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Architecture and Archaeology

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Alessandro Camiz, Martin Ebert, Giorgio Verdiani editors

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Cover image: Excavation plan of Nordquartier Malchin, (excavator Martin Schäfer for the town of Malchin, digitalised by Martin Ebert).

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ARCHITECTURE AND ARCHAEOLOGY: THE COMMON MEANING OF PAST AND FUTURE BUILT FORMS

ALESSANDRO CAMIZ
"D'ANNUNZIO" UNIVERSITY OF CHIETI–PESCARA"

"con gli occhi proprij ho ueduto, & con le proprie mani misurato i fragmenti di molti edificij antichi"

"with my own eyes I have seen, with my own hands I have measured the fragments of many ancient buildings"

(Andrea Palladio, 1570)

The State of the Art

In the recent debate on the relationship between architecture and archaeology (Capozzi, Fusco, and Visconti 2019) (Mariniello 2016), the prevailing thesis is that contemporary design should take shape within the archaeological site, figuratively affirming its contemporaneity. This assertion characterizes much of recent Italian design experimentation in archaeological contexts (Basso Peressut and Caliari 2014) (Cellini et al. 2009), but above all, it fuels the controversy that often sees architects standing against conservation organizations, making their project's life extremely difficult. This contribution questions the necessity of such a figurative affirmation. In an archaeological area, prior to any architectural design, a subtraction design operation

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Figure 1. Sir Lawrence Alma Tadema, The Colosseum, oil on canvas, 1896.

—the excavation— was carried out, defining a negative stratigraphic unit (Harris 1989). This operation, the archaeological excavation, was introduced only in the Age of Enlightenment; it is therefore a modern invention. The archaeological excavation is a contemporary operation that makes the past visible, attributing value to it. The assertion of identity by contrast of the contemporary design layer, in our opinion, does not consider the negative stratigraphic unity as a prerequisite for the design process itself. The compositional action should therefore take into account, as in any other place, the context and the process underway within it, thus establishing itself as a figurative connection. If the composition's primary subject is the ruin uncovered by the excavation, the design should determine its frame rather than asserting itself as an independent figure, or

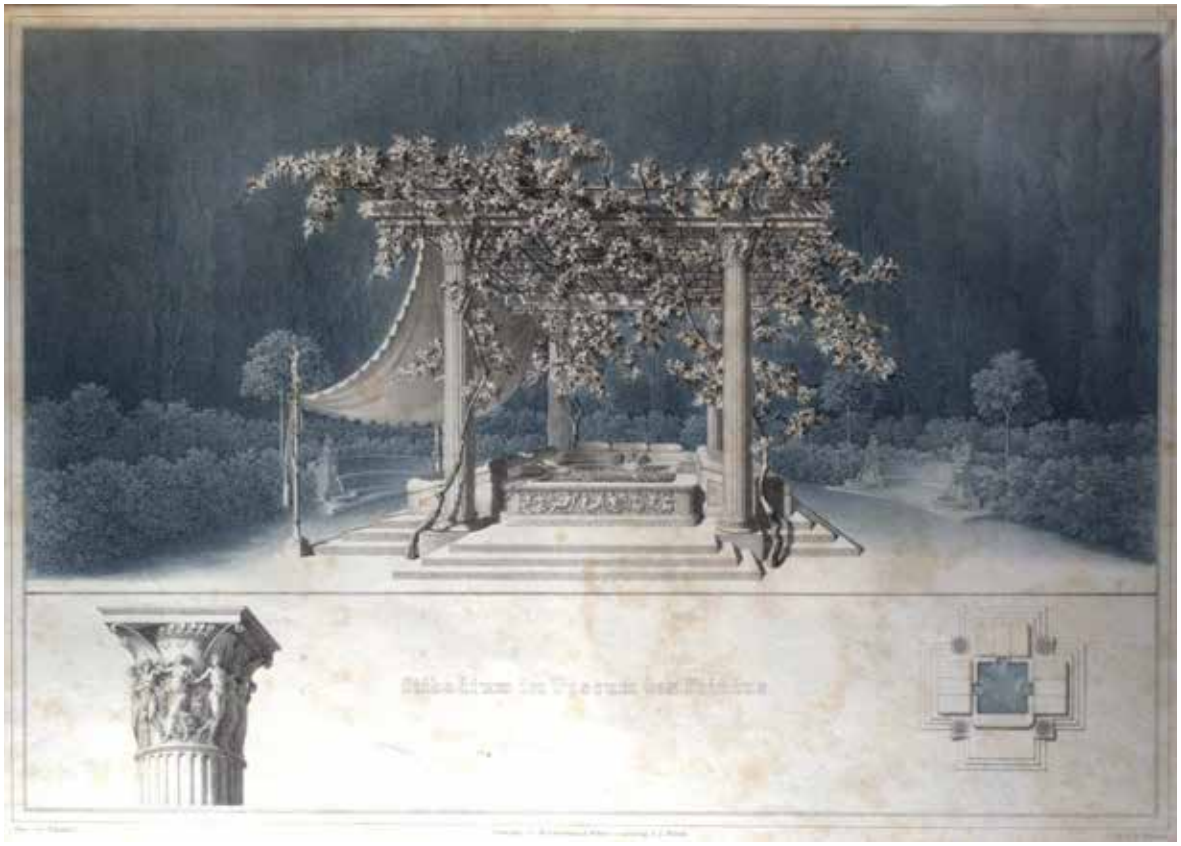

Figure 2. Karl Friedrich Schinkel, Stibadium of Plinius' Villa, (Architektonisches Album, 1842).

even by applying contrast. This thesis could be considered by many conservative and passé, but once the substantial contemporaneity of the archaeological excavation is recognized, it follows that a design that fails to take this into account cannot be contemporary, and is therefore itself conservative and passé.

Archaeological design: tactics and strategy

Although it is not easy to find official statistics, Italy is probably the country with the highest number of archaeological sites. This is supported by the number of sites declared World Heritage Sites by UNESCO: fifty-nine, the highest of any country in the world. Yet despite this well-deserved record, Italy does not seem to excel in archaeological project management. Examples certainly exist, and some of them are of high quality, for example, the Temporary Repository of Archaeological Finds at the Villa dei Quintili (Susanna Ferrini and Antonello Stella, 2002), the Access Pavilion to the Artemision excavations in Ortygia (Vincenzo Latina, 2012), and the ongoing redevelopment project for the Mausoleum of Augustus in Rome (Francesco Cellini, 2006). However, these numbers are certainly few when compared to those of other European countries, such

as Spain. If we were to broaden our analysis to include historical centres, a category of Italian invention (Toppetti and Capuano, 2017), the gap between Italian examples of contemporary architecture in historical centres and those in other European countries becomes even more evident. It's certainly necessary to distinguish between design in a historical urban fabric and design in an archaeological area; in our view, these are profoundly different things, but both suffer from a lack in Italy. In short, the country of historical centres and archaeology is unable to find the tools to design in these contexts. Of course, most will argue, it's the fault of the superintendencies which prevent architects from working as they should, and this is widespread political stance that accounts for what we believe to be a genuine disciplinary shortcoming. While there has been much debate in recent years about which scientific discipline is legitimately qualified to address archaeological design, and extensive experimentation has been conducted within teaching —for example, the nearly twenty-year experience of the Piranesi Prize, the work of the Roma Tre Faculty of Architecture, and the experiments of Raffale Panella and Alessandra Capuano, the methodological question of archaeological design, as we prefer to call it here, has not been seriously addressed within our discipline. While all disciplines are fully legitimated to address archaeological sites, and I am thinking especially of restorers (Carbonara, 1979), the question of design, at least nominally, belongs

Figure 3. Magnesia on the Meander stadium, Aerial Photogrammetric Digital survey, (in collaboration with Görkem Kökdemir and Utku Özdemir, University of Ankara, Department of Archaeology, Magnesia archaeological mission, 2024).

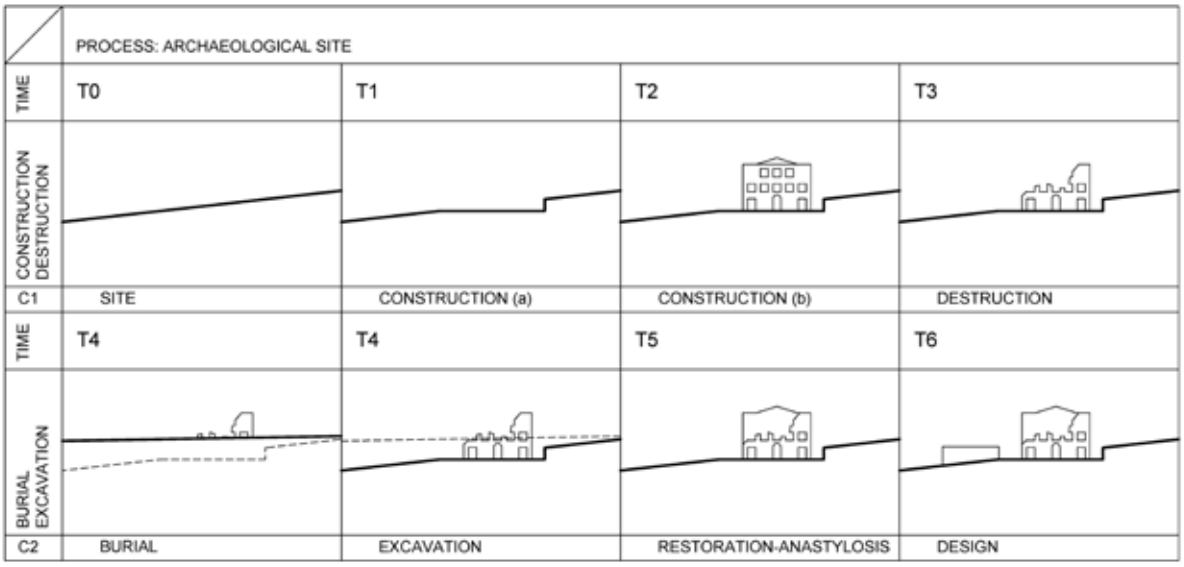

Figure 4. The formation process of an archaeological site should include the restoration project as a premise to the contemporary Design (A. Camiz drawing, 2023).

primarily to the field of design, not to interior design, not to landscape design, but of architectural design. Returning to the polemical opposition that too often sees architects and designers opposing superintendencies, we take the liberty of criticizing this political position that many colleagues often adopt so uncompromisingly, for both tactical and strategic reasons. Tactically, opposing superintendencies harms the architecture profession. If a superintendence halts a project because it deems it appropriate, its role of protection and safeguarding legitimates it to do so. Attacking it will certainly not push that superintendence to reconsider its position in this specific case, nor will it contribute in the slightest to restoring the trust and respect Italians generally have for the architect's profession. Strategically, however, a serious scientific reflection on the reasons why a project was halted would be far more useful than the usual outcry against the superintendence. Without this type of disciplinary reflection, and increased awareness of the nature of the problem and possible solutions, we will be condemned to remain in this situation for generations to come.

The Client: this unknown

We like to begin our examination with a classic reference: the first page of the architect's manual compiled under the guidance of Ridolfi. It's a questionnaire to be submitted to the client before starting any design project. When working in an archaeological context, the client is usually public, often composed of different and sometimes conflicting institutions. It would therefore be helpful to interview all

of them before any project to understand what they want, what they can accept, and what they absolutely will never accept, assuming that they know what they do want or not. This basic principle could also be extended by the designer, who should try to understand, even if the client isn't aware of it, what the client reasonably expects from the project and what they will never accept. On the one hand, this may also depend on the individual leading the superintendence, but I believe it largely depends on the context itself and the process underway.

In the 1950s, the Italian landscape of archaeological projects was very different from today. The experiments of Minissi (Vivio, 2015) and his collaborators had attracted international attention, and we are primarily interested in understanding the cultural underpinnings of that experience. It is now recognized that the experience of the Central Institute for Restoration and the teachings of Cesare Brandi (Brandi, 1963) were the foundation from which Minissi's projects started. Today, therefore, we must first turn our gaze to that school, with due updating of course, if we truly want to understand how an archaeological project can be undertaken. Along with Brandi's teachings, I believe we must humbly immerse ourselves in archaeology to understand its nature and objectives, to acquire the cultural tools needed to facilitate the necessary dialogue between architects and archaeologists, and above all, to understand

the process underway at an archaeological site.

References

Barosio, M.; Ramello, M.; Trisciuoglio, M. (eds.) (2014) *Architecture and Places. Progetto culturale e memoria dei luoghi - Cultural Design and Sites' Memory* (Celid, Turin).

Basso Peressut, L.; Pierfederico Caliari, P. (2014) *Architettura per l'archeologia. Museografia e allestimento* (Prospettive Edizioni, Rome).

Brandi, C.(1963) *Teoria del restauro* (Edizioni di Storia e Letteratura, Rome).

Camiz, A. (ed.) (2011) *Progettare Castel Madama. Lettura e progetto dei tessuti e del patrimonio archeologico* (Edizioni Kappa, Rome).

Camiz, A. (2012) 'Lettura e progetto di Via della Lungara', '*Architettura e città*', n. 7, pp. 49-54.

Camiz, A. (2019) Architettura e Archeologia: la composizione conforme dello strato contemporaneo, in A. Calderoni, B. Di Palma, A. Nitti, G. Oliva (eds) *Il Progetto di Architettura come intersezione di saperi. Per una nozione rinnovata di Patrimonio*, (Società Scientifica nazionale dei docenti di Progettazione Architettonica, SSD ICAR 14, 15 e 16, Naples) pp. 342-346.

Capozzi, R. (2024) 'The Emergence of Ichnoi in Today's City', '*Urbanform and design* (U+D)', n. 21, pp. 34-43.

Capozzi, R.; Fusco, G.; Visconti, G. (2019) *Pausilypon Architettura e paesaggio archeologico* (Aion, Florence)

Carbonara, G. (1979) *La reintegrazione dell'immagine: problemi di restauro dei monumenti* (Bulzoni, Rome).

Carpenzano, O.; Capuano, A.; Toppetti, F. (2013) *Il territorio storico dell'Appia nel futuro di Roma* (Quodlibet, Macerata)

Cellini, F. et al (2009) *Archeologia e progetto: didattica e tesi di laurea nella facoltà di Architettura* (Gangemi editrice, Rome).

Cellini, F.; Desideri, P.; Franciosini, L.; Pallottino, E.; Porretta, P.; Segarra Lagunes M.M. (eds.) (2016) *Arqueologia y proyecto de arquitectura* (Roma Tre press, Rome).

Franciosini, L. (2014) *Archeologia e Progetto, paesaggi antichi lungo la via Clodia*, (Gangemi editore, Rome).

Harris, E.C. (1989) *Principles of archaeological stratigraphy* (Academic Press limited, London)

Ieva, M. (2003) *Canosa dal territorio al castello. I caratteri di strutturazione territoriale in rapporto al sistema difensivo e alla nascita del castellum* (Mario Adda Editore, Bari).

Kökdemir, G. (2017) 'Magnesia ad Maeandrum', '*Actual Archaeology Magazine*', 17, pp. 74-81.

Mariniello, A.F. (ed.) (2016) *Beyond Pompeii Archaeology and urban renewal for the Vesuvian cultural and tourist district* (Gangemi, Rome).

Palladio, A. (1570) *I quattro libri dell'architettura* (Domenico de' Francesch, Venice).

Panella, R. (ed) (2013) *Roma la città dei fori. Progetto di sistemazione dell'area archeologica tra piazza Venezia e il Colosseo* (Prospettive Edizioni, Rome).

Rosłon, J.; Nicał, A.; Książek-Nowak, M.; Nowak, P. (2025) Immersive design and new digital competences for the rehabilitation and valorization of the built heritage: Opportunities, threats, risk management, in M. Balzani, F. Maietti, F. Raco (eds) *Heritage at Risk. Improving Resilience and Awareness towards Preservation, Risk Mitigation and Governance Strategies*, (CRC Press/Balkema, Abingdon, Oxon) pp. 301-308.

Strappa, G. (2025) 'Heritages in transformation and the spirit of the Constitution', '*Urbanform and design* (U+D)', n. 22/23, pp. 8-9.

Strappa, G. (2024) 'Against the hegemony of the present', '*Urbanform and design* (U+D)', n. 21, pp. 8-15.

Toppetti, F.; Capuano, A. (2017) *Roma e l'Appia. Rovine utopia progetto* (Quodlibet, Macerata).

Vivio, B.A. (2015) 'The "narrative sincerity" in museums, architectural and archaeological restoration of Franco Minissi', '*Frontiers of Architectural Research*', 4, 3, pp. 202-211.

CONSTELLATION OF *POLEIS* IN THE NATURAL SPACE OF THE MEANDER VALLEY

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ABSTRACT

This contribution aims to investigate several Aegean *poleis* – Priene, Miletus and Magnesia on the Meander – located on the coasts of Asia Minor in the Meander Valley, with the ambition of investigating the origin of an urban culture and living space that could be summarised by the term *Stadtbaukunst* – that is, the art of building the city – linked, that is, the foundation *ex-novo* foundation of a typically Greek settlement model, destined to expand on a geographical scale in the ancient world. A territory, that of the Aegean, promoter of the birth of an architectural culture that, by elevating geographical centrality to a matrix for producing new urban forms, delivered to posterity places of unsurpassed magnificence.

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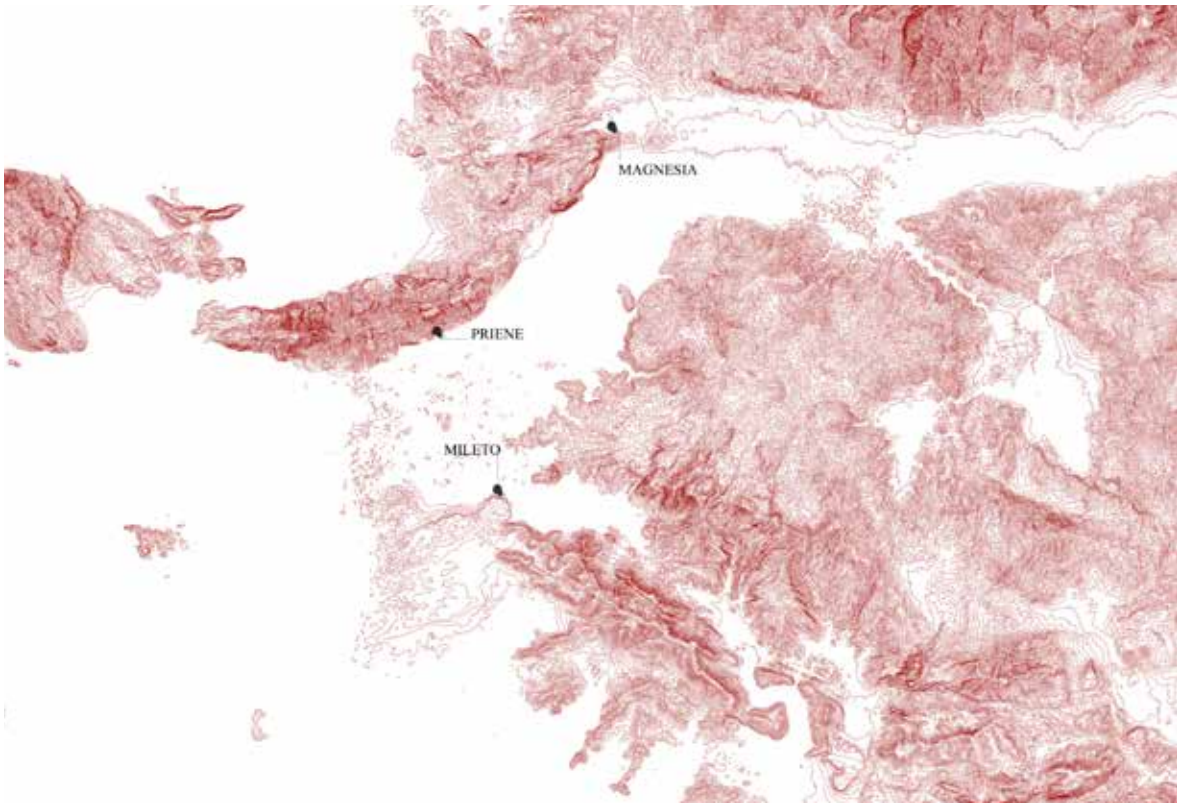


Figure 1. Meander territorial organism with identification of the poleis of Priene, Miletus and Magnesia on the Meander. Author's drawing.

The Meander Valley

If in the ancient world it was, according to myth, the divine powers that guided the founder's settlement choices, it would be quite inaccurate to exclude the role that *logos* assumed in the *ktisis* (division of the land as a founding act) of a new settlement, just as it would be fallacious to keep out of the discourse the role that the geographical configuration of the territory assumed in the choice of the place in which to settle the city. Following Arnold J. Toynbee (1959), it could be argued that it is precisely the richness engendered in the physical features of the land that nourished and nurtured the Hellenic spirit to the point of elevating the «Aegean Sea basin as the cradle of Hellenic civilisation [in that] it was the original habitat of that culture and always remained its focal point». The different territorial characteristics found in the Aegean basin, where chains of bare islands bathed by the sea are arranged to rim the Anatolian coastline, the original had a significant influence on the habitat thus had a significant on the "exact" selection of the places where the nascent civilisation was to settle.

The *poleis* – Priene, Miletus and Magnesia on the Meander – located in the present-day region of Aydin, are paradigmatic in this sense, not only because of the "foundational" relationship they once established with the Meander River (now Büyük Menderes), but also because of the singular ge-

ographical configuration that accommodates them, in relation to a circumscribed natural space that could be defined morphologically as a «territorial room».[1] Geomorphologically united by the natural presence of the river (Ratté, 2008), the three urban settlements are masterfully inserted into the mountain formations that circumscribe the Meander valley (Fig. 1), a closed, natural space capable of orienting the settlement structure of the cities. In this way, the original layout of the cities was always in close relation to the river, on steep terrain open to the sky and, above all, the sea, on which the cities relied for their sustenance since agriculture and crafts were not the exclusive source of supply. In fact, by qualifying the space of the plain through its ravines, a discontinuity is determined in the subdivision of agricultural plots, which in turn drives the construction of the foundation cities, binding them closely to the environmental context and the governmental and religious structure that underlies the form of the city.

It could be said that the Hellenes demonstrate an un-surpassed ability here to recognize the theatricality of the landscape. All the places they selected for the construction of life are conspicuous points in the territory, from which to grasp the open dimension and composite richness of the externality around them but also, likewise, show themselves as identifiable strongholds in the breadth of the landscape. A further characteristic that is worth pointing out is that, within the boundless natural dimension on which they hang in form, the foundation *poleis* – cities born and planned *ex-novo*, built over the course of a generation – do not indiscriminately increase their boundaries (i.e. they do not expand) to accommodate the demographic increase of the population, but prefer to grow by separation (or one might even say "multiply by budding"), defining fragments of multiple realities that are recognisable and coexistent with the morphology of the territory. It follows that the logic of centralisation, already seen in some respects in the role urban played by the agorai in the city-states, is reiterated even in the space "around" its centre, organising in the vast natural dimension a polar system of centres that are set in tension with each other. In this way, the Anatolian territory is confirmed as an attractor capable of polarising the centres, or *poleis*, between them, defining a "society" of city-states that recognise themselves in a precise settlement structure predisposed to the coexistence of large portions of nature with human settlements. Even today, in spite of the progressive silting up of the Meander, which deprived the surveyed cities of the sea (Fig. 2), it is possible to find this original structuring of the territory by *poleis*, auton-

[1] A term coined by Franco Purini to indicate a morphologically defined and identifiable geographic boundary as an autonomous landscape unit in which the multiplicity of phenomena finds a common attribute, participating in the identified geographic unity.

omous yet interrelated, founded in the privileged places of geography: primary forms that conditioned their settlement characteristics. It is no coincidence that the extraordinary urban and territorial model expressed by the Ionian Greeks in the three Aegean formations of Priene, Miletus and Magnesia on the Meander, can thus be identified as cooperation between archipelagos of cities concluded, interspersed with vast natural spaces that established them as strongholds within the territory.

This way of constructing the relationship with the outdoors still calls for reflection on the "way" of relating civil and formal aggregations with nature. Rather than thinking of a «delirium», to use an expression by Massimo Cacciari (2009), that would overstretch the territorial boundaries to be urbanised, invading further natural spaces, the way of thinking of the ancient founders of the *polis* is based on the idea of the constellation, restored by relations at a distance that elevate the multiplicity of characters, including orographic ones, as an underlying structure for the construction of dialogic relations between poles. This idea would seem to be directly connected to that of the finiteness of the settlement system, since it does not accept the hypothesis of invading the outside of the walls, making the territory homogenous and undifferentiated, instead consolidating it through disseminations of

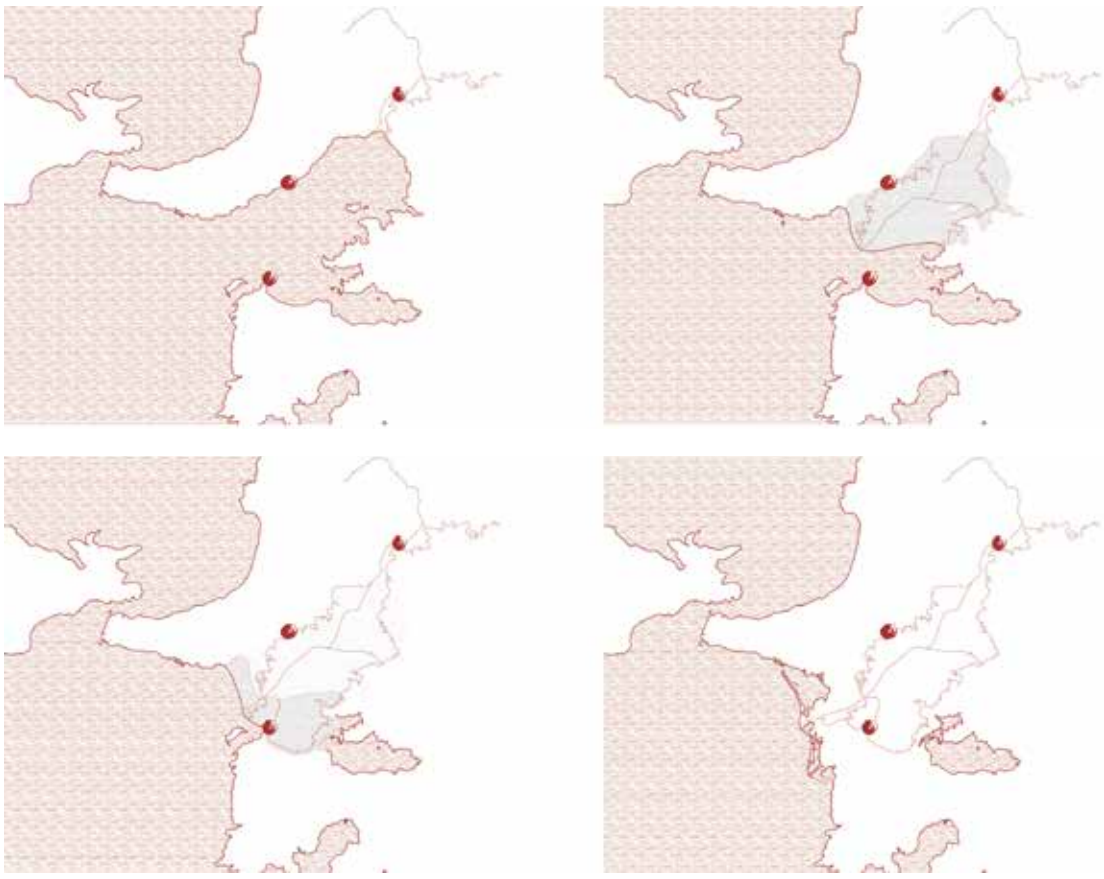


Figure 2. From left to right, top to bottom: progressive filling of the mouth of the Meander River. Author's drawing.

satellites capable of preserving their own formal autonomy. From the agora, as the "centre" of the *polis*, emerged the interscalar metrics that defined the relationships between the domestic space and the monumental dimension of the city, which, through the connections between the unfold *poleis*, finds the reasons to structure the territory and giving order to the world that hosted them. In this sense, the ancient cities bathed by the Aegean waters demonstrate a profound ability to construct a sense of the collective dimension, referring not so much or not only to the more general form of the city, but rooted in the relationship that cities establish among themselves, making participate in the elements outside the city, those of the territory, the "vision" of the world.

Priene

Situated on the coast of Asia Minor, overlooking the island of Samos, the settlement of ancient Priene (Fig. 3) initially stood on the slight, marshy slopes of the Meander River where, due to constant flooding, the Ionian citizens decided to move to a natural elevation raised from the muddy river plain and there found the «new» Priene (Hoepfner, 2005). The site chosen for the «re-foundation» of the city (Wiegand, Schrader, 1904), already in the mid- 4th century b. C., is rooted on the southern summit of the panoramic slope of Mount Mycale, at the foot of a precipitous rocky rise «inserted like an acropolis within the walls» (Burelli, 2017) that was never inhabited but was probably conceived by the Prienean community itself as a natural defensive system called upon to protect the city from a land that had not always been favourable to them.

Pytheos was probably the architect, or the designer of the plan, adopting an orthogonal grid of roads capable of measuring the steep and irregular natural modelling that, developing in a direction north-south, made the formation of the new particularly steep *polis*. Through the introduction of a terraced scheme – composed of four large platforms – Pytheos was in a position to compose a coordinated set of architectural masses, regimented by a regular but ductile distribution of streets whose intersections determined an ordered system of insulae. These insulae (almost quadrangular, measuring approximately 35x47m), in addition to accommodating the spaces where the private life of the citizens takes place, solve the problem of the difference in elevation. Since the terrain has a pronounced difference in height, the streets running from east to west assume a more or less constant course – following the natural slope of the land – while, in the direction, north-south the introduction

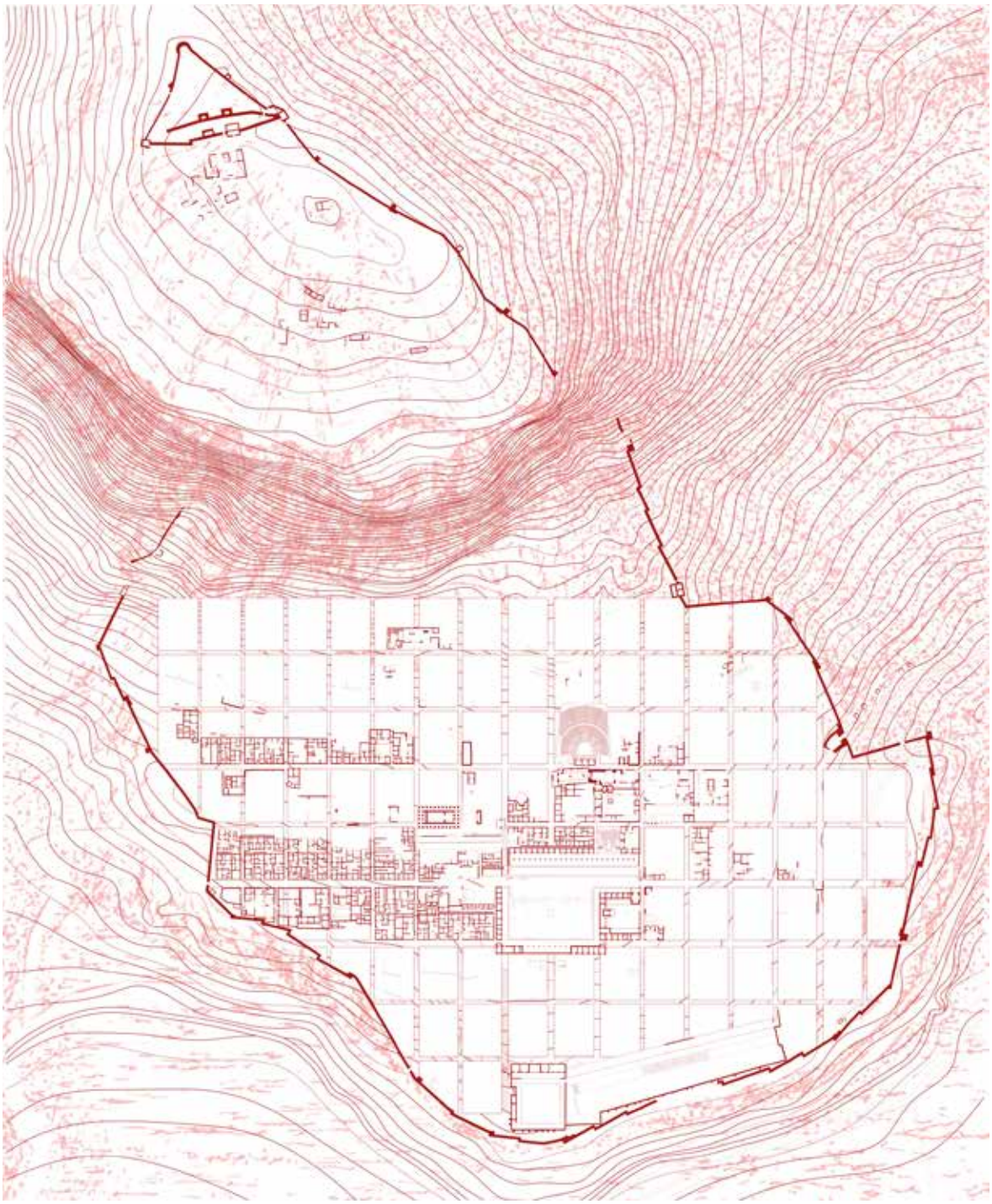


Figure 3. Planimetric restitution of the polis of Priene in the Hellenistic-Roman period. Author's drawing in accordance with recent archaeological evidence and interpretations by Theodor Wiegand.

of stairways makes it possible to connect the plane. The city's "center" of urban composition is evidently the agora (approximately 60x90 upward m), an open public square bordered by deep shaded stoai where, as in other Hellenistic cities, public gatherings, political events, ceremonial and commercial activities took place. It originates within the settlement matrix of the street layout and represents, as is well known, a dilated place called upon to gather the necessary elements of the city's public life, determining the

principle that governs the grouping of architecture, religious and civil, in space.
The city of Priene represents an eminent example that confirms the Hellenes' extraordinary aptitude for confronting the richness and heterogeneity of "prime" forms, the natural ones, interpreting them – in their specific topographical con-

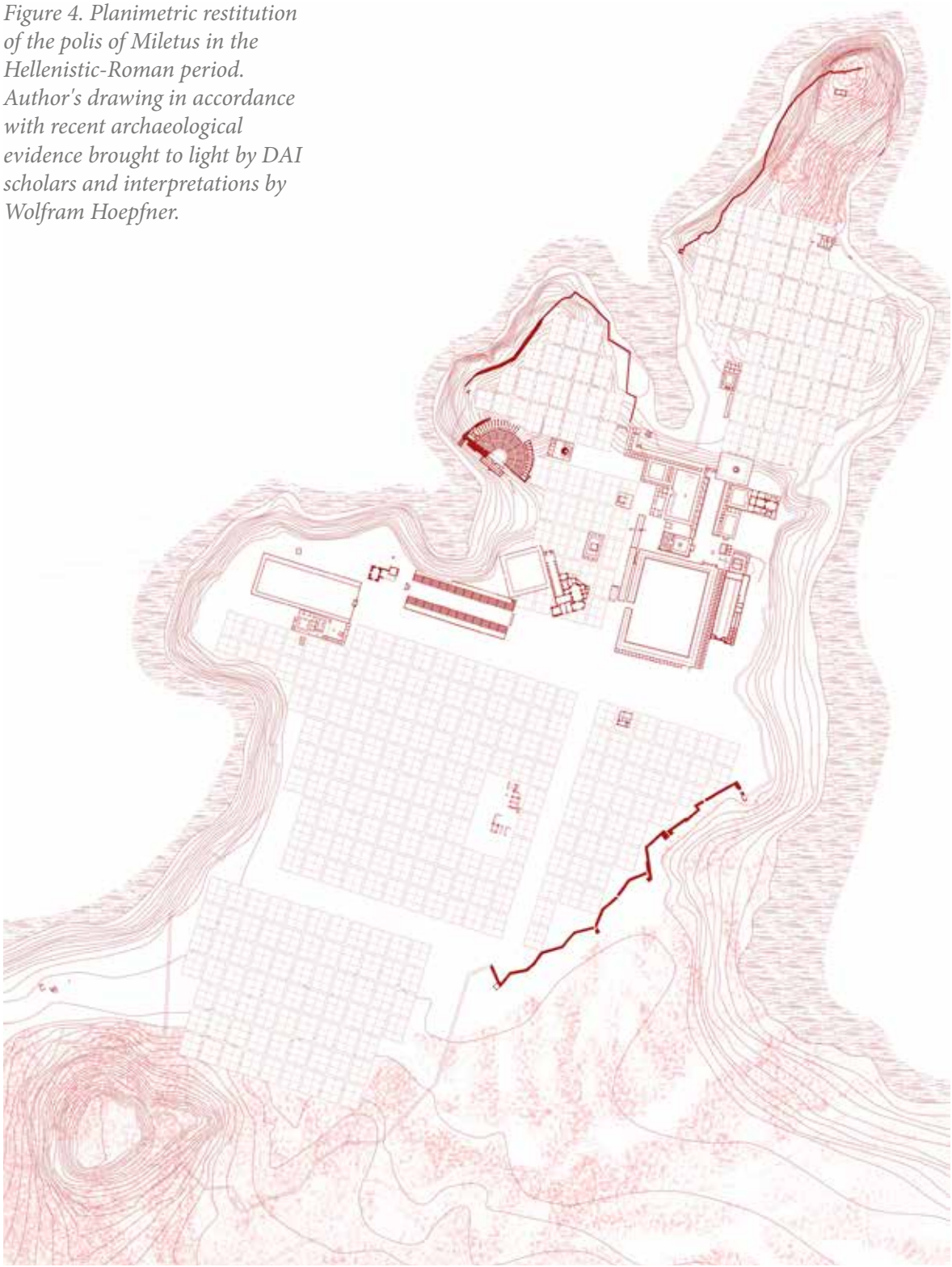


Figure 4. Planimetric restitution of the polis of Miletus in the Hellenistic-Roman period. Author's drawing in accordance with recent archaeological evidence brought to light by DAI scholars and interpretations by Wolfram Hoepfner.

sistency as much as in their reciprocal relations – as privileged references of choice, *ab origine* of any construction and transcription aimed at restoring to man his own "measured" space to inhabit.

Miletus

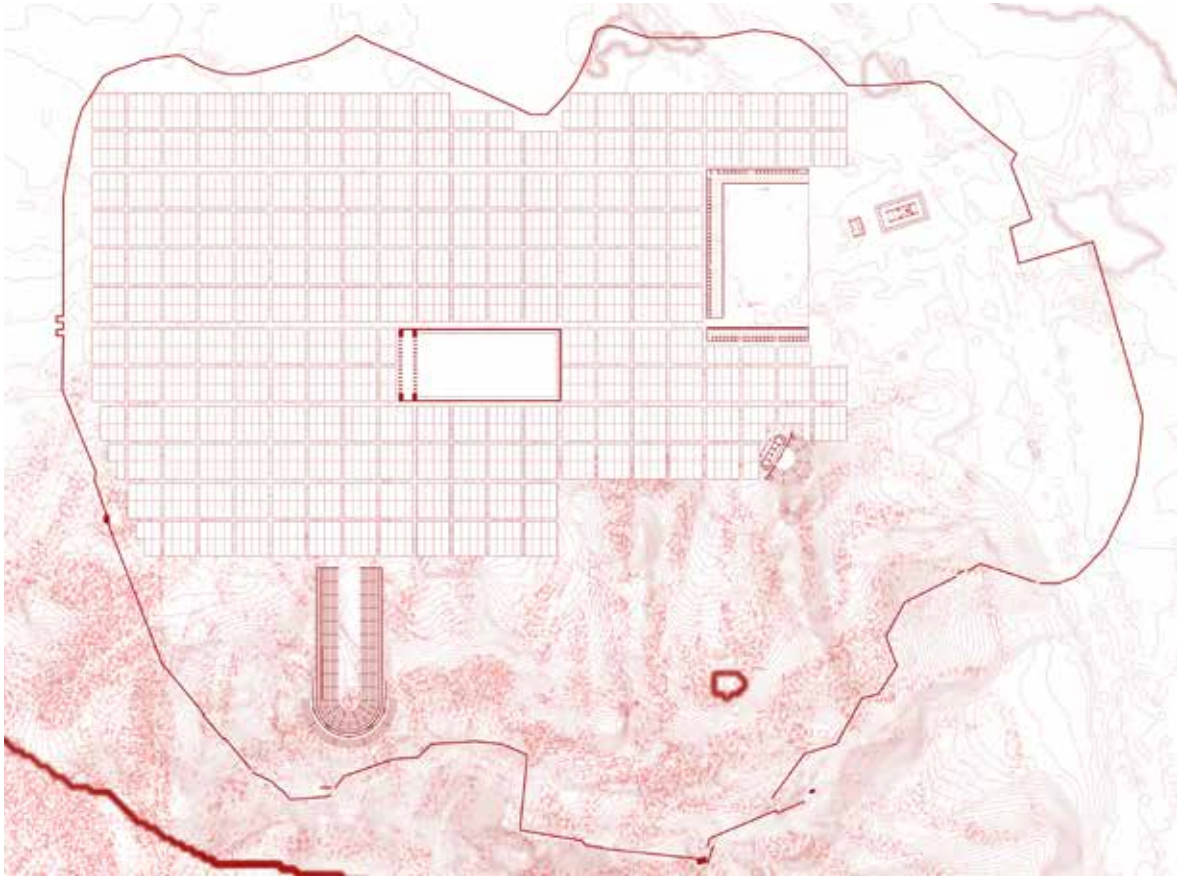
The birthplace of the man who is considered by many to be the *protos heuretes* (first inventor) of regular urban planning, i.e. Hippodamus, is located in a peninsular location whose orographic values gave the Milesians the opportunity to build no less than four seaports (Akrugal, 1978) that, from east to west, greeted sailors busy contributing to an agricultural area. already lucrative Some archaeological finds resurfaced from the moistened depths of the ground near Athenaion testify to the presence of a small settlement of Cretan origin, among other things already mentioned by Strabo when he states that the first founding nucleus was due to Sarpedon, brother of Minos, in a region of space between the promontories of Humeitepe, Kalehtepe and the rounded hill of Kalabaktepe (Cobet, 1997 - Longo, 1999). It was precisely those dominant heights – extended from the sea routes of routes the port to the land in the immediate hinterland – bordered by the seas and furrowed by rivers that attracted the later archaic settlements (Finley, 1977) – destroyed by the Persians in 494 b. C. – and conditioned the arrangement of urban forms in the *chora*, progressively changed by the alluvial deposits of the Meander that gradually filled the ancient gulf.

A walled circuit severely resting on the ground accommo-dates the two major sanctuaries, the Delphinion on the northeast and the Athenaion on the opposite side, which introduce the ritual and spiritual dimension of the Milesians' predecessors and allow for the orientation of the placement of the subsequent architectural episodes that, precisely between the two oldest monuments, will become unalterable matter and form, the stable architectural image of a society yearning to constitute itself as such and to feel finally united. At the "center" of the large public space garrisoned, at the extremes, by the two religious' polarities, four stoai surround the "south" agora, binding the civic aspirations of individuals to a clear and concise boundary. In the western part of the city, on the other hand, the theatre and the stadium introduce the theme as that of the spectacle of community, the main mechanism for observing, knowing and understanding things. With their position, the two factories are arranged to comment on the annular bend in front of them,

presenting themselves both as a privileged space for the staging of tragedy and at the same time a place of overlook from which to observe a more complex reality, one made of participation and sharing, through which the community could construct a common consciousness.

By carefully and ingeniously establishing the geometric rules and principles of the *polis* (Fig. 4), the *école Milesienne* (Martin, 1956) contributes in no small measure to the conquest of that idea of the city that so animates the spirit of the Greeks of Ionia, aimed at erecting together the community civil and political and the physical space that welcomes it, both within the walls and in the areas outside the *chora*. It is in those constructed and fully human-inhabited forms – domestic fabric, monumental episodes and public spaces – in their adherence to an overall weave of road and topographical networks, that one can discern the tortuous relationships that, from the Athenaion to the Delphinion, testify both to the fragility of the human dimension and to that immaterial tension towards isonomy founded on the capacity to extract from the everydayness of life – made up of both domestic and sensitive rituals and religious and supersensible ones – the principle of order necessary for the construction of the city.

Figure 5. Planimetric restitution of the polis of Magnesia on the Meander in the Hellenistic-Roman period. Author's drawing in accordance with recent archaeological evidence and interpretations by Orhan Bingöl.



Magnesia on the Meander

Between the clear waters of the Lethaios River (present-day Gümüşçay, literally "silver stream") and the rocky embroideries of Mount Thorax (Gümüşdağ, "silver mountain") emerge the geometric, luminescent stones of the city of Magnesia (Fig. 5), founded by the eponymous settlers from faraway Thessaly. The newly founded was built by summoning citizens and groups of architects around the sanctuary *polis* of Artemis Leukophryene, the (non-geometrical) "centre" of the new foundation capable of reifying, in a complex and harmonious unity, that notion of "togetherness" and that movement of aggregation that animated the turbulence of the creative spirit in the Hellenic world. In later times, the archaic and protective sanctuary of the city was rewritten in its volumetric articulations by Hermogenes, who restored the pseudoperipteral form so appreciated by Vitruvius (Bingöl, 2007 - Hoepfner, 1988), without changing its location, which, for symbolic and ritual reasons, still remains oriented towards the most significant promontory. The monumental dimensions of the temple (67.50 x 40 m), with those orderly sequences of columns placed in succession, herald the appearance of the later agora, defined in its primordial aspect as a large open square, whose ample dimensions hint at its centrality within the life of the city. From here, precisely from the threshold returned by the propylaea, begins a succession of discontinuous stages marked by the intention to lead citizens from the domestic space to the theatre and then culminating near the stadium. These two urban forms – the theatre and the stadium – built during the first foundation interpret, with their position, the geography of the ground, which, in turn, presides over and defines their typological and spatial characteristics. It was precisely in these places of celebration, representation and staging of collective festivities (Kerényi, 2001) that, following the alleged epiphany of Artemis Leukophryene, the ethnic and cultural identity of the Ionian world was strongly affirmed, extending the celebrations to non-Asian peoples who, despite their differences, responded chorally to the call (Kern 1900), elevating the religious circuit to a symbol of a shared human condition. It will come as no surprise, then, that the Ionian polis did not delay in becoming an important crossroads between Priene, Ephesus and Tralleis as, the "city sacred" to Artemis, invested a central role in intellectual, economic and political development in the Western world throughout the Hellenistic period.

By juxtaposing and holding together the finite dimension of the architectural elements (domestic fabric and monumen-

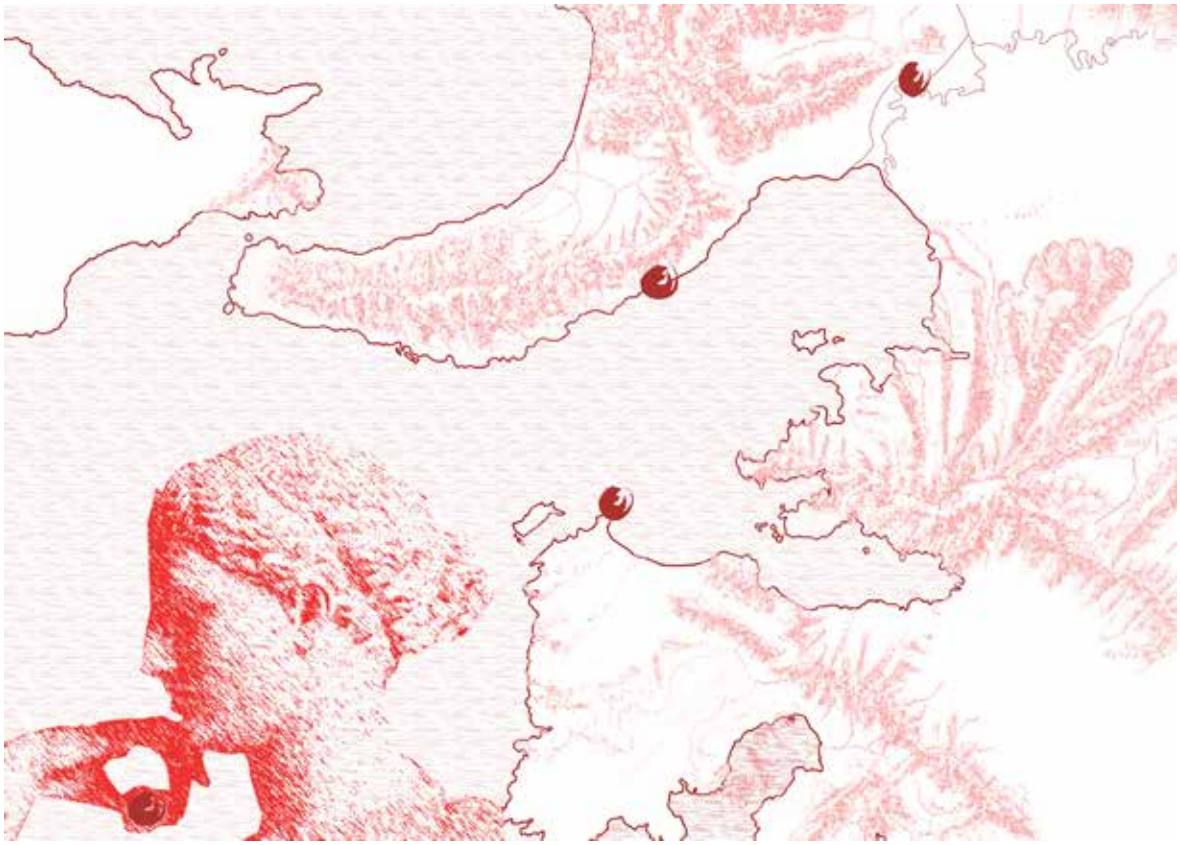


Figure 6. The concave space of the Gulf of Latmos in the VI century b. C. Author's drawing.

tal figures) with the indeterminacy of the boundless (landscape) and supersensible (divine) dimension, the Meandrian polis, though remodeled over time, seems to translate into form that Greek desire to build a prosperous way of life, made up of politics, conviviality, family ties, and not necessarily devoted to war (not only toward the external world, such as the Persian, but also internally, toward other poleis). So that in the immeasurable territorial vastness, between the mountainous landscape on one side (Mt. Thorax) and the crystalline waters (the Lethaios) on the other, cohabit a multitude of existences, cultural and formal, fixed by the whiteness of the great magnesian stones, which assign solidity to the place by producing an unexpected turbulence necessary to describe the deepest identity of that land: marked by the contrast between rounded shrubby masses silhouetted against the geometric and sculptural bulk of the city.

Conclusions

Within these considerations, the rediscovery of the *poleis* of Ionia could open up multiple future goals. Above all, for example, the possibility of continuing to popularize and promote the extraordinary urban and territorial model expressed by the Ionian Greeks in close relation to the environmental context and the governmental and religious

structure connected to the form of the city, could open up a vast field of opportunities with the more inclusive and continuous involvement of multiple scholars. Experts who, engaged in methodological pluralism, could effectively contribute to the revitalization of these extraordinary territorial strongholds (Fig. 6), with a view to real enhancement that would allow Turkey to make them a foundational element of our common Mediterranean culture.

But even more so, it is believed that in order to continue taking care of ourselves and the world around us, a continuous questioning of the extraordinary lesson that the ancients have delivered to us is necessary. A legacy, that which the Hellenistic city entrusts to us, which lies in the stringent relationship established between ancient forms of nature and urban forms, and which seems to prove as relevant as ever for our lives. To reflect again on this way of "making" cities means to search for elemental units that conform to our time, to be composed, in tune with the forms of the orographic substratum, in order to return to building cities, or parts of them, to once again form a fabric that reflects our humanity, both individual and collective. In other words, there is a responsibility today to reiterate how useful and operative this teaching still is in the conviction that there is a need to re-propose an echo of this value in the present city.

Although those repeated practices around mythical and supersensible beliefs may seem distant in time, the ancients' strenuous attempt to construct the inhabited world as a theatre for the enactment of participatory and shared values, still able to order the physical traces around us in an attempt to keep their meaning alive and construct a point of view oriented toward solving the problems of ancient cities that persistently, despite everything, point the way to the construction of a new world, may be closer to us.

References

Akrugal E. (1978), '*Ancient civilizations and ruins of Turkey*' (Turk Tarih Kurum Basimevi, Ankara).

Bingöl O. (2007) *Magnesia on the Meander Magnesia Ad Maeandrum: The City of Artemis With the White Eyebrows* (Homer Kitabevi, Istanbul)

Burelli A. R. (2017) '*L'integrale di Pytheos: dodici lezioni sull'eredità dell'antico*', (Aión, Firenze).

Cacciari M. (2009) '*La città*', (Pazzini, Rimini).

Finley M. I. (1977) 'Miletus and Dydima', in Id., *Atlas of Classical Archaeology* (McGraw-Hill Companies, New York) 206.

Hoepfner W. (ed) (1988) *Hermogenes, und die hoch-hellenistische Architektur* (Verlag Philipp von Zabern, Mainz).

Hoepfner W., Schwandner, E. L. (ed) (1994) *Haus und Stadt im klassischen Griechenland: Wohnen in der klassischen Polis* (Deutscher Kunstverlag, Munich).

Hoepfner W. (2005) 'Old and New Priene – Pythius and Aristotele', in Ferla K. (ed.), *Priene*: Second edition (Foundation of the Hellenic World, Athens) 29-47.

Kern O. (1900) '*Die Inschriften von Magnesia am Maeander*' (W. Spemann, Berlin).

Longo F. (1999) 'Mileto', in Greco E. (ed.), *La città greca antica. Istituzioni, società e forme urbane* (Donzelli Editore, Roma) 183-204.

Martin R. (1956) 'L'école Milesienne et l'urbanisme fonctionnel', in Id., *L'urbanisme dans la grèce antique* (A. & J. Picard & Cie, Paris) 97-126.

Purini, F. (1991) 'Un paese senza paesaggio', in Aa. Vv. *Il disegno del paesaggio italiano*, 'Casabella' 575/576, 40-47.

Purini, F. (2008) '*La misura italiana dell'architettura*' (Laterza, Roma-Bari).

Ratté C. (2008) 'The founding of Aphrodisias', in Ratté C., Smith R. R. (eds), *Aphrodisias Papers 4: New Research on the City and its Monuments*, 'Journal of Roman Archaeology Supplement' 70, 7-36.

Toynbee, A. J. (1959) '*Hellenism. The History of a Civilization*' (Oxford University Press, London) 27-35.

Cobet J. (1997), 'Milet 1994-1995. Die Mauern sind die Stadt. Zur Stadtbefestigung des antiken Milet', in '*Archäologischer Anzeiger*' 2, 249-284.

Kerényi K. (2001), 'L'essenza della festa', in Id., *Religione antica* (Adelphi. Milano) 62-63.

Wiegand T., Schrader H. (eds), *Priene. Ergebnisse der Ausgrabungen und Untersuchungen in den Jahren 1895-1898* (Georg Reimer, Berlin) 35.

THE SMALL SCALE OF THINGS: EMERGING SPATIAL CULTURE IN 19TH CENTURY AL BIDDA AND DOHA IN QATAR

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ABSTRACT

The paper deploys morphological and space syntax analysis on the 1823 settlement layouts of Al Bidda and Doha, Qatar. It examines the metric size, street and block pattern, and pedestrian sheds, as well as least-line and all-lines axial analysis and Visibility Graph Analysis (VGA), of the layouts. We provide a brief review of Qatar's pre-20th-century history. The aim is to understand emergent spatial structure and function in 19th-century Qatar. The analysis reveals two distinct settlement models despite shared origins. Al Bidda exhibits a classic center-to-edge structure, integrating visitors and residents similarly. Conversely, Doha features an edge-in hierarchical structure, prioritizing resident privacy. We argue that these models reflect pre-Islamic and Islamic norms, highlighting crucial differences between insiders (residents) and outsiders (visitors) in socio-cultural activities. They represent an inflection point in Qatar's history that influenced subsequent urban development and rapid urbanization in 20th-century Doha. The findings contribute further to our knowledge about settlements in the Middle East and the GCC regions.

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Introduction

This paper undertakes a spatial archaeology exercise using space syntax. It examines the settlement layouts of Al Bidda and Doha based on the historical record of Guy and Brucks' 1823 trigonometrical plan. In doing so, we provide a brief review of the history of Al Bidda, Doha, and Qatar before the 20th century. The paper also discusses the tendency in the literature to focus on European and American settlement forms, including the formative years of space syntax during the 1970s and 1980s. We deploy space syntax analysis using least-line and all-lines axial analysis, as well as Visibility Graph Analysis (VGA). The aim is to understand the emergent spatial structure and probable functioning of Al Bidda and Doha in 1823. Our analysis relies on the space syntax measures of global choice and integration, supplemented with metric distance – via pedestrian sheds and metric step depth, as well as shortest path length in VGA analysis – to argue that the layouts of Al Bidda and Doha in 1823 represent two distinct models of settlement form, despite their causal similarities. Al Bidda has a classic center-to-edge spatial structure, assimilating visitors and residents similarly within its layout. Doha has an 'edge in' hierarchical spatial structure, fostering privacy for residents within the layout. These models are generally endemic to pre-Islamic and Islamic norms. They underscore essential differences between 'insiders' or residents and 'outsiders' and visitors in these settlements' socioeconomic and cultural activities. We argue that Guy and Brucks' 1823 trigonometrical plan represents an inflection point in the history of Qatar, with implications for subsequent urban development and the rapid urbanization of Doha in the 20th century. In doing so, we highlight the significant findings of this research and its relevance to the historical study of settlements in the Middle East and GCC regions.

Doha in Qatar emerged as one of the most significant socioeconomic and transit hubs in the Gulf Cooperation Countries (GCC) region, alongside other cities such as Dubai and Abu Dhabi in the UAE, in the late 20th and early 21st centuries (Salama & Wiedmann, 2013). The Doha metropolitan region had an estimated population of approximately (~) 2.5 million in 2025, compared to Dubai (~3.8 million) and Abu Dhabi (~1.6 million) (UN, 2024; Dubai Statistics Authority, 2025). This represents a dramatic increase from Doha's estimated 1900 population of only 6,000 (Kurşun, 2002). Doha originated as an offshoot of the Al Bidda settlement in the early 19th century. Chroniclers and visitors often conflated Al Bidda and Doha together as a single settlement under the

banner of 'Al Bidda' due to their proximity, i.e., ~1,000 meters (m). The Carmelite Convent first records Al Bidda in 1681, alluding to a ruler and a fort within its confines while chronicling several settlements in Qatar. Conflicts destroyed Al Bidda (and, by implication, Doha) in 1821, 1828, and 1867. However, Doha began to gain increasing prominence over Al Bidda after the arrival of the Al Thani family circa 1847. Their influence and leadership significantly shaped Doha's history. They assumed control of the town until the 1868 settlement of the Qatari–Bahraini War, imposed by the British, explicitly recognized Qatar as a distinct entity from the Kingdom of Bahrain. This settlement acknowledged Mohammed bin Thani's position as the representative of the tribes of the Qatari peninsula.

Qatar was subsequently administered in one form or another as a protectorate of the Ottoman Empire (1871-1916) and the British Empire (1916-1971) until the Al Thani family became the royal family of an independent Qatar in 1971 (Fletcher & Carter, 2017, 2020). By the time of independence, Al Bidda had disappeared as a distinct, separate settlement as a consequence of Doha's rapid urbanization and eventual globalization, beginning with the discovery of oil in the 1950s and the later exploitation of oil and natural gas reserves in the latter half of the 20th century (Salama & Wiedmann, 2013). Today, Al Bidda only remains as a place name for the area of its original location, which now includes the Amiri Diwan (royal palace) of the State of Qatar and the national Al Bidda Park (Tannous et al., 2021). In contrast, the historic urban fabric of primarily two-story buildings in Souq Waqif (the 'standing market') still marks the original location for the founding of Doha (Tannous et al., 2022) (Figure 1).

This paper focuses on Al Bidda and Doha in the early 19th century. The paper speculates on the emergence of distinct spatial cultures in the two settlements, using various modeling techniques in the space syntax toolkit. Lieutenant (Lt.) Guy and Lt. Brucks' trigonometrical plan of the 'El Biddah'

Figure 1. Contemporary aerial views of (left) Al Bidda looking west at the Amiri Diwan (royal palace) of the State of Qatar in the foreground and Al Bidda Park in the background, and (right) Souq Waqif, the original location for the founding of Doha, looking north with the skyline of the West Bay Business District in the left background.

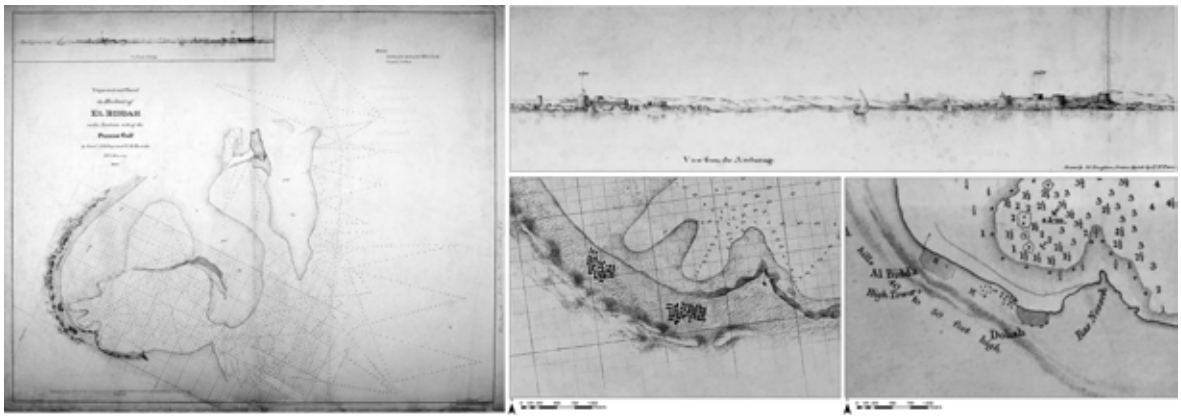

Figure 2. The 1823 trigonometrical plan of 'El Biddah' harbor (Doha Bay today) on the Persian Gulf's Arabian side by Lieuts. J.M. Guy and G.B. Brucks, (top right) 'View from the Anchorage' sketch by Houghton and Powell, and close-up views of the original maps of Al Bidda and Doha in (below left) 1823 and (below right) 1860 showing the town walls.

harbor (Doha Bay today) on the Persian Gulf's Arabian side includes settlement layouts for Al Bidda and Doha at the time. Carter and Fletcher (2017) provide a detailed view of these settlement layouts, scaled and reoriented to true north, which serve as the basis for redrawing the settlement layouts for space syntax analysis (Figure 2). A sketch, 'View from the Anchorage" by Houghton and Powell, was a top-left insert to this 1823 trigonometrical plan. It highlights the prominence of the Al Bidda Fort and Al Bu Aynayn Fort in Doha (to the right and left, respectively, in Figure 2, middle), as the only structures taller than one story. Conflicts would destroy both forts in 1848 and 1828, respectively. Subsequently, Sheikh Abdullah bin Jassim Al Thani constructed the Al Koot Fort in 1927 (renovated in 1978) next to Souq Waqif today (the northern rampart is barely visible in the foreground of Figure 1, left). An 1860 map of Al Bidda and Doha only shows the outline of the city walls. It provides very little information about the settlement layout at that time (Figure 2, bottom left), except for the scattered structures outside the walls.

The study in this paper is an exercise in spatial archaeology. Today, the city of Doha is a large metropolis, and within it is a place called Al Bidda. However, the settlement layouts in Guy and Brucks' map no longer exist, probably after 1828. The Bedouin Al-Buainain tribe was evicted from Al Bidda and Doha to the northern and western shores of the Qatari Peninsula in 1828, later migrating to eastern Saudi Arabia (Rentz, 1997). So, what is the value of this exercise in spatial archaeology? People tend to reconstruct previous settlements and dwellings using similar concepts, making some improvements where feasible rather than overthrowing them for new, untested ones (Hanson, 1989; Rossi, 1982). Of course, there are always exceptions, such as the effective abandonment of Pompeii after the catastrophic eruption of Mount Vesuvius in 79 CE, the temporary abandonment of Philadelphia (later Amman) in Jordan from the 15th Century to 1878 CE after a series of devastating earthquakes, and the reconstruction of

Lisbon, Portugal, after a 1755 CE earthquake, which led to the development of the Baixa Pombalina. Despite such upheavals and exceptions, the continuity of settlement patterns in many cases is a testament to a people's connection to their past.

Based on the historical record, we know several things about Al Bidda and Doha in the early 19th century, including:

- People supported themselves primarily through fishing and pearling.

- Trade occurred via water transportation without formal port facilities. Ships would anchor in Doha Bay (like the expedition that led to Lieutenant Guy and Lieutenant Brucks' 1823 trigonometrical plan) and beach shallow-draft boats on the coast due to the emergent coastlines (a stretch along the coast exposed by a relative fall in sea levels) of Qatar.

- Al Bidda served as the main port on Doha Bay, though Doha would later assume this role after 1867.

- The defensive role of the forts in both settlement layouts for guarding the towns from the coast.

- Most structures in these layouts were one story in height (except the forts), using locally available natural materials like rammed earth and palm fronds, which was a common practice.

- The majority of Qatari tribes historically adhered to Islam (Jaidah & Bourennane, 2009; Carter & Eddisford, 2013; Salama & Wiedmann, 2013; Fletcher & Carter, 2017, 2020).

According to Jaidah and Bourennane (2009), adherence to orthodox Islam began to sweep the Arabian Peninsula in 1745. In part, Al Bidda's 1823 settlement layout predates this movement, while Doha's is after it. However, it is reasonable to conclude that Al Bidda and Doha in 1823 looked similar to the photographs of Doha in January 1904 (Figure 3). Besides this, we know little about the day-to-day lives of the people who lived and visited there, as well as their experiences of Al Bidda and Doha as settlements at the time. For this, we

Figure 3. Photograph of Doha, Qatar, in January 1904.

must draw conclusions based on the available material: the settlement layouts, their relationships to each other and the coast, and the relationships of the dwellings within them as realized in space.

Our investigation models the settlement layout of Al Bidda and Doha in 1823 as a single system, separate within a defined settlement boundary and excluding the settlement perimeter spaces. This modeling technique serves as a proxy for understanding how the two settlements might have functioned together, how the settlement might have been viewed by visitors or 'outsiders' based on the emergent spatial structure related to the settlement's periphery (and, by definition, to the coastline and hinterlands), and how the settlement might have been viewed by residents or 'insiders' based on a purely internal understanding of spatial structure in each settlement. We examine metric distances in terms of 'as the crow flies' and shortest path measurements, block sizes/types and their morphological structure, connectivity patterns, and spatial route choices and integration/segregation using all-line and least-line axial analysis and visibility graph analysis (VGA) in the space syntax toolkit. Based on this, we derive conclusions about the emergent spatial structure of Al Bidda and Doha in the early 19th century that suggest there might have been contributory spatial factors that favored the eventual emergence of Doha as a contemporary metropolis – and led to the 'disappearance' of its ancestor settlement – related to Islamic values of gender segregation and privacy (Jaidah & Bourennane, 2009; Salama & Wiedmann, 2013; Al-Mohannadi et al., 2019).

About the Middle East and GCC Settlements

The literature on cities and urban morphology has traditionally focused on North American and European settlement forms (Fleischmann, 2017). Noted urban morphologist J.W.R. Whitehand refers to this as the problem of Euro-American myopia or 'anglophone squint' (Whitehand, 2005; 228). In many ways, this nearsightedness is understandable due to the emergence of urban planning and landscape architecture as distinct professions in Britain and the United States during the late 19th and early 20th centuries and its later specialist offshoots, such as urban ecology at the University of Chicago in the 1920s and 1930s (Major, 2018).

The historical literature about cities in Arabic texts tends to focus primarily on descriptive interpretations, ranging from classical poetry and travelogues to modern novels. They de-

scribe various aspects of urban life, such as social dynamics, political structures, and the individual's relationship with a city. They also describe the impact of urbanism on literature and culture, typically in individual settlements – rather than a general plan or morphologically based surveys – across the Arab region (Head & Hermes, 2018). This is exemplified by the travelogues of Ibn Battuta, filled with observations about the wandering of cities, including the southern part of the Arabian Peninsula in the modern-day GCC region (Battuta, 1377). Major et al. (2019, 2021) also note that urbanism in the Middle East is challenging to categorize. It is an intercontinental phenomenon, with influences from Africa, Asia, and Europe, leading to spatio-physical variations ranging from highly structured deformed grids (often called organic cities) to strongly ordered geometric ones (called regular cities), numerous (seemingly opposing) socio-cultural influences, i.e., Fertile Crescent/River Nile Delta, Greco-Roman/Turkish Ottoman, Christianity/Islam, Arabian/Persian, and so forth, and the factor of time, therefore often lacking a comprehensive or consistent historical record. People have continuously inhabited certain settlements for approximately 5,000 years (Kostof, 1991, 1992; Major et al., 2021). Others are (relatively) younger, i.e., less than five hundred years old, like Manama, Bahrain. The region also encompasses the rapid urbanization and globalization of 20th-century cities, such as Riyadh in Saudi Arabia and Dubai in the United Arab Emirates (Major et al., 2019).

A brief review of references to Middle Eastern settlements in several Western texts reveals a noticeable bias. However, it is not feasible to conduct an exhaustive review of the entire literature. For example, in Weber's (1958) *The City*, the only physical description of Islamic settlements discusses the spatial separation of fortified camps (*kasbeh* or *casbah*) from the *bazaar* or market street. He discusses the socio-political nature of Arabian settlements as close-knit groups of powerful interrelated families (clans), the relative political weakness of artisan and merchant associations (guilds), and Islam's inability to overcome these Arab tribal and clan associations (Weber, 1958). However, Weber's (1958) perspective typically skews toward European settlements and the Ancient Mediterranean region (North Africa and the Levant), except for the singular case of Mecca, Saudi Arabia, on which he seems to rely on Hurgronje (1931). In their first two chapters, Gallion and Eiser's (1963) *The Urban Pattern* discusses the Near East and the Mediterranean region, concerning Ancient Egypt, Jerusalem, Babylon, and, in particular, Ancient Greece. Otherwise, they primarily focus on Europe and North Ameri-

ca, with no mention of the Middle East during the Common Era. Similarly, Moholy-Nagy's (1968) *The Matrix of Man* only encompasses the Middle East when discussing the Ancient World and the Mediterranean region. She discusses the physical nature of linear merchant cities and, in particular, "the *suk* (e.g., market) or *bazaar* street (as) the principal planning feature of the Eastern merchant center," which she claims was an Arab adaptation of the Ancient Roman *cardo*, i.e., a principal north-south street (Moholy-Nagy, 1968; 199). She only mentions 19th-century Cairo, Egypt, as a Middle Eastern settlement from 1500 CE onwards (Moholy-Nagy, 1968). Jellicoe and Jellicoe's (1975) *The Landscape of Man* devotes four brief chapters to the 'central civilizations' of the Middle East, focused on the Ancient World and the expansion of Islam in Mesopotamia, India, and the Mediterranean region, specifically Spain. They briefly mention the oil economy of Arab states in the 20th century and, in their concluding chapter, a (now realized) master plan based on classical Renaissance planning principles by Western architects for Sultan Qaboos University in Muscat, Oman (Jellicoe & Jellicoe, 1975). Otherwise, after the opening chapters, they devote most of the remaining text to Western civilizations (Ancient Egypt is among them) and the Western Hemisphere, with a brief chapter on the Chinese or Oriental School of landscape design (Jellicoe & Jellicoe, 1975).

Kostof (1991, 1992) provides the most comprehensive view of Middle Eastern settlements. For example, he adeptly illustrates the likely adaptation of a gridded Roman colony into an Islamic layout and *vice versa* based on the premise that the Roman block is predominantly outward-facing, and the Islamic block is involuted, i.e., complicated, due to inward access to individual dwellings. He categorizes Islamic settlements under 'organic patterns,' which he analogizes to biological growth, suggesting that these settlements develop more naturally and less planned. Major (2018) points out that the dichotomy of organic and regular cities or patterns classifies urban form based on process in the first case and form/process in the second case. Like Weber (1958), Kostof (1991) notes the strong ties of ethnicity, kinship, and tribal affiliation, as well as custom, ownership, and the Muslim right to privacy (especially for females), in shaping Islamic settlements. He notes that Islamic laws and customs controlled the location of doors and windows on built forms; namely, a front door should not be directly opposite someone else's front door, and windows should never overlook another's yard, in addition to other simple rules for aggregating dwelling units (Hillier & Hanson, 1984; Kostof, 1991; Major, 2018; Khan,

2021). He also mentions the prominence of mosque minarets as a dominant feature in the skyline of Muslim settlements.

Otherwise, like others, Kostof's (1991, 1992) focus remains firmly on the Western World and the Far East, particularly Mesopotamia and the Mediterranean before the Common Era, when discussing Middle Eastern settlements. The exception is a solitary mention of Kuwait City, Kuwait, in the 1950s as evidence of Haussmann's 19th-century Parisian boulevards influencing modern planning worldwide. More recently, Burdett and Rode's (2018) *Shaping Cities in an Urban Age* mentions Dubai, UAE, and other cities, such as Singapore, demonstrating that the Modernist concept of high-rise living coexisting with a green townscape is a viable option for cities. They briefly discuss urban expansion and mobility in Kuwait City. There is also a brief mention of Masdar City regarding the 'Smart City' agenda. However, this area of Abu Dhabi in the UAE remains underdeveloped in 2025, highlighting the implementation challenges for Smart City ideas. These limited references to GCC settlements in the classic literature underscore the need for broader perspectives in urban studies, considering the global nature of urbanization and its diverse forms.

About Space Syntax, Pure Research, and Method

Space syntax also initially focused on European settlements when emerging in the late 1970s and early 1980s, based on the research of Bill Hillier, Julienne Hanson, and many others at University College London in the UK. Space syntax researchers had to draw axial maps of spatial networks by hand and calculate the accompanying spatial measurements, such as integration and connectivity, until the late 1980s. The constraints of the time – available materials, labor, and rudimentary computer programming – defined much of this early research. Hillier and Hanson's (1984) *The Social Logic of Space* presents only thirty-three unique settlement plans. Of these, 79% are in Europe, 9% in South America, 6% in Africa, and two are in North America and Turkey. 91% are historical plans. The only exceptions are the contemporary case studies of Barnsbury, Somerstown, and the Marquess Road Housing Estate in the UK. The town plan of Gassin, France, is the primary example of modeling settlements using space syntax methods. Hillier and Hanson (1984) do not state whether this is a historical or contemporary town plan. Satellite imagery suggests their Gassin plan is a historical one.

Hillier and Hanson's (1986) subsequent search for consisten-

cies and variations between spatial measurements expressing different configurations developed by space syntax relied on axial maps of seventy-five mostly historical European plans, including Winchelsea and other Medieval town plans available in Carter (1983). For convenience's sake, we can mark the beginning of the widespread software use in space syntax in 1990. However, it began a year or two earlier, most notably with the processing of the axial map of London within the North and South Circular Roads in 1989 (Hillier, 1996). Hillier's (1996) *Space is the Machine* relies heavily on theoretical models as 'tools to think with' while still demonstrating the value of this software evolution for space syntax. Hillier (1996) only presents fourteen unique settlement plans and axial maps. Of these, 76% are in Europe, 18% are in South America, and the last is Karimi's (1997) space syntax model of Shiraz, Iran. Of course, as space syntax expanded into a worldwide research program, this initial geographical basis has become considerably less pronounced over time (Tannous et al., 2021; van Nes & Yamu, 2021).

The exponential growth in computer processing power – Routley (2017) refers to a trillion-fold increase from 1959 to the present – has enabled researchers to build increasingly larger space syntax models since 1990. Space syntax researchers can now autogenerate based on road centerlines or draw in the computer models of entire regions and countries (Koch et al., 2009; Major et al., 2020; Space Syntax Ltd., 2021; van Nes & Yamu, 2021). Building more urban context for a space syntax model of existing cities is good practice. Space syntax measures rely on relational calculations. If there is not enough urban context, for example, when examining a neighborhood within a city, then the researcher may be working with a partial or unrealistic picture of the neighborhood's spatial structure. It is also practically easier in space syntax mapping to edit down a large model to appropriate urban boundaries rather than the other way around. However, as space syntax researchers follow good practice, they tend to leave behind the small-scale historical plan analysis that characterized space syntax in the 1970s and 1980s. The exceptions are usually young researchers in different parts of the world who are learning about space syntax at a more manageable model scale, or archaeologists using space syntax to develop more data about past settlements (Bustard, 1997; Shapiro, 1997, 2015; Morton et al., 2012; Tirado, 2015). However, there is still great value in experienced space syntax researchers investigating the historic plans of small settlements. For example, in *The Syntax of City Space*, Major (2018) surveyed more than 725 historical town plans in the

United States (98% of which were before 1945), classifying them based on their geometric characteristics. He demonstrated that the 1785 Land Ordinance, which divided land ownership based on a national grid, only intensified Americans' preference for the European Renaissance principles of regular grid planning before the 20th century. He modeled most of these historical town plans using space syntax. However, Major (2018) only presents the modeling of San Franciso, California (1847, 1848, 1849), New Haven, Connecticut (1623, 1748, 1830, 1852), and the historic Savannah, Georgia ward plan (1733, 1735, 1790, 1799, 1801, 1815, 1841, 1856) for his arguments about American urbanism. The understandable but gradual disappearance of historical plan analysis in space syntax is unfortunate. It is pure research, i.e., exploratory, without any practical end-use in mind. Nonetheless, there is still much that these plans can teach us about human settlements and the nature of places at the small scale of things.

We redraw the Al Bidda and Doha layouts based on Guy and Brucks' 1823 trigonometrical plan, relying on Fletcher and Carter's (2017) scaling and proper north reorientation. The study includes pedestrian sheds based on the 'as the crow flies' radius of 200 m and 400 m, or a 3-to-5-minute walk. The Western industry standard is 400 m and 800 m (or a 5-to-10-minute walk) worldwide (Talen, 2013). The calibrated radii are due to the hot desert climate of Qatar, which experiences long, extremely hot summers (ranging between 32.5° and 41.9° C) and short, mild to warm winters (between 22° and 29.6° C), making longer walks less viable most of the time (Source: Qatar Meteorological Department). We examine the type, size, and pattern of urban blocks and free-standing buildings in each layout. For the latter in Al Bidda, this is only the fort. For Doha, this includes the fort and an unidentified circular/octagonal building at its southern edge. The current head of the Heritage Department at Qatar Museums suggested it might have been a pigeon tower or perhaps a mausoleum. The study models these layouts as separate settlements within a defined boundary. Both boundaries have twenty-six vertices or endpoints, placed in line with street vistas and aligned with the shoreline to guard against skewed results due to the settlement bounds. We also model these settlements as a single system, aligning with the individual boundary vertices, except in the direction of each other, where the boundary parallels the coastline. Finally, we model both layouts independently of the settlement periphery by connecting the nearest built-form vertices. It includes all-lines axial analysis, where the software autogenerates lines of

sight from each vertex to every other visible one in the model and processes the space syntax measures. It also includes the researchers' drawing of the least-line axial map for each settlement, processed similarly using space syntax software (Hillier & Hanson, 1984; Hillier, 1996; Major, 2018; van Nes & Yamu, 2021). We examine connectivity and intersections in each settlement based on Major's (2018) parameters. We standardize and calibrate all measurement ranges, detailed in the next section, to compare or visually demonstrate our findings about these settlements more clearly. The study relies on the measures of global choice (through-movement), global integration (to-movement based on the relative mean depth of every line to all others), and local integration (localized to-movement, i.e., relative mean depth of every line to all others for three directional changes) (Tannous et al., 2021). Finally, the study conducts Visibility Graph Analysis (VGA) with and without the settlement periphery based on grid elements of ~10 m^2 in size – relying on Fletcher and Carter's (2017) scaling – to examine visual integration (visual mean depth from every grid element to every other) and metric step depth shortest path length from a selected element, i.e., the geometric center (Benedikt, 1979; Dalton, 2001; Turner et al., 2001).

Analysis of Emerging Spatial Culture

At first glance, the blocks in the layouts of Guy and Brucks' 1823 plan appear more geometric than anticipated for historical settlements in the Middle East based on restricted random aggregation – or a restricted random process as defined by Hillier and Hanson (1984) – whereby the layout emerges following simple, customary rules about locating new dwellings related to existing ones (Major, 2018) (Figure 4). The plans also do not show any blind alleys or cul-de-sacs. It is unclear if this is because Guy and Brucks utilized a common building line for their survey, eliminating minor deviations in dwelling form and unintentionally regularizing the layouts. It is unclear if these were the actual conditions or Guy and Brucks' drawing technique for their survey. Based on historical and contemporary precedents in Europe and Doha, respectively, we would expect no more than one or two blind alleys in these layouts if they even existed at the time, especially since all blocks are narrow in one dimension (Major, 2015; Major et al., 2020). Fletcher and Carter (2017) neither comment nor provide insight on either point.

However, a closer examination reveals that near-right angles (<10° of a perfect right angle) compose most of the blocks in

Al Bidda. We can only characterize one block in Al Bidda as perfectly rectangular. Near-right angles (<5° of a right angle) also characterize most blocks in Doha. Its layout does have more right angles. The southeastern area utilizes a formalized pinwheel axis using near-right angles, the first recorded instance in the history of Qatar, and more than a century and a half before becoming a widespread organizing mechanism for the suburban development of Doha (Major et al., 2019; Major et al., 2021). We can characterize four of Doha's blocks as perfectly rectangular. The exceptions are the forts in each layout and one circular/octagonal-ish-shaped block in Doha. This suggests Guy and Brucks did use a common building line in their survey. We will proceed as if their drawings are conceptually correct, even if they might not be a precise survey in the contemporary sense. It is also evidence of rudi-

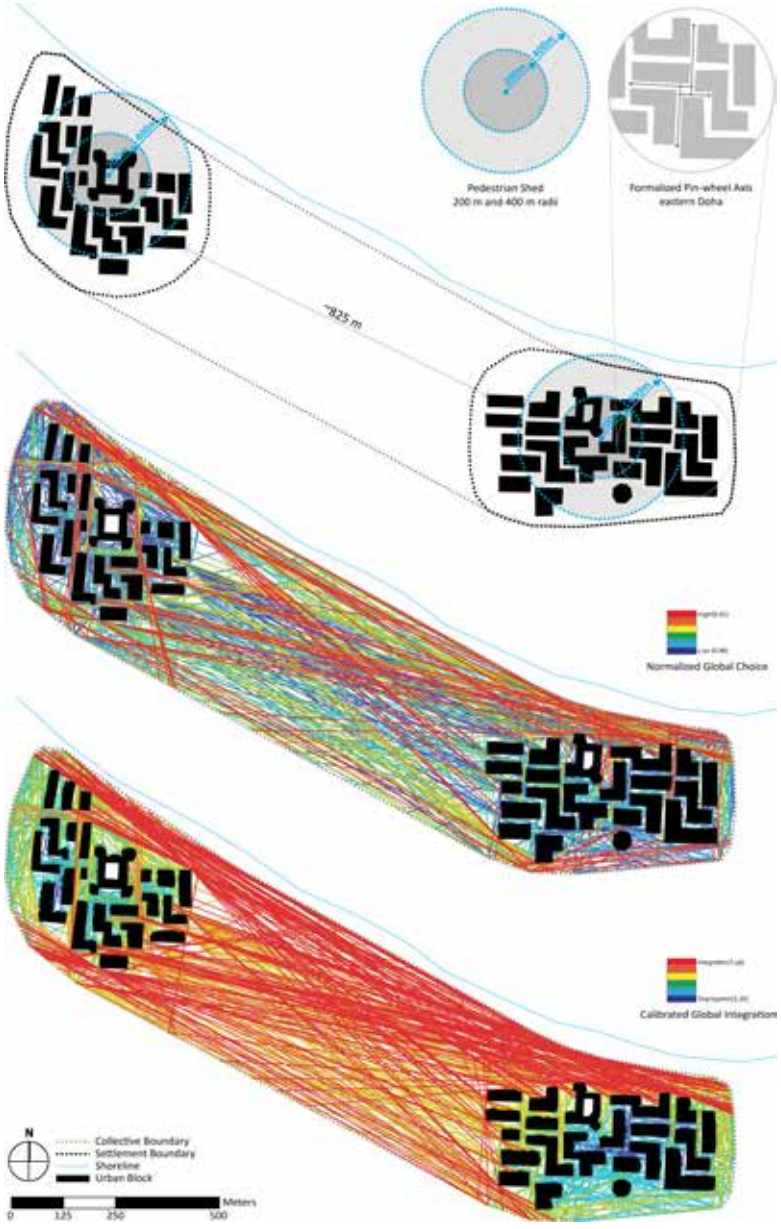

Figure 4. (top) The settlement layouts of (left) Al Bidda and (right) Doha in 1823 indicating the shoreline (in light blue) and individual and collective settlement modeling boundaries and pedestrian sheds from the geometric center of each settlement with an insert of eastern Doha, and all-line axial analysis of Al Bidda and Doha as a single spatial system for (center) normalized global choice and (bottom) calibrated global integration.

mentary survey techniques at work on a dwelling-by-dwelling basis in the settlements. Qatar National Library has five trigonometrical plans of the Persian Gulf region (specifically, Qatar) by Lieutenant J.M. Guy and Lieutenant G.B. Brucks available in its digital collection. However, the trigonometrical plan of 'El Biddah' harbor is the only one to include dwellings and structures. Other than this, there is no explicit evidence of planning other than the defensive role of the forts. Since no other surveys existed before this time, it is impossible to know with certainty which came first: the fort or the dwellings. Presumedly, a fort would only be constructed after there was something to protect.

There are no dwellings immediately north of the forts, maintaining an elevated, unobstructed vista of the bay. There are no built forms that are immediately recognizable as mosques in either settlement based on a footprint oriented in the direction of Mecca, Saudi Arabia, like we would see today. There is a possibility that two small, squarish-shaped blocks, each adjacent to the east and west of the fort, could be potential mosques in Al Bidda. This might make sense if one served the western half of the town and the other the eastern part. Doha's only candidate block is the centrally located circular or octagonal block at the southern perimeter. If so, it appears to be located to serve the entirety of Doha. However, we must consider the presence of mosques in Al Bidda and Doha as uncertain without corroborating evidence. William Gifford Palgrave (1871) said that there were no mosques in Al Bidda in 1863, as noted in his travel descriptions of the town, although two mosques were built shortly thereafter. In the absence of mosques, people probably worshiped in multi-functional spaces or structures. For example, the historical record is clear about the multi-functional characteristic of rooms in Qatari households before rapid urbanization in the 20th century (Jaidah & Bourennane, 2009; Carter & Eddisford, 2013).

The two settlements are ~825 m away at their nearest point. The geometric center of one settlement is ~1,325 m from the other, using the geometric center as a proxy for a location more or less equally distant for all residents of each town. The geometric center of Al Bidda is inside the fort, whereas it is immediately southwest of the fort in Doha. The settlements' relationship with each other derives from their relationship to the coastline of Doha Bay. The overall shape of Al Bidda is more compact, with blocks elongating away from the shoreline. Doha extends along the coastline, featuring a mixture of blocks that elongate parallel or perpendicular to the shoreline. The pedestrian sheds make clear that the entire settlement is accessible within 500 m of each geometric

center, with the overwhelming majority of locations within a five-minute walk.

The all-line axial analysis of normalized global choice (range: 0.00-0.01) and integration (a calibrated range of 7.16-2.35, where the maximum equals the total range) as a single system within the defined boundary reveals several insights. First, it underscores the crucial role of the undifferentiated space in connecting the settlements. Second, it brings to light the subtle skewing of this undifferentiated space towards the shoreline over the inland periphery. Third, it highlights a couple of routes that penetrate into and entirely through Al Bidda in a north-south direction, more or less perpendicular to the coast, with the subtle emergence of another route beginning to parallel the coast south of the northern blocks adjacent to the coast. In contrast, routes penetrating but not through the settlement characterize global choice in Doha, resulting in a clearcut hierarchy from integrated edge to segregated center for integration.

The rank ordering of blocks and free-standing blocks in Al Bidda and Doha reorients the blocks on their narrowest side, positioning them from largest to smallest for the metric area (Figure 5). At first glance, it looks like there are more blocks in Doha. However, this is an artifact of its larger block sizes. There are two more blocks in Al Bidda, with the largest being the fort (~15,625 m^2). Of its twenty-two blocks, 13 (or 60%) are near-regular polygons, i.e., <10° of a perfect right angle. The rest are irregular polygons, including five L-shaped (or nearly so) and two step-shaped blocks. The Al Bu Aynayn Fort (<10,000 m^2) is the second-largest block in Doha. The largest is an irregular polygon immediately east of the fort, running 135 m parallel to the coast with a sizeable pseudo-courtyard facing the bay. There are only eight near-regular polygon blocks (40%), i.e., <5° of a perfect right angle, all on the smaller side relative to the rest of the blocks. There are six L-shaped and two Z-shaped blocks, as well as a single circular/octagonal-ish-shaped block. Two irregular polygon

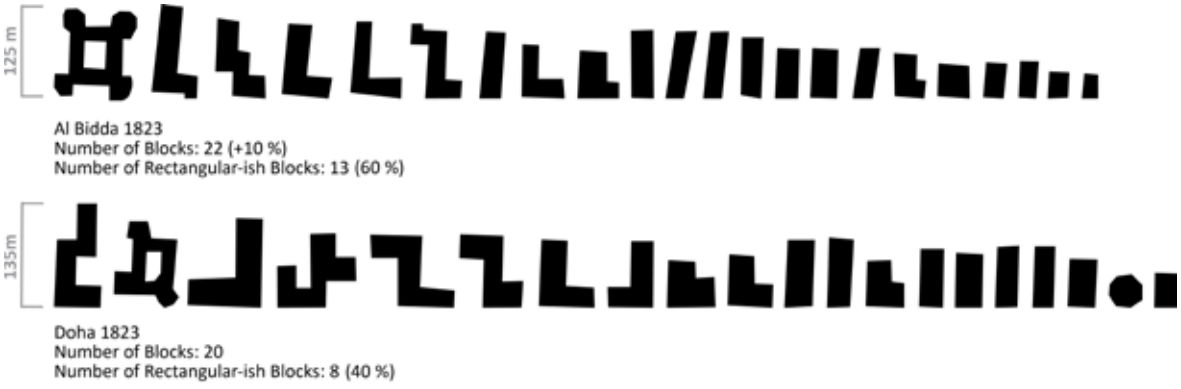

Figure 5. The rank ordering of urban blocks/free-standing buildings from the largest to the smallest for the metric area in (top) Al Bidda and (bottom) Doha in 1823.

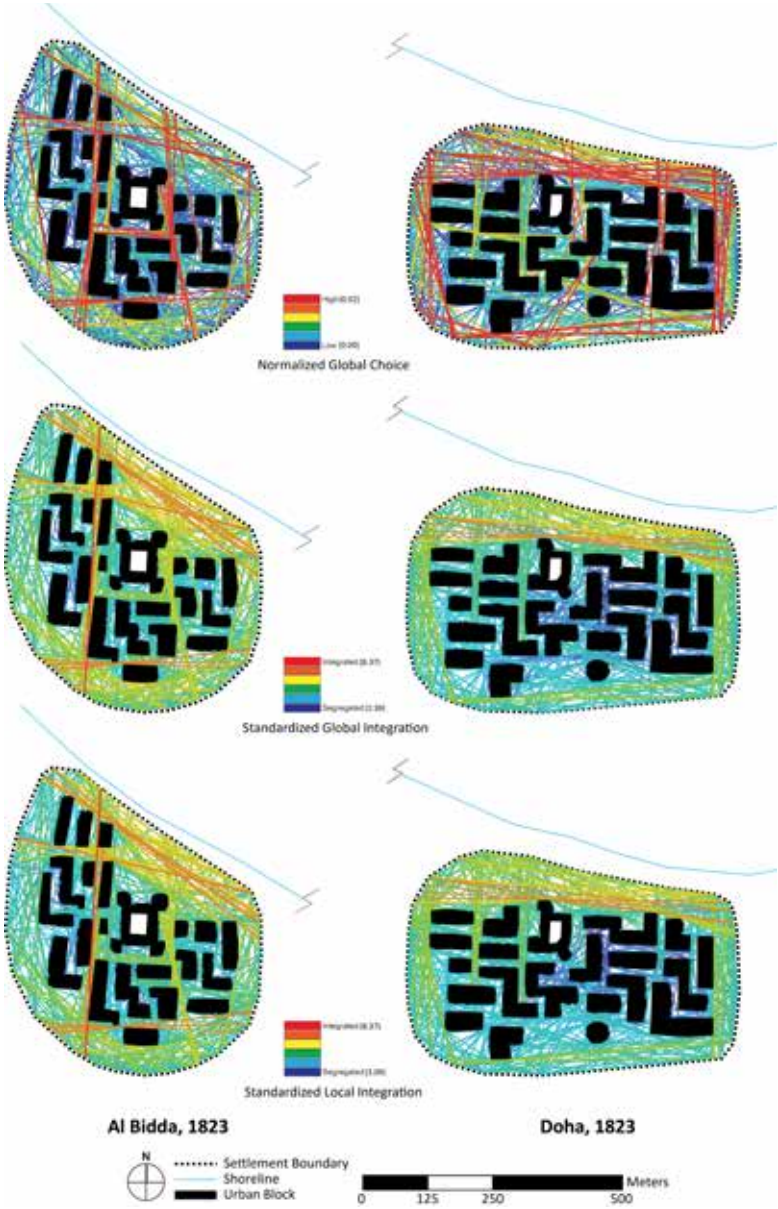

Figure 6. All-line axial analysis of the 1823 layouts in (left) Al Bidda and (right) Doha within the settlement boundary for (top) normalized global choice, (center) standardized global integration (radius=n), and (bottom) standardized local integration (radius=3).

blocks exist, including one immediately south of the fort. Generally, we can conclude that the Doha layout is more geometrical than Al Bidda, primarily due to its <5° of perfect right-angle logic.

We can examine the effect in the all-line axial analysis for global choice, global integration, and local integration of each layout as an independent system within the boundary, incorporating the periphery of the settlement (Figure 6). Calibrating the individual settlement boundaries helps ensure comparability, as there is only a <5% difference in axial size. Al Bidda (492 lines) is marginally larger than Doha (471 lines), which is unsurprising given that it has two additional blocks. We standardized the range for the measures of normalized global choice (0.00-0.02), global integration (2.39-8.37), and local integration (3.09-8.37). For the global and

local integration, we set the maximum value to the minimum value plus the total range for visual purposes.

The global choice in Al Bidda highlights the importance of the coastal route to the north, its emerging parallel route in the western part of the layout that becomes part of the shoreline perimeter north of the fort, and the east and west perimeter routes running perpendicular to the settlement. A single route runs along the entire length of the southern perimeter, with a solitary block south of it, which connects the north-south routes of the eastern and western perimeters. Within Al Bidda, it highlights dual north-south routes – composed of overlapping axial lines as pseudo-*cardines* (Latin plural of *cardo*), as described by Moholy-Nagy (1968) – running parallel on either side of the fort entirely through the layout. The eastern one is adjacent to the fort. The western one is located one block away (approximately 100 m). There is a central route connecting the two immediately south of the fort. In Moholy-Nagy's (1968) terms, we can describe this as an abbreviated *decumanus*, as it connects the *cardines* but does not extend further east or west of the layout. The spatial structure of Al Bidda represents a classic example of Hillier and Hanson's (1984) deformed wheel core, reaching from the center to the edges of the settlement.

The pattern of global and local integration in Al Bidda further reflects this, with the *cardo* west of the fort gaining significant prominence over the eastern one in terms of integration. This western *cardo* might have been the *bazaar* street in the classic manner of other Islamic settlements. The spatial structure of Doha for global choice and integration is more unique. The global choice highlights all perimeter routes, emphasizing the coastline perimeter and the north-south routes that enter the layout. However, these routes do not directly traverse to the opposite periphery. The focus on global choice is more pronounced in the areas east of the fort than in the west, i.e., further away from Al Bidda. The subsequent effect of standardized integration in the layout is profound, with high integration concentrated at the northern perimeter adjacent to Doha Bay and segregated spaces defining the internal layout of Doha.

The least-line axial analysis of Al Bidda and Doha as independent settlements for the global choice and integration pattern reiterates the importance of the coastline perimeter as it has the highest choice and integration values in both layouts (Figure 7). This is unsurprising given the importance of fishing, pearling, and trade in the socioeconomic life of both settlements at the time. Both global choice (0.00-0.30) and

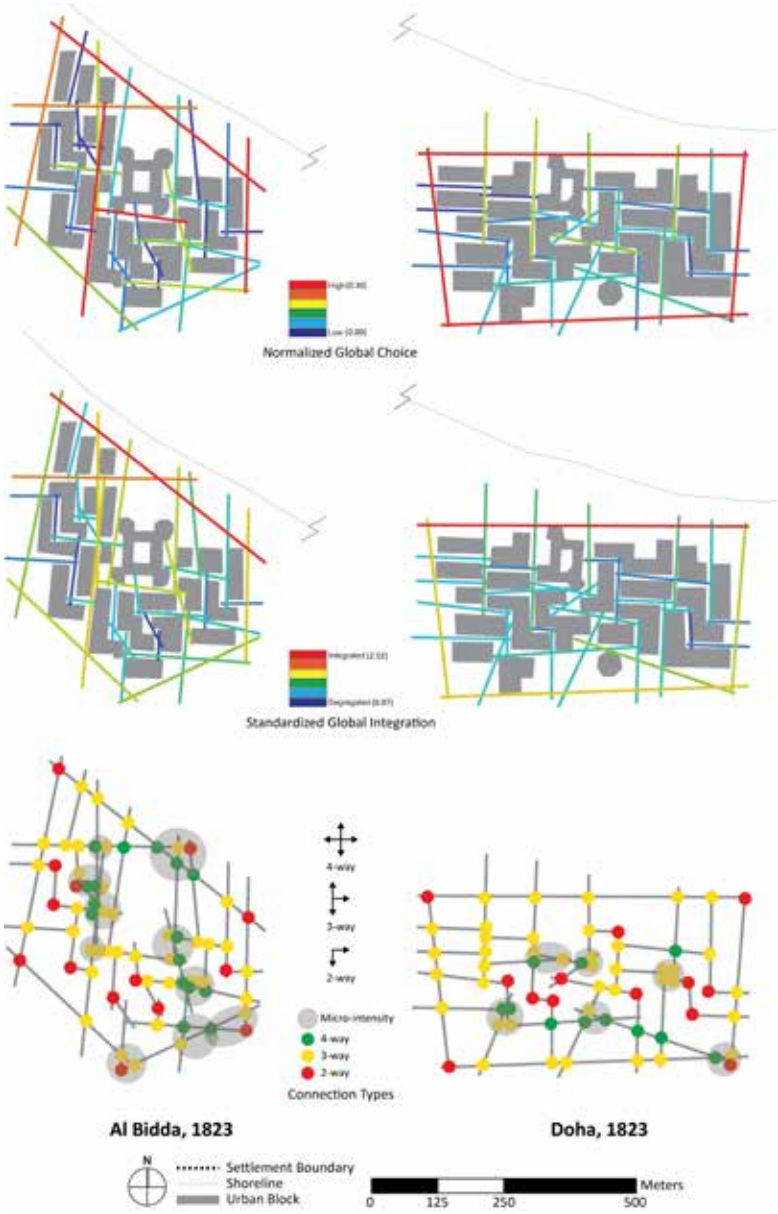

Figure 7. Least-line axial analysis in the 1823 layout of (left) Al Bidda and (right) Doha within the settlement boundary for (top) normalized global choice, (center) standardized global integration (radius=n), and (bottom) a representation of connection types (2-, 3-, and 4-way) indicating the micro-locations of intense connectivity.

integration (0.97-2.52) have a standardized range for comparison's sake. The segregation and low choice within the internal layout of Doha are again evident. The eastern *cardo* of Al Bidda becomes much less prominent for integration and choice in the least-line analysis. Global choice emphasizes the western *cardo* and the abbreviated *decumanus* south of the fort in Al Bidda.

We can discern other features by examining a representation of connectivity in Al Bidda and Doha, following Major's (2018) classifications. Connections at the edge of the settlement are not included in this classification if they lead to an undifferentiated periphery, i.e., corner connections are two-way, and edge connections are three-way.

Doha has 11 four-way connections in the layout. Al Bidda possesses 16 such connections (+45%). Both Al Bidda and

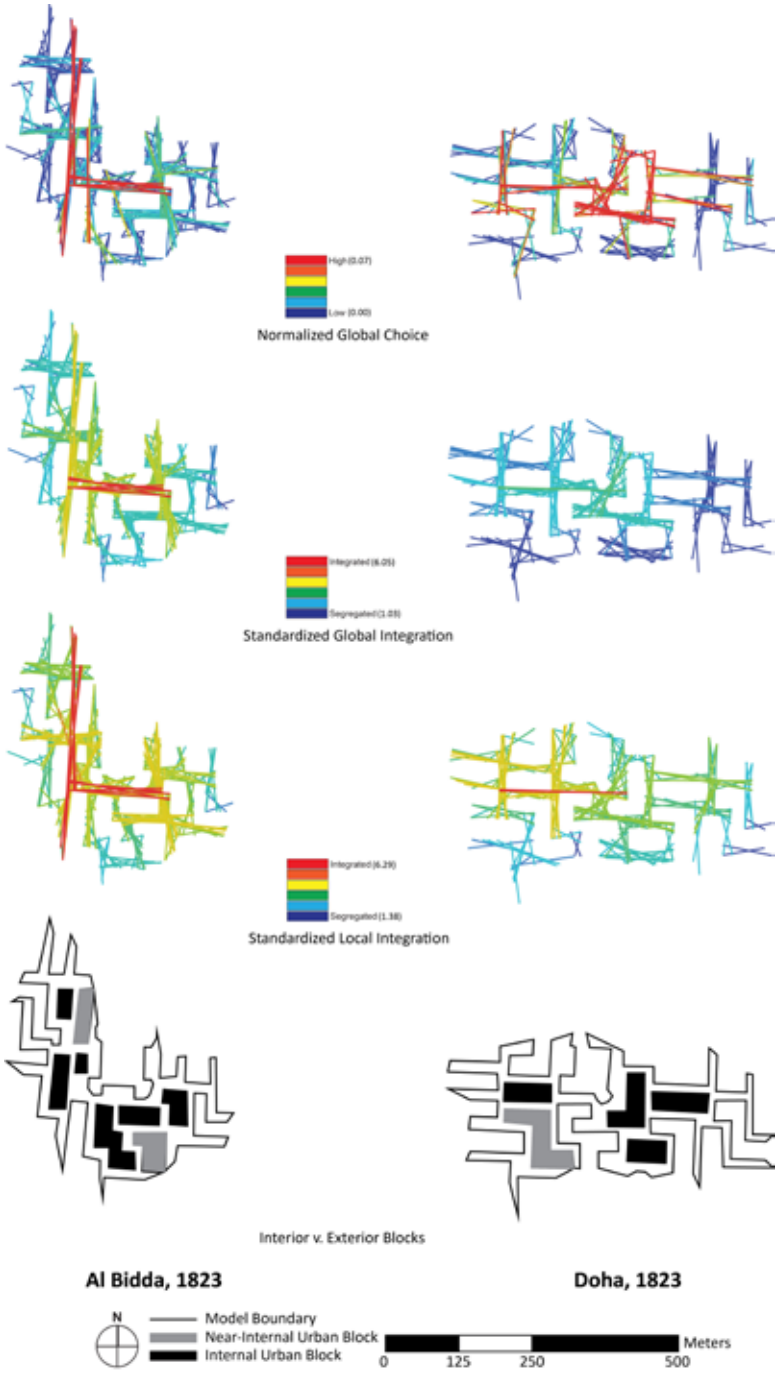

Figure 8. All-line axial analysis in the 1823 layout of (left) Al Bidda and (right) Doha excluding the settlement periphery for (top) normalized global choice, (top center) standardized global integration (radius=n), (bottom center) local integration (radius=3), and (bottom center) a representation of the model bounds indicating fully and nearly internalized urban blocks.

Doha have 34 three-way connections. Al Bidda has 14 two-way connections; seven are internalized within the layout, while the rest are located on perimeter spaces. Doha has 13 such connections, of which nine are internalized within the layout (+29%) and four at the layout's corners as a straightforward feature of its geometrical order. What differentiates connectivity in Al Bidda and Doha is how they are distributed within the layout. Doha features some two-way connections relatively close to its geometric center. The internal two-way connections in Al Bidda's layout are distributed to the interstitial areas away from its geometric center to the east, west,

and south. The overlapping micro-intensity of connections, i.e., intersections with multiple route choices, in Al Bidda focuses centrally on the cardines, coastline, and the entire southeastern edge. There is a distinct separation occurring among instances of overlapping micro-intensity connections in Doha, with only two immediately south of the fort, near each other. This mapping of connection types in the two layouts makes the geometrical order underlying Doha's spatial structure even more evident.

The all-line axial analysis of global choice, global integration, and local integration in Al Bidda and Doha, independent of their periphery spaces, provides an even starker contrast (Figure 8). The axial size difference is now more prominent: Al Bidda (233 or +26%) compared to Doha (185). Researchers again established a standard range for normalized global choice, global integration, and local integration for comparison purposes. The spatial structure of Al Bidda remains consistent for insiders/residents and outsiders/visitors, emphasizing the western *cardo* for global choice and integration, and abbreviated *decumanus* globally and locally within the layout. The eastern *cardo* is more prominent for local integration, effectively defining the 'edge' of the eastern area of town. Contrastingly, global choice highlights a series of internal routes within Doha's layout, which remain segregated for global integration. Local integration highlights the east-west route immediately south of the fort. On the western end of this route lies the geometric center of the layout. Doha has only five blocks wholly or nearly internalized within the layout, whereas Al Bidda has eight (+60%). Because of this, Al Bidda and Doha are divided into distinct east and west areas, located on opposite sides of their respective forts. However, the most apparent demarcation is the structured nature of Al Bidda and the hierarchical one of Doha as a spatial system. In Hanson's (1989) terms, Al Bidda is structured, and Doha is ordered. The difference arises from prioritizing socioeconomic or cultural factors in aggregating dwellings to Al Bidda and Doha, respectively. Like many other world settlements, Al Bidda's layout prioritizes socioeconomic activities for residents and visitors alike. Doha's layout prioritizes the customary norms of Islam for residential privacy.

Finally, the VGA analysis of visual integration and metric step depth shortest path length in Al Bidda and Doha in 1823 with and without their settlement periphery reiterates our findings (Figure 9). Researchers set a calibrated range for visual integration with (3.70-11.10) and without (1.92-5.79) the settlement periphery, where the maximum value equals

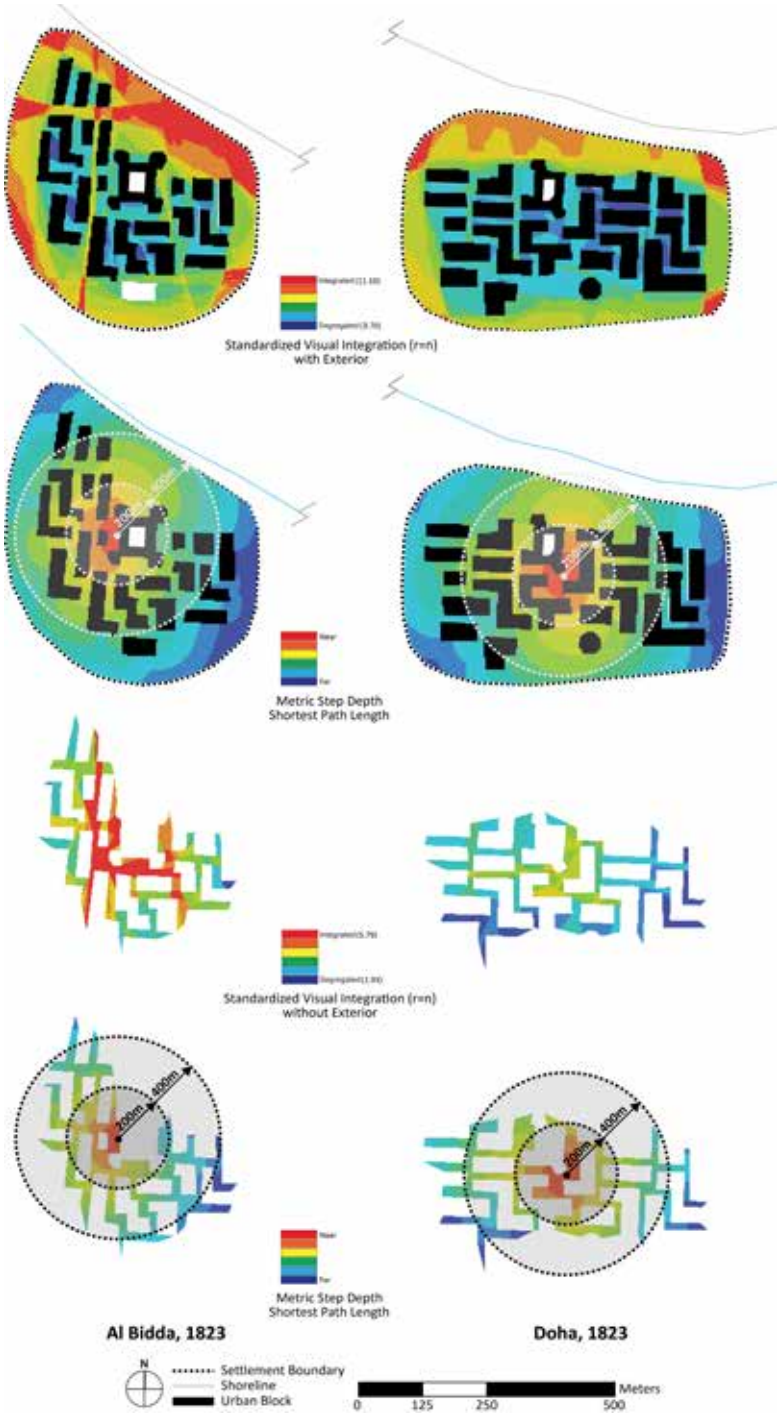

Figure 9. VGA analysis of the 1823 layout in (left) Al Bidda and (right) Doha within the defined settlement boundary for (top) standardized visual integration (radius=n) and (top center) metric step depth shortest path length with pedestrian sheds, and excluding the settlement periophery for (bottom center) standardized visual integration (radius=n) and (bottom) metric step depth shortest path length with pedestrian sheds.

three times the minimum in both cases. Since the geometric center of Al Bidda lies inside the fort, we shift it to the nearest grid element outside the fort to the west for the metric step depth shortest path. We overlay a pedestrian shed on each settlement from the grid element, defining its geometric center for reference. Both settlements possess strong visual integration along the coastline. Segregated visibility characterizes the internal layout of Doha. In Al Bidda, visual integration also focuses on the northern periphery of the coastline but also highlights the vistas into the settlement associated with

the western *cardo* and the coastal parallel route in the west. Otherwise, the internal layout of Al Bidda also remains relatively segregated for visibility. Without the periphery, visual integration in Al Bidda shifts to the west and east *cardines* and the central, abbreviated *decumanus*, replicating the all-line axial analysis. The internal layout of Doha remains entirely segregated.

For the metric step depth shortest path length, walking distances skew with the overall shape of the settlement related to the coast. The most extensive walking trips in Al Bidda are from its eastern blocks and inland periphery to the northwest blocks and coast. Likewise, the metric step depth shortest path length skews northward from the geometric center towards Doha Bay. Due to Doha's elongated shape along the coast, the metric step depth shortest path length for walking trips similarly skews towards the Doha Bay and inland periphery. The shortest walking trips are north-south. Doha's most extensive walking trip is from the block or corner in the southwest, somewhat skewed southward, to the facades on the western periphery. This marginally separates the easternmost and westernmost blocks for privacy in Doha. However, the ones in the west are even more private when considering both settlements as a single spatial system, as seen in the all-line axial analysis. It is a straightforward consequence of metric distance in the settlement pattern.

Discussion

Initially, the 1823 plans of Al Bidda and Doha appear to have similar features, perhaps due to the drawing techniques in Guy and Brucks' trigonometrical plan. However, spatial analysis reveals that these are, in fact, two distinct models of settlement form in mediating the relationship between insiders and outsiders, i.e., residents and visitors. Broadly, we can attribute these differences to pre-Islamic and Islamic views of settlement form in the GCC region. Al Bidda's spatial structure fulfills its socioeconomic role as the port. Fletcher and Carter (2017) state that Al Bidda was the only port from which trading vessels regularly sailed in Qatar in the early 1820s (Rahman, 2005). Again, it is unclear if this description conflates Al Bidda and Doha as a single settlement under the name 'Al Bidda' or treats them as distinct settlements.

Nonetheless, the layout of Al Bidda represents a classic example of Hillier and Hanson's (1984) deformed wheel structure (in red in Figure 10, top left) connecting from the center to most settlement edges. Al Bidda offers a typical picture of the settlement at the global and local scale of space for residents

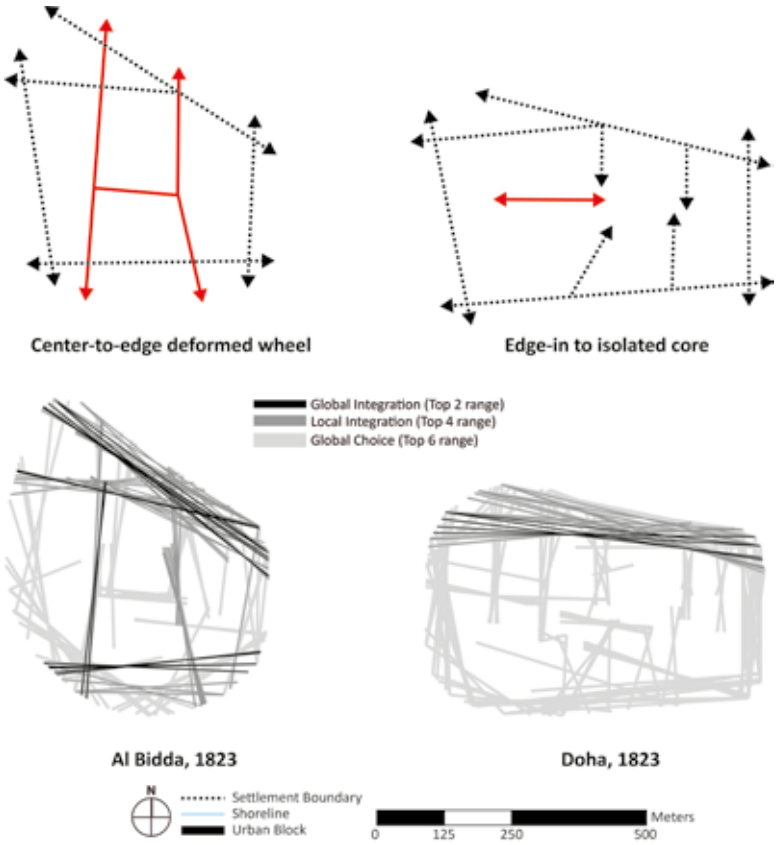

Figure 10. (top) The pre-Islamic and Islamic settlement models in the 1823 layout of (left) Al Bidda and (right) Doha and (bottom) the 'Ascendent or 246' map summarizing global choice, local integration, and global integration in each, respectively.

and visitors, thereby successfully assimilating them alike internally within its layout (Figure 10). Conversely, Doha's layout represents a new model of Islamic settlement in Qatar. It incorporates subtle geometry and block size and shape changes that affect connectivity and visibility, introducing internal segregation within its layout in a hierarchical model that operates 'edge-in' to generate privacy for residents. It constrains visitors to its more integrated and functionally important spaces along the coast. This necessitates generating an isolated, highly localized core within the settlement (in red in Figure 10, top right), nominally for the principal use of residents. It is more or less consistent with the geometric center based on the overall shape of Doha. It also underscores a shift from traditional settlement configurations (in Al Bidda) towards a more organized hierarchy (in Doha), wherein accessibility is regulated.

The 'Ascendent or 246' map of 1823 Al Bidda and Doha layouts, based on all-line axial analysis of each settlement within the settlement boundary, reveals these significant differences.[1] The map is 'ascendent' because the summarized graphic includes an ascending number of ranges from the top 2 of global integration (as thin black lines) through the top 4 of local integration (as dark grey lines of intermediate thickness) to the top 6 of normalized global choice (as thick, light

[1] *This representation, deriving from a 2024 idea discussed by Space Syntax Ltd.'s Tim Stonor in an invited presentation at the 14th International Space Syntax Symposium, provides a clear and comprehensive overview of their different spatial structure.*

grey lines) (Figure 10, bottom). This clarity allows us to understand the center-to-edge spatial structure of Al Bidda and its edge-in counterpart in Doha.

It is essential to reiterate that the historical development of Doha was not the result of top-down planning, but rather the individual application of simple, customary rules in a restricted, random aggregation. The process of incorporating rules on locating doors and windows in new dwelling units related to their neighbor's existing dwelling based on Islamic cultural norms, as suggested by Kostof (1991) and Khan (2021), is a key factor in giving rise to subtle changes in layout in Doha compared to Al Bidda in 1823. However, there is no indication of where the doors and windows are in the 1823 trigonometrical plan of Doha, so it is impossible to verify. However, it is a reasonable hypothesis, given what we know and what we learned in this analysis. Nonetheless, it would make our findings even more remarkable, as they derive from the collective sum of individual actions that contribute to the emergence of a new settlement form. Despite the later destruction of these settlements, Guy and Brucks' plan appears to document a critical inflection point in the history of Qatar and Doha with significant implications for its initial development and later rapid urbanization and globalization during the 20th century (Major et al., 2019).

Conclusion

This paper was an exercise in spatial archaeology, utilizing space syntax to examine the settlement layouts of Al Bidda and Doha in the historical record, based on a 1823 plan. We briefly reviewed the history of Al Bidda, Doha, and Qatar before the 20th century. The paper also discussed the tendency of urban researchers to focus on European and American settlements, downplaying those of the Middle East and the GCC regions. It included a review of space syntax's tendency to do so during its formative years in the 1970s and 1980s. The space syntax analysis in the paper relied on least-line and all-lines axial analysis, as well as Visibility Graph Analysis (VGA), to demonstrate the emergent spatial structure in Al Bidda and Doha during the early 19th century. Based on our findings, we argued that the 1823 layouts of Al Bidda and Doha, despite their apparent similarities, actually represent two distinct models of settlement form in the history of Qatar. Al Bidda possessed a classic center-to-edge spatial structure, enabling visitors and residents to assimilate similarly within its layout. Doha had an 'edge in' hierarchical spatial structure, fostering privacy for residents within its layout.

Generally, these model types were endemic to pre-Islamic and Islamic norms, underscoring the essential differences between 'insiders' or residents and 'outsiders' or visitors in terms of socioeconomic activities and cultural norms, as reflected in settlement forms. We concluded that Guy and Brucks' 1823 plans mark a critical inflection point in the history of Qatar, with profound implications for subsequent urban development and the rapid urbanization of Doha during the 20th century. In doing so, we highlighted the historical significance of this research and its relevance to the study of settlements in the Middle East and GCC regions, inviting a deeper appreciation for the rich history of these areas.

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Illustrations

All images by authors unless otherwise noted below.

Figure 1: (left) U.S Air Force/Staff Sgt. Bethany La Ville and (right) Licensed to Author by Alamy.

Figure 2: British Library, Oriental and India Office Collections via Wikipedia/Fletcher & Carter, 2017.

Figure 3: Public Domain, original photographs by Hermann Burchardt via Wikipedia. Obtained from Volume II of the Gazetteer of the Persian Gulf, 'Omān and Central Arabia (Government of India: 1908) compiled by John Gordon Lorimer.

References

Al-Mohannadi, A., Furlan R., Major, M.D. (2019) 'Socio-Cultural Factors Shaping the Spatial Form of Traditional and Contemporary Housing in Qatar: A comparative analysis based on space syntax' in *12th International Space Syntax Symposium Proceedings*. Beijing, China: Beijing Jiao Tong University, 8-13 July 2019, 285: 1-19.

Benedikt, M.L. (1979) 'To Take Hold of Space: Isovists and Isovists Fields' in *Environment and Planning B: Planning and Design*, 6: 47–66.

Burdett, R., Rode, P., Eds. (2018) *Shaping Cities in an Urban Age*. London: Phaidon Press.

Carter, R.A., Eddisford, D. (2013) *Archaeological Investigations in the Heritage Quarter of the Msheireb Development. UCL Qatar* Final Report for Msheireb Properties. The Origins of Doha Project, National Priorities Research Program (NPRP) Grant No. 5-421-6-010, Qatar National Research Fund, 19 June 2013.

Bustard, W. (1997) 'Space, Evolution and Function in the Houses of Chaco Canyon' in *First International Space Syntax Symposium Proceedings* (Eds. M.D. Major, L. Amorim, F. Dufaux), 2: 23.01–23.21.

Battuta, I. (1377). تحفة النظار في غرائب الأمصار وعجائب الأسفار *Rihla* ('The Travels') or Tuhfat al-anzar fi gharaaib al-amsar wa ajaaib al-asfar (A Gift to Those Who Contemplate the Wonders of Cities and the Marvels of Traveling). Morocco. Available in the U.S. Library of Congress.

Carter, H. (1983) *An Introduction to Urban Historical Geography*. London: Edward Arnold (Publishers) Ltd.

Dalton, N. (2001) 'Fractional Configurational Analysis and a solution to the Manhattan problem' in *Proceedings of the 3rd International Space Syntax Symposium* (Eds. Peponis J., Wineman, J., and Bafna, S.). University of Michigan, 26.1-26.14.

Dubai Statistics Authority. (2025) *Population Clock, Dubai Government*. Retrieved 26 January 2025 at https://www.dsc.gov.ae/en-us/Pages/default.aspx.

Fleischmann, M. (2017) *Measuring Urban Form: A systematisation of attributes for Quantitative urban morphology*. Master of Science Thesis, Urban Design Studies Unit, Department of Architecture, University of Strathclyde.

Fletcher, R., Carter, R.A. (2020) *Historical references to Doha and Bidda before 1850. The Origins of Doha Project*. 14 October 2020. UCL Qatar, NPRP Grant No. 5-421-6-010 from

the Qatar National Research Fund (a member of Qatar Foundation). Retrieved 26 January 2025 at https://originsofdoha.wordpress.com/wp-content/uploads/2015/03/a-history-of-doha-and-bidda1.pdf.

Fletcher, R., Carter, R.A. (2017) 'Mapping the Growth of an Arabian Gulf Town: The Case of Doha' Qatar' in *Journal of the Economic and Social History of the Orient*, 60(4), 420-487. DOI: 10.1163/15685209-12341432.

Hanson, J. (1989) '*Order and structure in urban design: the plans for the rebuilding of London after the Great Fire of 1666' in Ekistics*, 56 (334-335), 22-42.

Head, G. Hermes, N.F. (2018). *The City in Arabic Literature: Classical and Modern Perspectives*. Edinburgh, Scotland: Edinburgh University Press.

Hillier, B. (1996) *Space is the Machine: A Configurational Theory of Architecture*. Cambridge: Cambridge University Press.

Hillier, B., Hanson, J. (1986) *Spatial Configuration and Use Density at the Urban Level: Towards a Predictive Model*. Final Report to the Science and Engineering Research Council, SERC GR/D/13337.

Hillier, B., Hanson, J. (1984) *The Social Logic of Space*. Cambridge, UK: Cambridge University Press.

Hurgronje, S. (1931) *Mekka in the Latter Part of the 19th Century*. London: Luzac.

Jaidah, I., Bourennane, M. (2009) *The History of Qatar Architecture 1800-1950*. Italy: Skira Editora.

Jellicoe, G., Jellicoe, S. (1975) *The Landscape of Man: Shaping the Environment from Prehistory ot the Present Day*. London: Thames and Hudson, Ltd.

Karimi, K. (1997) 'The Spatial Logic of Organic Cities in Iran and the United Kingdom' in *First International Space Syntax Symposium Proceedings* (M.D. Major, L. Amorim, F. Dufaux, Eds.), 1 06.01–06.17.

Koch, D., Marcus, L., Hanson, J. (2009) *The economic 'health' of market towns a configurational approach to accessibility*. Retrieved 28 January 2025 at https://www.semanticscholar.org/paper/The-economic-%E2%80%98-health-%E2%80%99-of-market-towns-a-approach-Koch-Marcus/c105c9c474661d58cfd51b3b4d5cbe4090e0a6d1.

Kostof, S. (1992) *The City Assembled: The Elements of Urban Form Through History*. London: Thames and Hudson, Ltd.

Kostof, S. (1991) *The City Shaped: Urban Patterns and Meaning Through History*. London: Thames and Hudson, Ltd.

Khan, A.H. (2021) *Dimensions of Change from a Fishing Village to a Heritage Marketplace: A Study of Souq Al-Wakrah, Qatar*. Master of Urban Planning and Design (MUPD) Program, Qatar University. Copies are available from the QU Main Library.

Kurşun, Z. (2002) *The Ottomans in Qatar: a history of Anglo-Ottoman conflicts in the Persian Gulf*. Istanbul: Isis Press.

Major, M.D., Atour, R.M., Tannous, H.O. (2021) 'Organized Complexity of the Urban Object' in *Journal of Design for Resilience in Architecture & Planning* (DRArch), 2 (01-18) (December 2021), Special Issue: Space Syntax, Selçuklu/Konya, Turkey: Konya Technical University, 1-17. DOI: 10.47818/DRArch.2021.v2si032.

Major, M.D., Tannous, H.O., Al-Thani, S., Hasan, M., Khan, A., Salaheldin, H. (2020) 'Macro- and Micro-scale Modeling of Multi-modal Transportation Spatial Networks in the City-State of Doha, Qatar' in *Proceedings of the 56th ISOCARP Virtual World Planning Congress* (P. Lorens, H.H. Magidimisha, Eds.), International Society of City and Regional Planners, November 2020-February 2021, Doha, Qatar, 394-415.

Major, M.D., Mirincheva, V., Tannous, H.O. (2019) 'Urban Transformations: From restricted random aggregation to designed cultural intent in Middle Eastern cities (in Chinese and English)' in *China Journal of Urban Design*. Beijing: Tsinghua University Press, 5, 2019: 34-49.

Major, MD; (2018) *The Syntax of City Space: American Urban Grids*. New York/London: Routledge.

Major, M.D. (2015) The Invention of a New Scale: the paradox of size and configuration in American cities in *Journal of Space Syntax*. University College London, 6(1): 170-191.

Moholy-Nagy, S. (1968) *The Matrix of Man: An Illustrated History of Urban Environment*. New York: Frederick A. Praeger, Publishers.

Morton, S.G., Peuramaki-Brown, M.M., Seibert, P.C., Dawson, J.D. (2012) 'Civic and Household Community Relationships at Teotihuacan, Mexico: A Space Syntax Approach' in *Cambridge Archaeological Journal*, 2012, 22:3 387–40.

Palgrave, W.G. (1871) *A Year's Journey in Central and Eastern Arabia*. London and New York, Macmillan and Co.

Rahman, H. (2005) *The Emergence of Qatar: The Turbulent Years 1627-1916*. London: Thames & Hudson

Rentz, G. (1997) *Oman and the south-eastern shore of Arabia*. Reading, UK: Ithaca Press

Rossi, A. (1982) *The Architecture of the City* (Trans. D. Ghirardo, J. Okman). Cambridge, MA: MIT Press.

Routley, N. (2017) 'Visualizing the Trillion-Fold Increase in Computing Power' in *Venture Capitalist*, 4 November 2017. Retrieved 28 January 2025 at https://www.visualcapitalist.com/visualizing-trillion-fold-increase-computing-power/.

Salama, A.M., Wiedmann, F. (2013) *Demystifying Doha: On Architecture and Urbanism in an Emerging City*. New York: Routledge.

Shapiro, J.S. (2015) 'A Space Syntax Analysis of Arroyo Hondo Pueblo, New Mexico' in *School of American Research Press, Santa Fe, New Mexico, Arroyo Hondo Archeological Series*, 2015, 9, Retrieved: 1 June 2025 at http://www.arroyohondo.org/publications/monographs/space-syntax-analysis-arroyo-hondo-pueblo-new-mexico.

Shapiro, J.S. (1997) 'Fingerprints on the Landscape: Cultural Evolution in the North Rio Grande' in *First International Space Syntax Symposium Proceedings* (Eds. M.D. Major, L. Amorim, F. Dufaux), 2: 21.01–21.21.

Space Syntax Ltd. (2021) *Space Syntax's Integrated Urban Model of the UK provides policymakers, planners & service providers with analysis addressing transport, land value, jobs, air quality, physical & mental health*. Retrieved 28 January 2025 at https://spacesyntax.com/project/uk-integrated-urban-model/.

Talen, E. Ed. (2013) *Charter of the New Urbanism* (2nd Edition). New York: McGraw-Hill.

Tannous, H.O., Major, M.D., Aravassery, F.A., Mohammed, H., Shakerpoor, G., Ellath, L.A. (2022) 'Space, Time and Natural Movement in Old Doha: The Morphological Case of Souq Waqif' in *13th International Space Syntax Symposium Proceedings*. Bergen, Norway: Western Norway University of Applied Sciences (HVL), 20-24 June 2022, 365:1-365:21

Tannous, H.O., Major, M.D., Furlan, R. (2021) 'Accessibility of Green Spaces in a Metropolitan Network: Using Space Syntax to Objectively Evaluate the Spatial Locations of Parks and Promenades in Doha, State of Qatar' in *Urban Forestry & Urban Greening*, 58(2021), DOI: 10.1016/j.ufug.2020.126892.

Tirado, J.B. (2015) 'Aplicaciones de Sintaxis Espacial en Arqueología: Una Revisión de Algunas Tendencias Actuales' in *Arqueología de la Arquitectura*, 2015, 12: e031.

Turner, A., Doxa, M., O'Sullivan, D., Penn, A. (2001) 'From Isovists to Visibility Graphs: A Methodology for the Analysis of Architectural Space" in *Environment and Planning B: Planning and Design*, 28(1): 103–121.

United Nations (2024) *World Population Prospects: The 2024 Revision*. Department of Economic and Social Affairs - Popu-

lation Division, United Nations. Retrieved 26 January 2025 at https://population.un.org/wpp/.

van Nes, A., Yamu, C. (2021) *Introduction to Space Syntax in Urban Studies*. New York/London: Routledge.

Weber, M. (1958) *The City* (D. Martindale, G. Neuwirth, Trans.). New York: The Free Press.

Whitehand, J.W.R. (2005) 'The problem of anglophone squint' in *Area*, 37, 228-30.

TRACING LAYERS OF CONTINUITY AND TRANSFORMATION: THE URBAN PALIMPSEST OF AMIDA (DIYARBAKIR) THROUGH ITS CITY WALLS AND SPOLIA PRACTICES

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ABSTRACT

Diyarbakır, historically known as Amida, embodies a rich urban and architectural heritage shaped by centuries of transformation. This study examines the city's layered history through the lens of its city walls, exploring their expansion phases as a localized manifestation of the urban palimpsest phenomenon. Employing an interdisciplinary approach that integrates historical narratives and field surveys, the research highlights the strategic role of spolia in architectural adaptation and continuity, particularly during late antiquity in the context of recurring Sassanid sieges. In light of reconsidered primary sources, the study further investigates the dynamic processes of fortification and reuse. It ultimately proposes a hypothesis on a lost monument within Amida's religious landscape, contributing to a deeper understanding of the city's evolving built environment.

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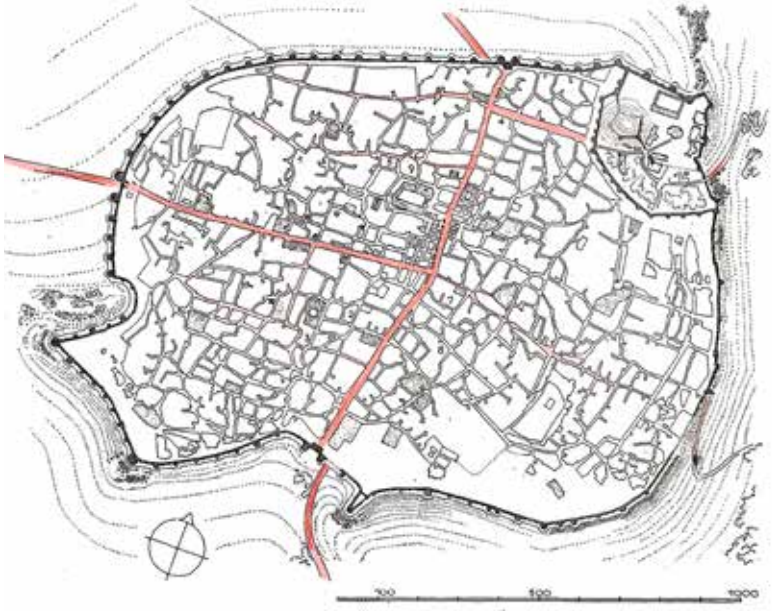

Figure 1. Walled city of Diyarbakır, layout plan. Source: SALT Research, digitally enhanced by Martin Ebert.

Introduction

Diyarbakır, located in southeastern Turkey on the northern banks of the Tigris River, occupies a strategic position in the fertile Mesopotamian basin, often regarded as the cradle of civilization. This location has made the city a historic crossroads for trade, migration, and cultural exchange, shaping its layered urban identity. Continuously inhabited since antiquity, Diyarbakır—known as Amida in ancient times—has witnessed the rise and fall of numerous civilizations, leaving a profound imprint on its urban fabric. The city's iconic basalt fortifications, the Diyarbakır City Walls, are among the largest and best-preserved ancient walls globally and are recognized as a UNESCO World Heritage Site. Historically a cultural and economic hub in Upper Mesopotamia, Diyarbakır has blended influences from Anatolia, Mesopotamia, and the Levant, reflected in its historic core, Suriçi. This walled city preserves its medieval street layout and features mosques, churches, caravanserais, and traditional courtyard houses, encapsulating its multilayered heritage (UNESCO, 2015).

Amida was among the largest Byzantine strongholds on the Persian frontier. While the dating of its fortifications has been debated, they are often attributed to Constantius II and Justinianus I, reflecting two major construction phases between the 4th and 6th centuries in response to persistent Sassanid attacks. Inscriptions in Latin and Greek, along with stylistic features, support this attribution. The city walls, though modified over time, retain elements of their original structure. Spanning 5.5 km, they include a 4.5 m wide and 8–12 m high main wall, complemented by an outer wall 1.8 m

thick and 2 m high, featuring galleries for troop deployment. Towers, approximately 15 m in diameter and projecting 12 m outward, are interspersed along the walls, supported by solid buttresses. Four monumental gateways, with triple passages flanked by U-shaped towers, enhance the fortifications. The walls reflect a Hellenistic architectural tradition, utilizing elaborate ashlar masonry. Stone dominates as the primary material, appearing in mortared rubble cores and finely worked facades, while brick use is limited to vaults in cisterns and towers. Large U-shaped towers, spaced 40 m apart, alternate with rectangular buttresses over 2 m wide, with smaller towers and buttresses arranged on the southern side. This design optimized defensive capabilities, combining positions for archers and ballistae, typical of earlier fortification strategies. Diyarbakır's fortifications remained the city's central defensive element also under Arab and Turkish rule from the 7th century onward, meeting its vital defense needs throughout history, through constant repairs and improvements (fig. 1) (Kontogiannis, 2022, pp. 27, 74, 77–81).

Diyarbakır's urban fabric presents a complex palimpsest of historical layers, a phenomenon well-documented in the scholarly literature. Archaeological excavations beneath the 11th-century Grand Mosque have uncovered monumental remains of Roman and Byzantine public buildings, revealing the city's deep stratification (Halifeoğlu and Assénat, 2021). The Grand Mosque itself, traditionally believed to have replaced the Early Byzantine cathedral dedicated to St. Thomas, exemplifies this continuity through its extensive use of spolia, primarily dating from the end of Late Antiquity (Keser-Kayaalp, 2018). Beyond this prominent site, numerous other churches of Diyarbakır are recorded in primary sources. While some remain in active use, others survive in various states of ruin, and a significant number have been subsumed beneath the modern urban fabric, their presence traceable only through archival and archaeological evidence (Tuncer, 2002).

Through a meticulous analysis of primary sources in conjunction with architectural and archaeological evidence, Gabriel (1940, pp. 177–181) successfully reconstructed the refoundation of Amida as a fortified provincial capital under Constantius II. He further argued that its expansion—effectively doubling its size—was undertaken during the reigns of Jovianus and Valens in the 4th century, followed by an almost complete renewal under Justinianus I in the 6th century (fig. 2). This article reexamines some of the primary sources previously cited by Gabriel to reassess aspects of this reconstruction. In contrast, Parla (2005) challenged Gabriel's multi-phase hypothesis, advocating instead for a single-phase fortification

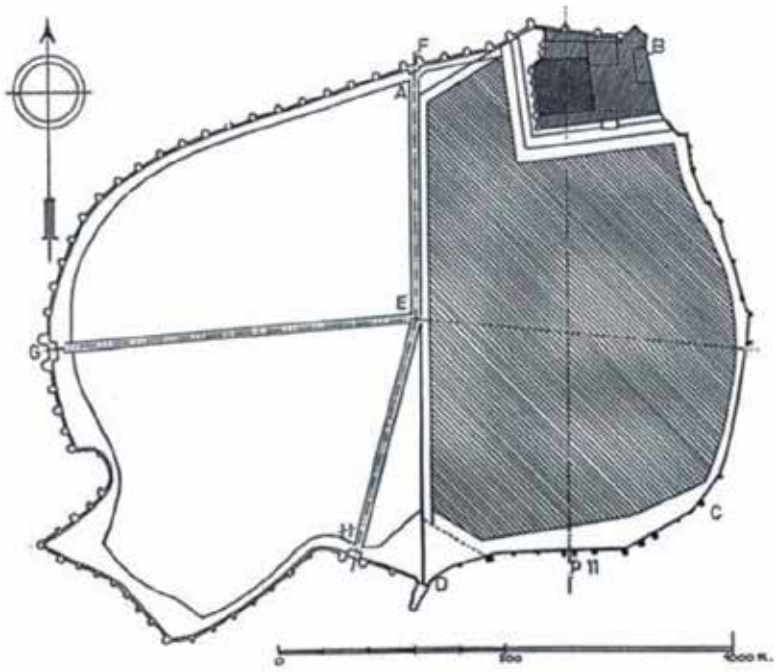

Figure 2. Reconstruction of Amida by Gabriel. Source: Gabriel, 1940, p. 180.

project under Constantius II. More recently, Crow (2007) reaffirmed Gabriel's interpretation of the 4th-century defensive works, distinguishing between two distinct construction phases. He further argued that these fortifications were both repaired and elevated in the early 6th century under Anastasius I, while dismissing Justinianus I's supposed interventions—referenced by Prokopios—as a myth.

Historical context:
Enhancing the defenses of a vulnerable city

According to the 6th-century historian Ioannes Malalas, Traianus (r. 98–117) elevated Amida to the status of a metropolis, appointed a governor, and founded the Province of Mesopotamia after separating it from the Province of Osroene (Malalas, 1986, p. 145). After the accounts of Ammianus Marcellinus (4th century), the Chronicle of Edessa (mid-6th c.), Jacob of Edessa (7th–8th c.), the Zuqnin Chronicle (also known as the Chronicle of Pseudo-Dionysius of Tel-Mahre) (late 8th c.) and Michael the Syrian (12th c.), it can be said that Amida, a small provincial capital by the 2nd century, underwent two major reconstruction and enlargement phases in the 4th century, including its fortification. The first, in 330/331, occurred during the reign of Constantinus I (r. 306–337), likely overseen by Constantius II as caesar (r. 327–337). The second, in 348/349, took place under Constantius II as emperor (r. 337–361), highlighting his influence on Amida's urban and military development (Cowper, 1865, p. 32; Brooks, 1898, p. 311; Chabot, 1899, p. 267; Marcellinus, 1935, p. 462–465; Harrak, 2017, pp. 262, 270).

The soldier-historian Ammianus Marcellinus, writing as a contemporary eyewitness of the Siege of Amida (359) in the Roman-Sassanid Wars of 337–361, first provides a vivid description of the city's transformation: Amida was originally a modest settlement, but Constantius II, while still serving as caesar, undertook extensive fortifications to provide a secure refuge for the surrounding populations. He enclosed the city with robust walls and towers, established an armory equipped with mural artillery (ballista), and transformed Amida into a formidable stronghold capable of deterring enemy incursions. The city's garrison consisted of Legio V Parthica, supported by a contingent of local cavalry (Marcellinus, 1935, pp. 462–465).

According to the lengthy tactical account of Marcellinus about the siege of 359, Amida's defenses, which could shelter at least 20,000 people, consisted of a single circuit of walls that were exposed to direct assaults, with minimal protection from a shallow ditch. The Sassanids launched offensives using heavily armored troops with war elephants, siege towers armed with ballistae, and scaling ladders, but the defenders successfully set them ablaze. Undeterred, the Sassanids constructed two massive mounds against the walls, prompting the Byzantines to build counter-mounds within the city. However, these defensive measures eventually gave way under sustained pressure. The siege culminated as the area between the city walls and the mounds was leveled, creating a direct path for the attackers and enabling the usage of a battering ram that destroyed a newly elevated, unsettled part of the wall against the siege mound, ultimately leading to the city's catastrophic fall (Marcellinus, 1935, pp. 470–511).

Although Amida was quickly restored following the Sassanid tactical withdrawal, it was reportedly in ruins by the time of Julianus (r. 361–363) (Marcellinus, 1940, pp. 194–195). The subsequent peace negotiations resulted in the cession of a strategic neighboring province, including its metropolis, Nisibis, to the Sassanids. As reported by Malalas, the Zuqnin Chronicle, and the 7th-century Chronicon Paschale, Jovianus (r. 363–364) undertook significant fortification efforts in Amida in 363. The emperor extended the city walls of Amida westward to encompass a nearby village situated beyond the preexisting urban boundary. This newly fortified area served as a refuge for emigrants from the surrendered province, including those displaced from Nisibis (Malalas, 1986, p. 183; Whitby and Whitby, 1989, p. 43; Harrak, 2017, p. 278).

The Siege of Amida (502–503) during the Byzantine-Sassanid War of 502–506 provides significant insights into the city's defenses and subsequent military enhancements under An-

astasius I (r. 491–518). Sources depict Amida as once again defended by a single circuit of strong walls, which, while formidable, remained approachable and open to direct assaults, echoing the conditions observed during the siege of 359. Despite these drawbacks, Malalas highlights Amida's strategic significance as the strongly fortified metropolis of Mesopotamia at that time (Malalas, 1986, pp. 223–224, 282).

The 6th-century Chronicle of Pseudo-Zacharias Rhetor, the 6th-century historian Prokopios, and the third part of the Zuqnin Chronicle (or Chronicle of Pseudo-Joshua the Stylite) detail the siege, marked by relentless assaults and inventive countermeasures: Despite employing battering rams, the Sassanids were unable to penetrate or destabilize the city walls. Then, they constructed a massive mound to eliminate the city walls, but the defenders undermined it, causing its collapse. Undeterred, the Sassanids rebuilt the mound with reinforced materials and shielded their laborers using a water-soaked thick tent to protect against arrows and fire, which the defenders destroyed with a large stone-hurling engine. Despite these setbacks, a critical lapse in defense led to the city's downfall. A Sassanid soldier discovered an inadequately concealed underground passage near a tower, allowing a small force to infiltrate the city and catch the defenders off guard. Exploiting this breach, the Sassanids eventually breached the city walls by using ladders and a series of towers to ascend them, rather than demolishing the structures, which had proven resilient against advanced siege tactics. Subsequent Byzantine attempts to reclaim the city involved constructing large siege towers, deploying siege engines, and mining beneath the walls, but none of these strategies succeeded (Hamilton and Brooks, 1899, pp. 153–154, 157–158, 160; Dewing, 1914, pp. 52–57, 68–69, 74–77; Harrak, 2017, pp. 404–412, 426, 428, 436).

The Chronicle of Pseudo-Zacharias Rhetor further notes that following the siege, the city was ransomed by the Byzantines after a truce in 505. Once peace was restored, Amida was repopulated and underwent significant restoration, including enhancements to its walls, with new construction added to bolster its defenses (Hamilton and Brooks, 1899, p. 163). Likewise, the 6th-century historian Evagrius Scholasticus provides a complementary account, describing Amida as a strong city of Mesopotamia. Following its recapture by the Sassanids, Anastasius I undertook substantial renewal (ἀνενεώσατο) efforts, expending considerable resources to restore the city to its former strength and significance (Scholasticus, 2000, p. 181).

Afterwards, amid continued clashes with the Sassanids and extensive fortification efforts across Mesopotamia, as Prokopios recounts once again, Justinianus I (r. 527–565) undertook significant defensive measures to secure the region. Both the primary wall (τεῖχος) and the outworks, namely the fore-wall (προτείχισμα), of the city of Amida, which had been constructed long before and had deteriorated with age, were replaced by new structures. These efforts not only restored the city's fortifications but also ensured its safety against future threats (Dewing, 1971, pp. 122–125).

The sieges of 359 and 502–503 exposed the vulnerabilities of Amida's defenses, which seemingly relied on a single wall that was highly susceptible to direct siege tactics such as battering rams, ladders, wooden towers, and earthen mounds. Following the Sassanid withdrawal in 505, Emperor Anastasius I initiated significant reconstruction efforts, likely incorporating preventive measures against these threats. As implied by the Chronicle of Pseudo-Zacharias Rhetor and Evagrius Scholasticus, these improvements presumably included the addition of a fore-wall and a deeper moat to enhance the city's defenses. Such features, common in late antique fortifications, were first explicitly referenced by Prokopios in the mid-6th century. During the reign of Justinianus I, the city walls had reportedly deteriorated, prompting his restoration efforts to reinforce Amida's defenses. The challenges faced by the city during the tumultuous period between approximately 500 and 540 are further detailed in the Zuqnin Chronicle, which attributes several of the city's hardships to a series of significant earthquakes (Witakowski, 1996, pp. 102–103).

The East Anatolian Fault, running near Amida, experienced heightened seismic activity during the 520s, including two major earthquakes and prolonged aftershocks in Antioch as well as its surroundings. Historical accounts suggest that the first half of the 6th century was a particularly active seismic period across the Byzantine Empire (Downey, 1955, pp. 597–598). These events likely contributed to the structural damage and instability of Amida's fortifications, as noted by Prokopios. Following Anastasius I's earlier reconstruction efforts, which finalized the defensive layout, Justinianus I's comprehensive repairs presumably addressed the damage caused by these earthquakes, ensuring the fortifications remain functional against both natural disasters and military threats.

Discussion: Field survey and material evidence

The historical accounts discussed above align with Gabriel's (1940, p. 180) reconstruction, which posits an initial, smaller city established under Constantius II, later expanded to

Figure 3. Southwestern section of the walled city, n.d. Source: SALT Research.

twice its size. However, Parla (2005, pp. 60–61) contested this model based on an argument concerning population density and urban surface area, estimating a population of 20,000 would need a much larger area. Yet, her hypothesis relies on modern urban data, making it anachronistic and unsuitable for the period in question. In contrast, a comparative analysis of Roman urban settlements suggests that Constantius II's Amida, covering approximately 75 ha, could have accommodated such a population with ease, before Jovianus and Valens' expanded Amida that reached 145 ha. Roman Pompeii—considered a middle-to-upper-class settlement—had a density of 166 p/ha, amounting to roughly 12,500 inhabitants, while Ostia, a commercial harbor city, had a significantly higher density of 317 p/ha, reaching an estimated 24,000 residents (Storey, 1997). Given these figures, the smaller Amida of Constantius II as a modest provincial capital could have feasibly housed 20,000 inhabitants, perhaps even more, particularly in times of siege.

The city walls of Amida exhibit distinct architectural characteristics that correspond to two primary construction phases. Broadly speaking, the western half with the Urfa Gate features massive towers interspersed with regularly spaced buttresses and built with finely cut ashlar masonry laid in uniform courses (fig. 3–6). In contrast, the eastern half—extending from the Harput (Dağ) Gate to the Mardin Gate axis—is characterized by longer wall segments with fewer towers, constructed with relatively smaller, roughly hewn stones arranged in irregular courses (fig. 7). These

Figure 4. Harput (Dağ) Gate in the north, with later towers, n.d. Source: SALT Research.

structural distinctions align with the interpretations of Gabriel (1940) and Crow (2007), contradicting the hypothesis proposed by Parla (2005).

A notable feature documented during the field survey is the use of spolia particularly in the section northeast of the Tek Gate in the north, where three towers prominently incorporate repurposed column shafts. These elements are systematically inserted at regular intervals, serving as binding materials between the mortared cores and the external façades. This practice not only reinforces the structural integrity of the walls but also reflects an urban palimpsest phenomenon akin to that observed in the Grand Mosque. The walls themselves, through their construction phases and incorporation of spolia, embody the architectural legacy of the city's earlier monuments. While the presence of these materials has been briefly acknowledged in previous scholarship (Gabriel, 1940, pl. 68/10; Şahin-Güçhan et al., 2005, pp. 29–30; Halifeoğlu, 2012, p. 127), their significance in the context of

Figure 5. Mardin Gate in the south, with the fore-wall, n.d. Source: SALT Research.

Figure 6. Southwestern section, with the fore-wall, 1965. Source: SALT Research.

Amida's urban history and built environment has yet to be fully explored (fig. 8–9). Similar spolia, though fewer, were also reutilized to wall up a postern next to a northwestern tower on the main walls between the Çift and Urfa gates, as a later defensive measure (fig. 9).

According to the 6th-century historian Ioannes of Ephesus, during the construction of the massive siege mound by the Sassanids against the city walls of Amida in 502–503, the monastery of Mar John Urtaya, located near the northern city walls, was destroyed, and its materials—wood, stones, and tiles—were added to the mound. The monastery had been a thriving institution, known for its extensive buildings and vibrant community. To expand their space, the monks had begun constructing a larger chapel, with materials transported from nearby quarries in an organized effort, which remained incomplete due to the Sassanid attack. Nevertheless, since the mound remained after their departure, much of its material was repurposed for the city's reconstruction, including a chapel, and other urban structures. Although the monastery was later rebuilt, by using materials quarried from the mound, it was on a smaller scale (Brooks, 1923, pp. 563–567). In this context, it is

Figure 7. Eastern section of the walled city, n.d. Source: SALT Research.

Figure 8. One of the towers with spolia, northeast of the Tek Gate. Source: Funda Arslan.

worth questioning whether the spolia building materials documented in the northern walls and towers originated from this monastery via the abandoned mound and were repurposed during the reconstruction efforts undertaken by Anastasius I after 505.

Conclusion

This interdisciplinary study, by integrating historical narratives, field surveys, and a comprehensive analysis of Diyarbakır's (formerly Amida) urban defense system, reveals the dynamic processes of fortification, material reuse, and architectural adaptation that have shaped the city's long history, particularly evocative of Amida's strategic significance in Late Antiquity—a period characterized by recurrent Sassanid sieges as well as natural disasters. Amida's urban palimpsest phenomenon reflects the city's resilience and highlights its evolution with major fortification phases in the 4th and early 6th centuries, where Anastasius I's intervention seemingly included also the addition of a fore-wall and a moat to reinforce the defense. A significant finding presumably from the same period is the concentration of spolia, especially column shafts, within a short northern section of the walls, which suggests a possible link to a now-lost

Figure 9. Walled up postern between the Çift and Urfa gates. Source: Funda Arslan.

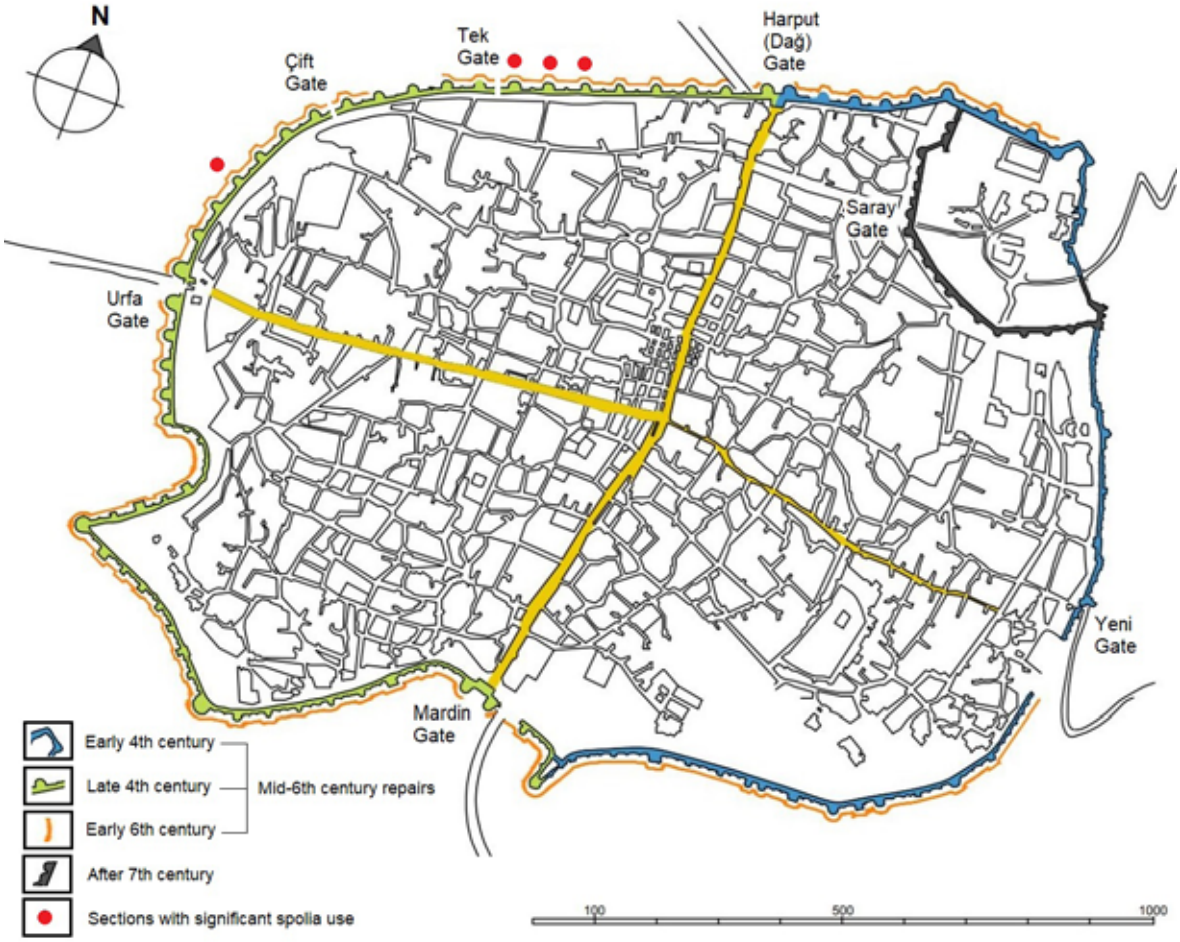

Figure 10. Major expansion phases and modifications of the Diyarbakır city walls during late antiquity, highlighting sections with significant spolia usage. Source: Funda Arslan.

monument within Amida's religious landscape by the early 6th century, potentially the monastery of Mar John Urtaya. This interpretation contributes to a deeper understanding of the city's urban development and the enduring relationship between its fortifications and sacred topography. Finally, after the reconsidered primary sources, it can be argued that Prokopios' account of Justinianus I's mid-6th-century efforts, either overstated or overlooked in scholarship, likely refers to extensive post-earthquake repairs (fig. 10).

References

Brooks, E. W. (1898). "The Chronological Canon of James of Edessa", *Zeitschrift der Deutschen Morgenländischen Gesellschaft*, 52(2), 261–327.

Brooks, E. W. (1923). "John of Ephesus, Lives of the Eastern Saints (I)", in Graffin, R., Nau, F. (eds.), *Patrologia Orientalis 17* (Firmin Didot, Paris), 1–631.

Camiz, A. (2022). Attracting Amida-Diyarbakır: Muratorian, Conzenian urban morphology and Space syntax, a methodological comparison, in Charalambous, Nadia; Camiz, Alessandro; Geddes, Ilaria eds (2022). *Cities as Assemblages, Proceedings of the XXVI International Seminar on Urban Form* 2019, (2–6 July 2019, Nicosia, Cyprus) Vol. 1, Tab edizioni, Rome, pp. 203-218.

Chabot, J. B. (1899). *Chronique de Michel le Syrien : patriarche jacobite d'Antioche* (1166–1199), Vol. 1 (Culture et Civilisation, Paris).

Cowper, B. H. (1865). "The Chronicle of Edessa", *Journal of Sacred Literature and Biblical Record* 5(9), 28–45.

Crow, J. (2007). "Amida and Tropaeum Traiani: a Comparison of Late Antique Fortress Cities on the Lower Danube and Mesopotamia", Poulter, A. G. (ed.), *The Transition to Late Antiquity, on the Danube and Beyond* (British Academy, London), 435–455.

Dewing, H. B. (ed.) (1914). *Procopius, Vol. 1* (History of the Wars, Books I and II) (London, Heinemann).

Dewing, H. B., Downey, G. (eds.) (1971). *Procopius, Vol. 7* (Buildings, General Index to Procopius) (Cambridge, Harvard University Press).

Downey, G. (1955). "Earthquakes at Constantinople and Vicinity, A.D. 342–1454", *Speculum* 30, 596–600.

Gabriel, A. (1940). *Voyages Archeologiques dans la Turquie Oriantale* (E. de Boccard, Paris).

Halifeoğlu, F. M. (2012). "Diyarbakır Surlarının Mimari Özellikleri ve Yapım Tekniği", in Temel, M. (ed.), *International Symposium of the City Walls of Diyarbakır* (Governorship of Diyarbakır), 115–129.

Halifeoğlu, F. M., Assénat, M. (2021). "The Great Mosque of Diyarbakir: a contribution to understanding the monumental development of a site from antiquity to the Arab conquest", *Anatolian Studies* 71, 141–156.

Hamilton F. J., Brooks, E. W. (eds.) (1899). *The Syriac Chronicle, known as that of Zachariah of Mitylene* (Methuen, London).

Harrak, A. (ed.) (2017). *The Chronicle of Zuqnīn, Parts I and II: From the Creation to the Year 506/7 AD* (Gorgias Press, Piscataway).

Jeffreys, E., Jeffreys, M., Scott, R. (eds.) (1986). *The Chronicle of John Malalas: A Translation* (Melbourne: Australian Association for Byzantine Studies).

Keser-Kayaalp, E. (2018). "The Great Mosque of Diyarbakır in Light of Discussions on Spolia and Classicism", in Jevtić, I., Yalman, S. (eds.), *Spolia Reincarnated: Afterlives of Objects, Materials, and Spaces in Anatolia from Antiquity to the Ottoman Era* (ANAMED, Istanbul), 125–147.

Kontogiannis, N. D. (2022). *Byzantine Fortifications: Protecting the Roman Empire in the East* (Pen & Sword, Huddersfield).

Marcellinus, A. (1935). *Ammianus Marcellinus, Vol. 1*, Rolfe, J. C. (ed.) (London, Heinemann).

Marcellinus, A. (1940). *Ammianus Marcellinus, Vol. 2*, Rolfe, J. C. (ed.) (Cambridge, Harvard University Press.

Parla, C. (2005). "Diyarbakır Surları ve Kent Tarihi", *METU Journal of the Faculty of Architecture* 22(1), 57–84.

Scholasticus, E. (2000). *The Ecclesiastical History of Evagrius Scholasticus*, Whitby, M. (trans.) (Liverpool University Press, Liverpool).

Şahin-Güçhan, N., Ünay, A. İ., Böke, H., Gökçe, F. (2005). "Diyarbakır Kent Surları Koruma Sorunları," *METU Journal of the Faculty of Architecture* 22(1), 27–55.

Storey, G. R. (1997). "The population of ancient Rome", *Antiquity* 71(274), 966–978.

Tuncer, O. C. (2002). *Diyarbakır Kiliseleri* (Metropolitan Municipality of Diyarbakır).

UNESCO (2015). *Diyarbakır Fortress and Hevsel Gardens Cultural Landscape*, https://whc.unesco.org/en/list/1488/ (accessed February 15th, 2025).

Whitby, M., Whitby, M. (trans.) (1989). *Chronicon Paschale 284–628 AD* (Liverpool University Press, Liverpool).

Witakowski, W. (ed.) (1996). *Pseudo-Dionysius of Tel-Mahre: Chronicle* (Known also as the Chronicle of Zuqnin), Part III (Liverpool University Press, Liverpool).

HOLY SPIRIT HOSPICES IN MECKLENBURG: CHARITABLE INSTITUTIONS WITHIN THE FABRIC OF MEDIAEVAL TOWNS

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ABSTRACT

Hospices were an essential part of social welfare in mediaeval urban communities. With the rapid expansion of urban life into the landscapes of Eastern Middle Europe, a significant number of hospices spread during the course of the 13th and 14th centuries. The contribution focuses on Mecklenburg, a landscape in Northeastern Germany, and examines the location of Holy Spirit Hospices in the towns of this area. The article focuses on a selected number of hospices with the aim of analysing their size and position in the urban tissue, concluding that their placement and exposure in the urban space followed clear rules and customs. Based on historical records and archaeological excavations, the article concludes with a complete itinerary of Holy Spirit Hospices in Mecklenburg.

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Figure 1. Interior of a Medieval Spanish Hospital, 1280-1284 from "Cantigas de Santa María, Códice rico", Ms. T-I-1, f. 100r, Real Biblioteca del Monsterio De El Escorial, Madrid, public domain.

Introduction

Charitable institutions played a crucial role in the social fabric of mediaeval towns. The planting of 40 towns and the rapid growth of urban life in 13th-century Mecklenburg changed the social fabric of the population. While families in rural areas provide shelter and care to exposed members, the transition of the mostly rural population to an urban lifestyle poses challenges for the social fabric. Urban life is to a much greater extent determined by economic relations in the guilds, which have replaced, to a great extent, family duties like caring for the elderly and the sick.

Beneath the façade of the gilded society, an increasing segment of the urban populace harboured a fear of insufficient support in case of illness or age. An increasing number of people in the fast-growing towns of Mecklenburg lived without a social network that could provide for them in need (Knefelkamp 2000).

In the background of this development, a growing number of charitable institutions provided social, medical, and spiritual comfort to the exposed population. Dating back to the *Institutio canonicorum Aquisgranensis* in 816, hospices were seen as a major institution of Christian charity (Knefelkamp 2000). It is therefore not surprising that the Roman Church first and foremost tried to address the growing number of exposed people. First among those were the urban monasteries of Mendicant orders like Franciscans/Clarissians

(Schwerin, pre 1236; Rostock, pre 1243; Parchim, ca. 1246; Wismar, ca. 1255; Neu Brandenburg, ca. 1260; Ribnitz, 1324; Grevesmühlen, 1326; Güstrow, 1509) and Dominicans (Rostock, 1256; Röbel, pre 1285; Wismar, 1292). In addition to the urban monasteries, a number of Hospitaller orders created a network of hostels and pilgrim hospices in the tradition of the *Xenodochium*, among those the Knights Hospitaller (Johanniter) (Eichsen, 1200; Sülstorf/Kraak, 1217; Mirow, 1226; Gardow, post 1286; Nemerow, 1298; Lychen, pre 1302), the Teutonic Order (Krakow, pre 1268), and the Antonines (Tempzin, 1222) (Huschner 2016). As it becomes clear from the dating of these monastic institutions, their appearance clearly coincides with the introduction of urban life in 13th-century Mecklenburg.

Mendicants and their infirmaries mainly provided spiritual support and comfort to the sick and dying, while the Hospitaller Orders mainly served hospitality and health care to pilgrims. During the urban expansion of the 13th-century towns, their burgesses developed a growing consciousness to rule over all matters inside the walls of the town, recognising their responsibility for the poor, sick, and elderly part of the urban population. Towns therefore developed their own institutions of social care for all inhabitants not provided for by the guilds. These institutions can be categorised into

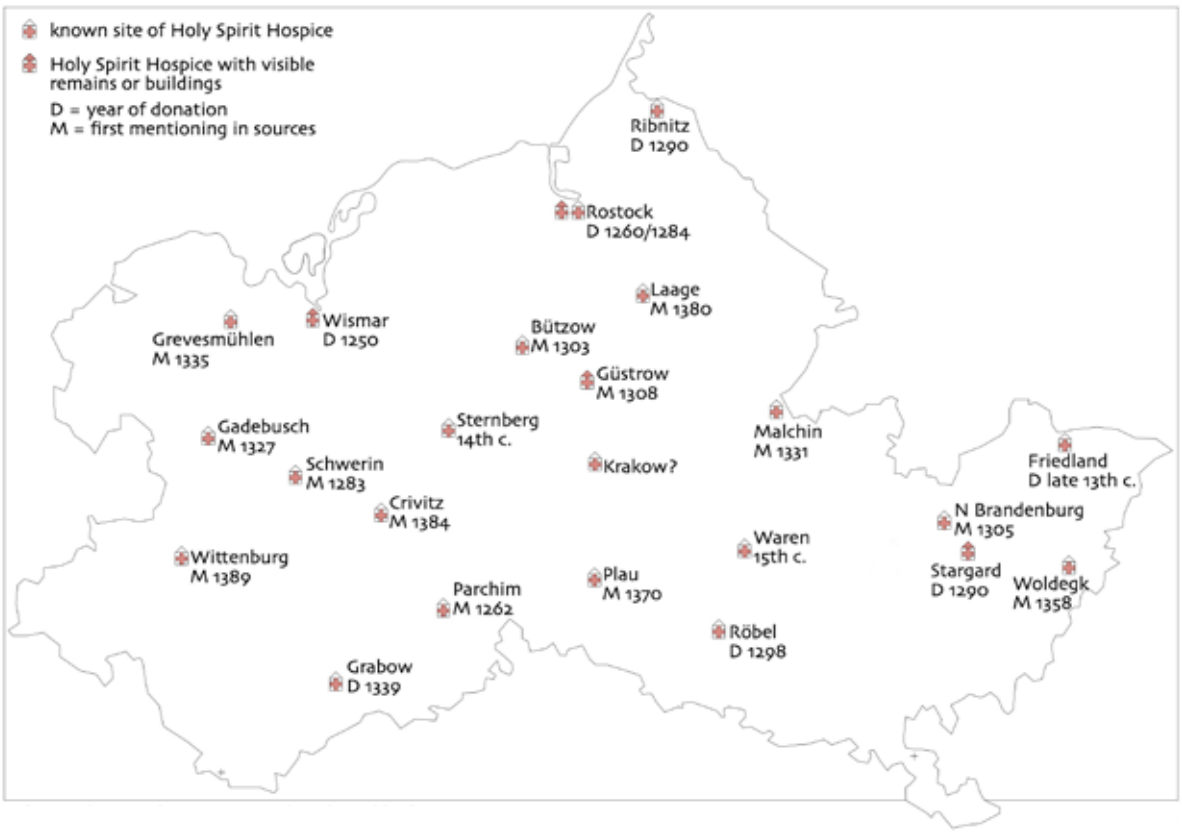

Figure 2. Known sites of Holy Spirit Hospices in Mecklenburg. Drawing by Martin Ebert.

two groups: urban hospices, providing housing, care, and spiritual guidance to the weak, poor, and elderly population and quarantine for travellers; and extramural hospices. These were mostly founded later, becoming essential as pandemic waves swept through Europe in the 14th century: Extramural hospices did also provide housing to the victims of leprosis, which had become endemic.

Inside the town walls, Holy Spirit Hospices became a vital part of the system of charitable institutions in Mecklenburg. Keyser and Ruchhöft mention at least 22 sites in Mecklenburg (Keyser 1939, Ruchhöft 2021): Bützow; Crivitz; Friedland, late 13th C.; Gadebusch, mentioned 1327; Grabow, 1339; Grevesmühlen, mentioned 1335; Güstrow, mentioned 1308; Krakow (?); Laage; Malchin, 1331; Neu Brandenburg; Parchim, mentioned 1265; Ribnitz, 1290; Röbel, 1298; Rostock, mentioned 1260, moved 1284; Schwerin, mentioned 1283; Stargard, 1290; Sternberg, 14th C.; Waren, mentioned 1426; Wismar, 1250; Wittenburg, mentioned 1389; Woldegk, mentioned 1358 (figure 2).

Research question

The contribution of this article is to survey known hospices in 13th-century towns in Mecklenburg (Ebert 2021), locate them in the urban form, and analyse their size, layout, and location in relation to their function in the urban tissue. This geometrical and statistical examination is intended to lead to a better understanding of the genesis of both urban form and hospices. In light of recent archaeological excavations, the spatial scriptedness and regularity of Holy Spirit Hospices is illustrated.

Methodical approach

The survey of all known hospices in Mecklenburg is based on Keyser's encyclopaedic work «Deutsches Städtebuch» (Keyser 1939), the Registry of Historic Documents in Mecklenburg (MUB), and the Regesta Mecklenburgica (RMU), which have proven to be the most serious source of information about urban structures in mediaeval Mecklenburg. Based on the survey, a status on the current built inventory is taken.

Based on archaeological data, historic photographs, available literature, and digital GIS information, a geometrical reconstruction of selected hospices is undertaken. Seven of Mecklenburg's hospice sites were examined by morphological methods and described by their current status, geome-

try, historical records, or modern cadastral maps. The reconstructions generate general typological information about the Holy Spirit Hospice as a mediaeval building type. Finally, the reconstructed geometry of the hospices is set in the context of the mediaeval building tissue. Here, the position of the hospices in the city and in relation to important streets, walls, and gates is of special interest.

The Holy Spirit Hospice as a building type

To understand the relationship between hospices and the urban community, precision as to the hospice's function is important (Knefelkamp 2000). The nature of the mediaeval hospices run by the burgesses of the town is dual. Firstly, they are religious institutions, as they have to provide spiritual guidance and religious comfort to their inhabitants. Secondly, their economic and practical organisation is administered by the town's council or other institutions, not belonging to the Roman Church. The dual nature of these institutions is a direct result of mediaeval religiosity, which, in the face of imminent disease and death, called for the spiritual cleansing of the soul in preparation for the post-mortal life.

This duality expresses itself in the architectural form, which consists of two main elements: the hospice and its chapel. The infirmary, with its individual cells, is placed as close as possible to the chapel to make easy access for the inhabitants. By the 11th century, individual cells of hospices were common dormitories with little or no individual spaces, fol-

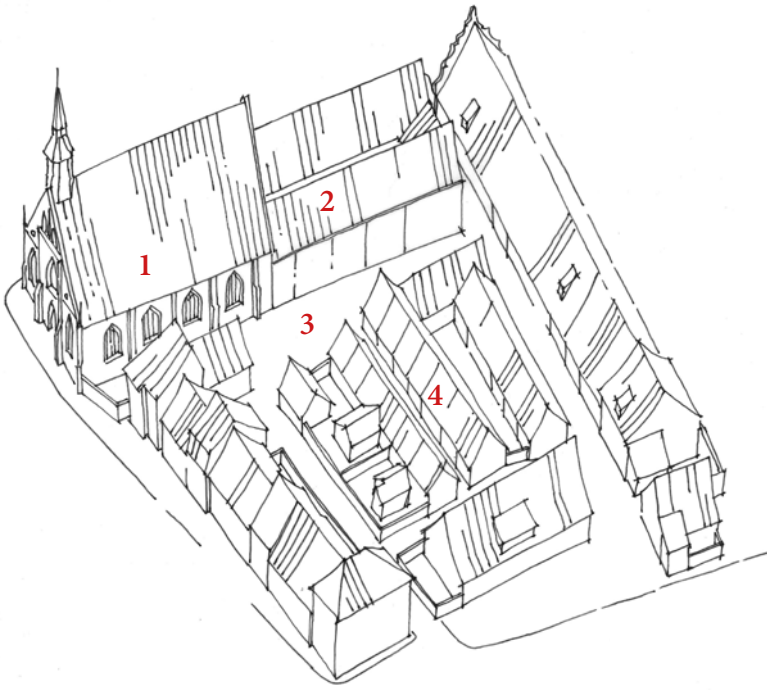

Figure 3. Holy Spirit Hospice Stralsund. 1-chapel, 2-infirmary attached to the choir and placed around a small courtyard, 3-main courtyard, 4-prbend houses. Drawing by Martin Ebert.

lowing the monastic model of common life. In the high Middle Ages, the layout turned back to individual cells, as can be seen in the western wing of the hospital in Wismar (built in 1411). In some Burgundian cases, the cells of the dormitory were again placed inside the chapel (Tonnerre, 1293; Beaune 1443), or the chapel and dormitory were linked directly (Lübeck, 1227; Goslar, 1254; Wismar, 1411), making participation in the religious services easier. In Northern Germany, the cells or individual dormitories were often grouped around a yard or a cloister, which connected them with the chapel, preferably close to the altar (Stralsund 1329, Ribnitz 1290, Parchim, pre–1265) (figure 3).

The history of urban hospices in Mecklenburg is closely linked to the influence of the Heiliggeist Hospice in Lübeck, founded in 1227 as a municipal institution. Its first leader was a local merchant. The setup as a religious institution under municipal administration led to conflicts with the bishop early on, who owned the first site of the hospital at the Klingenberg. Therefore, the Order of the Holy Spirit was commissioned to run the spiritual guidance in Lübeck, which led to the writing of the hospice constitution of 1263 (Steynitz 1970).

The constitution established the daily practice at the Holy Spirit Hospice in Lübeck and proved to be of great influence on hospices in Northern Germany (Minneker 1999). The constitution describes a monastic community with strict rules as to food, religion, and daily routines. In return for a lifelong residency, the inhabitants were to transfer their personal wealth to the hospice. These funds were used to maintain the hospice and provide a sinecure income to the personnel. By doing so, wealth was spread among all inhabitants, including the poor, who otherwise would not be able to afford to live in the institution (Steynitz 1970).

The hospices became a popular cause for the charity of wealthy merchants. While the hospices provided their food supply partly in their own gardens, they could accumulate large amounts of wealth and buy larger plots inside the town, farms, or mills outside the city walls. In the 15th century, some hospices got so wealthy that they would appear as money lenders or as an attractive investment opportunity for wealthy merchants (Stuntz 2005).

During the Reformation in the 1520s, some of the chapels belonging to hospices in Mecklenburg were turned into the first Protestant churches, while large parochial churches still preached according to Catholic tradition, (Güstrow, Ribnitz). As the mediaeval organisation of social welfare collapsed

in the beginning of the 17th century, some hospitals were re-purposed for housing or its buildings were destroyed. The hospice in Plau was demolished in the middle of the 16th century for its building materials to be used for the construction of Güstrow Castle. Hospice buildings were turned into almshouses (Woldegk, Parchim). As urban life in Mecklenburg declined after 1618, many hospice chapels could not be maintained and were removed (Grabow, pre-1620; Laage, 1560; Ribnitz, pre-1700; Rostock, 1818; Sternberg, 1659; Waren, 1696; Woldegk, 1796) or turned into infirmaries (Friedland). The 20th century claimed the Holy Spirit hospices of Malchin and Friedland, which became victims of arson committed by Soviet troops in April 1945. Today, only a few chapels remain intact to be visited: Wismar, Stargard, and Güstrow.

Selected Holy Spirit Hospices in Mecklenburg

The most recognisable building in the hospice is its chapel. Since only a few hospice buildings survived, historical archives and archaeological records were used to reconstruct destroyed buildings; similar buildings in other towns in the region were taken into consideration. Especially helpful here is Craemer's architectural description of German hospices (Craemer 1963).

The buildings of the hospices were mostly constructed as regular houses, meaning that the most affordable materials were used. That meant that the dormitories and prebend houses, especially in the small towns of Mecklenburg, were built of

Figure 4. Holy Spirit Chapel of Güstrow. 3D scan in February 2022 by Martin Ebert

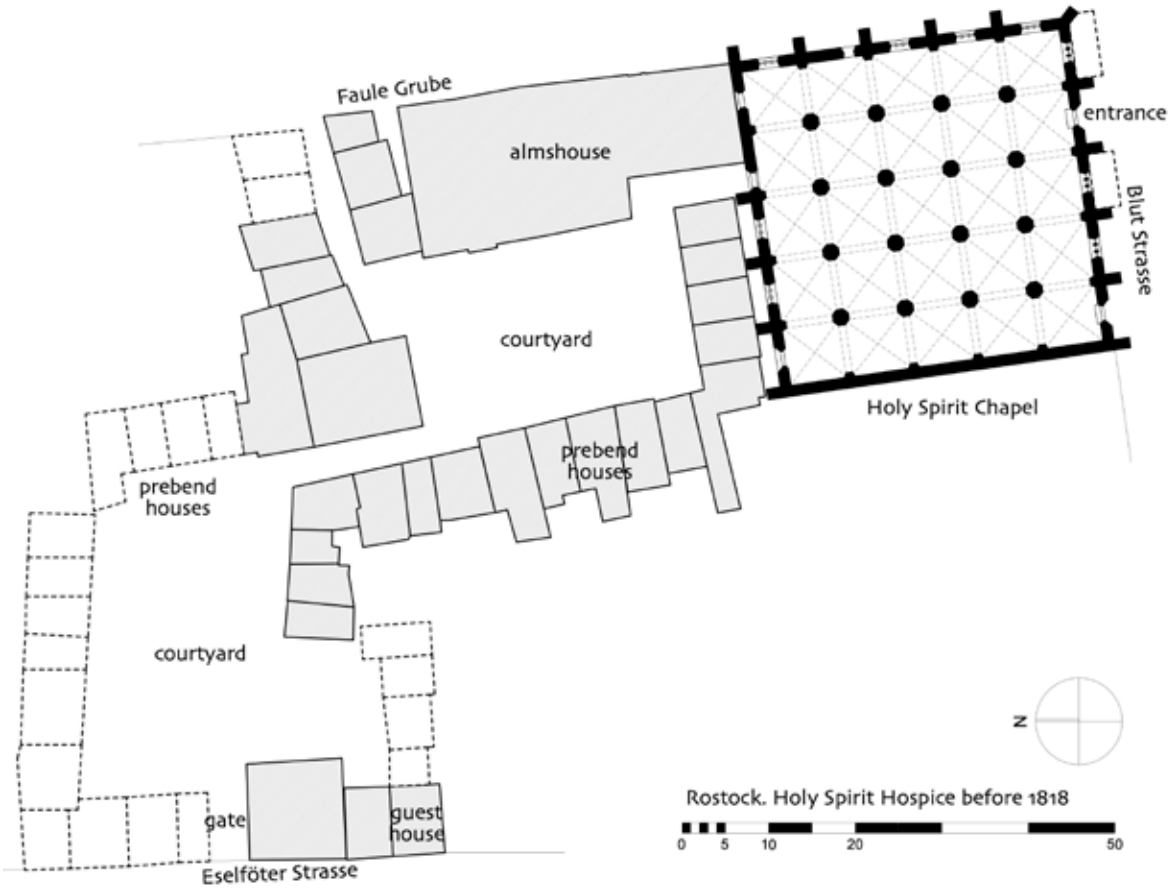

Figure 5. Rostock. Reconstruction of the Holy Spirit Hospice in 1818 according to Lorenz. Existing buildings are shown in grey. Illustration by Martin Ebert, based on Tarnow (Schlie 1902) and Fischer (1931).

wood. Only the richer Hanseatic towns with a wealthy merchant class could build both chapel and infirmary with brick (Lübeck, Wismar, and Rostock). The wooden buildings in the smaller towns often became victims of fire. Here the only traces allowing a cautious reconstruction can be based on plot footprints in the urban cadastral maps and on archaeological finds.

Donations by the urban merchant class allowed the chapels to be built in brick or stone. They can easily be classified by size. The largest was undoubtedly the Holy Spirit hospital in Rostock (figure 5): a five-aisled hall with five bays with a considerable size of 39x39 metres. The building, a vaulted hall erected around 1297, came into bad repair after the Reformation and consequentially removed in 1818. The footprint of the hall and the adjacent two courtyards of small prebend houses, not wider than 6 metres, is easy to spot in modern cadastral maps at Kröpeliner Straße 84 and 85 and Heiligengeisthof.

The Holy Spirit Hospice of Wismar, is largely intact and has become a widely known tourist attraction. The church contains a hall measuring 40x15 metres with timber ceilings. The infirmary with the dormitory cells is attached to the church on the north side, together with two vaulted chapels. The other

hospice buildings, later replaced, were organised around a courtyard with prebend houses to the eastern and western sides and the master's house to the north.

The remains one of Mecklenburg's largest Holy Spirit Hospices in Ribnitz were recently documented as part of an archaeological survey (Kaute 2021). The findings suggest a chapel with the dimensions of 21x17 metres. The excavation shows no signs of exterior buttresses, suggesting the chapel was not vaulted. After destruction by fire in 1455 and rebuilding, the chapel was the site of the first Lutheran sermons in Ribnitz. The fact that it could be used as a place for worship for the first Lutheran community in Ribnitz reveals the considerable size of the church. During the 18th century, the building fell into disrepair and was used as a brick-stone quarry. In 1792, the parish sold the hospice buildings (Krambeer 1938). The hospice buildings were situated on the north side of the chapel, grouped around a narrow courtyard (figure 6). The width of the plots surrounding the courtyard is 5.5 to 6.0 metres, similar to measurements taken at prebend houses in Rostock. Archaeological excavations have documented 184 burials in the hospice cemetery west of the church (Kaute 2021). The attached reconstruction drawings are based on Kaute's excavation in 2020 and the Holy Spirit Chapel in Güstrow, which has a similar disposition.

The Holy Spirit Hospice in Malchin was mentioned for the first time in 1331. After reconstructions in the middle of the 16th century, its chapel fell into disrepair and was further damaged in 1740. In the 19th century, the building was significantly reduced in height and turned into a communal storage building. It was finally destroyed by the town fire laid by Soviet troops in 1945. The footprint of the chapel was clearly recognisable in the cadastre maps until the 2020s, when parts

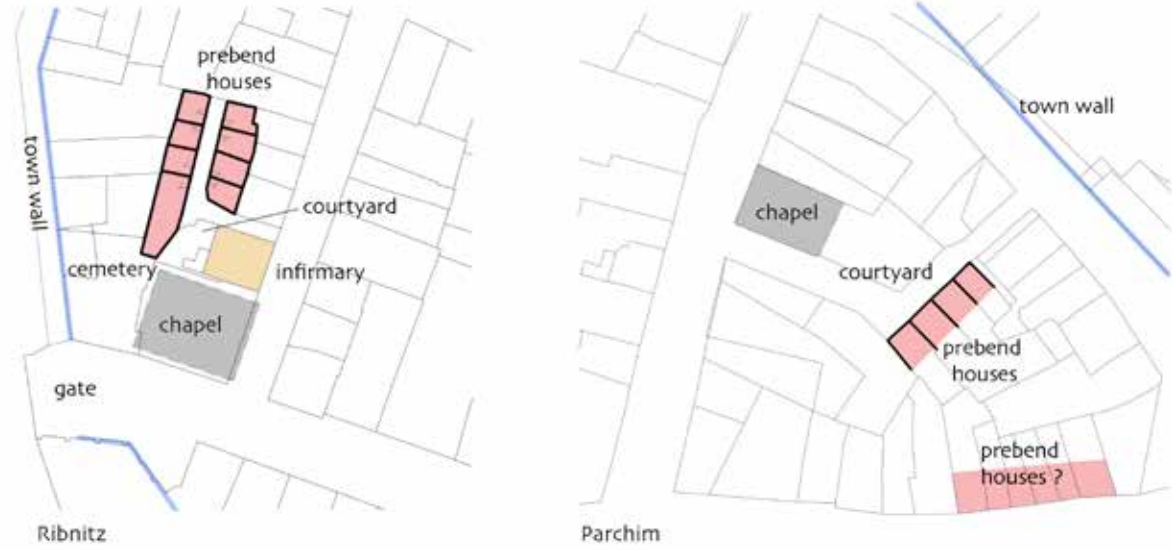

Figure 6. Cadastral map of Ribnits (left) and Parchim (right). Traces of prebend housing related to the Holy Spirit Hospices, revealed by plots of only 5.5–6.0 metres width. Illustration by Martin Ebert, based on maps provided by Landesamt für innere Verwaltung MV

of the chapel were excavated to make way for a grocery store (Schmidt 2013). The chapel had a footprint of 13.8x19.0 metres with a polygonal choir with a ⅝ geometry. Photographs provided by Torsten Gertz show a large portal in the middle of the western facade and a smaller door and a niche in the southern facade of the Capel. The photographs show no signs of external buttresses (figure 7). This suggests that the chapel had not been vaulted, similar to the Holy Spirit chapels in Wismar and Güstrow. There are no signs of other hospital buildings belonging to the chapel. Schmidt's findings of stone foundations of relevant size east of the choir are not specific enough to clearly associate them with the hospice (Schmidt 2013).

The hospice in Güstrow is still present in the town's cityscape as a well-preserved chapel. The building with a footprint of 10.5 x 20.5 metres, mentioned as early as 1308, was built in the 14th century with the typical features of hospice chapels in Mecklenburg: a rectangular plan with featureless exterior brick walls and Gothic windows. The eastern gable shows five Gothic wall niches with small windows, wimpergs, and an opening for the bell. The building has no buttresses and features a flat timber ceiling. The chapel has openings both to the north and the south and is connected to the neighbouring building to the west by stairs and doors. The predecessor of the neighbouring building, featuring a school, is suspected to have been part of the hospice, even though the Bodenehr map of 1717 shows a symmetrical facade with a Gothic west portal. The Borchmann plan of 1733 shows a large hospice building south of the courtyard belonging to the hospice. The remains of that building would have to be found under the current schoolyard. Between 1524 and 1533, the chapel was the first Lutheran church in Güstrow. The building was secured in 1993 and rehabilitated from 2005 to 2007 to its current state and houses a museum.

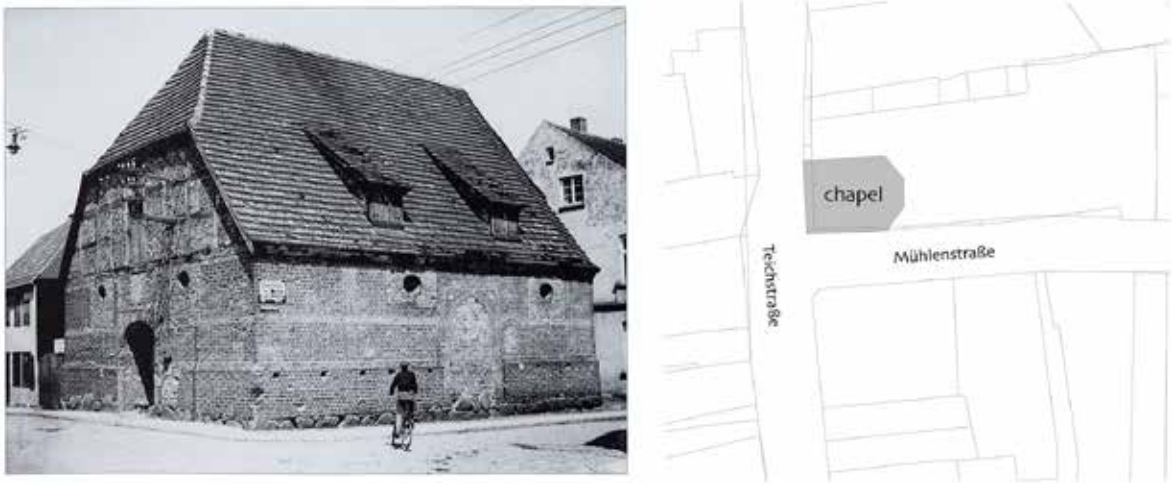

Figure 7. Holy Spirit Hospice Malchin before its destruction. Photography 1935 by Karl Eschenburg, Universität Rostock. Its footprint placed on the modern cadastral map, provided by Landesamt für innere Verwaltung MV.

The Holy Spirit chapel of the hospice in Friedland shows similar features to the Güstrow chapel. It had a rectangular footprint of 11.9 x 22.7 metres and featured a gable with vertical niches in Gothic style. The chapel was already mentioned in 1290. The attached hospital buildings burnt down in the fire of 1695, so the chapel was changed into a hospital building and refurbished as such in 1864 (Simonis and Fischer 1730, Mayer 1896). The building was in use as an infirmary until April 29th, 1945, when Soviet troops set the centre of Friedland on fire. The building and its latest additions dating to 1864 were destroyed. The remains of the chapel became victim to the widening of the road bypassing the neighbouring town gate. The infirmary and the prebend houses did not left any footprints in Friedland's oldest cadastral map, which renders the reconstruction of the hospice in its mediaeval disposition impossible pending further archaeological excavations.

Nothing remains after the Holy Spirit Hospice in Woldegk. It was mentioned for the first time in 1358 as a chapel with an attached hospice. Little is known about its buildings, but their position in the urban tissue is. A copy of a drawing ascribed to the year 1580 shows the chapel by the Neubrandenburger Tor. West of the chapel, a building with the description «almshouse» appears, pointing to the position of the former infirmary. The hospice site is situated in the 1298 extension of the urban footprint, when 16 plots of a neighbouring village were added to the town (Ebert 2024). After the dissolution of the almshouse in 1720, the chapel was changed into a shelter for six inhabitants, only to be removed finally in 1796 (Schüßler 2000). An ornamental brick found during archaeological excavations in spring 2025 con-

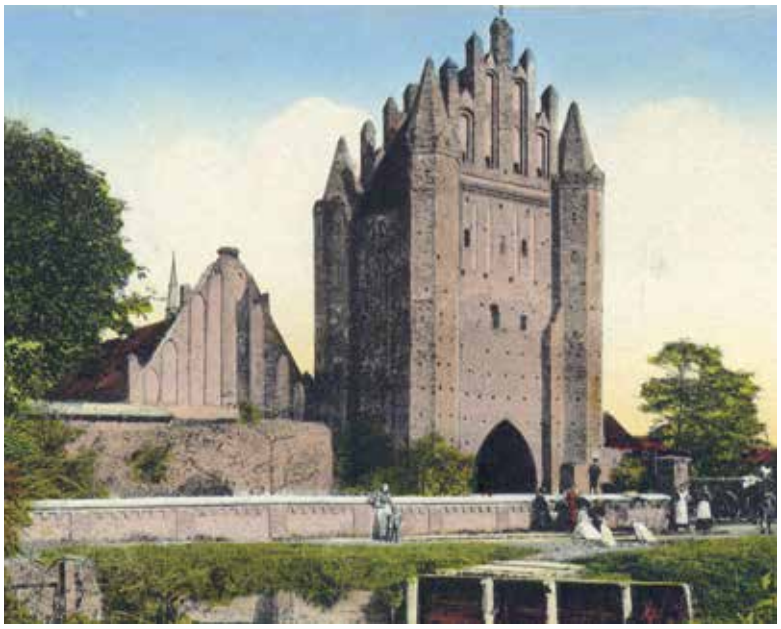

Figure 8. Eastern gable of the Holy Spirit Chapel seen behind the Neubrandenburger Tor from outside the town gate before 1945. Contemporary postcard, kindly provided by the Municipal Museum Friedland, Frank Erstling.

firm the position of the chapel but has yet to reveal the existence of a cemetery.

Holy Spirit Hospices in the urban tissue of towns

Studying the structural layout of mediaeval Holy Spirit hospices in Mecklenburg, their relationship to the town walls and their proximity to fresh water and one of the town gates becomes apparent.

All the analysed hospices were placed in direct contact with the city wall. In this, they seemingly followed the custom of the *Valetudinaries*, the Roman military hospices, which were placed inside the wall close to a gate. This tradition might have endured the Middle Ages through the advice to place the hospices *in aptiorem et ampliorem locus in subito* (at the scarcely inhabited areas by the wall, possibly by a river) (Jetter 1966).

By placing the hospices on the periphery of the growing towns in Mecklenburg, larger plots could be attained. By the time the hospices were founded, most towns were not yet for-

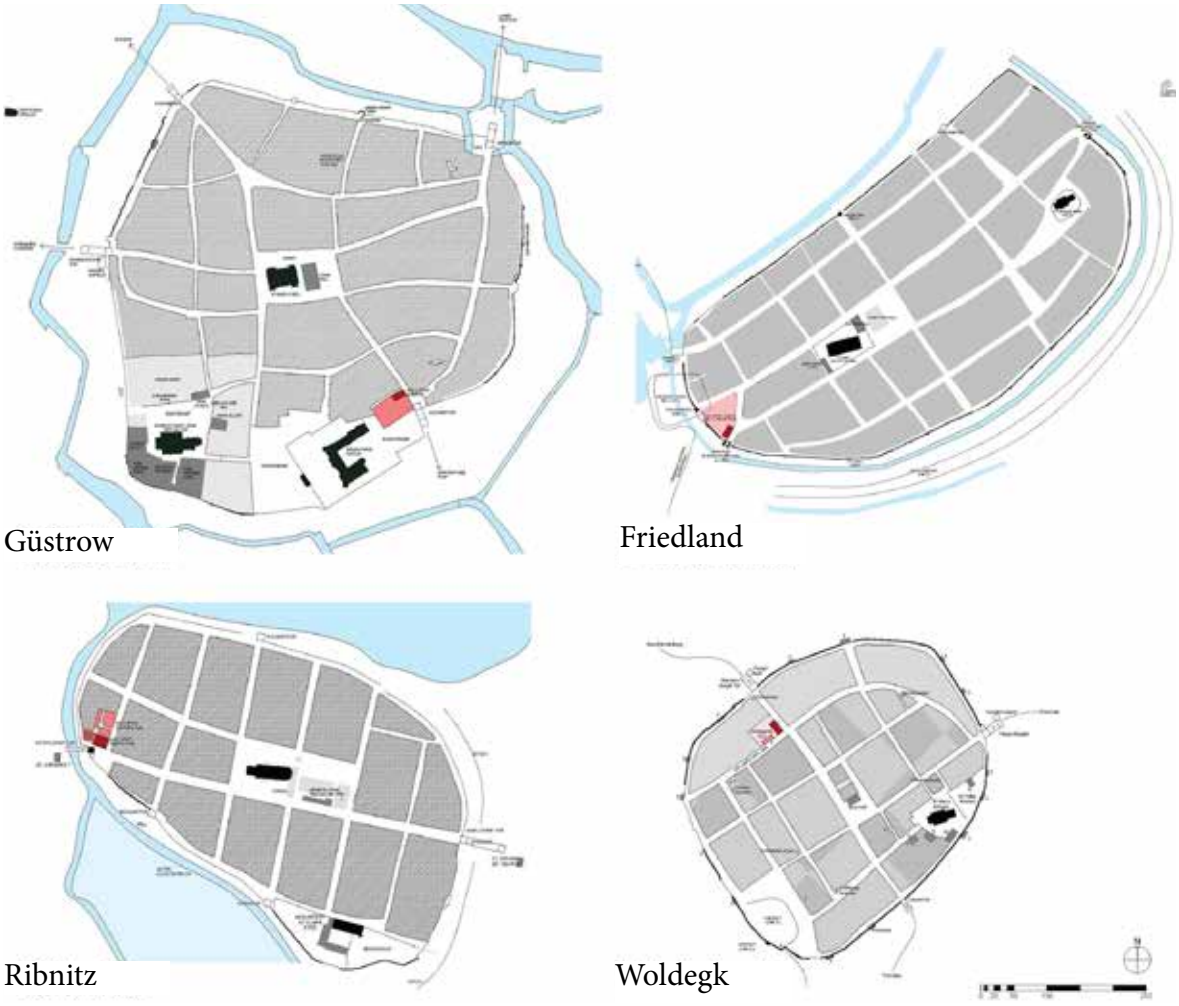

Figure 9. Town plans of Güstrow, Friedland, Ribnitz and Woldegk reveal the typical position of the hospice chapel on the corner of a building block close to a major town gate. Drawing by Martin Ebert.

tified, and the neighbouring plots were not built on yet. By choosing a peripheral plot, the garden of the hospice could be large enough to contribute significantly to the diet of their inhabitants. The peripheral position points furthermore to the modest funding of the early hospices, since they were not able to compete with wealthier merchants and craftsmen for the more valuable plots close to the market.

In the towns that contained double or triple town cores, like Rostock or Wismar, the hospices were placed along the periphery of one of the cores. In Rostock, the hospice was founded in 1218 at an unknown location in the *Altstadt*, then moved in 1275 to an extramural position between the outer city walls of the *Neustadt* and the *Mittelstadt*. When the three towns united in 1280, the hospice remained in its unusual central spot (figure 10).

In Wismar, the hospice was placed on the western side of the gate, separating the *Altstadt* and the *Neustadt*. When the town walls were erected in 1276 around the now-united city, the hospice remained in its central position between the cores of the old and the new town. Similar processes can be observed in other fast-expanding Hanseatic cities, for example, Greifswald (Rütz 2010) and Stralsund, where the hospice, founded in 1256, was moved to its current position on the southeastern periphery in the early 1300s (Möller 2016).

It is often claimed that the Holy Spirit hospices were to be placed outside the city walls. Besides the case of Rostock, where the hospice is placed extramural between the old and the new town, only two further cases of extramural positions are known in Mecklenburg: the Holy Spirit Hospice in Stargard and the long-perished hospice in Laage, which was

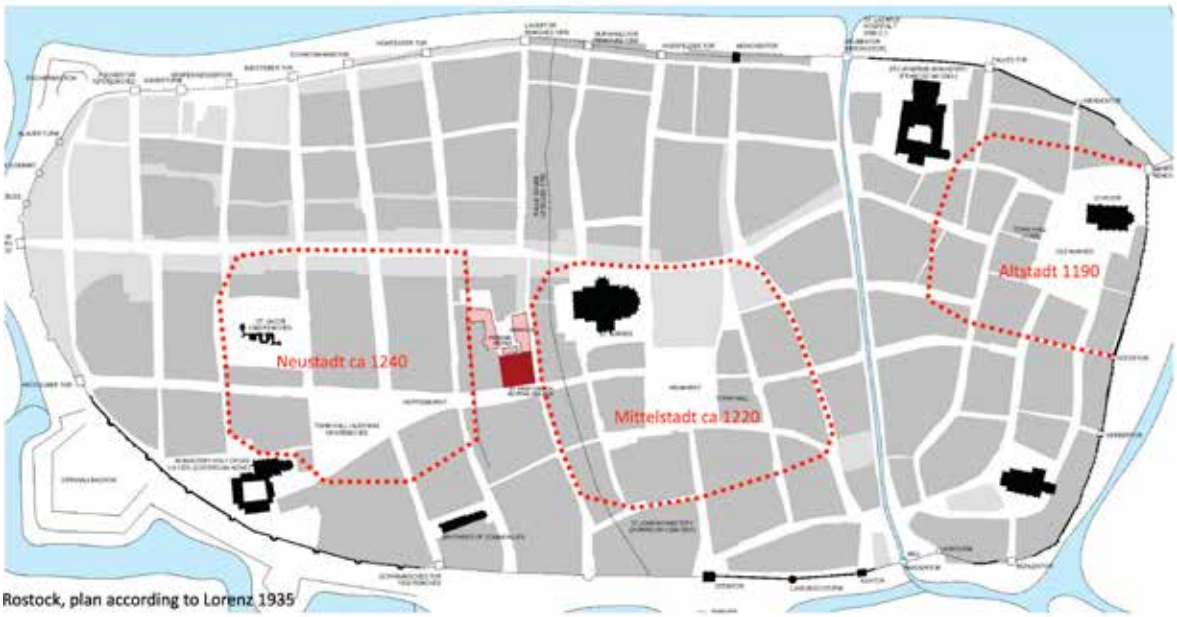

Figure 10. The Holy Spirit hospice in Rostock was extramural, situated between the expanding urban centres of the middle and new town. The hospice maintained its central position when all three towns united in 1280. Illustration by Martin Ebert, based on Lorenz 1935.

placed on a hill on the other shore of the Recknitz, 800 metres west of the town. It is notable that both towns were not fortified by walls. It is therefore reasonable to assume that Stargard, where the hospice is placed about 220 m from the marked and 160 m from a bridge that marks the outer perimeter of the established town, can be seen as «frozen» in an intermediate state of urban growth. Because the period between the planting of the town and its fortification could extend over several decades or even longer, it can be assumed that the Stargard hospice was meant to mark the future outer edge of the town. Under the influence of a strong nearby ducal castle, Stargard never developed the dynamics leading to sufficient urban growth and the erection of city walls. Therefore, the hospice remained outside the towns boundaries by the street leading up to the castle.

It appears therefore more useful to describe the location of Holy Spirit hospices as part of the dynamic processes in the earliest phase of the formation of urban tissue. The results of this study confirm Leistikow's suggestion that the hospices originally placed on the outer rim of the urban settlement quickly became included in the urban tissue for practical reasons as a result of the rapid growth of urban structures and related garden properties on the periphery of the town (Leistikow 1985).

In most of the examined cases, the hospice chapel marks a street corner in close proximity to the city gates. It would therefore attract the attention of travellers leaving or entering the town through one of the main city gates. Placed in peripheral areas of the town, which in the first century of urban growth would be perceived as a ring of gardening and pasture, it could dominate and grow easier in the low-density structure.

The positioning of the hospices was also determined by the importance of the road leading through the neighbouring gate. The hospices in Rostock and Wismar were placed along the main road in the periphery, which later became the main connection between the old and the new towns. In Ribnitz, the hospice is placed by the Rostocker Tor, one of the two main gates connecting the town with the neighbouring Hanseatic town. In Malchin, the hospice is situated by the Fischertor, the main entry to the city from the east; in Güstrow, the south-eastern Gleviner Tor connects the town with Malchin, Plau, Neu Brandenburg, and further Stettin. In Friedland and Woldegk, the hospice chapel would mark the corner of an urban quarter in close proximity to the town gate leading to the main urban centre in the region.

After their deaths, the inhabitants of the hospices were buried often on the grounds of the hospice. A number of Christian

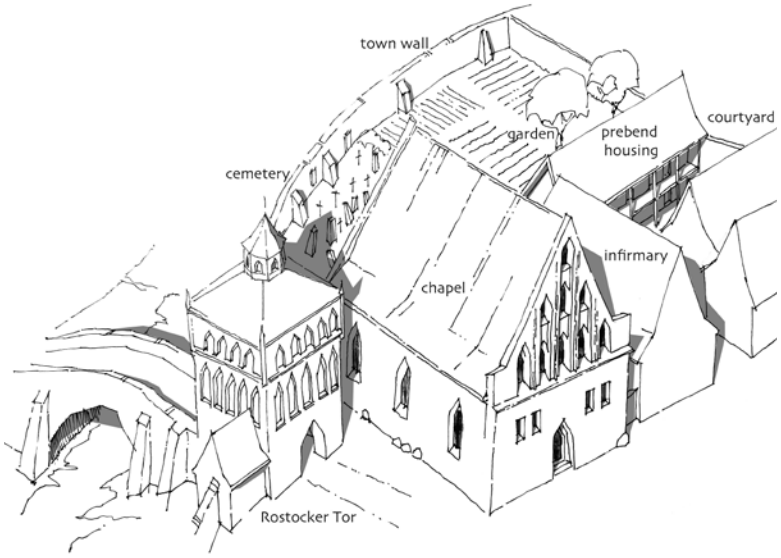

Figure 11. Reconstruction of the Holy Spirit Hospice in Ribnitz by the Rostocker Tor. Illustration by Martin Ebert based on excavations by Kaute (2021) and modern cadastral maps.

burials are documented close by and under the chapels in Rostock, Ribnitz, and Malchin. Only the peripheral position of the hospices in the urban plan allowed for the placement of space-demanding cemeteries inside the limits of the hospice.

Conclusion

The Holy Spirit hospices played a vital part in the network of social and religious institutions in mediaeval cities. Seven of Mecklenburg's 22 hospices were examined by morphological methods and described by their current status, geometry, historical records, and modern cadastral maps. The analysis of the position between chapel, hospice, and cemetery is conclusive and can be summarised as follows:

Holy Spirit Hospices were mainly built as hospices for the sick, elderly, and poor population. The hospices contained a chapel and additional hospice buildings, like infirmaries, a kitchen, and a refectory. The hospices were placed on the periphery of the developing urban structure and mostly later included by the town walls. They are therefore to be found close to the city walls and in sight of one of the major gates of the town.

The chapel was preferably built in the corner of a town block, while the cemetery and the gardens were placed towards the outer perimeter of the site. The hospice buildings are situated in close connection with the chapel, sometimes attached (Wismar), but mostly grouped around a courtyard or a cloister (Rostock, Ribnitz, Güstrow, Parchim). While the location of dormitories inside the chapel is common in other parts of Germany (Mainz, Biberach) and France, only the case of the Holy Spirit Hospice in Rostock probably housed both infirmary and religious functions in a large vaulted hall.

Inventory of Holy Spirit Hospices in Mecklenburg

Bützow. Between the bishops gardens and the new mill, before 1303. No visible traces. Sources: Keyser, p. 279, MUB 2851.

Crivitz. Mentioned in 1384, location unknown. No visible traces. S: MUB 11555; 12342, RMU 1527, 2176.

Friedland. Mentioned 1290, situated by the Neubrandenburger Tor. Destroyed 1945, no visible traces. Keyser, p. 285 MUB 9452, 13948. 13949, 13954, 13985, 14026, 14027, 14078, 14084, 14108, 14116, 14134, 14170, 14775.

Gadebusch. Heiligengeisthaus, mentioned 1327, location unknown. No visible traces. S: Keyser, p. 287, MUB 4869, 4875, 5129, 5388, 5613, 7253, 8760, 8925.

Grabow. Holy Spirit Chapel, donated 1339, removed before 1620. Location unknown, no visible traces. S: Keyser, p. 290, MUB 5917, 5918, 5919, 5938, 6092, 6910, 7758, 7934, 8195, 8434, 10163, 10513, 11487, 11641. RMU 5148.

Grevesmühlen. Heiligengeisthaus mentioned 1335, removed in 1531. Location unknown, no visible traces. S: Keyser, p. 292, MUB 7446, 7514, 7526, 7642, 7744, 7786, 9675, 14316, 14329, 14332, 14338, 14533n, 14802, 14905, 14914, 14928, 14933, 14938, 14941, 14949, 14964, 14968, 14978, 14995, 14999, 15005, 15019, 15025, 15029, 15030, 15037, 15043, 15060, 15064, 15083, 15101, 15114. RMU 6904.

Güstrow. Heiligengeisthaus mentioned 1308. Chapel built in 14th C. which remains intact. All remaing buildings replaced by a school. S: Keyser, p. 294, MUB 211, 3597, 4207, 5460, 6241, 6242, 6244, 6281, 6364, 6489, 6493, 6686, 6782, 6983, 12395. RMU 64, 4602, 4649, 4971, 5734, 10859, 14266.

Krakow. Mention of a site-name Heiligengeist-camp. Location unknown. S: Stadtchronik, p. 29, NLA HA Kartensammlung Nr. 72 M/25 gg.

Laage. Holy Spirit Hospice outside the town, 1380 mentioned. Removed 1560, no visible traces. S: Keyser, p. 301, MUB 11269n.

Malchin. Holy Spirit Hospice donated before 1331, outer walls of the gothic chapel destroyed in 1945, no visible traces. S: Keyser, p. 304, Schmidt 13, MUB 5273, 5847, 7651n, 9801. RMU 11692, 12008.

Neu Brandenburg. Site mentioned 1305 in Treptower Strasse, burned down in 1676. No visible traces. S: MUB 3016, 6776, 8350, 8436, 8570, 8989, 12694. RMU 19, 373, 1080, 1229, 1231, 1337, 1345, 1355, 2998, 4773.

Parchim. Heiligengeisthaus mentioned in 1262, sold in 1766, later removed. No visible traces but the site name. S: Keyser,

p. 314, Augustin, p. 40f, MUB 1048, 1850, 2521, 3026, 3368, 3524, 3873, 5040, 5335, 7178, 7187, 7202, 7557, 7623n, 8171, 10419, 11219, 11311, 11557, 11838, 12610, 12882, 13310, 13564, 14268. RMU 1320, 1637, 2533, 9300, 9817.

Plau. Mentioned 1370 to be situated outside the town. Location unknown. MUB 10093; 15080.

Ribnitz. Heiligengeistkapelle donated in 1290, removed before 1700. No visible traces. S: Keyser, p. 320, Kaute, ABMV 21, MUB 2311, 2532, 2805, 8338, 8426.1+3+8, 8451n, 9317. RMU 2396; 14979; 15004.

Röbel. Donated 10. February of 1298 in Neu Röbel, under administration by the council. Location unknown. S: MUB 2486.

Rostock. Mentioned 1260 in an unknown location, moved in 1284 to a location between Mittelstadt and Neustadt, chapel removed in 1818, guest house and some prebend houses still exist. S: Keyser p. 323, MUB 2740, 2741, 2804, 2883, 2897, 2971, 3047, 3054, 3227, 3340, 3374, 3435, 3447, 3474, 3701, 4075, 4082A, 4566, 4608, 4999, 5000, 5003, 5024, 5664, 5837, 5931, 6103, 6232, 6508, 6674, 6906, 6983, 7093, 7139, 7194, 7218, 7234n, 7438, 7501, 7512n, 7811, 7861, 8109, 8113, 8121, 8166, 8180, 8338, 8400, 8417, 8491, 8567, 8650, 8673, 8721, 8859, 8862, 8953, 9147, 9239, 9333, 9802, 9870, 10067, 10395, 10895, 11085, 11108, 11218, 11247, 11283, 11332, 11333, 11652, 11659A+B, 11741, 11781, 11794, 11970 u. n, 12058, 12118 u. n, 12154, 12188, 12349, 12363, 12379, 12386, 12426, 12464, 12521, 12617, 13070n, 13164, 13199, 13735, 13758, 13765, 13766, 13775, 13875, 13918, 14103n, 14417, 14539, 14552, 14613, 14641, 14823, 14863, 14928. RMU 596, 1488, 2203, 2204, 2252, 2800, 2968.2, 6060, 6288, 6760, 7560, 8451, 8525, 9169, 9656, 9882, 10606, 10775, 11009, 11532, 11801, 13115, 13649, 14001, 14111 (F!), 14281, 14591, 14801, 14858, 14881, 14885, 14900, 24726, 24728.

Schwerin. Heiligengeisthaus mentioned 1283, location Buschstrasse /3. Enge Strasse. No visible remains. S: Keyser, p. 329, MUB 1672, 1766, 1829, 2045, 4962n, 6952, 8391. RMU 6976.

Stargard. Donated 1290, re-established in 1576. All structures but the chapel removed in the 19th C.. S: MUB 9291.

Sternberg. Holy Spirit Hospice and chapel built in 14th C., chapel removed in 1659. Location between Fischerstraße and Große Spiegelstraße, no visible remains. S: Keyser, p. 334, MUB 8366, 8409, 8588.

Waren. 1426 attached as chapel on the south side of St. Georg church. Site probably Alter Markt 6, burnt in 1694, no visible remains. S: Keyser, p. 341, RMU 2780.

Wismar. Donated 1250, new chapel in 1323, Siechenhaus attached, chapel and infirmary still existing. S: MUB 653, 655, 662, 663, 722, 744, 886, 893, 906, 920, 989, 1158, 1181, 1253, 1271, 1396, 1384, 1452, 1484, 1488, 1501, 1531, 1539, 1600, 1603, 1604, 1657, 1706, 1773, 1880, 1908, 1991, 2017, 2045, 2069, 2076, 2143, 2196, 2251, 2258, 2259, 2261, 2263, 2291, 2312, 2318, 2367, 2425, 2543, 2592, 2608, 2609, 2767, 2772, 2841, 2897, 3168, 3208, 3209, 3268, 3278, 3585, 3633, 3962, 4012, 4122, 4303, 4328, 4339, 4341, 4407, 4414, 4454, 4455, 4458, 4488, 4524, 4528, 4533, 4551, 4555, 4577, 4590, 4656, 4663, 4665, 4700, 4701, 4724, 4770, 4812, 4878, 4932, 4937, 4982, 4986, 5051, 5069, 5087, 5101, 5166, 5186, 5258, 5269, 5305, 5405, 5516, 5714, 5717, 5852, 5867, 5923, 5931, 5981n, 6085, 6131, 6179, 6189, 6194, 6199, 6516, 6548, 6610, 6634, 6693, 6732, 6733, 6753n, 6806, 6815, 6820, 6822, 6828, 6829, 6869, 6913, 6997, 7039, 7430, 7431, 7432, 7514, 7544, 7548, 7641, 7714, 7736, 7754, 7796, 7960, 7969, 7970, 8000, 8224, 8322, 8331, 8427, 8665, 9106, 9128, 9243, 9525, 9569, 9584 u. n, 9776, 9816, 9845, 9849, 9852, 9892, 9895, 9929, 10213, 10219, 10340, 11117, 11460, 11537, 11538, 11539n, 11550n, 11880, 11950, 12087, 12342, 12408, 12827, 12876, 13054, 13095, 13262, 13423, 13447, 13533, 13534, 13570, 13689, 13704, 14336, 14618n, 14780, 14864, 14928, 14942, 15030. RMU 41, 95, 141, 219 u. n, 280, 282, 383 u. n, 591, 742, 784, 877, 1029 u. n, 1199n, 1223, 1276, 1306, 1415, 1437, 1516, 1686, 1720, 1752, 1753, 1789, 1899, 1954, 1974, 1979, 1991, 2002, 2607, 2752, 2836, 2864, 2957, 3125, 3498, 3644, 4149n, 4302, 5256, 5285, 5569, 5902, 6087, 6177, 6216, 6461, 6492 u. n, 6546, 6580 u. n, 6657, 6750, 6809, 6836, 6838, 6904, 7169, 7902, 8107, 8108, 8744, 9429, 10186, 10206, 11179, 11202, 11244, 11665, 11854, 11984, 12502, 13114, 13164, 13613.

Wittenburg. Holy Spirit Chapel mentioned in 1389. Location unknown, no visible remains. S: Keyser, p. 347, MUB 12091, 12101, 12102, 12280.

Woldegk. Mentioned in 1358. Almshouse collapsed in 1720; Chapel removed in 1796. No visible remains. S: Krüger, p. 199, MUB 8503, 8504.

MUB = Mecklenburgisches Urkundenbuch

RMU = Regestenkartei mecklenburgischer Urkunden

References

Augustin, K. (1995). *Die Geschichte der Stadt Parchim* (Reprint). Stock und Stein.

Craemer, U. (1963). *Das Hospital als Bautyp des Mittelalters*. Köln, W. Kohlhammer.

Ebert, M. (2021). "A methodical approach to the comparative study of planted towns in 13th-century Mecklenburg." *Forma Civitatis* 1, pp. 56-67.

Ebert, M. (2024). Practical aspects of morphological research in urban renewal projects. *Urban Morphology*, 28(2), pp. 167–181.

Fischer (1931). Ein Neubauprojekt des Heiligen-Geist-Hospitals zu Rostock aus dem Jahre 1806, *Beiträge zur Geschichte der Stadt Rostock* 17, pp. 111-113.

Hugonnet-Berger, C., Réveillon, E., Fromaget, B., Laget, P.-L., & François, B. (2011). *Patrimoine hospitalier en Bourgogne*. Somogy.

Huschner, W. (2016). *Mecklenburgisches Klosterbuch: Handbuch der Klöster, Stifte, Kommanden und Prioreien* (10./11.-16. Jahrhundert). Rostock, Hinstorff.

Jetter, D. (1966). *Geschichte des Hospitals 1 Westdeutschland von den Anfängen bis 1850* / von Dieter Jetter. Wiesbaden, Steiner.

Kaute, P. (2021). "Ribnitz-Damgarten, Lange Straße 73/75 – Baubefunde und Friedhof des historisch überlieferten Heiligengeisthospitals." *Archäologische Berichte aus Mecklenburg-Vorpommern* 28:, pp. 117-133.

Keyser, E. (1939). *Deutsches Städtebuch Handbuch städtischer Geschichte, vol 1*. Stuttgart.

Kleiminger, R. (1962). Das Heiligengeisthospital von Wismar in sieben Jahrhunderten ein Beitrag zur Wirtschaftsgeschichte der Stadt, ihrer Höfe und Dörfer, in *Abhandlungen zur Handels- und Sozialgeschichte* (vol. 4). Böhlau.

Knefelkamp, U. (2000). *Stadt und Spital im späten Mittelalter. Städtisches Gesundheits- und Fürsorgewesen vor 1800*. P. Johanek. Köln, Weimar, Wien, Böhlau Verlag: 19-40.

Krambeer, K. (1938). *Stadt Ribnitz in Vergangenheit und Gegenwart*. Ribnitz, Selbstverlag

Landeshauptarchiv Schwerin KHAS. *Regestenkartei mecklenburgischer Urkunden* (RMU).

Leistikow, D. (1985). Mittelalterliche Hospitalbauten Norddeutschlands in Meckseper C. *Stadt im Wandel*. Braunschweig, pp. 223-249.

Lorenz, A. F. (2007). *Zur Geschichte der Rostocker Stadtbefestigung*, kommentiert von Steffen Stuth. Grünberg Verlag, Weimar & Rostock.

Mayer, A. (1896). *Geschichte des Großherzogtums Mecklenburg-Strelitz von seiner Entstehung bis zur Gegenwart nebst Chronik der Stadt Friedland von 1244-1896*. Neustrelitz, Barnewitz.

Verein f. Mecklenburgische Geschichte. (1863-1913). *Mecklenburgisches Urkundenbuch MUB* (Vols. 1–25).

Minneker, I. (1999). "Repräsentation und sakrale Legitimation. Majestas Domini und Bürgermedaillons im Heilig-Geist-Hospital zu Lübeck." *Zeitschrift des Vereins für Lübeckische Geschichte und Altertumskunde* 79.

Möller, G. (2016). Stralow-Schadegard-Stralsund: Stadtgründung und frühe Stadtentwicklung. in Gläser, M (ed) *Vorbesiedlung, Gründung und Entwicklung.* Lübecker Kolloquium zur Stadtarchäologie im Hanseraum X. Lübeck. X: 305-319.

Ruchhöft, F. (2021). *Städte in Mecklenburg*. Unpublished manuscript., p. 112.

Rütz, T. (2010). "Hospital St. Spiritus." *Greifswalder Beiträge zur Stadtgeschichte, Denkmalpflege, Stadtsanierung* 4: 36-39.

Schlie, F. (1902). *Die Kunst- und Geschichts-Denkmäler des Grossherzogthums Mecklenburg-Schwerin*. Schwerin i.M., Druck und Vertrieb der Bärensprungschen Hofbuchdr.: Kommissionär K. F. Köhler, Leipzig.

Schmidt, B. I., Ernst-Alexander und Zahn, Norbert (2013). "Gräbchen und Gräber – Archäologische Unterschungen an der Heilig-Geist-Kapelle von Malchin." *Archäologische Berichte aus Mecklenburg-Vorpommern* 20, p. 16.

Simonis, E. F. and M. G. Fischer (1730). *Vorhandene Nachricht von der im Stargardischen Kreyse des Hertzogthums Mecklenburg belegenen Stadt Friedeland Theils aus einer von Herrn Martin Gustav Fischer Gryphiswaldo-Pomerano, iam Iur. Stud. bey seiner Valediction zu Friedland den 8ten April Anno 1729. gehaltenen Lateinischen Oration*, Theils aus andern Historischen Urkunden. Neu-Brandenburg, Dobberthien: 6 Bl., 148 S., 141 Bl.

Steynitz, J. v. (1970). *Mittelalterliche Hospitäler der Orden und Städte als Einrichtungen der sozialen Sicherung*: p. 176.

Stuntz, H. (2005). *Hospitäler im deutschsprachigen Raum im Spätmittelalter als Unternehmen für die caritas-Typen und Phasen der Finanzierung*. Funktions-und Strukturwandel spätmittelalterlicher Hospitäler im europäischen Vergleich, pp. 129-160.

Schüßler, H. (2000). *Woldegk. Stadt der Windmühlen von den Anfängen bis 1945*, vol. 1, Woldegk.

Techen, F. (1927). Das Haus zum Heiligen Geist zu Wismar. *Mecklenburgische Jahrbücher*, 91, pp. 153–248.

DATING AND KNOWLEDGE POTENTIAL OF SECULAR STONE BUILDINGS IN MEDIEVAL OSLO

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ABSTRACT

Archaeological constructions and deposits predating 1537 in Norway lack legal protection, leading to insufficient documentation and loss of historical information. This issue particularly affects secular stone buildings, which have often been misdated to the post-medieval period. This study reassesses the dating of previously excavated stone buildings in the Old Town of Oslo, stating that many are indeed medieval and constructed from the late 13th century onwards. This research sheds light on medieval Oslo's townscape, correcting misconceptions and emphasizing the significance of these structures. The findings contribute to a more accurate understanding of Oslo's architectural history and facilitate heritage management by suggesting where stone buildings might be found in the future.

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Introduction

Currently, archaeological constructions and deposits from after 1537 lack protection under Norwegian cultural heritage law.[1] This means that such features are excavated with minimal documentation, leading to a loss of information.[2] This has been a particular problem surrounding secular stone buildings, as many of these buildings have for a long time been mistakenly dated to the post-medieval period. Only a handful of articles are written on Oslo's secular stone buildings (Schia, 1988; Ekroll, 1991a), and these buildings' low priority may even have created an erroneous image of Oslo's townscape (Ekroll, 2015a, p. 263). Recent investigations in the Old Town of Oslo have shown that many of the secular stone buildings are indeed medieval.

My aim with this article is threefold: First, I will reassess the dating of the stone buildings in medieval Oslo, arguing that many of them were constructed during the medieval period, particularly from the late 13th century onwards. The reassessment includes a brief discussion of dating methods for stone buildings. Secondly, I will show how the buildings with revised dating lie in certain parts of the town, affecting the townscape. This makes it possible to predict where stone buildings could be discovered in the future, which will be invaluable for planning archaeological investigations related to future urban development. Finally, an increase in the number of medieval stone buildings identified within the medieval town calls for new discussions of urban secular stone architecture, and I will suggest questions for further research on this topic.

The medieval part of Oslo lies in the district called Gamlebyen (literally "the Old Town"). Oslo was established around the beginning of the 11th century and lay in the same location until 1624, when a fire led to the town being abandoned and the population being unwillingly moved to a new town called Christiania, established on the opposite side of the Bjørvika inlet (Figure 2).

Following the Reformation in 1537, most of Oslo's medieval churches were torn down, and the stones were used for foundations, cellars, and chimneys in secular buildings (Ekroll, 1991a, p. 78), and for expansion of Akershus fortress (Schia, 1988, pp. 109–110). This readily available stone material is one of the main reasons that, until recently, it was assumed that most stone buildings excavated in medieval Oslo were built from the remnants of demolished churches after 1537. While medieval Oslo undoubtedly was a primarily timber-built town, recent archaeological excavations have shown that stone buildings were prominent in parts of the medieval townscape (Bauer and Engen, 2024; Bauer and Stige, 2018;

[1] The 1537 protection date was established in the law of 1978. Work on a new cultural environment (sic) law is ongoing, with the new law possibly being effectuated in 2027. 1650 and 1850 has been suggested as the protection date in the new law (NOU 2025: 3).

[2] See McLees, 2019 for an extensive discussion of this topic.

Berge et al., in prep.; Derrick, 2018; Edman, Hegdal and Haavik, in prep., Haavik and Hegdal, 2020).

Definitions

In this article, a stone building is defined as a building with at least one storey made of stone, regardless of whether this was a partially dug-down cellar, a ground floor underneath a timber building (often also called "cellar"), or a building with several stone-built storeys.

Several medieval cellars are known from Norway's countryside (see for instance Bauer, 2018; Bendixen, 1891; Gjesvold, 1999; Pedersen and Sæther, 1995), where timber buildings on stone cellars was a common construction method (Berg, 1995, pp. 176–177; Ekroll, 1997; Lidén, 1974, p. 11). Similar buildings must have been built in towns, although were perhaps not very common (Koren-Wiberg, 1921, pp. 79, 87). Archaeologically, it is difficult to discern whether a stone cellar supported storeys of stone or timber, hence my decision to include cellars – which usually is the only part of a building that is preserved and excavated.

The ground plan of a building provides information about the rest of the building. In their article on the profane building environment by Ringsaker church and Hamar diocese, Meyer and Moberg (2021, pp. 68–69) argue that the ground plan

Figure 1. The partially dug-down cellar in stone building 29 (see Figure 4), excavated in 2017–18 directly south of the medieval Bispeallmenningen / Bishop's Street. The building was constructed around AD 1300. Parts of the building were excavated in 1953 and was then mistakenly dated to the 16th century. Facing east. Photo: NIKU. CC BY-SA.

indicates whether there was a second storey above the stone cellar. Specifically, they see a pattern in which buildings with an antechamber / staircase room and opening into a main room commonly had more than one stone storey. Wall thickness can also indicate more stone storeys. However, in most cases, archaeological remains provide too little information to reconstruct a building's complete appearance.

With a stone vault, the cellars were considered fire-safe, as opposed to building with wooden beams supporting the floor above the cellar (Koren-Wiberg, 1921, p. 78). This made them important for storing goods. Apart from emphasizing that cellars primarily served as storage rooms, I will not go into the function of each stone building. Kolstadløkken (1999, pp. 166–169) discusses differences and similarities between stone cellars and stone buildings, which she argues could be significant. Certain stone buildings could for instance function as venue for town council meetings (DN, vol. 3, no. 138; vol. 1, no. 216) or as wine cellars, as in Bergen (Grieg, 1933, p. 38).

Material

Stone buildings in medieval Oslo are known from both archaeological excavations and written sources. I will present the archaeological material first. I will also address source critical issues for both types of material.

Archaeological material

The Norwegian Institute for Cultural Heritage Research (NIKU) has carried out large-scale urban excavations relating to development covering major parts of medieval Oslo. During the last twelve years, remains of 17 stone constructions have been investigated, ten of which had already been located, but only partially excavated (Figure 1). In total, the remains of 99 stone buildings or other types of stone constructions have so far been documented within the boundary of the medieval town (Figure 2 and 4).[3] Not counting the royal and episcopal manors, monasteries, and churches, the number is 89.[4] Excluding the constructions that cannot be confirmed as stone buildings, there are 81. Most of these were earlier interpreted as being constructed and in use in the period 1537–1624.

The earliest archaeological investigations in Oslo focused on the monumental royal and ecclesiastical architecture: churches, monasteries, and the episcopal and royal residences (Fischer, 1917; Fischer, 1935; Fischer, 1937; Fischer, 1951; Nicolaysen, 1866; Nicolaysen, 1891; Nicolaysen, 1862–1866). This work was led by architects primarily interested in stone architecture of high-quality craftsmanship; secular dwellings were not considered equally interesting. Stone and timber buildings were removed with limited documentation (Blix,

[3] Note that some of these include separate walls that are not necessarily part of the same building. The total number of buildings could thus potentially be somewhat higher.

[4] The Cistercian monastery at Hovedøya lies outside the town, and the church and hospital dedicated to St Laurent have been located based on graves and descriptions in written sources.

1879; Enger, 1954). There is also a lack of collected datable artefacts and stratigraphic information relating to the late 19th / early 20th century excavations of the town's secular buildings (Molaug, 2008, p. 74). The limited documentation is often confined to unpublished diaries (for an account of the Gerhard Fischer diaries, see Hommedal, 1990) or as plan drawings lacking clear stratigraphical information. Sketches, such as the ones made by Johan Meyer in the late 19th century, contain a great deal of useful information, but is challenging to use, with buildings overlapping one another, making the stratigraphy difficult to distinguish (Fischer, 1950, p. 62).

Sometimes even thorough documentation is not enough, as constructions can be almost completely removed, thus leaving insufficient remains for secure archaeological interpretation. In other cases, only a small part of a building is exposed, thus making it impossible to determine the type of building, its full extent, or its structural context – and its dating. Even some newly excavated buildings, like building 67, is exposed in such a limited degree that little can be said about its function (Alvestad, Derrick and Oldham, 2025).

Prior to NIKU's investigations, no stone buildings were dated using C14 dating or dendrochronology. The dating of these earlier excavated buildings relied heavily on typology and relative dating techniques – or they were not dated at all. With just a few exceptions, stone buildings in recent excavations have consistently been dated to the period from the late 13th to early 15th century, using C14, dendrochronology, or optically stimulated luminescence dating (Bauer and Stige, 2018, p. 71).

Whereas the undated buildings in Oslo were earlier assumed to be post-medieval, I suggest that most of them are in fact from the medieval period. This fits the assumption for Bergen that stone construction for regular townspeople started in the first half of the 13th century (Koren-Wiberg, 1921, p. 79).

Written sources

The Norwegian diploma material (Diplomatarium Norvegicum) provides valuable information on Oslo's secular dwellings (Bull, 1922; Fischer, 1950; Grieg, 1933), listing approximately 70 urban tenement plots by name. These documents are crucial for understanding the prevalence of stone buildings in the medieval town. Twelve tenement plots are explicitly mentioned as having stone buildings or cellars. While three appear in 15th-century diplomas, the rest are recorded in the 14th century. In total, 16 stone buildings are directly or indirectly referenced on these plots. Including Turnen (The

Figure 2. Map showing important features in medieval Oslo. Timber constructions are shown in dark brown, while stone constructions are shown in grey. The royal, episcopal and monastical complexes are shown in black, with completion of the walls where such were lacking. Map key: 1 = St Mary's Church; 2 = The royal manor; 3 = St Nicolay's Church; 4 = St Clement's Church (southern parish church); 5 = The Franciscan Monastery; 6 = St Hallvard's Cathedral; 7 = The bishop's manor; 8 = St Olav's Monastery (Dominican); 9 = Church of the Holy Cross (northern parish church); 10 = St Laurence Church with hospital; 11 = Nonneseter cloister (Bendictine nunnery); 12 = Western Street / Vestre strete; 13 = Eastern Street / Østre Strete; 14 = Northern Street / Nordre strete; 15 = Bishop's Street / Bispeallmenningen; 16 = Clement's Street / Klemensallmenningen; 17 = Goat Bridge / Geitabru. The arial photo shows the medieval town's location within present-day Oslo. After the fire in 1624 destroyed Oslo, Christiania was established next to Akershus fortress on headland visible in the middle of the photo. Map: Bauer et al. (2024), with additions by Egil Lindhart Bauer, NIKU. Arial photo: Norge i bilder, Oslo Municipality 2019, owner: Oslo Municipality.

Tower), which is assumed to have had a stone building, the number rises to 17 (Bauer and Stige, 2018, p. 79). Of particular note is Brandgård, which must have been substantial, as it featured a three-storey stone building (Bandlien and Norseng, 2024, p. 261).

These buildings are documented between 1323 (1310, if Turnen is included) and 1477. However, the dates in the diplomas represent terminus ante quem, meaning that the buildings already existed by the year they are mentioned and may have stood for generations prior.

Very few stone buildings from named tenement plots can be directly linked to excavated structures. Notable exceptions include Saxegården and probably Belgen. Since the names themselves are not directly identifiable in the archaeological record, it is impossible to definitively match them to excavated buildings or the medieval townscape, despite attempts to do so (Bauer, 2020, p. 258; Løberg, 1956; Løberg, 1957; Stige and Bauer, 2018, p. 93).

Basing the number and dating of stone buildings solely on written sources is speculative (Ekroll, 2015b). These sources must be used critically, and one must avoid uncritical repetition of earlier interpretations (cf. Herteig, 1991; Koren-Wiberg, 1921). Additionally, the number of documented stone buildings is uncertain, as most diplomas are lost (Bull, 1922, pp. 170–171). Some stone buildings may have existed without being explicitly identified as such in the records, and many more likely remain undiscovered.

It is conceivable that all tenement plots in town had stone cellars for storage (Ekroll, 1991a, p. 84), a scenario that likely applied to other cities such as Bergen (Ekroll, 2015b, p. 144).

Kolstadløkken's review of cellars in Bergen, Oslo, and Tønsberg even suggests that two-thirds of tenement plots with a cellar had more than one. She concludes that most households had access to a cellar for storage (Kolstadløkken, 1999, p. 173).

Methods

In addition to the newly located buildings, I have reassessed the dating of all previously excavated stone buildings. Øystein Ekroll (1991b) reviewed excavated stone constructions in his work Renessansebyen Oslo. I have considered his assessment of each construction and referred to original documentation where this has been available. I have approached each construction with a diametrically different hypothesis than the title of Ekroll's work indicates. While he sought to find out how the town looked after the Reformation (the paradigm

in the 1990s being that most secular stone buildings were post-medieval), I have approached the material considering all the stone buildings as medieval unless there is convincing evidence that they are younger. Some, for instance, are located within medieval cemeteries (Schia, 1988, p. 112) or blocking medieval streets (Ekroll, 1991a, p. 82). These I have excluded from my discussion (Figure 3).

All the buildings referred to in this article are numbered according to Ekroll's (1991b) review, but with several newly excavated buildings added to the sequence. I have also added earlier excavated constructions that Ekroll did not include, most notably two cellars under buildings situated along the assumed northern boundary of the bishop's property. In the sequence, I have also included the buildings already acknowledged as medieval and thus not relevant in Ekroll's review of the renaissance town.

In many cases, reliably reassessing the date of a stone building is impossible due to the absence or incompleteness of original documentation. When available, dating criteria include the building's stratigraphic position, C14 or dendrochronological dating of wooden wall foundations or other wooden features, C14 dating of lime mortar, OSL dating of bricks, typological analysis of masonry, identification of stone types (e.g., from specific quarries), number of floor

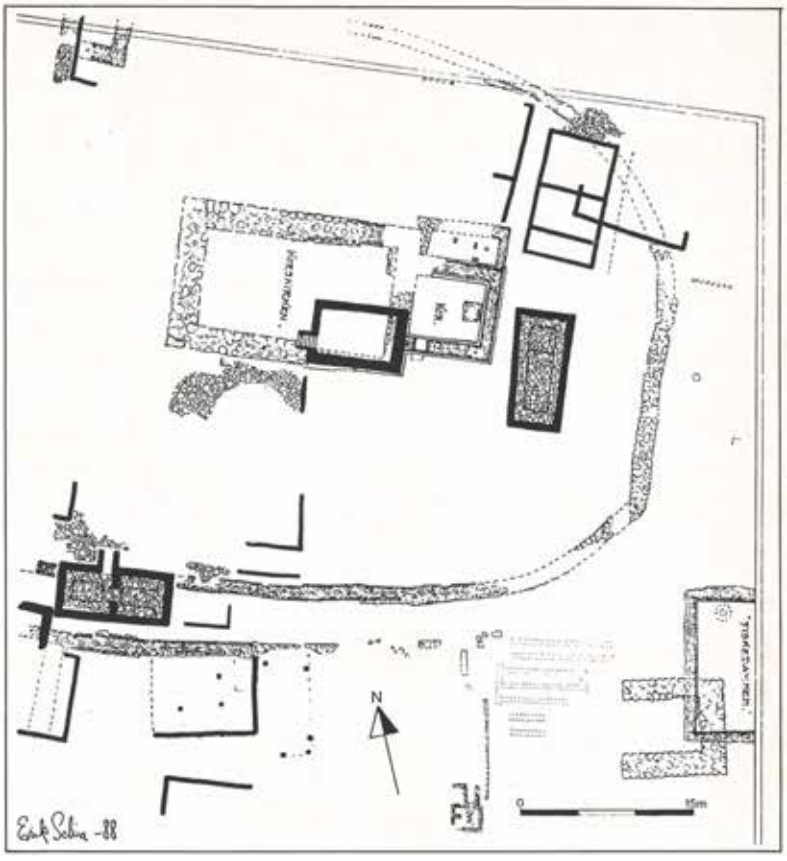

Figure 3. Examples of clearly post-medieval stone buildings: one inside a church ruin, one in the cemetery directly east of the chancel, and one in the middle of an earlier street. Drawing: Erik Schia (1988, p. 113). Reproduced with the permission of The Norwegian Directorate for Cultural Heritage (Riksantikvaren).

layers, the building's physical layout, fire deposits inside or outside the structure, orientation relative to medieval or later structures, topography and ground conditions. The different criteria have various weaknesses. Typological dating of artifacts found in the building's context cannot be used for assessing its construction date (e.g. Enger, 1954), as the artefacts' deposition can be hundreds of years later than the construction of the building. During the large-scale excavations in Oslo in the 1970's and 80's, typological dating was the main method used for placing the stone buildings in the late 16th and early 17th century (Schia, 1987a, p. 65). As noted above, some stone buildings are mentioned in written sources; however, since these references rarely correlate directly with excavated structures, they are useful for dating only in rare cases.

Interpretations made in earlier excavations generally focused on the buildings' latest history. The buildings were connected to younger phases rather than the phases in which the buildings might have been constructed. In these earlier excavations, absolute dating methods were not used. Frequent use of dendrochronology, C14, and to some extent OSL dating, in recent excavations have given better opportunities for precise dating.

Stratigraphic interpretation of stone buildings can be difficult due to their often-long history. There can be long sequences of deposits both outside and inside of the buildings, helping with the interpretation, but often these deposits are removed due to changes in use inside or changes in the plot outside, for instance after a fire destroyed timber buildings on the plot but leaving the stone building intact. A critical interpretation of deposits around a stone building is needed, specifically distinguishing between deposits cut by the building's construction and deposits accumulated around the standing building. Deposits in contact with the walls are always younger than the building, and if a stone cellar has a transition from a rubble back wall to smooth wall surface, it demonstrates where the ground surface was at the time of construction.

Depth below the present-day ground surface has in some cases been used as a dating method, but it is not reliable, since later activity may have altered the depth significantly. In several areas of the medieval town, there are no remains from the 15–17th centuries. Instead, deposits from the 14th century lie directly below modern infilling. This could be due to larger undertakings in the 17th century to level out areas, for instance after the fire of 1624 and the transition from town to arable land.

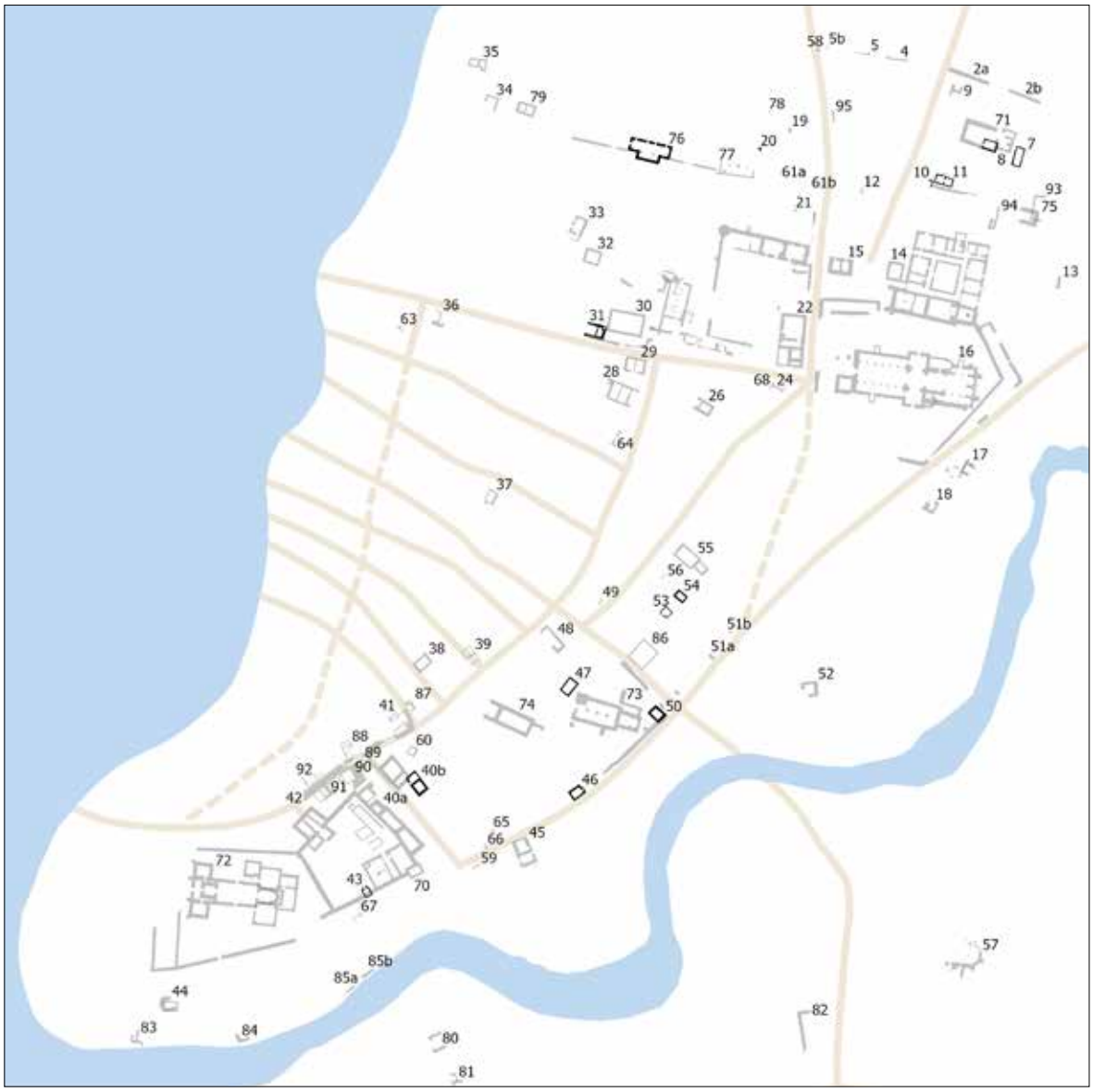

Figure 4. Map showing all documented stone buildings in old Oslo. While the exact date of many cannot be ascertained, only the ones drawn in black can be reliable dated to the post-medieval period. Thus, all the grey buildings could conceivable be medieval. Some of the remains are so limited that they are hardly visible next to the building number. Map: NIKU. CC BY-SA.

The presence of cobble stone floors or small yellow bricks have often been used to argue that a building has a post-medieval date. However, it has rarely been considered that buildings may have several phases of floor. It is very unlikely that multiple floor layers accumulated over the period of less than a hundred years, between the Reformation and the fire of 1624. Moreover, recent excavations in Oslo have shown that stone cellars with cobble stone floors were constructed around 1300, thus excluding this as a tell-tale sign of a post-medieval date. Yellow bricks were introduced in the 16th century, but these can be a later addition to an older building.

All these factors illustrate challenges when trying to date stone buildings, as they were durable constructions, commonly in use for several centuries – and changes were continuously made to the buildings themselves or their use.

Reassessing specific buildings

As mentioned, many secular stone buildings were found in earlier excavations and most of these were assumed to have a post-medieval date. Even if documentation in many cases is limited, I argue that with a more critical approach, as many as 69 buildings could be medieval. I have here selected a few buildings to exemplify this. The building numbers are shown in Figure 4.

The excavation of building 28 in 2015 marked the start of the new paradigm. The building was first discovered in 1954 and interpreted as post-medieval (Enger, 1954). It was not until the wooden pile foundations underneath the cellar walls were radiocarbon dated that it was realized that the building was constructed around 1300 (Edman, Hegdal and Haavik, in prep.). When two additional stone buildings (59 and 64) from excavations in 2015 yielded medieval dating, the approach to such constructions fundamentally changed: it was clear that the assumption that they were post-medieval was false.

It came as no surprise, then, when building 29, immediately north of building 28 was re-dated to around 1300 (Berge et al., in prep.), after first having been assumed to be post-medieval in the 1954 excavation. Building 29 (see Figure 1) was well-preserved, with two cellar rooms with separate doorways, wooden floors, and plant, insect, and faunal remains testifying to its use throughout the high and late medieval period (Bauer and Engen, 2024, pp. 206–207; Berge et al., in prep.). The two doorways could suggest shared use by separate households.

Building 26, further east, is another building likely from the same time. It has not been completely excavated; thus, it is still possible to find datable material below the walls. It has been assumed to be post-medieval, but stratigraphically it could be medieval. In fact, its size and layout, which corresponds to building 29, indicate a similar dating. It furthermore adheres to the orientation of the medieval plots. Below the eastern room were deposits from the 12th century (Molaug, in prep.), but this does not say anything about the building's age.

Together, buildings 28, 29, and 64 make up a concentration of stone buildings south of the bishop's manor – a likely high-status area (Bauer and Engen, 2024, pp. 203–207). If building 26 is included, the area is even larger. However, we do not know if there are other stone buildings between building 26 and the others to the west.

Building 15 is another building like 26 and 29, with two rooms with separate doorways. The building had several

post-medieval floor layers but was still interpreted as from the high or late medieval period (Ekroll, 1991b, p. 15). This makes sense considering the buildings assumed relation to the shoemakers' area in the northern part of town, towards which the excavated doorways face. A building's physical layout is not the best dating indicator, as stone cellars were similar for centuries, but being almost identical to buildings 29 and 36, the medieval dating is likely.

The previous age assessment of building 36, south of Bispeallmenningen, exemplifies the old paradigm: It was argued that since the buildings further east that lay next to Bispeallmenningen (e.g. 28 and 29) were assumed to be post-medieval, 36 was as well (Ekroll, 1991b, p. 22). Now that the buildings further east are reliably dated to the high medieval period, this problematic circular reasoning becomes obvious. Still, the location of building 36 so far west could indicate a later date. The same may go for buildings 34, 35, and 79. These may date from a time when land elevation had made the area suitable for construction. Thus, they could be younger, but it cannot be ruled out that ground conditions here became suitable earlier than further south due to the curve in the shoreline, combined with land reclamation, and possibly sediments carried with the river Akerselva, which had its outflow in the area. Hence, I have included them all as possible medieval stone buildings.

Figure 5. Stone building 59 with cobblestone floor with drainage canals leading to a sunken barrel in the corner (right). Photo: NIKU (Derrick, 2018, p. 155). CC BY-SA.

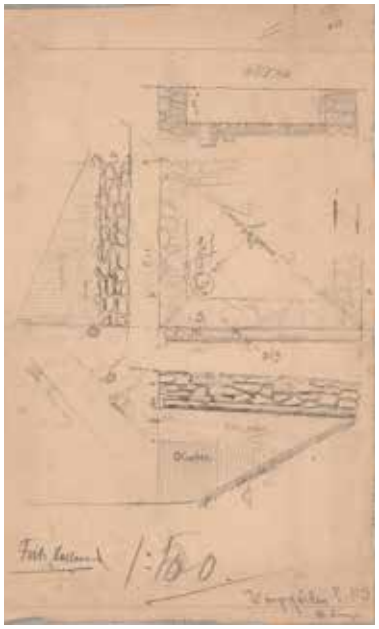

Figure 6. Example of early documentation of a stone cellar. No written documentation belonging to the building is available. Still, this drawing is better than the available documentation of many other stone buildings. Note the scribbled word "Kongsgården?" in the bottom right corner, added by Bernt C. Lange. This later addition shows that even the location of the cellar was uncertain. I have located the cellar and given it number 60 (see Figure 4). Note the sunken barrel in the corner, a feature found in several other buildings, for instance no. 59 (Figure 5). Drawing: Fritz Holland. Reproduced with the permission of The Norwegian Directorate for Cultural Heritage (Riksantikvaren).

As mentioned, cobblestone floors cannot be used to asign a building to the post-medieval period. In fact, a layout that occurs in several stone buildings, is a cellar room with cobblestone floor with drainage leading to a dug-down barrel in the corner. The just mentioned building 36 had such a layout, as did for instance buildings 37, 59 (built in the mid-14th century, see Figure 5), and 65 (Hegdal, 2021, pp. 120–132). A similar feature is seen in Fritz Hollands drawing of building 60, north of the royal manor (Figure 6). Building 58, in the northern part of town, is only represented by a stone-paved floor, but the presence of a dug-down barrel in the corner shows that it is a cellar. This building could be as old as from the last part of the 11th century of early 12th century (Smestad, 1991, pp. 43, 46). Whether this early date can be correct, is difficult to say. However, it fits with the relatively recent realization that the northern part of the town was developed earlier than previously assumed (Martens, 2010).

Regarding the northern part of town, building 5b should be mentioned. This building (Figure 7) could be part of a gate tower (Ekroll, 2015a, p. 274), but whether it is post-medieval or earlier is uncertain. If it is medieval, it is tempting to connect it to the other constructions further east (particularly 2a and 2b), possibly forming the northern defensive boundary of the town.

As mentioned, stone buildings could be in use for centuries. We have several examples of new buildings being constructed next to or atop older building phases. This is especially relevant for cellars. Saxegården (building 45) is one of the few buildings we know the name of from medieval Oslo. The present-day louis-seize-style building is from 1800 and is constructed atop a medieval cellar. Recent investigations of a preserved vault and floor show that these are from the early 14th or late 13th century. The walls themselves are probably earlier (Hegdal, Åkerstrøm and Meyer, 2024, p. 72). Thus, the building is older than what is known from the diploma material (DN, vol. V, no. 100), and has been in use for at least 500 years.

Building 24 was discovered in 1904 and believed to be post-medieval. Recently, it was fully excavated, with two phases defined, the first built in the early 14th century, while the second in the late 14th century – a clear example of rebuilding in the medieval period. A post-medieval cobblestone surface was even incorporated into the walls, thus indicating that the building was reused at this time (Derrick et al., 2023, pp. 124, 131, 144)

Another example is building 55, which consisted of two rooms, where the eastern and smaller one was older. The western room had raft foundations, and the eastern room had pile

Figure 7. Wall in Arups gate. Could this be the remains of a medieval building, possibly a gatehouse, reused in the boundary of the playground? Note that the area of the wall in Figure 4 is smaller than what is visible in this image. Photo: Bauthler / Oslo byarkiv. CC BY-SA.

foundations. The eastern room had five floor layers, while only one floor layer was found in the western room, but above-lying floors may have been removed by a modern cellar. The single floor layer nonetheless does not necessarily entail a much shorter use period than the eastern room (Schia, 1987a, pp. 59, 61). While the exact date of the building's two phases are hard to ascertain, it is important to note that the phase plans from the excavation show that the building's footprint is not in conflict with earlier buildings after ca. AD 1300 (Figure 8).

Even though the bishop's manor is not the focus of this article, some of the buildings in this area must be mentioned. Building 33 is a case in point, being described as having a vault with bricks of medieval format (Figure 9). Together with its layout, this indicates a medieval date. Ekroll (1991b, p. 22) suggests that the building's deviant orientation from the bishop's manor to the east can suggest a later date, but this is uncertain. Just north of building 33 lays building 76 which is known to be post-medieval, but the cellar coincides with the presumed outer boundary wall of the medieval manor. This could suggest that the cellar was part of the original, medieval complex. And finally, building 77 (below another post-medieval building) is remarkably similar to the hall building in the west wing of the bishop's manor, with centrally placed pillars , just northeast of building 30. Whether this hall building in the west wing was medieval or later was even discussed at the time of excavation, in 1903. While the archaeologist in charge, Heinrich Jürgensen, wrote that it was a medieval hall building (Fischer, 1950, p. 64), an anonymous newspaper article upheld a post-medieval date (Aftenposten, 1903). Recent excavations dated a supporting wall to the mid-13th century (Berge et al., in prep., p. 392), thus finally laying the discussion to rest. Thus, the similarity between the hall building and building 77 suggests a medieval date for the latter, as well.

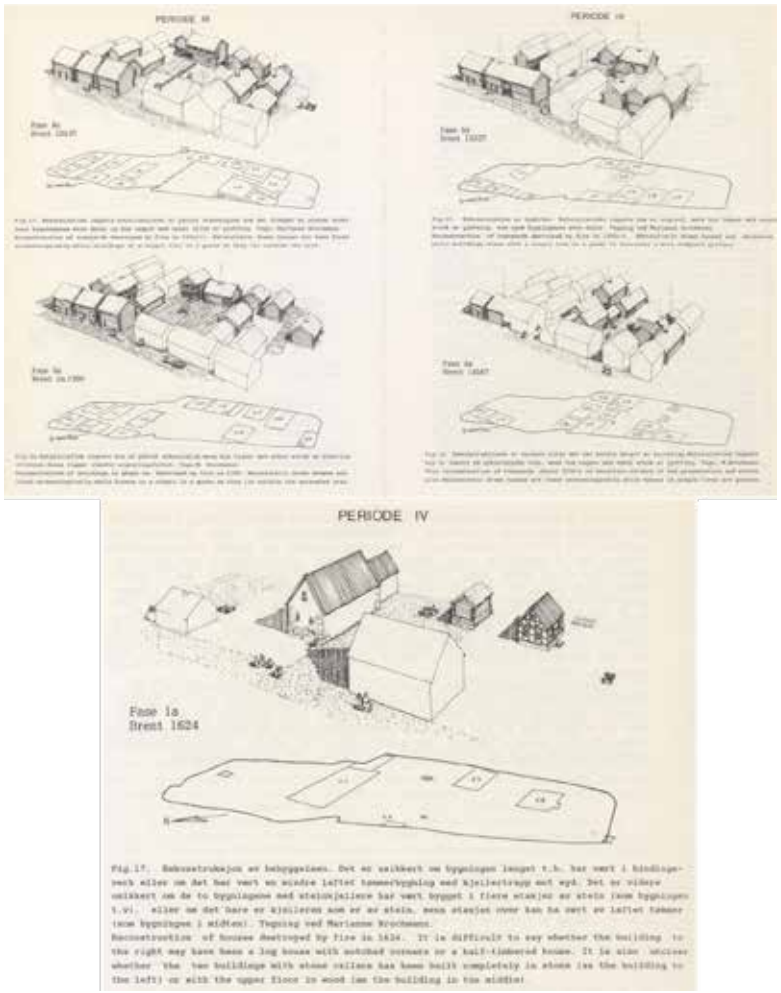

Figure 8. Phase maps from the excavation sites called Mindets tomt and Søndre felt, excavated in 1970–1976 (Schia, 1987b, pp. 184–187). Drawings: Marianne Brochmann. Reproduced with the permission of The Norwegian Directorate for Cultural Heritage (Riksantikvaren).

Not only do we now know that the total number of stone buildings is much higher, but also that many are or may be medieval. Even though uncertainties remain, as many as 69 of the 81 stone buildings may have been part of the medieval townscape.

A revised townscape

Despite the increase in available building materials due to the demolition of stone churches after the Reformation, stone buildings were a crucial part of the earlier, medieval townscape. The durability of stone buildings made them more than just architectural elements. Their placement and size played a role in ensuring stability within the town while simultaneously demonstrating the builder's wealth and status (see Bauer, 2020).

The newly excavated stone buildings, together with the previously excavated which are now attributed to the medieval period, form certain patterns in their placement. Several buildings cluster along Vestre strete in two distinct groups:

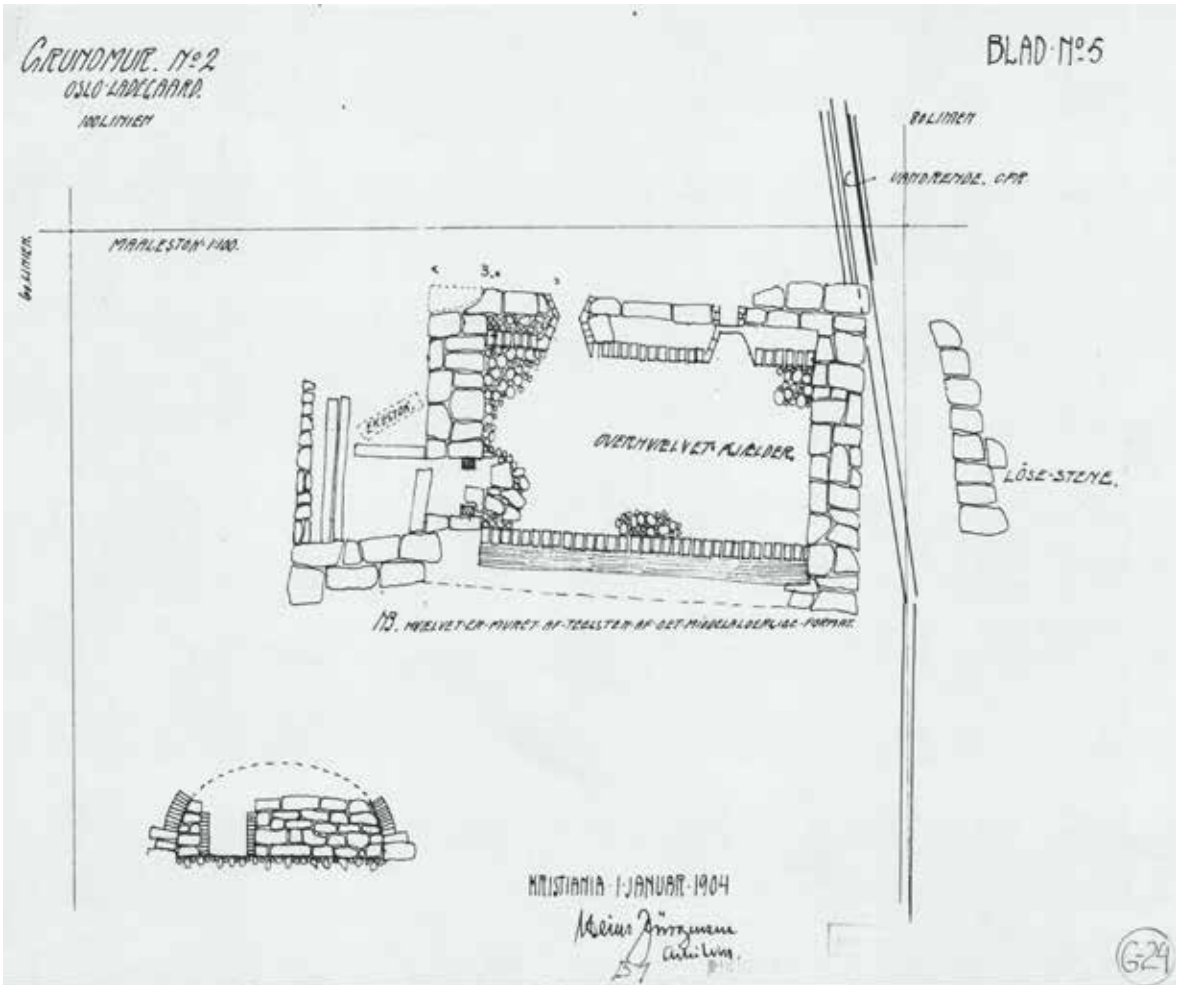

Figure 9. Building 33, west of the bishop's manor, is described as having a vault with bricks of medieval format. Drawing: Heinrich Jürgensen. Reproduced with the permission of The Norwegian Directorate for Cultural Heritage (Riksantikvaren).

one near the king's manor and another near the bishop's manor (Derrick, 2023). This suggests that stone architecture was used by the owners to assert their status among these two elites in the medieval town. We see that proximity to streets is a key factor in general, not only along Vestre strete. Stone buildings facing main thoroughfares or squares would allow their owners to assert their presence in the urban landscape (Ekroll, 1991b, p. 30). There is also a practical reason for this placement, as storage rooms accessible from the streets would facilitate the transportation of goods in and out. Additionally, the stone buildings' non-flammable material would, in combination with the streets, have limited the spread of fire (Derrick, 2023; Derrick and Sunde, 2024). What we now know about the stone buildings' placement contradicts an earlier assumption that these lay in the back part of the town plots (Koren-Wiberg, 1921, p. 78).

Most of the stone buildings lie along the ridge from the headland in the south-west to the presumed northern boundary of the town, in present-day Arups gate. In the western part of town, poor ground conditions and vulnerability to storm

surges likely discouraged the construction of stone buildings. Flooded cellars would be a disaster for stored goods. Instead, storage buildings in the harbour area were lighter log constructions, built on timber foundations. A possible exception is in the north-western part of the town, where the already mentioned buildings 34, 35, and 79 were excavated.

Future nuances in dating will influence the overall picture of stone buildings in the townscape in different periods. It is, for instance, hard to differentiate between early 14th-century buildings and buildings from the late 15th century.

For the post-medieval town, Schia (1988, p. 111) argues that the area between Vestre and Østre strete was characterized by an open settlement pattern, with stone cellars and stone-paved yards between domestic buildings. According to the phase maps from the earlier excavations, only stone buildings were present, and less of the area was covered by buildings than in the High Middle Ages (Figure 8). This raises important interpretive challenges: Specifically, where were the dwellings in the later phases if only stone buildings remained?

Leaning on Schia (1988, p. 108) and his map of presumed post-medieval stone buildings, Ekroll (1991b) argues for a topographic shift in the last one hundred years of Oslo's history, wherein the main settlement moved from the southern part of the town to the area surrounding the cathedral. First, I do not agree that the settlement is denser around the cathedral than in the southern part of town. Second, since recent excavations show that the stone buildings southwest of the cathedral were medieval, a major part of the settlement was already here in the medieval period.

In any case, it appears unlikely that dwellings were relocated to other parts of town. The area between Vestre and Østre strete occupied a central location with continuous habitation from the earliest phases of Oslo's urban development throughout the Middle Ages (Bauer and Engen, 2024, p. 203). There was, however, a large population reduction after the plague epidemics from the mid-14th century, reducing the population from its high of around 3 000 in the first half of the 14th century (Nedkvitne and Norseng, 2000, pp. 178–179; Sigurðsson and Ødegaard, 2024, p. 127). Still, Oslo's population in the early 1600's had risen again. It has been estimated to have been between two and three thousand (Bull, 1922, p. 444). Thus, it is unlikely that the area was so sparsely covered by buildings, compared to the high medieval period (Figure 8). This becomes especially apparent considering that the size of most of the stone buildings in

the area suggest they were storage houses and not dwellings. There simply would not be enough room for Oslo's citizens.

Schia argues that most of the stone buildings were from the 16th and/or early 17th centuries (Schia, 1988, p. 111). He does, however, agree that there were still timber buildings in the town (Schia, 1988, p. 118). Still, these are not shown in the phase plans from the excavations. Combining what we now know, my hypothesis is that not only were there many more stone buildings in the medieval town, but there were also a lot more timber buildings in the post-medieval town. This results in a revised townscape for both periods, with the medieval and post-medieval town being more alike than previously assumed. Thus, Oslo in the century prior to 1624 retained many of its earlier characteristics, and there is little evidence for a dramatic shift in the townscape.

Taking a broader view of construction practices in the period, the notion that post-medieval Oslo consisted exclusively or even primarily of stone buildings is implausible. Even in Christiania, where regulations mandated stone, brick or timber-frame construction, log buildings continued to be built. These regulations were not strictly enforced until the early 18th century (Roede, 2001, pp. 204–205; Roede, 2016, p. 17). The reluctance to adopt stone and brick as building material in Christiania indicates that such materials were even less likely to be used in Oslo between 1537 and 1624.

I agree with Ekroll (2015a, p. 262), who argues that despite the institutional changes brought by the Reformation, the history of Oslo should be seen as continuous up to 1624 rather than marked by a sharp break in 1537. To understand the post-medieval townscape, it is crucial to recognize the degree of continuity with the medieval town.

In the phase plans from the area of the 1970–80's excavations between Vestre and Østre strete, the types of buildings are very different in the 1624 phase than in the medieval phases (see Figure 8). However, there are no clear changes in the plot boundaries from the high medieval situation to the last phase which burned in 1624 (Schia, 1987a, p. 67). A continuation of the plots indicates a continuation of the same town. As I have argued, the lack of timber buildings related to the later phases is improbable. Instead, it is more likely that timber buildings, with shallower foundations than the stone buildings/cellars, have been removed by later activity (Schia, 1987a, p. 59) – probably from the time after the fire of 1624, when burnt-out building remains were demolished to prepare the area for agriculture.

Implications and usefulness for urban heritage management

This reassessment of stone building dating can aid in preservation efforts by identifying protected structures. It also provides reference tools for improving dating techniques, thereby optimizing excavation and documentation strategies. Furthermore, a clearer understanding of secular stone buildings in medieval Oslo can inform future urban development projects. It allows for better predictions regarding the location and number of stone buildings, which is essential in assessing potential conflicts in city planning.

The 1537 boundary in the current Norwegian Cultural Heritage Law provides clear protection for stone buildings (and all other archaeology) older than this date. However, an unfortunate consequence has been the systematic downplay of importance of stone buildings younger than the Reformation (Ekroll, 2015a, pp. 262–263). Naturally, stone buildings younger than 1537 are of great importance for understanding Oslo's history. The town lay in the same place until the fire of 1624, and its history should be seen as continuous until 1624, rather than as a history of a medieval town until 1537 and a renaissance town in the brief century after (Ekroll, 2015a, p. 262). Except for the several demolished churches, the late 16th and early 17th century town was still like the medieval town in many ways: It was organized by the same streets (Ekroll, 1991b, p. 39) and, broadly, the same plot structure. Secular building traditions did not change significantly just because of the Reformation. While more stone material was made available from torn-down churches, the inhabitants would still construct log buildings, and stone buildings would generally be raised using the same masonry techniques.

The administrative consequence of stone buildings not immediately being attributed to a post-medieval date is significant, particularly for future excavations. When new stone buildings are found, they cannot be dismissed as unprotected. Work on a new cultural environment law is ongoing, and one suggestion is to extend the protection date to 1650. This would include all post-medieval stone buildings (and all other archaeology) in the Old Town of Oslo prior to the fire of 1624. Such an expansion of the law would be a welcome change – and essential for understanding Oslo's history.

Based on the revised townscape already presented, I can suggest areas with high potential for revealing medieval secular stone buildings in future investigations. Compared to the southern part of the medieval town, few large-scale excavations have been carried out in the north. In Arups gate it will be possible to expose larger parts of already known stone

constructions, making it possible to interpret them more securely (se suggestion for research question 5 below).

There is great potential for finding stone buildings in Oslo gate, along the street marked by the eastern dotted line in Figure 2. In almost all investigations in Oslo gate, stone buildings have been uncovered, even in narrow trenches. The same goes for the presumed route of Østre strete, southwards from St. Hallvard's Cathedral. Furthermore, considering that a long stretch of Vestre strete is not excavated, excavations along this street's path has potential for locating stone buildings.

It is also significant where the potential for finding stone buildings is low. It is very unlikely to uncover medieval stone buildings in the westernmost areas of the town, due to the poor ground conditions and vulnerability to storm surges during most of the medieval period.

Further research questions

Several questions can be raised regarding stone buildings in Oslo's townscape, some general and some more specific:

1. Stone architecture was relatively exclusive due to the required access to building materials and craftsmen. They were a larger initial investment than log buildings, but also lasted longer, considering both regular material decay and resistance against the great threat of town fires. As such, their placement, size, and to some degree function, were important for the stability in the town. Combined with a prominent position along main streets and the clustering of buildings near the royal and episcopal manors, the stone buildings contributed to shaping the townscape. This raises several questions about social structures: Were the stone buildings used for underlining the owners' position? Were their placement attempts to control urban development? Did stone buildings contribute to gentrification of the town?

2. What do the stone buildings indicate about economic structures? Using the number and size of stone buildings, primarily cellars, it may be possible to estimate the total storage capacity for certain commodities in medieval Oslo. The town law specifies what kind of commodities should be stored in cellars, and a calculation of such volumes could provide valuable insights into trade and the urban economy.

3. There is a layout that occurs in several buildings: that of two similarly sized rooms, with separate doorways leading to an enclosed yard. Given that several stone buildings had two rooms, did they serve different owners? The division of

Blesusgård in 1477 (DN, vol. 5, no. 900), for instance, suggests that such shared use was common. This question should be considered in relation to changes in the names of tenement plots, which, it has been suggested, shows attitudes towards ownership and self-expression (Bauer, 2020).

4. If the dating of building 58 is correct, this raises several questions: were there stone buildings in town so early? What does this tell us about the development of the northern part of Oslo, earlier believed to be a later expansion? We now know that there was regular settlement as far north as Arups gate. Furthermore: Who had the opportunity to build in stone this early, when primarily churches were built in stone?

5. Little is known about the walls in Arups gate. These could belong to stone buildings, but they could conceivably be part of a town wall, which could possibly have incorporated the cemetery wall north of Korskirken (no. 9 in Figure 2).

6. Considering Oslo had more medieval stone buildings than previously assumed, does the same go for Bergen (Ekroll, 2015b, p. 144), and how does this compare to Tønsberg? Furthermore, how come almost no stone buildings are found in medieval Trondheim? (See McLees, 2008 for a notable exception; Ekroll, 2015a, p. 271) How can similarities and differences between Norway's medieval towns be explained?

References

Aftenposten (1903) *Udgravningerne i Oslo. Den gamle Grundmur*. Newspaper article, September 14th. https://urn.nb.no/URN:NBN:no-nb_digavis_aftenposten_null_null_19030914_44_531_1

Alvestad, J. G., Derrick, M. and Oldham, M. (2025) *Fjerning av tidligere gangbro over Klypen, Middelalderparken, Oslo*, Oslo: Norsk institutt for kulturminneforskning.

Bauer, E. L. (2018) 'The High Medieval Royal Manor', in Skre, D. (ed.) Avaldsnes: *A Sea-King's Seat at the Island of Kǫrmt*. Berlin, New York: De Gruyter.

Bauer, E. L. (2020) 'Self-expression through Eponymous Tenement Plots in Medieval Oslo', in Eriksen, S.G., Holmqvist, K.L. and Bandlien, B. (eds.) *Approaches to the Medieval Self. Representations and Conceptualizations of the Self in the Textual and Material Culture of Western Scandinavia, c. 800–1500*. Berlin/Boston: Walter de Gruyter GmbH, pp. 255–278. https://hdl.handle.net/11250/2736596

Bauer, E. L. and Engen, T. (2024) 'Bydeler og sosiale forskjeller', in Bauer, E.L., Eriksen, S.G., Hegdal, H., Stige, M. and Berge, S.L. (eds.) *Det gamle Oslo 1000–1624*. Oslo: Cappelen Damm Forskning, pp. 200–219. https://cdforskning.no/cdf/catalog/book/239

Bauer, E. L., Eriksen, S. G., Hegdal, H., Stige, M. and Berge, S. L. (eds.) (2024) *Det gamle Oslo 1000–1624*: Cappelen Damm Forskning. https://cdforskning.no/cdf/catalog/book/239

Bendixen, B. E. (1891) *Fornlevninger i Sønhordland og Hardanger*, Foreningen til Norske Fortidsmindesmerkers Bevaring, Aarsberetning for 1890, pp. 9–48.

Berg, A. (1995) *Norske tømmerhus frå mellomalderen. Bind 5: Hus for hus. I Aust-Agder, Vest-Agder, Rogaland, Hordaland, Færøyane, Sogn og Fjordane, Møre og Romsdal, Sør-Trøndelag*. Oslo: Landbruksforlaget. https://urn.nb.no/URN:NBN:no-nb_digibok_2010050603032

Berge, S. L., Haugan, K. Ø., Holmen, K. O., Derrick, M., Hovd, L., Helstad, M. and Bauer, E. L. (in prep.) *Follobanen Bispegata. Arkeologisk utgravning under Bispegata, Gamlebyen, Oslo*, Oslo: Norsk institutt for kulturminneforskning.

Blix, P. (1879) Fortidslevninger i Aaslo, *Den norske ingeniør- og arkitektforenings organ 1879* nr. 3, 4, 6, 8. Kristiania: Den norske ingeniør- og arkitektforening.

Bull, E. (1922) *Oslos historie. Kristianias historie* Kristiania: J. W. Cappelen. https://urn.nb.no/URN:NBN:no-nb_digibok_2011041506022

Derrick, M. (2018) *Follobaneprosjektet F04 Klypen Øst og Saxegaardsgata 15. Arkeologisk utgravning mellom Bispegata og Loenga. Middelalderparken og Saxegaardsgata 15 & 17, Oslo*, Oslo: Norsk institutt for kulturminneforskning. http://hdl.handle.net/11250/2565604

Derrick, M. (2023) Vestre strete: Medieval Oslo's most important and least understood thoroughfare, *Collegium Medievale*, 36, pp. 127–168. hdl.handle.net/11250/3124455

Derrick, M., Oldham, M., Engen, T., Bergland, T. and Meyer, R. (2023) *Arkeologiske undersøkelser i forbindelse med realisering av reguleringsplan for Bispegata med Oslo torg. Funn av graver, bebyggelsesspor, gater og bryggefundamenter*, Oslo: Norsk institutt for kulturminneforskning. https://hdl.handle.net/11250/3109507

Derrick, M. and Sunde, J. Ø. (2024) 'Lov og rett, stabilitet og tilpassing i Oslo i middelalderen', in Bauer, E.L., Eriksen, S.G., Hegdal, H., Stige, M. and Berge, S.L. (eds.) *Det gamle Oslo 1000–1624*. Oslo: Cappelen Damm Forskning, pp. 270–287. https://cdforskning.no/cdf/catalog/book/239

DN = Diplomatarium Norvegicum: Oldbreve til kundskab om Norges indre og ydre forhold, sprog, slægter, sæder, lovgivning og rettergang i middelalderen. (23 vols). Christiania/Oslo: C.C.A. Lange, C.R. Unger et al. 1874–2001. https://dokpro.uio.no/dipl_norv/diplom_felt.html

Edman, T., Hegdal, H. and Haavik, A. (in prep.) *Follobaneprosjektet F03 og F04: «Arkeologigropa». Gamlebyen, Oslo*. NIKU Oppdragsrapport 76/2017 Oslo: Norsk institutt for kulturminneforskning.

Ekroll, Ø. (1991a) Oslo 1537–1627: Mellomalderby eller renessanseby?, *Fortidsminneforeningens årbok*, 145(1991), pp. 73–92

Ekroll, Ø. (1991b) *Renessansebyen Oslo*. Oslo: Riksantikvarens utgravningskontor.

Ekroll, Ø. (1997) *Med kleber og kalk. Norsk steinbygging i mellomalderen*. Oslo: Samlaget. https://urn.nb.no/URN:NBN:no-nb_digibok_2009030304094

Ekroll, Ø. (2015a) Oslo mellom reformasjon og ruin 1537–1624: Historie og arkeologi*, En aktivist for middelalderbyen Oslo*: Festskrift til Petter B. Molaug i anledning hans 70-årsdag 19. desember 2014. Oslo: Novus, pp. 261–280.

Ekroll, Ø. (2015b) The Stone Buildings Around St Mary's Church in Bergen - a Reassessment, in Baug, I., Larsen, J. and Mygland, S.S. (eds.) *Nordic Middle Ages - Artefacts, Landscapes and Society. Essays in Honour of Ingvild Øye on her 70th Birthday*. Bergen: UBAS - University of Bergen Archaeological Series, pp. 133-144. https://hdl.handle.net/1956/15401

Enger, C. (1954) *Oslo Gamlebyen 1954* 10/5–15/10. Upublisert utgravningsdagbok.

Fischer, G. (1917) Middelalderens bispeborg i Oslo: De nyeste utgravningene, *St. Hallvard*, 3, pp. 256–274.

Fischer, G. (1935) *Cistercienserne og Hovedøya. Fortidsminner Oslo*: Foreningen til norske fortidsminnesmerkers bevaring. https://urn.nb.no/URN:NBN:no-nb_digibok_2012100906030

Fischer, G. (1937) *Mariakirken i Oslo. Fortidsminner Oslo*: Foreningen til norske fortidsminnesmerkers bevaring. https://urn.nb.no/URN:NBN:no-nb_digibok_2015050407572

Fischer, G. (1950) *Oslo under Eikaberg: 1050–1624–1950*. Oslo: Aschehoug. https://urn.nb.no/URN:NBN:no-nb_digibok_2007061400030

Fischer, G. (1951) *Norske kongeborger*. Oslo: Gyldendal. https://urn.nb.no/URN:NBN:no-nb_digibok_2008042900071

Gjesvold, P. E. (1999) *Fire steinkjellere i Hamar bispedømme: en undersøkelse av kjellernes bygningshistorie og funksjon*. Hovedoppgave, Universitetet i Oslo, Oslo.

Grieg, S. (1933) *Middelalderske byfund fra Bergen og Oslo*. Oslo: Det norske videnskaps-akademi i Oslo. https://urn.nb.no/URN:NBN:no-nb_digibok_2012070508183

Hegdal, H. (2021) *Vollgrav, leirebrudd eller «Stadzens Grop»? Brofundamentet vest for Saxegården. Gamlebyen, Oslo*, Oslo: Norsk institutt for kulturminneforskning. https://hdl.handle.net/11250/2759926

Hegdal, H., Åkerstrøm, J. and Meyer, R. (2024) *Saxegården - hvelv og gulv,* Oslo: Norsk institutt for kulturminneforskning.

Herteig, A. E. (1991) The Bryggen papers: Main series. Bergen Universitetsforlaget.

Hommedal, A. T. (1990) "Fischer-materialet": Dokumentasjonsmaterialet og arbeidsmetodane til Gerhard Fischer, *Fortidsminneforeningens årbok*, 144(1990), pp. 161–186

Haavik, A. and Hegdal, H. (2020) *Follobanen 2015. Områdene nord for Bispegata, Gamlebyen, Oslo*, Oslo: Norsk institutt for kulturminneforskning. https://hdl.handle.net/11250/2676365

Kolstadløkken, T. (1999) *Bygården i norsk middelalder: Boforhold og romfunksjoner i bygårder i Bergen, Oslo, Tønsberg og Nidaros, 1300–1450*. Upublisert hovedoppgave, Oslo.

Koren-Wiberg, C. (1921) *Bergensk kulturhistorie*. Det Hanseatiske Museums skrifter Bergen. https://urn.nb.no/URN:NBN:no-nb_digibok_2012100306141

Lidén, H.-E. (1974) *Middelalderen bygger i stein: en innføring i steinhugger- og murerhåndverket i Norge i middelalderen.* Oslo:

Universitetsforlaget. https://urn.nb.no/URN:NBN:no-nb_digibok_2013062005044

Løberg, L. (1956) 'Det gamle Oslos gårder', *St. Hallvard*, 1956/6, pp. 280–288.

Løberg, L. (1957) 'Det gamle Oslos gårder', *St. Hallvard*, 1957/1, pp. 67–88.

Martens, V. V. (2010) *Arupsgate, Gamlebyen, Oslo. Arkeologisk undersøkelse og overvåking i forbindelse med utskifting av vannledning*, Oslo: Norsk institutt for kulturminneforskning. http://hdl.handle.net/11250/2608165

McLees, C. (2008) *Olav Tryggvasons gate 3 og Krambugata 3 og 5 (Bristolkvartalet). Arkeologiske undersøkelser i forbindelse med bygging av nytt hotell*, Trondheim: Norsk institutt for kulturminneforskning.

McLees, C. (2019) *Materialities of Modernity and Social Practice in Trondheim c. 1500–1800: An Archaeological Contribution to the Study of Post-Medieval Norway*. NTNU. http://hdl.handle.net/11250/2584587

Meyer, R. and Moberg, H. (2021) 'Det profane bygningsmiljøet ved Ringsaker kirke og Hamar bispedømme: prestegård, borganlegg og kannikenes residenser', in Hauglid, K., Stige, M. and Bø, R.M. (eds.) *Ringsaker kirke - landets fornemste sognekirke*. Oslo: Novus forlag, pp. 61–87.

Molaug, P. in prep. Stratigrafisk-topografisk analyse. Bebyggelsesrester Nordre felt. In: Molaug, P. (ed.) *"Nordre felt". Stratigrafi, topografi og daterende funngrupper*. Unpublished manuscript.

Molaug, P. B. (2008) 'Oslo blir by - fra 1000 til 1200', in Andersson, H., Hansen, G. and Øye, I. (eds.) *De første 200 årene: Nytt blikk på 27 skandinaviske middelalderbyer* UBAS Nordisk - Universitetet i Bergen Arkeologiske Skrifter. Bergen: Universitetet i Bergen, pp. 73–92. https://hdl.handle.net/1956/11369

Nedkvitne, A. and Norseng, P. G. (2000) *Middelalderbyen ved Bjørvika: Oslo 1000–1536*. Oslo: Cappelen. https://urn.nb.no/URN:NBN:no-nb_digibok_2011022208164

Nicolaysen, N. (1862–1866) *Norske fornlevninger: En oplysende fortegnelse over Norges fortidslevninger, ældre en reformationen og henførte til hver sit sted*. Kristiania: Foreningen til Norske fortidsminnesmerkes bevaring. https://urn.nb.no/URN:NBN:no-nb_digibok_2015013008154

Nicolaysen, N. (1866) 'Om Udgravningen i Aaslo 1865: Den oprindelige Bispegaard', *Illustreret Nyhedsblad*, 15, nr. 11.

Nicolaysen, N. (1891) *Hovedø kloster og dets ruiner*. Kristiania: Foreningen til norske fortidsmindesmerkers bevaring. https://urn.nb.no/URN:NBN:no-nb_digibok_2018030107203

Norseng, P. G. and Bandlien, B. (2024) Borgerskap og andre fellesskap, in Bauer, E.L., Eriksen, S.G., Hegdal, H., Stige, M. and Berge, S.L. (eds.) *Det gamle Oslo 1000–1624*. Oslo: Cappelen Damm Forskning, pp. 256–269. https://hdl.handle.net/11250/2759926

NOU (2025: 3) *Ny kulturmiljølov. Utgreeing frå utvalet oppnemnt ved kongeleg resolusjon 22. juni 2022*. Avgitt til Klima- og miljødepartementet 24. mars 2025. https://www.regjeringen.no/no/dokumenter/nou-2025-3/id3092679/?ch=1

Pedersen, R. and Sæther, T. (1995) *Hvelvkjellere på landsbygda: De skjulte kulturminner. Oslo: Program for forskning om kulturminnevern*, Norges forskningsråd. https://urn.nb.no/URN:NBN:no-nb_digibok_2009100800011

Roede, L. (2001) *Byen bytter byggeskikk: Christiania 1624–1814*. 5, Arkitekthøgskolen i Oslo, Oslo. https://urn.nb.no/URN:NBN:no-nb_digibok_2012102206004

Roede, L. (2016) *Historisk atlas over Oslo: Gamle kart forteller*. Oslo: Pax.

Schia, E. (1987a) 'C. Bebyggelsesrester og datering', in Schia, E. (ed.) *De arkeologiske utgravninger i Gamlebyen, Oslo. «Søndre felt». Stratigrafi, bebyggelsesgrupper og daterende funngrupper*. Øvre Ervik: Alvheim & Eide, pp. 41–168. https://urn.nb.no/URN:NBN:no-nb_digibok_2016111748002

Schia, E. (1987b) 'D. Topografi og bebyggelsesutvikling', in Schia, E. (ed.) *De arkeologiske utgravninger i Gamlebyen, Oslo. «Søndre felt». Stratigrafi, bebyggelsesgrupper og daterende funngrupper*. Øvre Ervik: Alvheim & Eide Akademisk forlag, pp. 169–190. https://urn.nb.no/URN:NBN:no-nb_digibok_2016111748002

Schia, E. (1988) Oslo før brannen i 1624, *Fortidsminneforeningens årbok*, 142(1988), pp. 107–120

Smestad, I. (1991) Oslogate 2–8, 1987–1988, in Schia, E. and Wiberg, T. (eds.) *Grøftegravinger. De arkeologiske utgravninger i Gamlebyen, Oslo*. Øvre Ervik: Alvheim & Eide, pp. 7–62. https://urn.nb.no/URN:NBN:no-nb_digibok_2007081700073

Stige, M. and Bauer, E. L. (2018) Middelalderbyen Oslo - av stokk og stein, *Collegium Medievale*, 31, pp. 71–101. https://ojs.novus.no/index.php/CM/issue/view/201

Ødegaard, M. and Sigurðsson, J. V. (2024) Oslos rikdom – kongens og kirkens inntekter, in Bauer, E.L., Eriksen, S.G., Hegdal, H., Stige, M. and Berge, S.L. (eds.) *Det gamle Oslo 1000–1624*. Oslo: Cappelen Damm Forskning, pp. 122–133. https://cdforskning.no/cdf/catalog/book/239

EXPLORING URBAN MORPHOLOGY IN MOROCCO

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ABSTRACT

This report summarizes the seminar *Exploring Urban Morphology in Morocco*. An academic event organized by Imane Saidi with the support of Forma Civitatis (The International Journal of Urban and Territorial Morphological Studies) and its editors, Alessandro Camiz, Martin Ebert, and Giorgio Verdiani. It outlines the seminar's objectives and key themes, offers an overview of the research presented, and details the activities undertaken. The report concludes with event outcomes and future perspectives.

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Introduction

The concept for this seminar originated from an analytical investigation of the urban form of Rabat's old town, commonly referred to as a complex labyrinth, which remains largely underexplored in local urban studies. Its intricate layout contrasts sharply with the surrounding urban fabric, highlighting the distinctive nature of the historical town. The seminar was designed to provide valuable insights into the significance of urban morphology in the study of historical towns such as the medina, while also exploring the relationship between these traditional urban forms and the subsequent patterns of urban expansion. Understanding these dynamics is crucial for comprehending the overall structure of Rabat, as they represent the city's evolution and identity.

The seminar held in Rabat on the 14th of December 2024 featured a lecture followed by a tour of the historic medina, offering academic enrichment and cultural immersion. In introduction, the event began by introducing the global network of urban form, ISUF, the International Seminar on Urban Form, providing context for the broader network of urban morphology, accompanied by an overview of the series *Writing Urban Form: Talks on Islamic Cities*, organized by Alessandro Camiz, Ph.D., at Özyeğin University. This series emphasizes Camiz's role in advancing urban morphology education among students in Africa and the Middle East, particularly in historic towns.

After providing an overview of the general network, the lecture, entitled *From the Medina to Rabat Ville: Evolving Urban Forms*, began by providing an overview of the general urban network before delving into a detailed analysis of the city's growth. It specifically focused on the urban tissue of the medinas and traced its evolution through to Rabat Ville, highlighting key factors that have driven this transformation. Central to the analysis were essential concepts such as nodes, routes, and urban attractors—key elements in understanding

Figure 1. Image from the lecture 'From the Medina to Rabat Ville: Evolving Urban Forms'.

the dynamics of urban growth—explored by Camiz (2018). These concepts provide a framework for analysing the spatial and functional relationships within the city's evolving urban fabric.

Additionally, the role of mosques as pivotal urban elements in Islamic Maghreb towns, crucial for understanding how sacred spaces functioned as buildings with significant influence on urban form (Saidi, 2025). These concepts collectively provide a framework for analysing the spatial and functional relationships that shaped the city's evolving form.

The lecture delivered a brief analytical study that connected the old city with the later urban development designed during the French protectorate, highlighting the importance of urban morphological studies in understanding the old town as part of the larger city. A dedicated session following the seminar emphasized the importance of urban morphological studies for researchers in Morocco, positioning the field as a crucial tool for urban analysis. A prominent issue within the region's architectural discourse is the lack of focus on historical towns from an architectural and urban morphological perspective. The event sought to highlight the value of examining the past to gain a deeper understanding of both the present and the future by encouraging dialogue between researchers, students, and architects from diverse backgrounds engaging in substantive discussions.

Main Themes

Theoretical framework

The analytical investigation of the urban fabric is based upon principles of the Italian School of Urban Morphology, established by Saverio Muratori and Gianfranco Caniggia. An approach emphasizes the implication of recognizing historical traces within the urban landscape to inform and guide solutions for contemporary architecture and urban planning (Malfroy, 2021). A framework that highlights historical continuity of cities through morphological layer, a significantly crucial tool in dealing with cases of the Maghreb cities.

Colonial urban expansion

The lecture examined the evolution of this coastal city, with particular emphasis on the transition from the fortified towns of Salé and Rabat to the urban expansions orchestrated by French planners. It critically examined the segregation between the "indigenous town"—a term commonly used by French colonial planners to describe the medina—and the French-designed “Ville Nouvelle,” characterised by linear

developments (Morestin, 1950). Additionally, the lecture addressed the relationship between form and function within the Islamic medina and how this contrasts with the purpose-driven urban planning implemented during the colonial period.

The medina's urban layout with its focus on privacy, community, and social interactions, underline the rationale of organic urban forms. Its functionality follows principles described by Hakim (2008), where the town follows codes that have been historically developed through communal consensus, focusing on ensuring harmony between built environments, social interactions, and local culture. The irregular urban patterns indicate a history of social, religious, and commercial activity and human interaction, which are essential to understand in order to fully grasp the urban form. Thus, understanding urban growth involves interpreting both the physical structure and the social history of a city, connecting typological analysis and a study of geometric patterns with the social processes that shape urban development (Petruccioli, 2007).

Conservation challenges

Given the medina's coastal nature and vulnerability to climate change, understanding its functionality and underlying logic becomes crucial for conservation. By understanding these aspects, the study contributes significantly to the broader effort of achieving balance between preserving Rabat's traditional character and accommodating future developments. This balance is becoming increasingly critical, particularly given the medina's central position within a densely populated tourist area, where pressures of modern growth and preservation must be carefully navigated. By the end of the seminar, an interactive session encouraged idea exchange and rethinking of how historical and current urban forms can coexist and inform one another, enriching the broader field of urban morphological studies.

Medina Tour

The medina tour began at Bab El-Had, at the point of the Marché Centrale. Attendees explored the walled town, gaining insights into concepts discussed during the seminar, through navigating the street network and commercial alleys, which define its historic social activity. Principal routes offer prominent views of the intersections with secondary routes and the boundaries of each compact urban block. These primary routes have historically served as the central corridors for commercial activity over the years (Figure 4). As we explored the medina, we paused at significant urban

Figure 2. Image from the Medina Tour at the Starting Point of Marché Central, Rabat.

block boundaries and the intersections of streets, which not only delineate the structure of the urban fabric but also provide rich insights into the various phases of urban growth, as discussed in the lecture and essential for evaluating the city's development. Finally, the tour provided an immersive experience that enhanced understanding of urban growth and deepened their perception of the organic urban fabric, and contributed to an enriching discussion and engagement on the dynamic relationship between built environments and community practices.

Conclusions and Future Directions

The gathering provided profound insights into the link between past and present using the lens of urban morphology. It served as a forum for networking and dialogue that fostered the exchange of research interests and topics. Bringing together a diverse group with a mix of experience levels and disciplines enriched the dialogue and fostered a collaborative atmosphere. Attendees affiliated with various schools locally and internationally have attended the program, including the School of Architecture, Planning and Design at University Mohammed 6 Polytechnique (UM6P), International University of Rabat (UIR), Universidad Politécnica de Madrid (UPM), and L'École Nationale d'Architecture de Rabat (ENA).

Exploring Urban Morphology in Morocco underscores a positive milestone in expanding the network and fostering

Figure 3. Event announcement poster for the seminar Exploring Urban Morphology in Morocco. Created by the author, 2024.

communication between local and international scholars. Looking ahead, we hope to focus on cultivating a cohesive urban community in the Maghreb, emphasizing continuous dialogue and knowledge exchange across diverse practices and scholarly topics within the region. This initiative aims to expand connections with researchers from neighbouring countries further. In addition to fostering the growth and sustainability of the network, our objective is to advance the field through collaborative efforts and knowledge exchange in Maghreb countries.

References

Morestin, H. (1950) '*Les faubourgs indigènes de Rabat', Les Cahiers d'Outre-Mer,* 3-9, pp. 66–76.

Malfroy, S. (2021) *A Morphological Approach to Cities and Their Regions*. Zürich: Triest Verlag.

Saidi, I. (2025) 'A Typo-Morphological Investigation: The Ksar Ait Benhaddou', *Forma Civitatis: International Journal of Urban and Territorial Morphological Studies*, 3(1), pp. 98-103.

Camiz, A. (2018) 'Diachronic transformations of urban routes for the theory of attractors', in D. Urios Mondéjar, J. Colomer Alcácer and A. Portalés Mañanós (eds.) *Proceedings 24th ISUF 2017 - City and Territory in the Globalization Age*, pp. 1359–1369.

Petruccioli, A. (2007) *After Amnesia: Learning from the Islamic Mediterranean Urban Fabric*, ed. ICAR. Bari, Italy: Polytechnic of Bari.

Hakim, B.S. (2008) 'Mediterranean urban and building codes: origins, content, impact, and lessons', *Urban Design International*, 13, pp. 21–40. Doi: 10.1057/udi.2008.4.

IRANIAN NETWORK OF URBAN MORPHOLOGY: IDEA, ESTABLISHMENT, AND PROGRESS

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ABSTRACT

The Iranian network of urban morphology has been established under the supervision of ISUF International by a group of Iranian scholars from different universities and institutes in Iran. Even short, this network has quite a history, from early steps to establishment and from establishment to recent activities. This short history can be expressed as follows:

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The Initial steps

More than two years ago, after publishing the article *The study of urban form in Iran*, by Mazyar Abaee, the establishment of the Iranian network was encouraged by Vitor Oliveira (the president of ISUF) and Giuseppe Strappa (the coordinator of the regional networks). The establishment process of the Iranian network began by inviting the scholars who had been mentioned in the article to the founding board. After the initial meetings, the board decided to develop a constitution as the first significant step. When the first edition was made, the board decided to elect the council to finalise the constitution and proceed with the registration. The council, which consisted of five members, including Mazyar Abaee as the president, concluded the constitution and, after the board's approval, sent it to the ISUF president and the regional network's coordinator. Finally, the network and the constitution were registered with ISUF on June 30. Afterwards, the council plans for the yearly vision. The first activities were defined as being in the form of online speeches by inviting the members of the Iranian founding board. The primary approach of these speeches is essential cultivation to introduce urban form using its general meaning, referring to diverse architecture, planning and design paradigms. Finally, the council of the Iranian network is investigating the appropriate ways to transform its founding board into a general assembly by inviting academics interested in the field in its disciplinary manner.

Establishment of ISUFIran

The network was officially established during a meeting in June 2023 with the presence of Vitor Oliveira and Giuseppe Strappa. The network is led by a "society" and its "executive committee" (the second of which is a reformation of the in-

Figure 1. The city of Yazd Landscape, the most preserved brick settlement in the country.

itial council), including Zahra Ahari (society member), MR Noghsanmohammadi (society member, whose thesis on Yazd is the most well-known morphological study in Iran (fig.1)), Eisa Esfanjary (executive committee member), Toofan Haghani (executive committee member), Nasim Iranmanegh (executive committee member), Mahta Mirmoghtadaee (society member), Maryam Mohammadi (executive committee member), Pantea Alipour (society member), Azadeh Mohajer Milani (society member), and Mazyar Abaee (president and executive society member).

Institutional Support

Some of ISUFIran's Activities were supported by the Urban Planning and Architecture Research Centre of Iran (UARC). This institution was formerly the research department of the Ministry of Housing and Urban Development (currently named the Ministry of Road and Urban Development). It was privatised and recently became a sub-institution of the Iran Tourism Finance Group. Last year, the main support of UARC was holding meetings and online events, and now, it is helping compile the newsletter.

Online Events

During several online meetings, ISUFIran invited Iranian experts on urban form, including Toofan Haghani, Zahra Ahari, Mohammadreza Noghsanmohammadi and Pantea Hakimian. ISUFIran was honoured to host Alessandro Camiz, Tulga Unlu, Olgu Caliskan, Gizem Erdogan Aydin and Dalya Hazar from the Italian and Turkish Network of Urban Morphology. Mazyar Abaee hosted meetings.

Introductory Meeting

An introductory meeting (May 22, 2023) held to present the Iranian network to national and international colleagues. In this event presentations made by Vitor Oliveira, Giuseppe Strappa and Iranian network members and colleagues from Iran, England, Italy, Turkey and South Africa participated in the event (Fig. 2).

Newsletter

Publishing a newsletter suggested by Oliveira in the introductory meeting and followed up by Maryam Mohammadi and Toofan Haghani. ISUFIran Society decided to publish

Figure 2. The international introductory session poster on the Iranian network of urban morphology

the newsletter quarterly, representing the society's and the network's activities to disseminate the place and importance of urban morphology as a distinct domain of knowledge and as an instrument to expand the network's borders.

ISUFIran is currently planning a series of online events that invite Iranian and international colleagues. It is obvious that more disciplined programs, such as international in-person meetings, summer schools, and regional or international conferences, face special political and economic barriers, which the society of ISUFIran has to solve in collaboration with colleagues all over the world.

FIRST INTERNATIONAL WORKSHOP ON ABRUZZO'S HISTORICAL HERITAGE

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International Network for Architecture and Archaeology

The Castel di Sangro workshop is part of a decade-long series of international educational initiatives carried out under the aegis of various participating universities. Among the many, we wish to recall: Panagia Acheiropoietos, 2014, Cyprus; Castel Madama, 2016, Italy; Salamis 2017, Cyprus; Kyrenia Castle, 2018, Cyprus; Camerino, 2018, Italy; Galata waterfront, 2019, Turkey; Horrea Agrippiana, 2020, Italy; Castelvecchio Calvisio, 2020, Italy; Horrea Agrippiana, 2021, Italy; Castelvecchio Calvisio, 2021, Italy; Priene, 2022, Turkey; Forum of Theodosius, 2023, Turkey; Castel di Sangro, 2024, Italy.

The recent establishment of the International Network for Architecture and Archaeology (INAA) https://www.architecture-archaeology.com/, an international research organisation, has enabled us to bring together, on a single website, all materials from previous workshops and summer schools, serving as a launch platform for future initiatives. These educational events have all been characterised by a dialectical relationship between architecture and archaeology, which we consider essential for the training of architects. Another

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common thread in these experiences is the constant presence of Italy and Turkey. Whenever possible, we have sought to alternate locations, bringing Italian students to Turkey and Turkish students to Italy. This has not been without bureaucratic challenges—such as obtaining visas—and financial ones, as mobility has always been self-funded.

Over the years, we have realised that not only our motivation—explained below—but also that of the participating students has always been very high, which has encouraged us to continue. In ten years, we have never required participation fees from students, except in rare cases where we collected minimal contributions (about €50 per student) to cover unforeseen expenses. Italy and Turkey share a unique and unparalleled architectural heritage, encompassing not only the legacy of the Roman Empire but also monasteries and medieval castles. It is no coincidence that they are the countries hosting the largest number of UNESCO sites in the world. This heritage represents a formidable research resource for heritage-related studies. Furthermore, though to varying degrees, Italy and Turkey also share a limited capacity to intervene in these contexts with enhancement projects linked to cultural use. In essence, a clear and high demand for accessibility and heritage valorisation, driven by tourism, encounters a relatively weak response in terms of design output. For various reasons, interventions in these sites are difficult, and when they do occur, the design responses are often inadequate. This highlights an insufficient training of students—the future professionals—on documentation and design in heritage contexts. This motivation has driven us over the past ten years to pursue this initiative. We believe that we have a duty to continue this educational project and bring it to a more structured level in the future, in order to secure financial resources capable of supporting the enthusiasm of our students, who have always participated with great commitment.

Figure 1. Poster of the "International Workshop on the Historical Heritage of Abruzzo: Technologies and Design", 2024 edition.

Castel di Sangro: Technologies and Design

From 20 to 27 July 2024, the international workshop dedicated to the historical heritage of Abruzzo, entitled "Castel di Sangro: Technologies and Design", was held at the Conference Hall of the Museo Civico Aufidenate in Castel di Sangro. Professors Alessandro Camiz, Daniela Ladiana and Giorgio Verdiani, together with the Aufidenate museum director Mario Rainaldi were the scientific coordinators of the event. Twenty students participated, from various universities including the University of Malaga, the University of Thessaly, Abdullah Gül University, "Sapienza" University of Rome, and "G. d'An-

nunzio" University of Chieti-Pescara. The workshop began with a conference at the Museo Civico Aufidenate, entitled "Minor Historical Centres: But Why Minor?" which presented recent research and projects on the historical heritage of Abruzzo and, in particular, on Castel di Sangro. Throughout the week, experts from various fields delivered lectures and in-depth studies on methodological and operational aspects related to the workshop themes, such as the enhancement of small historical centres, the use of digital technologies for documentation and conservation, and archaeology as a driver of social development. On the final day, we presented and publicly discussed the results of the workshop. The Castel di Sangro workshop was characterised by a highly collaborative and participatory international working environment in the development of the proposed themes. From a methodological perspective, one of its central features was the emphasis on interdisciplinary collaboration. Coordinators and tutors promoted not only synergy among students but also their interaction with external professionals and distinguished figures invited to participate in the seminars. Moreover, the presence of institutional representatives and local citizens enriched the students' reflections and design proposals, offering a valuable opportunity to engage with the social and cultural reality of the context. The design challenge unfolded in a context of strong connection with the territory, not only linking participants with the working environment but also putting them in direct and dialogical contact with the local community and with the political and professional actors.

The workshop focused on activities related to the enhancement and design of historical heritage including: digital sur-

Fig. 2. Group photo of the "International Workshop on the Historical Heritage of Abruzzo: Technologies and Design", 2024 edition.

vey of the conventual building to acquire detailed knowledge; digital modelling of the conventual building to support management and scheduled maintenance; architectural design of the annexed volumes and open spaces, with the aim of redeveloping existing areas and increasing opportunities for use.

The participants carried out all the activities directly on the project sites, with an integrated approach blending both theory and practice. The success of the First International Workshop on Abruzzo's Historical Heritage confirmed the validity of our teaching approach, which integrates theory and practice through direct immersion in project sites. This event, the most recent in a decade-long series of educational initiatives, demonstrated that the workshop is a true laboratory of innovative ideas and a model of interdisciplinary collaboration.

It has traced a path that should be continued and further developed, especially in a region such as Abruzzo, so rich in heritage, turning the workshop into a recurring event in these territories. This would make it possible to establish a stable network of universities, institutions, and professionals, able to address systematically the challenges of conservation and enhancement of cultural heritage, with a particular focus on Abruzzo's minor historical centres. A key element for the future is the strengthening of local community involvement. The workshop highlighted the importance of dialogue between experts and citizens, not only to enrich projects with in-depth knowledge of the territory but also to foster a stronger sense of belonging and active participation. Integrating communities into decision-making and design processes could transform our workshops into a model of social as well as cultural innovation. In conclusion, the future of this series of workshops lies in its ability to evolve into a permanent platform for exchange, combining research, education, innovation, and practical interventions. In this way, we can contribute to building a renewed vision of the relationship between heritage and territory, strengthening the mission we have consistently pursued over the years.

References

Bertocci, S. et al. (2019) The Kyrenia Castle, an Approach to Digital Documentation in the Cyprus Island, in Börner, W. and Uhlirz, S. (eds.), *Proceedings of the 23rd International Conference on Cultural Heritage and New Technologies* (Vienna, Austria November 2018), Museen der Stadt Wien–Stadtarchäologie, Vienna, pp. 1-13.

Camiz, A.; Bertola, G. and Özkuvancı, Ö. (2023) Post seismic typological transformation of three mediaeval houses, Castelvecchio Calvisio (AQ), in Camiz, A.; Ceylanlı, Z. and Özkuvancı, Ö. (eds.) *Cities in evolution: diachronic transformation of urban and rural settlements*, (Proceedings of the VIII AACCP symposium, Özyeğin University, Istanbul 2021), vol. I, DRUM Press: Istanbul, pp. 54-59.

Camiz, A. (2023) Ricostruire Castelvecchio Calvisio (AQ) dove era e come sarebbe potuto essere, *Architettura e Città. Argomenti di Architettura*, 18, pp. 142-146.

Camiz, A. and Özkuvancı, Ö. (2022) Mimarlik ve Arkeoloji Uluslararası Yaz Okulları. Architecture and Archaeology International Summer School, in Özorhon G. et al. (eds.) *Özyeğin Üniversitesi, Mimarlık ve Tasarım Fakültesi 10*. Yıl Kitabı. Özyeğin University, Faculty of Architecture and Design. 10th Year Book, Özyeğin University press: Istanbul, pp. 108-109.

Camiz, A. (2016) Utility of urban morphology studies for the design process: some educational experiences, in Strappa, G.; Amato, A.R.D. and Camporeale, A. (eds.), *City as Organism. New Visions for Urban Life*, (22nd ISUF International Conference, 22-26 September 2015, Rome Italy), vol. 2, U+D editions: Rome, pp. 1509-1518.

Camiz, A. (2019) 'Contextual design. L'esperienza del Laboratorio di Architettura degli Interni a Salamis, Cipro', *Architettura e Città. Argomenti di Architettura*, 14, pp. 93-95.

Camiz, A. ed. (2016) *Reconsidering Archaeology and Architecture*. Book of Abstracts. Davide Ghaleb: Vetralla.

Camiz, A.; Ceylanlı, Z. and Verdiani, G. (2023) An Integrated Approach to Archaeological Heritage: the Shipwreck Museum in the Kyrenia Castle, Cyprus, in Summerer, L.; Kiessel, M. and Kaba, H. (eds.), *New approaches toward recording, preserving and studying cultural heritage in divided* Cyprus: problems & opportunities, ARUCAD Press: Kyrenia, pp. 301-321.

Camiz, A.; Verdiani, G. and Ceylanlı, Z. (2018) Seminario internazionale: lettura e progetto del castello di Kyrenia. International workshop: reading and designing the Kyrenia castle, in Bertocci, S. (ed.), *Conference Proceedings of Symposium of representation scientific area for development of multidiscipli-*

nary international programs, DIDApress: Florence, pp. 264-269.

Capparelli, F. and Camiz, A. (2019) BIM documentation for architecture and archaeology: the shipwreck museum in the Kyrenia castle, Cyprus, in Conte, A. and Guida, A. (eds.), *Re-USO Matera. Patrimonio in divenire, conoscere, valorizzare, abitare*. Gangemi International: Rome, pp. 2241-2250.

Giovannini, C. E.; Verdiani, G. and Cardinali, V. (2024) 'Priene, a monumental disaster in the Aegean: Digital approaches to the Doric Stoa's and the theater's lost evidence', *Heritage*, 7(8), pp. 4538–4561.

Rankin, T. (2021) 'A Report on the 2020 ISAR International Architecture Summer School in Abruzzo'. *Forma Civitatis. International Journal of Urban and Territorial Morphological Studies*, 1(1), pp. 98-105.

Valletta, E. and Camiz, A. (2019) Image reintegration. Restoring the Palace in the Kyrenia Castle, Cyprus, in Conte, A. and Guida, A. (eds.) *ReUSO Matera. Patrimonio in divenire, conoscere, valorizzare, abitare*. Gangemi International: Rome, pp. 390-320.

Verdiani, G. and Camiz, A. (2020) Fatto senza mani: rilievo, storia e valorizzazione del monastero di Panagia Acheiropoietos, Cipro. Made without hands: survey, history and valorisation of the monastery of Panagia Acheiropoietos, Cyprus, Firenze. *Architettura*, Anno XXIV, Quaderni 2020, Firenze University Press: Firenze 2020, pp. 84-89.

Verdiani, G.; Arslan, P. and Çiçek, E. (2019) Urban transformation and evolution of the Beyoğlu waterfront in Istanbul, in Conte, A. and Guida, A. (eds.) *Re USO Matera: Patrimonio in divenire. Conoscere, valorizzare, abitare*. Gangemi International: Rome, pp. 1215–1226.

Verdiani, G.; Giraudeau, S. and Leonardi, A. (2021) 'Small towns and digital survey: Virtualizing Castelvecchio Calvisio, Abruzzo, Italy'. *Forma Civitatis. International Journal of Urban and Territorial Morphological Studies*, 1(1), 80–95.

Verdiani, G.; Ricci, Y.; Pasquali, A. and Montanaro, F. (2023) The remains of the Horrea Agrippiana in the Roman Forum: From survey to virtual reconstruction, in Camiz, A.; Ceylanlı, Z. and Özküvancı, Ö. (eds.) *Cities in evolution: Diachronic transformations of urban and rural settlements* (Proceedings of the VIII AACCP symposium, Özyeğin University, Istanbul 2021, Vol. 2, DRUM Press: Istanbul, pp. 96–106.

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THE GENESIS OF MEDIEVAL TOWNS IN TRANSYLVANIA

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BOOK REVIEW OF

Niedermaier, Paul (2016) Geneza orașelor medievale în Transilvania, Editura Academiei Române, București, (The Genesis of Medieval Towns in Transylvania)

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The Genesis of Medieval Towns in Transylvania is a monumental work authored by Paul Niedermaier, which addresses the evolution of urban planning in Transylvania from the Early Middle Ages to the early modern period. The book is extremely detailed and well-documented, with its main objective being to elucidate the process of formation and development of Transylvanian medieval towns, within the context of an in-depth analysis of their structures and morphology. The book is complementing an earlier work by the author, Medieval Habitat in Transylvania (2012), aiming to clarify previously underexplored issues and open new research directions.

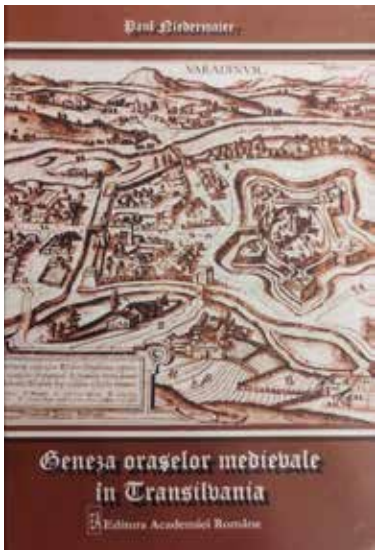

Figure 1. Niedermaier, Paul: Geneza oraşelor medievale în Transilvania (The Genesis of Medieval Towns in Transylvania), Book cover.

The study covers a vast period ranging from the post-Roman period and the decline of ancient urban centers to Transylvania's inclusion in the Habsburg Empire, tracing the phases of urban development starting with the habitat during the migration period, moving through the beginnings of early medieval urbanism, and culminating in its apex during the period 1242–1347, a phase that marks the formation of the key historical centers of Transylvania. Subsequently, between 1348 and 1541, urbanism was dominated by the development of suburbs and durable constructions, while in the early modern period, although the first modern urban trends emerged, changes were less significant.

The volume examines around 40 significant urban centers of medieval Transylvania, categorized as either "cities" or "market towns," alongside the genesis of over 100 smaller settlements. These include ecclesiastical, administrative, mining, and commercial centers from regions such as Banat, Crişana, Maramureş, and Ardeal. In each case, essential historical data on the functionality of the settlement, its population, and spatial evolution are analyzed. Urban structures are assessed in terms of their compositional complexity and the layout of households and streets relative to the size of the settlement.

The book is structured into six main parts, each addressing essential stages in the evolution of urban planning in these regions, starting with the research methods.

The research methodology employed by the author is based on the morphogenetic types of habitat. It establishes the conceptual framework and theoretical boundaries necessary to trace the evolution of settlements and urban centers. The methodology combines the study of historical documents with the analysis of maps and urban configurations. Niedermaier focuses on identifying planimetric and parcel typologies, drawing clear distinctions between historical periods and the specific influences of each era. Plans and graphic rep-

resentations are central tools in the analysis, developed from old maps and supplemented with sketches and isometric views to depict the configuration of settlements in different historical stages. These graphic materials, including the Josephine surveys of the 18th century, present certain limitations, such as inaccuracies due to small scales or missing details. To compensate for these deficiencies, the document proposes supplementing data through the interpretation of parcel textures and general planimetric structures. Essential elements of the plans, such as parcel boundaries, fortifications, and watercourses, are prioritized, while insignificant details, like boundaries between private courtyards, are omitted to ensure analytical clarity.

Niedermaier classifies medieval Transylvanian settlements into three distinct morphogenetic types that reflect unique adaptations to geographical and economic conditions, as well as the cultural and political influences of the period. Scattered settlements, associated with livestock farming, are characterized by large distances between parcels, irregular shapes, and a clearly defined nucleus. In contrast, compact settlements and linear settlements—results of the Saxon colonization of the 12th century—exhibit rigorous organization and strict parceling rules. The second type, loose-knit settlements with small, nearly square parcels located in close proximity to each other, reflects modest economic beginnings and early urban organization. By contrast, the third type includes linear settlements with elongated, regularly arranged parcels, a hallmark of colonists' planning that was later widely adopted in Transylvania. This classification is not only descriptive, but also explanatory, providing a solid foundation for understanding subsequent urban evolution. The study demonstrates that while these settlement types underwent transformations over time, they formed the structural basis of medieval towns in the region.

The Mongol invasions of 1241 and later Ottoman incursions had a significant impact on the structure and organization of towns. Nevertheless, Niedermaier highlights the persistence of certain archaic elements within urban structures: for instance, the street networks of major towns like Braşov and Cluj remained relatively stable, and central marketplaces continued to play a crucial role in urban spatial organization. These marketplaces, along with fortifications and durable constructions, contributed to the consolidation of Transylvanian historical centers.

The impact of Saxon colonization on Transylvanian urbanism was significant, as the settlers introduced new spatial

organization rules, reflected in settlements such as Mediaș, Bistrița, and Sebeș. Land parceling, functional zoning and the construction of fortified churches are among the defining features of this process. These transformations profoundly influenced the cultural and urbanistic identity of the region, shaping the development of towns well into the modern period.

The expansion of towns was influenced by natural boundaries—such as rivers or terrain—as well as by economic and strategic factors. Suburbs, which emerged as zones of expansion, were gradually integrated into the urban structure, contributing to the diversification of street networks and the creation of new functional spaces.

Chapters dedicated to the classical and late medieval periods emphasize the economic role of towns. Niedermaier analyzes marketplaces, inns, and crafts, highlighting how these activities drove urban dynamics and contributed to the prosperity of commercial centers. Sibiu and Brașov are presented as emblematic examples of towns that benefited from regional and international trade.

Although The Genesis of Medieval Towns in Transylvania by Paul Niedermaier provides an exhaustive analysis, it is worth noting that some recent archaeological discoveries and certain aspects—such as urban influences from outside the Transylvanian region—might have warranted a more extensive exploration. Additionally, while the cartographic analysis is highly valuable, additional maps or diagrams could have further supported the author's arguments.
Nevertheless, the work remains a fundamental reference point for Romanian historiography, filling a significant gap in the research on medieval urbanism.

THE CITY BEAUTIFUL AND THE GLOBALIZATION OF URBAN PLANNING

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BOOK REVIEW OF

Morley, Ian (2025). The City Beautiful and the Globalization of Urban Planning. Cambridge University Press, Cambridge.

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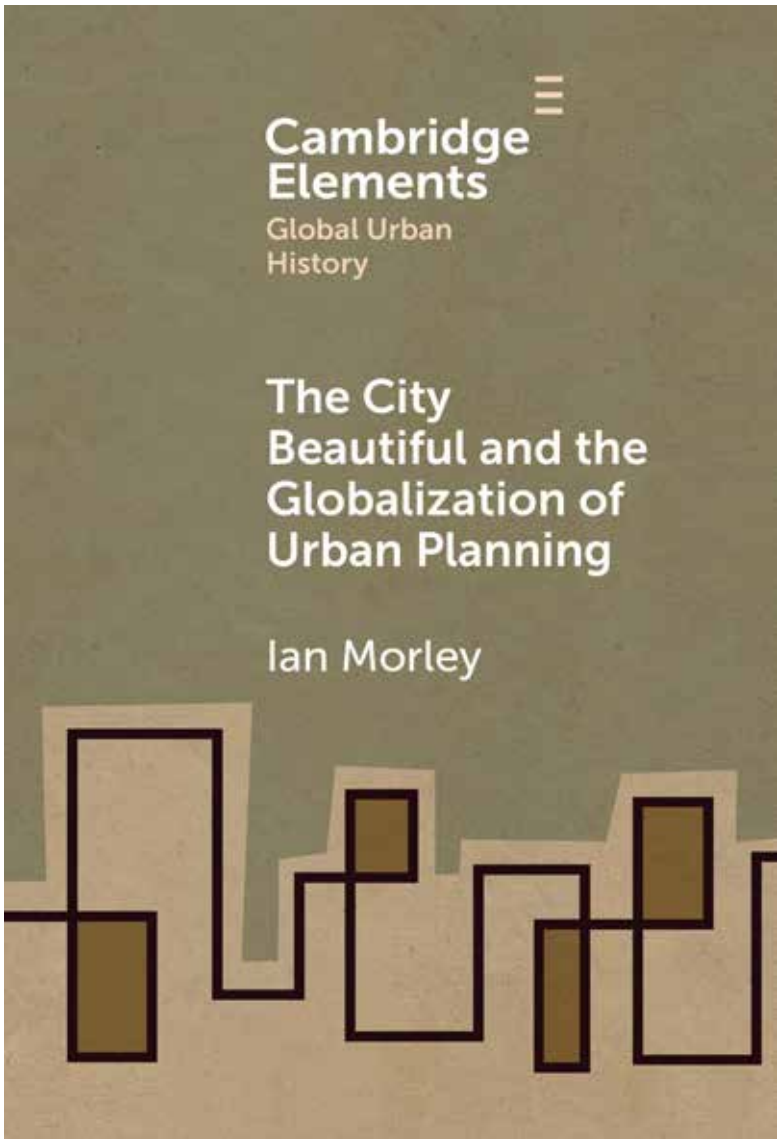

Figure 1. The City Beautiful and the Globalization of Urban Planning (Cover), by Ian Morley, 2025, Cambridge: Cambridge University Press.

The City Beautiful and the Globalization of Urban Planning by Ian Morley examines in detail how the City Beautiful movement spread beyond the American borders and influenced urban planning internationally. Although the movement is often perceived as an American-centric phenomenon, Morley strongly argues that its aesthetics and principles were adapted by urban planners all over the world with different cultural and political structures. The book investigates the impacts of this phenomenon in various urban designs of dissimilar cultures and climates, while placing it in the context of broader history, politics, and ideologies. (Morley, 2025)

The book, which emphasizes the spreading of planning models globally, magnificently expands on the studies of Robert Freestone (2007, 2023), Gilbert A. Stelter (2000), and Daniel T. Rodgers (1998). It argues against the widely held belief that the City Beautiful movement was limited to North America by demonstrating how its principles were dissemi-

nated worldwide. To reveal how planners in different regions integrated elements of the movement into their own urban designs, Morley offers case studies form cities throughout Europe, Asia, and Latin America. To examine how planning principles were used in diverse regions, such as Asia and Australasia, the examination goes beyond individual cities. The book effectively illustrates the spreading of planning knowledge circulated through exhibitions, publications, professional organizations, and the global movement of planners like Daniel Burnham. Moreover, this study raises critical questions regarding the intersection of urban design with authority, governance, and identity.

In addition to aesthetics, the City Beautiful ideals encompassed social order and civic involvement. Morley points out that the urban designers considered grand boulevards, monumental architecture, and public areas as means of fostering social cohesiveness, civic pride, and even political legitimacy. The City Beautiful movement was modified to fit local circumstances rather than being a strict model. Morley describes how planners in many countries adapted the ideas of this movement according to political systems, cultural preferences, and the resources at their disposal. He looks at how the movement's components were blended with local architectural traditions in places such as Manila, Buenos Aires, and Delhi.

The City Beautiful movement faded in its origin by the middle of 20th century, the author discusses that the movement's impact persisted in several international contexts. Long after it lost favour in the United States, many cities kept up its

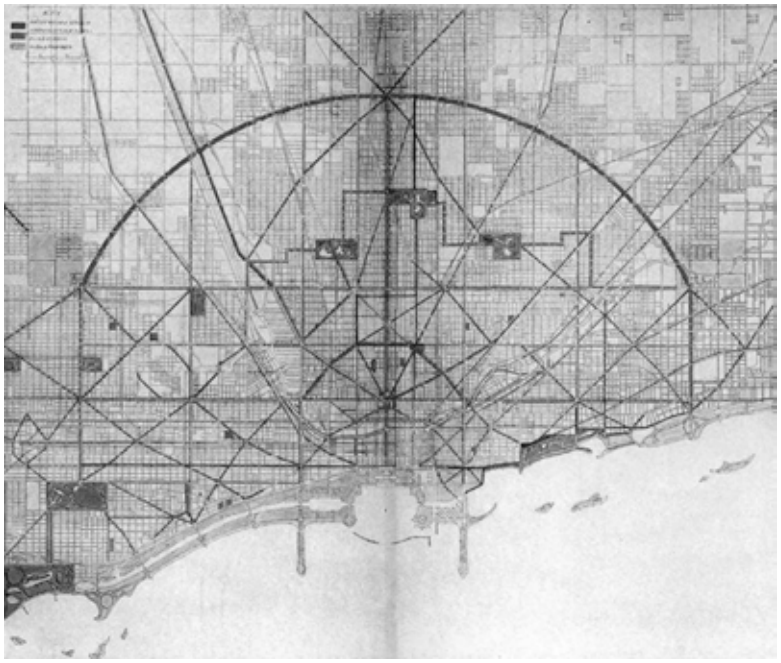

Figure 2. The 1909 plan of Chicago with street and boulevard, and park systems, Burnham and Bennet, 1909. Reprinted from The City Beautiful and the Globalization of Urban Planning (9), by I. Morley, 2025, Cambridge: Cambridge University Press.

ideals, which helped people learn about the urban planning history. He connects these early planning efforts to later developments in modernist urban design as well as contemporary urban revitalization projects.

This book is a valuable contribution to urban history and planning studies. Morley's study is well-supported by archive materials, historical photographs, and urban planning documents. The book effectively connects the gap between architectural history and urban studies, making it relevant to scholars, planners, and policymakers. However, the book convincingly establishes the global influence of the City Beautiful, it could further interrogate the local adaption and resistance to these planning models. How did non-Western societies reinterpret or resist the aesthetics and ideologies of this movement? The analysis would be strengthened by a closer examination of native planning customs and how they interact with imported models.

The City Beautiful and the Globalization of Urban Planning, expands our understanding of the City Beautiful movement by representing its permanent impact beyond the United States. This book is a noteworthy resource for historians, architects, and urban planners seeking how aesthetic and social principles formed cities worldwide.

References

Morley, I. (2025). *The City Beautiful and the Globalization of Urban Planning*. Cambridge: Cambridge University Press.

Freestone, R. (2007). *Designing Australia's Cities: Culture, Commerce and the City Beautiful*. Sydney: University of New South Wales Press.

Freestone, R. (2023). City Beautiful Movement, in R. Dilworth (ed.), *Oxford Bibliographies in Urban Studies*.

DOI: 10.1093/OBO/9780190922481-0069

Stelter, G. A. (2000). Rethinking the Significance of the City Beautiful Idea, in R. Freestone (ed.), *Urban Planning in a Changing World: The Twentieth Century Experience*. London: E and FN Spon.

Rogers, D. T. (1998) *Atlantic Crossings: Social Politics in a Progressive Age*. Cambridge: The Belknap Press of Harvard University Press.

URBAN PLANNING IN NAZI GERMANY

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BOOK REVIEW OF

Bodenschatz, Harald; Grau, Victoria; Post, Christiane and Welch Guerra, Max (eds.) (2025). Urban Planning in Nazi Germany. Attack, triumph, terror in the European context, 1933–1945. Dom Publishers, Berlin.

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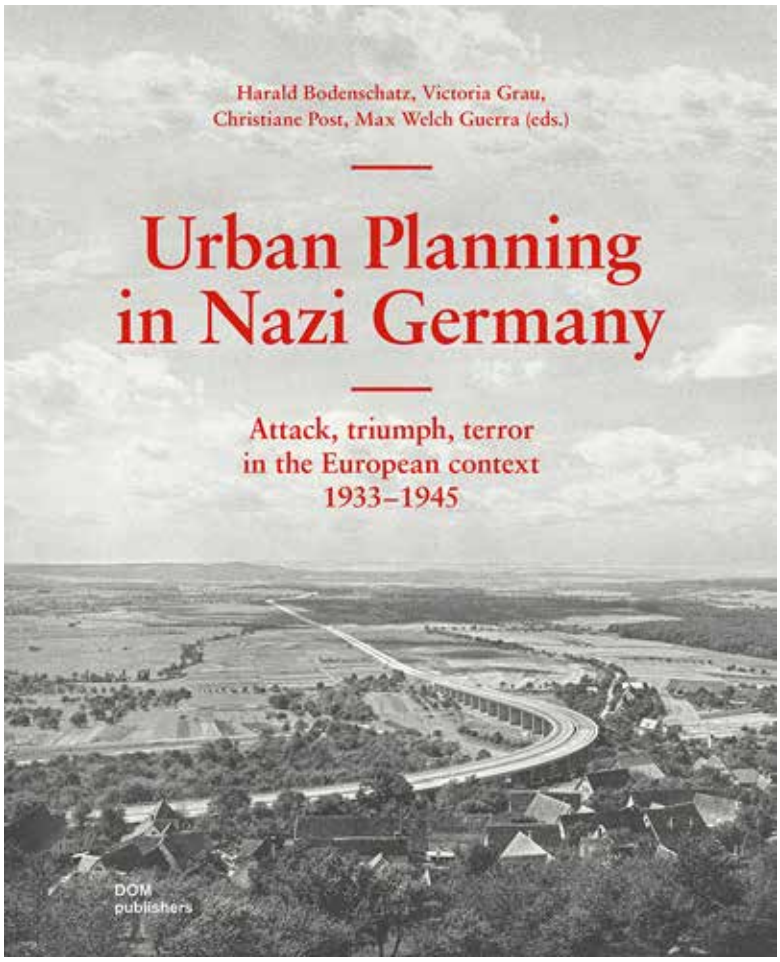

Figure 1. Urban Planning in Nazi Germany by Harald Bodenschatz a.o., book cover.

The volume *Urban Planning in Nazi Germany* starts with a curious letter, written by the functionalist architect Ernst May and his wife, Ilse. Both had just returned disillusioned from the Soviet Union, where they witnessed the ousting of modern architecture by the emerging dictator Josef Stalin. The letter, addressed to Ilse's mother, dates to the end of March 1933. In the face of the Weimar Republic's collapse, they attribute to the German people a lack of democratic traditions. In a key phrase they conclude, «A dictatorship is probably the most appropriate form of government for Germany today.» (Bodenschatz, 2025, p. 25.)

The letter reflects hereby a general sentiment among the modernist architects and urban planners of their time who see a moderate dictatorship as a premise for the realisation of their revolutionary urban schemes. It is indeed striking that the futuristic urban plans of Ludwig Hilbersheimer, Le Corbusier and Marcello Piacentini harbour an inherent totalitarian element. It is therefore not surprising when the English urbanist Patrick Abercrombie judges fascist Italy to be «at the moment … the most energetic town-planning nation in Europe». (ibidem)

We have seen a number of books on the subject of architecture and urban planning during the Nazi era in Germany. It is the genuine strength of this book not to base its effect on widely known illustrations of Speer's Germania or Gieseler's grim architecture, sending pleasant shivers down the spines of its readers. The premise of this book describes a general sentiment of frustration among the self-declared avant-garde about the inability of the European democracies to handle the imminent housing crisis of the inter-war era and the radical changes to the urban tissue that the introduction of the automobile required. Many of them saw in the emerging autocrats and dictators a welcome opportunity to topple the sluggish planning bureaucracy and their democratically elected clients. This volume challenges the idea of the uniqueness of German and Italian urban planning and embeds the work of German urban planners in a European context, drawing parallels to similar symptoms in Portugal, Spain, America and the Soviet Union. It illustrates the mutual awareness of planners in different countries throughout the 1930s, creating an impressive patchwork of interrelated monumentalist, if not totalitarian, urban concepts.

Figure 2. "Drive Safely on German roads", propaganda poster used for the promotion of the Reichautobahn, ca 1936; in: Bodenschatz, H. a.o.. Urban Planning in Nazi Germany, p.79.

Urban Planning in Nazi Germany explores the entire width of spatial planning, from housing and new representative town plans to infrastructure projects, industry, leisure, and planning related to the «Germanisation» of the East, including concentration and labour camps. The volume is split into three chapters: «Attack» (1933–1937), «Triumph» (1937–1941) and «Terror» (1941–1945), reflecting the arch of the 12 years of Nazi rule. Between the main chapters, the «International Exhibition in Paris 1937» and the exhibition «Planning and Construction in the East» from 1941 are presented, marking the pinnacle and turning points of the three phases of urban planning identified by the authors. The book continues with a contribution on urban planning after the «Collapse», describing the international echo of the immediate postwar period.

Finally, the volume subsides with the question of «Remembering: but what and how?», focusing on the changing role of public remembering. In the face of emerging generations unfamiliar with both Nazi rule and the subsequent World War and likewise estranged from the thinking of the 1968 generation of politicised intellectuals, the redefinition of the urban planning legacy of the Nazi era is on its way. Given the international nature of totalitarian thinking, the authors are presenting a European approach to remembering and acknowledging this volume as a significant contribution.

Figure 3. Three other volumes in the series edited by Harald Bodenschatz, all published by DOM publishers.

The book is consequentially set up in a series of books edited by the publishers, examining totalitarian planning during the period, reaching, among others, *Urban Planning in the Shadow of Stalin* (Bodenschatz 2004), *Urban Planning for Mussolini* (Bodenschatz 2011), *Urban Planning under Salazar* (Bodenschatz, Guerra 2019) and *Urban Planning as Francos Crusade* (2021). This impressive volume of work is a testament to Harald Bodenschatz's over 50 years of research on the subject and the perseverance of the publishers to gather it into voluptuously illustrated volumes. This volume, with its wide range of cases and large number of illustrations, like documents, plans and photos, is very well suited as a curriculum in the teaching of architectural and planning history. We wish this book a wide reception and presence in university libraries. Its large size and hardcover binding make it just another striking proof for the necessity of the presence of physical books.

References

Bodenschatz, H. (2004). *Städtebau im Schatten Stalins: die internationale Suche nach der sozialistischen Stadt in der Sowjetunion 1929–1935*, Verlagshaus Braun, Berlin.

Bodenschatz, H. (ed) (2011). *Städtebau für Mussolini. Auf der Suche nach der neuen Stadt im faschistischen Italien*. DOM Publishers, Berlin.

Bodenschatz, H., Welch Guerra, M. (2019). *Städtebau unter Salazar. Diktatorische Modernisierung des portugiesischen Imperiums 1926–1960*. DOM publishers, Berlin.

Bodenschatz, H., Welch Guerra, M. (2021). *Städtebau als Kreuzzug Francos. Wiederaufbau und Erneuerung unter der Diktatur in Spanien 1938–1959*. DOM publishers, Berlin.

CALL FOR PAPERS
CITY RENEWAL AND URBAN ARCHAEOLOGY

The seventh ISUFitaly International Conference, organized by the "Federico II" University in the historical Palazzo Gravina, Naples, will examine the relationship between the emerging urban archaeological traces and the conspicuous morphological value that this formal legacy can generate. The Conference aims at establishing new connections between the contemporary city and the ancient artefacts. Within this framework, the conference intends to re-propose urban continuity and/or discontinuity, and the role of urban architecture, as a necessary intermediary within the contemporary city.

The organisers and the ISUFitaly Council are herein inviting Italian and international researchers, practitioners, as well as PhD students who have finished or are completing their research to participate in the Conference.

We will welcome abstract proposals on these main tracks:

- Theories for the city's interpretation
- Reading urban form
- Urban design and urban archaeology
- Architectural composition and archaeology

The seventh ISUFitaly International Conference will be held on 19-21 February 2026. The theme of the conference is City Renewal and Urban Archaeology. Morphological Value of City's Traces. Following the previous ISUFitaly conferences themes, dealing mainly with the relationships between urban morphology, history and architectural design, the seventh Conference aims to pose the problem of the relationship between the emergence of urban archaeological traces and the often conspicuous morphological value that this formal legacy can potentially generate through urban design as tool to establish links between contemporary city and artefacts from the past: through the creation of large-scale urban archaeological parks or the construction of archaeological roofs; through establishing unprecedented relationship with infra-

structures related to underground level different form those of the city 'in surface'. The theme of urban continuity/discontinuity in the contemporary city and the role of urban architecture as a necessary intermediary, or condition of possibilities, between the historical city, the public space and possible congruent transformations in the contemporary age, are thus re-proposed.

The organisers and the ISUFitaly Council invite participation in the Conference by Italian and international academics and interested professionals. PhD students who have completed or are completing their research degree are also invited to take part.

For more details go to www.isufitaly.it.

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