The Spatial Development of the Harbour and the Medieval City of Rhodes

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Author:

Berk Bilgin (5457521)

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ABSTRACT:

This thesis explores the spatial interplay between the harbour and the Medieval City of Rhodes, tracing how the Knights of St. John and the Ottoman Empire shaped the island's urban identity. By adopting a spatial-historical methodology supported by cartographic reconstructions, the study demonstrates how military, religious, and economic priorities influenced the city's structure over time. The fortified integration of the harbour under the Knights is contrasted with the Ottoman strategy of adaptive reuse and integration into imperial trade networks. The research reveals a persistent spatial logic that transcended regime changes, manifesting in fortified architecture and religious-military infrastructure. Through original maps and analysis of historical sources, the thesis argues that Rhodes developed not only as a strategic military outpost but as a spatial palimpsest reflecting layered ideologies of control and power. This study contributes to architectural history by offering a visual and analytical framework for understanding how imperial legacies shape urban morphology in the Mediterranean context.

KEYWORDS: Rhodes, harbour development, Knights of St. John, Ottoman Empire, spatial analysis, architectural history, Mediterranean urbanism, fortified cities, historical cartography, cultural heritage.



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Introduction

Strategically located at the crossroads of key maritime routes connecting the Aegean, Levant, and North Africa, the island of Rhodes has seen its harbour and city evolve through centuries of influence from diverse rulers and powers. Each left an indelible mark on its spatial development and architectural character (Kollias, 2005). From the ancient Hellenistic period to the medieval and Ottoman eras, Rhodes has witnessed a complex interplay of military, religious, and economic forces that have shaped its urban landscape.

This research investigates the reciprocal influence between the spatial evolution of the harbour and the Medieval City of Rhodes, focusing on the distinct contributions of the Knights of St. John and the Ottoman Empire. This study explores how the spatial fabric of the city was shaped by the military strategies and cultural influences of two dominant powers. An analysis of their influence shows the interconnection between urban development, trade, and military power. This analysis highlights Rhodes' development as a maritime centre in the Mediterranean and illustrates how the island's spatial layout mirrors the region's changing political and cultural dynamics.

Through a chronological analysis of Rhodes' city and harbour development, this research will address the following sub-questions:

- How did the military and religious objectives of the Knights of St. John shape the spatial development of Rhodes' city and harbour?
- To what extent did Ottoman architectural practices and trade networks influence the spatial organisation of the city and harbour?

The findings will highlight the roles that both the Knights of St. John and the Ottomans played in shaping Rhodes' urban structure, particularly in the context of its harbours and fortifications, and how these legacies persist in the modern layout of the city.

Methodology

This study employs a spatial-historical methodology grounded in cartographic analysis to explore the reciprocal relationship between the harbour and the urban development of Rhodes across different historical periods. The central approach involved generating and interpreting a series of original maps that visually reconstruct the urban and territorial transformations of Rhodes from antiquity to the Ottoman period.

Seven figures were produced, each representing a distinct spatial and temporal development layer. These maps were created through the digital redrawing and reinterpretation of historical data, topographic information, and architectural remains, emphasising geographic logic and urban morphology.

- **Figure 1** introduces a grid overlay on the island's topography, illustrating how physical geography—particularly mountainous versus flat coastal areas—has influenced the pattern of urban and territorial divisions.
- **Figure 2** presents a division of Rhodes into three historical-cultural zones overlaid onto the modern urban fabric to demonstrate continuity and change in spatial organisation over time.
- Figures 3–6 follow a chronological sequence:
 - **Figure 3** shows the Hellenistic period's coastal, maritime-focused urban structure, marked by grid planning and architectural remnants tied to Rhodes' role as a naval power.
 - Figure 4 depicts the shift inland during the Byzantine period, characterised by decentralised and ecclesiastically centred settlement patterns.
 - Figure 5 captures the fortified restructuring under the Knights of St. John, highlighting the integration of the harbour into the city's defence system and the rigid zoning between the Collachium and the Bourg.
 - **Figure 6** illustrates the Ottoman period, where the medieval structure was preserved mainly, with selective additions of Islamic and civic architecture.
- Figure 7 offers a focused view on the spatial distribution of religious and military infrastructure across the city and harbour, emphasising the layered functions of control, faith, and symbolism embedded in the urban landscape.

Each map was manually created and geospatially informed, allowing comparative visual analysis. The maps were constructed through a synthesis of historical maps (e.g., from Maglio (2023) and Old Town Rhodes (n.d.)), archaeological records, and own interpretive reconstructions. The method emphasises how form followed function, whether that function was religious, commercial, strategic, or defensive.

A cartographic approach brings this study to light of how geography, politics, and ideology worked together to shape the spatial development of Rhodes. By analysing Rhodes' development over historical periods and studying the location for structures, it becomes clear that the harbour did more than support the city. Historically, the harbour was central in shaping its layout, orientation, and internal divisions.

Historical Background

Rhodes has long occupied a pivotal role in the Eastern Mediterranean due to its strategic location. Located at the crossroads of major maritime routes connecting the Aegean, the Levant, and North Africa, the island was a key hub for trade, naval activity, and cultural exchange (Gabrielsen, 2013). This advantageous location attracted successive powers—Greek city-states, Byzantines, Crusaders, Ottomans, and Italians—each of whom left their mark on the island's urban form and maritime infrastructure (Kollias, 2005). According to Gabrielsen (2013), "Rhodes had reached such a peak of power that it took upon its own, on behalf of the Greeks, the war against the pirates and cleared the sea of that scourge" (Gabrielsen, 2013, p. 67). This shows the island's significant role in controlling maritime trade and piracy in the Mediterranean.

Rhodes was a critical point for trade between the Aegean and the Eastern Mediterranean, renowned for its shipbuilding and skilled sailors (Kollias, 2005). Gabrielsen (2013) notes that "the Rhodians, by establishing friendship with all the dynasts, kept themselves immune of any justifiable complaint, but their sympathies inclined mostly towards Ptolemy" (Gabrielsen, 2013, p. 67). This alliance with the Ptolemaic Kingdom helped secure Rhodes' position in regional commerce, as its economy was deeply connected to Egypt, with trade links that strengthened over time (Gabrielsen, 2013).

Gabrielsen (2013) also emphasizes the importance of the Rhodes-Egypt maritime route, describing it as one of the most profitable and strategically vital in the Mediterranean: "the long stretch of water – 325 sea-miles – between Egypt and Rhodes can justifiably be regarded as one of the 'golden sea routes' of the Mediterranean" (Gabrielsen, 2013, p. 69). The trade conducted along this route, especially involving the movement of grain and Rhodian amphorae, was a major contributor to the prosperity of both Rhodes and Egypt (Gabrielsen, 2013).

0.1 Medieval Period – The Knights of St. John (1309 – 1522)

The arrival of the Knights Hospitaller in 1309 marked a dramatic transformation of Rhodes' urban and defensive structures. The city was reoriented toward military fortification and Crusader-style administration (Kollias, 2005). As Kollias (2005) describes, "the Knights tried, chiefly by new additions on the outside and inside, to render the walls capable of withstanding enemy artillery" (Kollias, 2005, p. 85). Strategic elements such as extended bastions and reinforced towers were added, increasing the range of fire and strengthening weak points (Kollias, 2005).

Within the fortified northern section of the city, known as the Collachium, the Knights constructed a comprehensive administrative and religious centre (Gabrielsen, 2013). This included the Palace of the Grand Master, the Great Hospital, and other key buildings of the Order (Kollias, 2005). According to Kollias (2005), "in the Collachium were the great church of the Order... the residences of the Knights, and... the Palace of the Grand Master, which also served as the citadel, final refuge of the besieged" (Kollias, 2005, p. 90). These developments reshaped the city's social and architectural identity, embedding a Western Christian power structure within a previously Byzantine and Greek urban context (Kollias, 2005).

Equally significant was the enhancement of Rhodes' harbour infrastructure. The commercial harbour (Emborio) was protected with walls and a chain controlling ship entry, while Mandraki harbour became the base of naval operations (Kollias, 2005). As Kollias (2005) notes, "a shipyard was situated in the northwest harbour, known since medieval times as Mandraki" (p. 89), and the Knights constructed the Tower of St Nicholas between 1464 and 1467 to defend both Mandraki and Emborio. This tower, he explains, "commanded both the Commercial Harbour and the Mandraki as well as the entrance to the Bay of Acandia" (Kollias, 2005, p. 25). These harbours' fortifications were essential for economic control and military defence in the Eastern Mediterranean (Kollias, 2005).

0.2 Ottoman Period (1522 – 1912)

Following the Ottoman conquest of Rhodes in 1522 under Sultan Süleyman the Magnificent, the island retained its strategic prominence in the eastern Mediterranean. While the conquest itself came after extensive campaigns against the Mamluks and Safavids, Rhodes was viewed as a vital node within Ottoman naval and commercial strategies, primarily due to its harbour infrastructure and its history as a bastion of Christian corsair activity (Brummett, 1995).

Before its capture, Rhodes had long been considered a threat to Ottoman and Muslim maritime commerce (Brummett, 1995). Brummett notes that the Knights of St John regularly engaged in piracy, provoking Ottoman retaliation: "There was only one minor engagement, a punitive raid on Rhodes in 1505, which was the direct result of piratic activity" (Brummett, 1995, p. 111). These raids were not isolated incidents; the Knights' corsairing, though cloaked in crusading ideology, targeted both Muslim and Christian shipping: "The Knights regularly supported or orchestrated attacks on Muslim (and Christian-owned) shipping... Only fear of reprisals prompted the council to deter the entrepreneurial corsairing of the Knights" (Brummett, 1995, pp. 101–102).

Once incorporated into the Ottoman Empire, Rhodes was not merely garrisoned for defence but became integrated into the empire's broader naval and economic networks (Brummett, 1995). The Ottomans used it as a strategic harbour in maintaining control over the Aegean and eastern Mediterranean sea lanes (Brummett, 1995). As Brummett explains, the Ottomans expanded their naval patrols to protect coastal settlements and trade routes from piracy, the same kind of threat Rhodes had once represented (Brummett, 1995, p. 98).

This control also had a diplomatic impact. Ottoman naval superiority compelled regional actors, including Venice and Rhodes, into dependent positions: "Ottoman naval power forced Venice and Rhodes into dependency relationships... Rhodes, for example, geared its military and economic activities to Ottoman naval manoeuvres" (Brummett, 1995, p. 17).

The harbour at Rhodes remained operational and relevant throughout the Ottoman period, facilitating military logistics and commercial navigation (Brummett, 1995). The Ottoman Empire's strategic use of harbours such as Rhodes formed part of its broader attempt to dominate eastern Mediterranean commerce, especially in response to Portuguese incursions further east (Brummett, 1995).

Chronological Overview Map of City and Harbour Development (1300–1912)

This study begins with two foundational maps to visualize the spatial evolution of Rhodes' urban and harbour structure across the two significant periods – the Knights of St. John and the Ottomans. These maps establish the geographic and spatial logic behind the city's historical development.

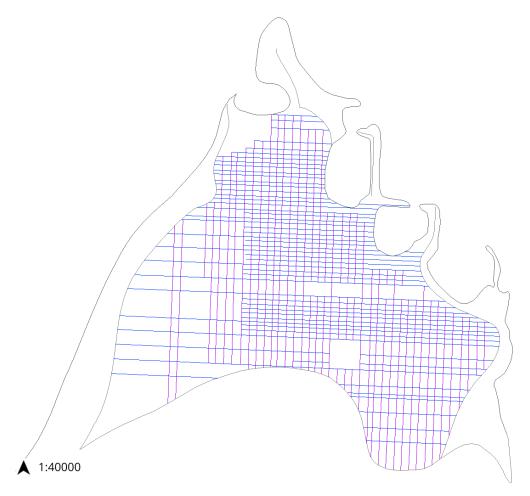


Figure 1: Grid overlay showing the topographic influence on urban development in Rhodes. Map created by the author, based on Maglio (2023).

Figure 1 presents a grid-based overlay of the island, illustrating how Rhodes' natural landscape—notably its mountainous terrain and flatter coastal plains—has shaped patterns of territorial division. The positioning of urban areas and territorial zones corresponds strongly with this topography. Where the landscape is more continuous and even, divisions appear more uniform; in contrast, areas with more significant variation, such as mountain ranges, show more irregular boundaries.

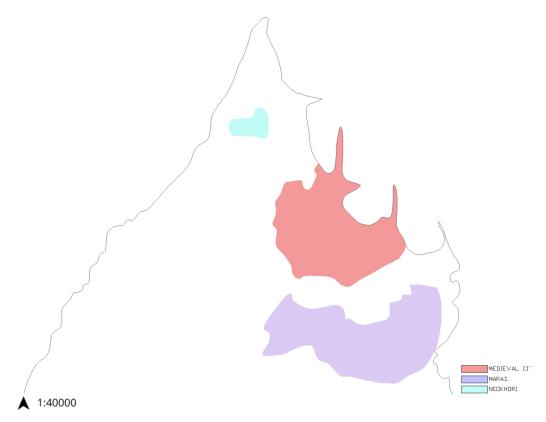


Figure 2: Division of Rhodes into three historical-cultural zones, overlaid on the current urban fabric. Map created by the author, based on: Old Town Rhodes (n.d.).

Figure 2 depicts the division of Rhodes into three distinct historical-cultural zones. This division is based on topographic logic and long-standing settlement patterns reflecting natural geography and socio-political developments over time. The positioning of these zones demonstrates how geography and terrain informed both ancient and modern spatial organisation.

Following this geographic foundation, a chronological series of historical maps (Figures 3–6) further illustrate the evolution of urban and harbour structures over time:

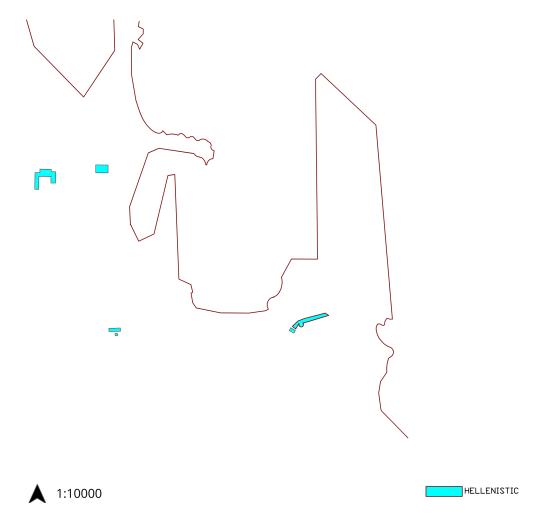


Figure 3: Hellenistic period urban and architectural distribution along the coastline of Rhodes. Map created by the author.

Figure 3 focuses on the **Hellenistic period**, capturing the earliest discernible phase of urban development in Rhodes as reflected through the spatial distribution of architectural remains. Following the synoecism of the island's cities in 408 BCE, this period was characterised by a strong emphasis on maritime connectivity and coastal access (Gabrielsen, 2013). Most surviving architectural structures from this era are concentrated along the coastline, suggesting that the early city was firmly anchored in its role as a port and trading hub within the eastern Mediterranean (Gabrielsen, 2013).

The layout of the Hellenistic city, although largely lost beneath later layers of development, still reveals elements of a rational grid structure that reflects classical urban ideals of order, proportion, and civic life (Gabrielsen, 2013). However, this figure's most notable is the absence of the later medieval city, which had not yet been established. This highlights a spatial gap between the ancient and medieval urban cores, offering critical insight into how the city evolved in location and function over time.

As a significant naval and commercial power, Rhodes maintained strong cultural and economic ties with the Hellenistic kingdoms, especially the Ptolemies of Egypt (Gabrielsen, 2013). This prominence is mirrored in its monumental architecture—temples, theatres—many of which were positioned to overlook or relate directly to the harbour (Gabrielsen, 2013).

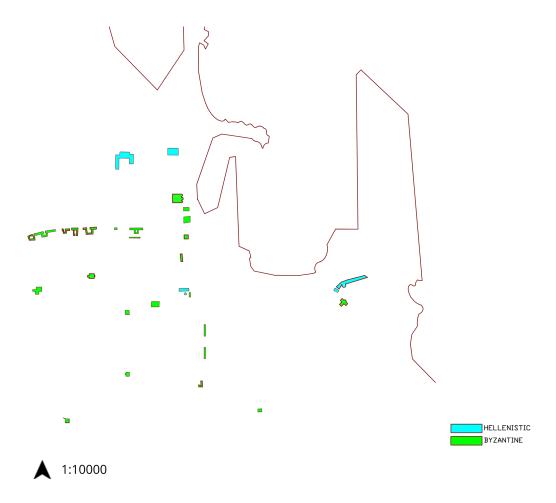


Figure 4: Byzantine period urban expansion into the island's interior, focusing on inland settlement areas. Map created by the author.

Figure 4 depicts the **Byzantine period** when Rhodes underwent a subtle but meaningful transformation in its spatial structure and settlement dynamics. Following the decline of the Hellenistic urban model and amidst ongoing threats from both seaborne invaders and internal instability, the nature of urban occupation began to shift (Kollias, 2005). The once coast-centric development pattern led to a more fragmented and inward-oriented settlement configuration during this era.

This movement inland was likely driven by strategic, defensive, and sociopolitical factors. Once a hub of commerce and maritime exchange, the coast became increasingly vulnerable to raids and instability in the Aegean region (Brummett, 1995). As a response, urban communities gradually sought the safety of elevated or more defensible inland positions. This is reflected in the more organic and less geometrically planned settlement patterns that emerged—contrasting sharply with the rational layouts of earlier Hellenistic planning.

The Byzantine focus on ecclesiastical and administrative structures also introduced new layers of spatial influence. Churches, monasteries, and civic buildings began to serve as local nuclei around which settlements grew rather than being dictated solely by trade or port accessibility. This period reflects a more localized, community-based mode of urbanism, where survival and religious centrality often precede expansive city-building or grand urban planning.

In sum, the Byzantine period represents a transitional phase in Rhodes' urban history—bridging the classical legacy of the coastal polis with the fortified and hierarchical structure that would later dominate under the Knights of St. John.

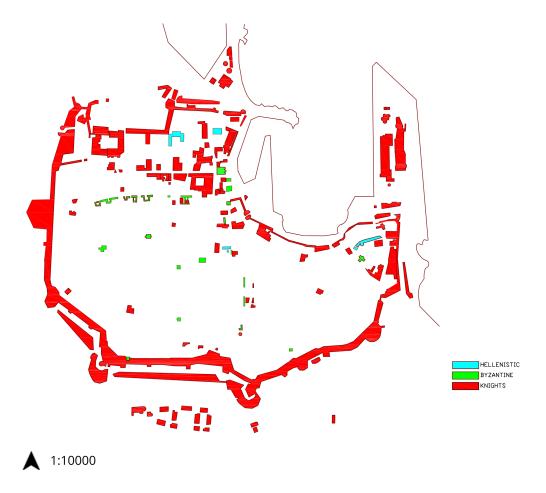


Figure 5: Urban and harbour development during the Knights of St. John period, including fortified city walls and harbour integration. Map created by the author.

Figure 5 illustrates the transformative period of **the Knights of St. John**, spanning from the early 14th century until the Ottoman conquest in 1522. This period is marked by the most significant spatial and functional shift in Rhodes's urban evolution. Upon establishing their rule, the Knights initiated a comprehensive reorganisation of the city's layout, aligning it with strategic military logic and symbolic Christian authority. The construction of an elaborate and robust city wall system, complete with bastions and and gates, reflected both the external threats from rival powers and the internal need for fortified control.

The harbour, particularly the Mandraki and Emborio basins, was actively integrated into this fortified system. Rather than remaining a peripheral or purely commercial space, the harbour became central to the city's defensive strategy. Fortified towers were erected at the harbour entrances, and urban development around the docks was designed to serve maritime trade and naval defence. The transformation of the harbour into a military stronghold signified the merging of urban and maritime infrastructures into a cohesive fortified unit.

Within the city walls, functional zoning became increasingly pronounced. The northern Collachium quarter was reserved for the Order and its administrative and religious institutions, including the Palace of the Grand Master and several auberges representing the Langues. The southern area, the Bourg, housed the general population, artisans, and markets. This dual structure reinforced the Hospitaller regime's social hierarchy and spatial organisation.

Overall, this period marks the emergence of Rhodes as a militarised, self-sufficient urban entity. The city's transformation under the Knights of St. John would have a lasting impact on its urban identity and form, much of which remains legible in the modern fabric of Rhodes today.

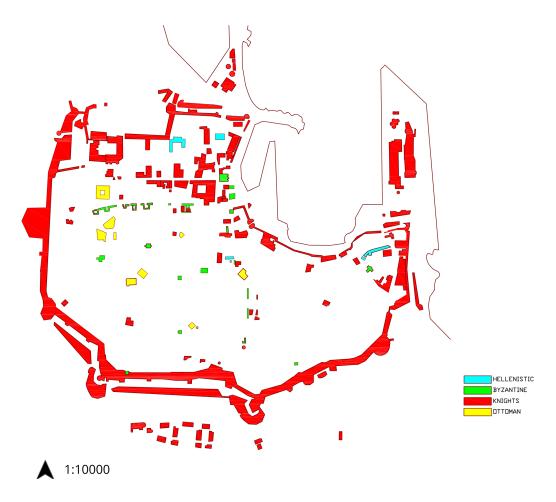


Figure 6: Ottoman period preservation of the medieval city structure, with limited new constructions and a maintained harbour. Map created by the author.

Figure 6 represents the **Ottoman period**, during which the layout and structure of the fortified city were largely maintained. The Ottomans preserved much of the existing urban fabric, including the fortified harbour, while adding several civic and religious buildings. They did not radically alter the spatial configuration of the city, underscoring the enduring legacy of the Knights' urban interventions. The Ottoman period maintained continuity in the urban form but added new elements to the city's life, ensuring its continued importance as a Mediterranean port.

Together, the figures offer a layered visualisation of how Rhodes' city and harbour evolved in response to changing political powers, military needs, and cultural ideologies, anchored in the island's geography and historical function as a Mediterranean stronghold.



Figure 7: Distribution of military and religious infrastructure in Rhodes, including fortification towers, city walls, harbour castles, and ecclesiastical buildings such as churches, monasteries, and chapels. *Map created by the author.*

Figure 7 further deepens the analysis by focusing specifically on the *military and religious infrastructure* that shaped the identity and function of Rhodes as a fortified Mediterranean city. The map includes all known churches, chapels, and monasteries within the urban fabric, alongside the city's defensive elements—city walls, towers, harbour castles, and fortification ruins. These components are not only architectural markers but also carriers of political and symbolic meaning, serving both spiritual functions and asserting control over the physical and social space of the city.

The map reveals a notable spatial clustering: ecclesiastical structures are concentrated within the walled medieval city, particularly the *Collachium*, historically reserved for the Knights of St. John. This spatial arrangement reflects the fusion of religious authority and military power during the Hospitaller rule (1309–1522), when religious institutions operated as administrative and cultural centres, reinforcing the identity of Rhodes as a Christian bastion on the frontier of the Muslim world.

Simultaneously, the military infrastructure—such as towers, curtain walls, and fortified gates—strategically encircles the city and its harbours, underscoring the defensive imperative of controlling maritime access. The presence of bastions and towers oriented toward the sea, especially around Mandraki and Emborio, demonstrates how the harbour was fully integrated into the military logic of the city. The Knights' emphasis on the fortification of the harbour suggests the need to defend against naval threats and the symbolic importance of the harbour as the city's interface with the broader Mediterranean world.

Under Ottoman rule (1522–1912), while Christian institutions were often repurposed or replaced by Islamic ones, many structural elements of the medieval fortifications were maintained. This continuity suggests that the city's spatial logic—anchored by its religious-military duality—remained relevant across regimes. Some new mosques and civic buildings were integrated into the existing urban form without drastically altering the original layout, further reinforcing the enduring spatial dominance of the Hospitaller framework.

Overall, Figure 7 visualises the deeply embedded relationship between faith, power, and urban form in Rhodes. It underscores how religious and military infrastructures were not isolated systems but part of an integrated strategy to claim, defend, and shape the city—physically, ideologically, and functionally—across centuries of foreign rule.

Synthesis and Analysis

How did the military and religious objectives of the Knights of St. John shape the spatial development of Rhodes' city and harbour? The arrival of the Knights Hospitaller in 1309 marked a dramatic transformation of Rhodes' urban and defensive structures. The city was reoriented toward military fortification and Crusaderstyle administration. As Kollias (2005) describes, "the Knights tried, chiefly by new additions on the outside and inside, to render the walls capable of withstanding enemy artillery" (Kollias, 2005, p. 85). Strategic elements such as extended bastions and reinforced towers were added, increasing the range of fire and strengthening weak points. These military objectives were instrumental in redefining the city's spatial layout, where fortification determined the perimeter and scale of urban expansion.

The Knights constructed a comprehensive administrative and religious centre within the fortified northern section of the city, known as the Collachium. This included the Palace of the Grand Master, the Great Hospital, and other key buildings of the Order. According to Kollias (2005), "in the Collachium were the great church of the Order... the residences of the Knights, and... the Palace of the Grand Master, which also served as the citadel, final refuge of the besieged" (Kollias, 2005, p. 90). The prioritisation of religious authority and military hierarchy dictated the zoning and symbolic organisation of the urban space, with the Collachium physically and ideologically elevated above the rest of the city. This demonstrates how the religious and administrative needs of the Knights were not just accommodated within the urban fabric but fundamentally reshaped.

Equally significant was the enhancement of Rhodes' harbour infrastructure. The commercial harbour (Emborio) was protected with walls and a chain that controlled ship entry, while Mandraki harbour became the base of naval operations. As Kollias (2005) notes, "a shipyard was situated in the northwest harbour, known since medieval times as Mandraki" (p. 89), and the Knights constructed the Tower of St Nicholas between 1464 and 1467 to defend both Mandraki and Emborio. This tower, he explains, "commanded both the Commercial Harbour and the Mandraki as well as the entrance to the Bay of Acandia" (Kollias, 2005, p. 25). The fortification of these harbours, especially integrating military architecture directly into the port landscape, demonstrates the Order's objective to control urban territory and maritime access. Their religious-military identity was spatially imprinted through these dual-use infrastructures, blending the sacred and the strategic within a single fortified harbour-city system.

Figure 5 visually affirms this transformation. Urban development during the Knights' period revolved around integrating fortified harbours and internal zoning. The Collachium was heavily inscribed with religious-military architecture, while the Bourg developed around markets and crafts. Figure 7 further reveals the high density of churches, monasteries, and fortifications within the medieval core, attesting to the spatial dominance of the Knights' religious and military agenda. Together, these infrastructures enabled the Order to defend Rhodes and project their power throughout the Eastern Mediterranean.

To what extent did Ottoman architectural practices and trade networks influence the spatial organisation of the city and harbour? Following the Ottoman conquest of Rhodes in 1522 under Sultan Süleyman the Magnificent, the island retained its strategic prominence in the eastern Mediterranean. While the conquest came after extensive campaigns, Rhodes was viewed as a vital node within Ottoman naval and commercial strategies. The Ottomans recognised the defensive strength of the Knights' city layout and retained its core spatial logic. Thus, the city's spatial organisation remained largely consistent, though layered with Ottoman civic, religious, and economic structures.

As Brummett (1995) notes, the Ottomans did not radically alter the city's layout but repurposed many of its key buildings. Churches were converted into mosques, and new elements such as hammams, mosques, and fountains were inserted into the existing urban grid. However, these additions were integrated into the pre-existing Hospitaller framework, suggesting a degree of spatial continuity. Figure 6 illustrates this preservation of the medieval city's structure, with only limited new constructions. While the Ottomans added to the city, they did not erase its fortified identity—instead, they co-opted it to serve their own administrative and religious purposes.

Notably, the Ottomans utilised Rhodes' harbours to consolidate their naval dominance. Brummett explains that the Ottomans expanded their naval patrols and integrated Rhodes into broader maritime strategies, protecting trade routes from piracy and maintaining regional control (Brummett, 1995, p. 98). This strategic maritime use did not require large-scale reconstruction of harbour facilities but rather sustained them as part of a more extensive imperial infrastructure. The continuity of the harbour's spatial organisation—especially the fortified Mandraki and Emborio—allowed the Ottomans to maintain logistical control without significant urban redesign.

Regarding trade networks, Rhodes adapted to the Ottoman maritime system and was a logistical waypoint. The harbour remained active and was crucial to the movement of goods across the Aegean and Levant. The transformation was thus more institutional and functional than architectural. Brummett observes that "Ottoman naval power forced Venice and Rhodes into dependency relationships... Rhodes, for example, geared its military and economic activities to Ottoman naval manoeuvres" (Brummett, 1995, p. 17). This geopolitical dependency reshaped the city's operational rhythms if not its visible form.

Overall, the Ottoman contribution to the spatial organisation of Rhodes was subtle but impactful. Their approach was one of adaptive reuse: they maintained the city's fortified character and harbour structure while embedding their own architectural and administrative identity within it. The result was a hybrid urban form—defined by its Christian-medieval skeleton but imbued with Ottoman-Islamic life. This continuity and overlay are particularly evident in Figure 7, where many fortifications and Christian buildings were retained even as new mosques and civic spaces emerged within the same spatial framework.

Conclusion

The spatial evolution of Rhodes' city and harbour is a testimony to the island's strategic significance in the Eastern Mediterranean. Over the centuries, the city has transformed in response to military, religious, and economic needs, each phase contributing to today's intricate urban fabric. The arrival of the Knights of St. John in 1309 marked a significant shift in the city's development, as they introduced fortified walls, military structures, and a new administrative order. Their religious and military objectives shaped the city's layout by establishing a fortified northern district, the Collachium, and incorporating the harbour into a defence-oriented urban structure.

The Ottoman conquest of Rhodes in 1522 did not significantly alter the city's structure but instead integrated the island into the broader Ottoman Empire's naval and trade networks. The Ottomans maintained the medieval fortifications and introduced new architectural elements, reinforcing Rhodes' role as a strategic maritime hub. The Ottomans also reshaped the harbour to accommodate their naval operations and trade routes, ensuring its continued prominence in the region.

The Knights and the Ottomans left indelible marks on Rhodes' city and harbour. The Knights focused on military fortifications and the construction of religious and administrative centres. At the same time, the Ottomans preserved and adapted these structures to their needs, integrating them into their empire's broader system of commerce and military control. As a result, Rhodes became a vibrant and multi-layered city where the urban space's military, religious, and commercial functions were deeply interwoven.

This research underscores the dynamic relationship between political power and urban development, highlighting how the city and harbour's spatial organisation reflected the ruling powers' changing priorities and strategic needs. The continued relevance of the harbour, as both a commercial and military asset, exemplifies how the city adapted to historical shifts while maintaining its central role in the Mediterranean's maritime networks. The legacy of the Knights and the Ottomans remains evident in Rhodes' modern urban landscape, offering a glimpse into the complex historical forces that shaped one of the most strategically significant islands in the Mediterranean.

Discussion

This research has demonstrated how the historical evolution of Rhodes' urban and harbour structures can be traced through spatial and cartographic analysis. However, several challenges arose during the process, primarily relating to the availability and accessibility of reliable data.

One of the main difficulties encountered was the limited amount of detailed historical and urban data available on Rhodes, especially for periods before the Knights of St. John. Unlike other Mediterranean cities with extensive archaeological and urban documentation, Rhodes has a relatively fragmented historical record. As a result, many of the maps produced in this study were based on partial information and required careful interpretation of historical texts, old maps, and secondary literature. This limitation inevitably influenced the depth and precision of specific analyses.

For example, while the study includes maps of the Hellenistic and Byzantine periods, these are necessarily broad in scope. The limited archaeological and urban evidence from these periods meant that the visualisations focused mainly on the earliest recognisable phases of urban settlement without the ability to reconstruct detailed spatial configurations fully. Similarly, the Italian occupation period was omitted due to a lack of accessible urban transformation data, despite its potential significance for understanding 20th-century modifications to the harbour and city.

Nonetheless, the research could still address the central questions concerning the relationship between harbour development and urban form by triangulating data from historical maps, topographic logic, and scholarly literature. The methodology, though constrained, proved effective in visualising long-term spatial trends and highlighting how geography and shifting political regimes shaped Rhodes's urban identity.

These limitations also point toward fruitful directions for future research. More extensive archaeological excavation reports, digitised archives, and urban planning documents—particularly concerning the Italian period—could enrich and refine the spatial narrative presented here. Likewise, a deeper exploration of the Hellenistic and Byzantine phases, including inland settlement patterns and ecclesiastical architecture, would offer a more comprehensive understanding of Rhodes' transitional urban phases.

In sum, while data scarcity posed challenges, it underscored the importance of careful source interpretation and creative cartographic reconstruction. The maps produced in this study serve not only as tools of analysis but also as frameworks for future inquiry into Rhodes's layered urban and harbour history.

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