, as well as staterooms designed for the marquisate government, also frescoed and vaulted (e.g. *camera paramenti* 1476) (Beltramo, 2015b).

In order to adapt to the rapidly growing use of high-calibre firearms, the new outer defence system found its centre of gravity in the massive tower overlooking the piazza, and also included a circular *rondella* structure and a *faussebraye*, clearly influenced by the technical insight of Francesco di Giorgio, the works by Baccio Pontelli, and the contemporary constructions in central-northern Italy, as well as the solutions adopted in development work within the Monferrato marquisate in the 1470s and 1480s (Adams, 1994; Nazzaro & Villa, 2004; Viganò, 2008; Meneses, 2010).

In contrast with the public courtyard, the 1300s structure included a private courtyard hosting the marquises' apartments on the first floor, and the chambers available to court members at the ground floor – mainly stables and cellars. This area was also subject to restoration, which involved, in particular, the Marquis' room and the *studiolo* (cabinet) used by Margaret of Foix, with a view on the Saluzzo hill and the San Bernardino convent.

The internal courtyard of the private area of the castle was decorated by a series of grisaille frescoes, painted for Ludovico II's marriage to Margaret of Foix in 1492, as witnessed by the arms of the House of Foix painted between the frames and the themed frescoes. The marquis's castle was the inspiration behind the choice to decorate the façades and the courtyards of the Saluzzo palaces with grisaille frescoes. A choice that would strongly influence architecture in the first few decades of the 16<sup>th</sup>-century, when noble families of Saluzzo adopted a similar embellishment to their residences (Caldera, 2011). Close to Saluzzo, there was the Monferrato marquisate, where – in the 1460s and 1470s – local governors implemented similar choices, targeted towards a reinstatement of the political and accommodation functions of the Casale castle, by means of an update of the defence system and the setup of new rooms around a second central courtyard (Angelino, 2003). Construction work had



Fig. 2- Saluzzo Castle, view overlooking the town

the purpose of introducing spaces to host the bureaucratic and administration functions necessary to guarantee an increasingly stable presence of the Monferrato government. Following the choice to establish it as the new capital of the marquisate, Casale became the main court premises and gained the status as *civitas* in 1474 (Settia, 1987-88). The main fortification and restoration work on the castles in the marquisate is ascribable to William VIII. The work of course included the Casale castle that was strengthened and enlarged with the addition of a second court, which is the reason for which in 1480 it was referred to as *castrum magnum civitatis Casalis* (Lusso, 2009).



Fig. 3- Casale Monferrato castle today; portico in the first courtyard

In the transformation of the castle, the marquises William VIII (between 1464-1465) and Boniface III (until 1494) carried out choices to improve its lay-out as well as its accommodation and military system. Following the doubling of the castle's surface area by means of the creation of the western courtyard (second courtyard) added to the 1300s structure, William VIII decreed a new definition of the spaces dedicated to public and administration

functions as well as the private, family spaces: the private noble apartments were laid out adjacent to the second courtyard, while the first courtyard was redesigned to host new staterooms (Bonardi, 2003).

The site for the construction of a new porticoed wing – dedicated to public use – along the first courtyard outlining the southern edge materialized around the 1460s. The open arcade adjacent to the chancellor's office is first mentioned in 1483. Despite the painted faux-bossage applied to the portico design and monochrome panelling on the top floor, the traditional architectural language adopted shows the conservative spirit of the marquises, which tended to repeat known models. The second courtyard, embellished by green spaces and gardens was mostly designed for private use of the marquis entourage; at the *piano nobile*, there were the family apartments, frescoed and decorated with tapestry, around a great hall accessed by means of a staircase at the south end of the wing dividing the two courtyards. Among spaces of the marquises' apartments located within such main floor referenced in literature, there are the *guardacamera* (antechamber), the *studiolo*, and the *sala grande* (great hall) (Giordano, 2006). Along with storage spaces, the ground floor also hosted a chapel decorated by painter Cristoforo Moretti as early as 1467 (Lusso, 2009).

The 1480s were dedicated to the improvement of the castle's defence system; marquises Boniface III, then William VIII, commissioned new military-oriented work, including a curtain wall protecting the ancient stronghold, a wider moat, a counterscarp, and a new tower, mentioned in 1488; the pinnacle of the operations was the construction of a *rivellino* on the south end. Four cylindrical towers with a receding slope closed the new wall perimeter. The upgrade of the defence system was based upon the erection of a *faussebraye* surrounding the entire complex, as well as a new, low and subtle curtain wall.

## 2.2. A Savoy construction site: the Fossano Castle

In order to understand the development and transformation mechanisms of the Savoy castles in the late 15<sup>th</sup> century, the Fossano Castle – which

underwent ambitious interior space redesign operations commissioned by Charles I, Duke of Savoy in the 1480s – appears to be a significant element of analysis. Between 1485 and 1487 the castle's architecture was radically renewed, with the creation of a palace within its interior space that rationalized the structure's pre-existent functions in a modernized cultural framework (Gentile, 1985). The main objective of the work commissioned by the young duke was a reorganization of the elements accumulated over a century and a half – without a clear overall project – within the space of the four towers and curtain wall defined by prince Philip of Savoy-Acaia.

Renovation of the castle occurred at a time when Charles I was called to deal with a series of important political choices, and the chess table of the duke's alliances and expansion ambitions thus seemed to go in the direction of the marquisate of Saluzzo (Barbero, 2002). The duke's intention was mainly to broaden the controlled area rather than establish a new capital of the duchy – which had instead been a main factor in the choices made by the nearby marquisates of Saluzzo and Monferrato (Grillo, 2010; Longhi, 2011). Work on the Fossano Castle brought a formal and functional redefinition of the interior spaces, while at the same time catering for its defence use with an upgrade of the outer curtain walls and the moat, following modern military criteria. Whilst for the majority of noble castles the tall medieval square towers were shrunk and lowered to avoid bombardment damage – as was the case in Saluzzo – Fossano maintained its system with four square towers, one at each corner. Besides, it must be noted that work commissioned by Bona of Savoy, duchess of Milan, was also distinguished by an anachronistic erection of a central, tall tower within the Rocchetta of the Sforza Castle in Milan (circa 1476-1480).

The inner area of the Fossano Castle features the attempt to set up a palace and courtyard inspired by the style of main Italian and European courts: the *magnum pallacium* occupies the western portion of the castle, opposite to the set of towers upon entrance, and overlooking the area outside the town (Longhi, 2010). Key spaces such as the great hall and the palace chapel – recorded to exist in the castle even before – found a new life within a more

complex and defined lay-out. Presumably the tower adjacent to the chapel hosted the *camera domini* (lord's room), another distinguishing element of a noble palace: in accordance with the ceremonial standards of the court, the room was located at the end of the path from the entrance to the great hall and the chapel; it was also distinguished by a private latrine.



Fig. 4- Fossano Castle, interior view of the courtyard

In the 15<sup>th</sup> century, the topic of living comfort and a more functional lay-out involving the distribution of court spaces on a single floor was also implemented to interior design of castles like the one in Fossano, which maintained its strongly medieval symbolism distinguished by towers around its perimeter. A spiral staircase (*viretto*), positioned on the outside between the palace and the loggia at the north end, connected the courtyard and the stateroom floor, providing a direct access to the great hall (Carità, 1985).

The portico encircles the central courtyard on just three of the four sides, leaving the palace front open; adjacent to the entrance, the loggia uncloses to give way to seven arcades boasting stone columns with capitals and bases featuring sculpted Savoy emblems. The raised gallery lays on chamfered brick supports, following the 15<sup>th</sup>-century standards of civil and castle building.

### 3. Conclusions

Though not abandoning its military functions and appearance, in the late 15<sup>th</sup> century the Saluzzo Castle took on the use as a noble building that hosted government offices and the marquis court. Its architectural setup was a witness of such use, adopting an ancient language to add a series of celebratory elements to a medieval template, such as grand galleries and courtyards, gardens, and new series of frescoes, thus cladding the forms inherited by tradition with an updated meaning.

A policy of re-use of consolidated symbols across the territory seemed to be adopted even by Fossano and the Duke of Savoy, by means of a re-definition of interior spaces with a series of separations, within a consolidated noble architecture model. The Fossano Castle differs from Saluzzo and Casale, in that it was not a ducal palace built in a city with ambitions to become government capitals. Nevertheless, the trend of restoring ancient fortified spaces and reusing them as court premises was a process shared with numerous other Italian noble families in the decades straddling the mid-1400s, likely in search of a dynastic legitimization – exploiting the medieval constructions which were already deeply rooted in the urban landscape – as well as an increased safety and privacy.

The case of Fossano, without any "capital" ambitions, was different to the others in that the geopolitical framework of the Savoy rule and the volatility of its court prevented it to architecturally redesign a main seat of power, even in other urban centres (Turin, Chambery, Pinerolo).

The lay-out and essential rooms of the formal court design were thus reiterated, but in more refined contexts, where the presence of the court is durable and constant, but appears more subtle, and shy of – for example – specific spaces for the government and administration, or for leisure, or with the chambers distributed within two courtyards as in the "state" residences of the houses of Saluzzo and Monferrato as well as other Italian contexts.

## References

- Adams, N. (1994) L'architettura militare di Francesco di Giorgio Martini. In: Fiore, F.P. & Tafuri, M. (eds.) *Francesco di Giorgio architetto*. Electa, Milano, pp. 114-150.
- Angelino, A. (2003) Da fortezza a residenza della corte paleologa. In: Comoli, V. (ed.) *Il castello di Casale Monferrato dalla storia al progetto di restauro*. Alessandria, Cassa di Risparmio di Alessandria, pp. 29-39.
- Barbero, A. (2002) *Il ducato di Savoia. Amministrazione e corte di uno stato franco-italiano (1416-1536)*. Roma-Bari, Laterza.
- Beltramo, S. (2015a) *Il marchesato di Saluzzo tra Gotico e Rinascimento. Architettura città e committenti*. Roma, Viella.
- Beltramo, S. (2015b) Combining the Old and the New: The Princely Residences of the Marquises of Saluzzo in the 15th Century. In: Beltramo, S., Cantatore, F. & Folin, M. (eds.) *A Renaissance Architecture of Power. Princely Palaces in the Italian Quattrocento*. Leiden, Brill, pp. 105-133.
- Beltramo, S. (2015c) Medieval Vestiges in the Princely Architecture of the 15th Century. In: Beltramo, S., Cantatore, F. & Folin, M. (eds.) *A Renaissance Architecture of Power. Princely Palaces in the Italian Quattrocento*. Leiden, Brill, pp. 28-52.
- Bonardi, C. (2003) Architettura per la pace, architettura per la guerra. In: Comoli, V. (ed.) *Il castello di Casale Monferrato dalla storia al progetto di restauro*. Alessandria, Fondazione Cassa di Risparmio di Alessandria, pp. 67-87.
- Boucheron, P. (2004) 'Non domus ista sed urbs': Palais princiers et environnement urbain au Quattrocento (Milan, Mantoue, Urbino). In: Boucheron, P. & Chiffolleau, J. (eds.) *Le palais dans la ville. Espaces urbains et lieux de la puissance publique dans le Méditerranée médiévale*. Lyon, Presses Universitaires de Lyon, pp. 249-284.
- Boucheron, P. & Folin, M. (eds.) (2011) *I grandi cantieri del rinnovamento urbano: esperienze italiane ed europee a confronto, secoli XIV-XVI*. Roma, École française de Rome.
- Caldera, M. (2011) I frammenti di una vicenda decorativa: testimonianze quattrocentesche dalla Castiglia di Saluzzo. In: Comba, R., Rao, R. & Lusso, E. (eds.) *Sulle tracce degli antichi castelli. Dalla ricerca alla divulgazione*. Cuneo, Società degli Studi Storici, Archeologici ed Artistici della provincia di Cuneo, pp. 45-48.
- Carità, G. (ed.) (1985) *Il castello e le fortificazioni nella storia di Fossano*. Fossano, Cassa di Risparmio di Fossano.
- Castelnuovo, G. (2006) A la court et au service de nostre prince: l'hôtel de Savoie et ses métiers à la fin du Moyen âge. In: Bianchi, P. & Gentile, L.C. (eds.) *L'affermarsi della corte sabauda. Dinastie, poteri, élites in Piemonte e Savoia fra tardo medioevo e prima età moderna*. Torino, Zamorani, pp. 23-53.
- Cavicchi, G. & Marcolini, G. (2002) Il Castello Estense di Ferrara in epoca ducale. In: Bentini, J. & Borella, M. *Il Castello Estense*. Viterbo, Betagamma, pp. 39-66.
- Fiorio, M.T. (ed.) (2005) *Il Castello Sforzesco di Milano*. Milano, Skira.
- Folin, M. (2015a) Princes, Towns, Palaces: A Renaissance 'Architecture of Power'. In: Beltramo, S., Cantatore, F. & Folin, M. (eds.) *A Renaissance Architecture of Power. Princely Palaces in the Italian Quattrocento*. Leiden, Brill, pp. 1-27.
- Folin, M. (2015b) The Renewal of Ferrara's Court Palace under Ercole I d'Este (1471-1505). In: Beltramo, S., Cantatore, F. & Folin, M. (eds.) *A Renaissance Architecture of Power. Princely Palaces in the Italian Quattrocento*. Leiden, Brill, pp. 187-215.
- Gentile, G. (1985) La fabbrica del castello di Fossano nei documenti contabili. Dal quinternetto di Pietro Lamberti al conto del tesoriere generale Rufino de Murrus. In: Carità, G. (ed.) *Il castello e le fortificazioni nella storia di Fossano*. Fossano, Cassa di Risparmio di Fossano, pp. 91-110.
- Giordano, L. (2006) La sala grande tra tardo Medioevo e primo Rinascimento. In: Rossi, M. (ed.) *Imperatori e Dei. Roma e il gusto per l'antico nel Palazzo dei Pio a Carpi*. Carpi, Musei di Carpi, pp. 27-38.

- Grillo, P. (2010) Fossano, avamposto sabaudo nel Piemonte sud-occidentale: 1314-1418. In: Comba, R. (ed.) *Il secolo degli Acaia (1314-1418). Storia di Fossano e del suo territorio*. Vol. II. Fossano, CO.RE Editrice Società Cooperativa, pp. 101-130.
- Longhi, A. (2005) Le residenze sabaude nel Medioevo: il quadro territoriale, i modelli architettonici, i cantieri. In: Volpiano, M. (ed.) *Le residenze sabaude come cantieri di conoscenza. Ricerca storica, materiali e tecniche costruttive*. Torino, Fondazione CRT, pp. 33-44.
- Longhi, A. (2010) Cantieri e architetture. In: Comba, R. (ed.) *Il secolo degli Acaia (1314-1418). Storia di Fossano e del suo territorio*. Vol. II. Fossano, CO.RE Editrice Società Cooperativa, pp. 45-89.
- Longhi, A. (2011) Presidio e rappresentatività: il palazzo Sabauda nel castello di Fossano. In: Comba, R. (ed.) *Nel ducato sabaudo (1418-1536. Storia di Fossano e del suo territorio*. Vol. III. Fossano, CO.RE Editrice Società Cooperativa, pp. 43-73.
- Lusso, E. (2009) Il castello di Casale come spazio residenziale. Note per una storia delle trasformazioni architettoniche in età paleologa (1351-1533). *Monferrato arte e storia*, vol. XXI, pp. 7-30.
- Lusso, E. (2014) La committenza architettonica dei marchesi di Saluzzo e di Monferrato nel tardo Quattrocento. Modelli mentali e orientamenti culturali. In: Corrain, L. & Di Teodoro, F.P. (eds.) *Architettura e identità locali*. Firenze, Leo S. Olschki, pp. 423-438.
- Meneses, P. (2010) *Baccio Pontelli a Roma: l'attività dell'architetto fiorentino per Giuliano Della Rovere*. Pisa, Felici.
- Nazzaro, B. & Villa, G. (eds.) (2004) *Francesco di Giorgio Martini. Rocche, città, paesaggi*. Roma, Kappa.
- Pagella, E., Rossetti Brezzi, E. & Castelnuovo, E. (eds.) (2006) *Corti e città. Arte del Quattrocento nelle Alpi occidentali*. Milano, Skira.
- Palmas, C. (1995) Castelli medievali e loro trasformazione in dimore gentilizie. In: Viglino Davico, M. (ed.), *Cultura castellana*. Torino, Istituto Italiano dei castelli, pp. 117-127.
- Patetta, L. (2005). Il castello nell'età sforzesca (1450-1499). In: Fiorio, M.T. (ed.) *Il Castello Sforzesco di Milano*. Skira, Milano, pp.79-99.
- Salch, C-L (2000). Le château de Milan. Un grand chantier de château-fort. 1451-1492. In: *Castrum Europe, Châteaux-forts d'Europe*. Strasbourg, Editions du Centre d'étude des châteaux-forts, 16, pp. 19-34.
- Scotti, A. (2005) Il castello in età moderna: trasformazioni difensive, distributive e funzionali. In: Fiorio, M.T. (ed.) *Il Castello Sforzesco di Milano*. Skira, Milano, pp. 191-224.
- Scotti, A. (2015) The Sforza Castle of Milan (1450-1499). In: Beltramo, S., Cantatore, F. & Folin, M. (eds.) *A Renaissance Architecture of Power. Princely Palaces in the Italian Quattrocento*. Leiden, Brill, pp. 134-162.
- Settia, A.A. (1987-1988) "Fare Casale città": prestigio principesco e ambizioni familiari nella nascita di una diocesi tardo medievale. *Rivista di storia, arte, archeologia per le province di Alessandria e Asti*, XCVI-XCVII, 285-318.
- Simoncini, G. (2016) *La memoria del medioevo nell'architettura dei secoli XV-XVIII*. Roma, Gangemi editore.
- Viganò, M. (2008) *L'architettura militare nell'età di Leonardo. 'Guerre milanesi' e diffusione del bastione in Italia e in Europa*. Bellinzona, Casagrande.
- Vitiello, M. (2004) *La committenza medicea nel Rinascimento*. Roma, Gangemi editore.
- Welch, E. (2010). Patrons, Artists, and Audiences in Renaissance Milan 1300-1600. In: Rosenberg, C.M. (ed.) *The Court Cities of Northern Italy, Milano, Parma, Piacenza, Mantua, Bologna, Urbino, Pesaro and Rimini*. Cambridge, Cambridge University Press, pp. 26-35.
- Whiteley, M. (1994) Royal and Ducal Palaces in France in the Fourteenth and Fifteenth Century. Interior, ceremony and function. In: Guillaume, J. (ed.) *Architecture et vie sociale. L'organisation intérieure des grandes demeures à la fin du Moyen Age et à la Renaissance*. Paris, Picard, pp. 47-63.