INVESTING IN NEW LAND

Public Value Creation Through Land Reclamation: Architecture, Urban Design, and Governance in Copenhagen

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A Thesis Presented for the Degree of Master of Science in Architecture and Urban Design

AUIC - Politecnico di Milano

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Supervisor: Laura Pogliani

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Land reclamation has long functioned as a strategic instrument for urban expansion, territorial control, and economic development in coastal cities. Beyond its technical dimension, it operates as a mechanism of value creation, enabling governments to generate revenue, finance infrastructure, and reshape spatial organization through newly produced land. This thesis examines how land reclamation interacts with governance structures, land-based finance, and urban design, and how these interactions influence the production, negotiation, and distribution of public value within the urban fabric.

The research adopts a historical and analytical framework to trace shifting motivations behind reclamation, including defence, industrial growth, modernization, and climate adaptation. Particular attention is given to the transformation of land from a strategic or industrial asset into a financial instrument embedded within public-private development models. Through this lens, reclamation is analysed not only as territorial expansion but also as a political and economic process shaping urban form, spatial quality, and everyday life.

Copenhagen serves as the primary case study due to its long-standing tradition of land-making and its contemporary reliance on entrepreneurial governance and land value capture. Three major projects, Ørestad, Nordhavn, and Lynetteholm, are examined through planning documents, site observations, and interviews with professionals involved in their development. By linking historical trajectories with contemporary large-scale projects, the thesis evaluates how value derived from reclaimed land is embedded in governance mechanisms and spatial outcomes, and how these processes redefine the relationship between economic growth, environmental responsibility, and public benefit.

Keywords: Urban Design, Land Reclamations, Public Value Creation, Entrepreneurial Urban Governance, Coastal Urban Development

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INTRODUCTION:
Creation of Public Value with Land Reclamations

Coastal cities have a long and complex relationship with the sea, where water functions not only as a natural boundary but also as an active element shaping urban growth, spatial organization, and urban life.[1] Rather than forming a fixed edge, the sea increasingly operates as part of the urban realm, challenging clear distinctions between land and water, nature and culture. In this context, land reclamation has become a key mechanism through which cities expand into the sea, creating new urban environments and redefining coastal space.

Land reclamation refers to the creation of new land or the improvement of existing land through techniques such as filling shallow waters with soil or dredged material, draining wetlands, and constructing polders using dikes and pumping systems.[2] While often presented as a technical response to land scarcity, reclamation has always been closely linked to broader economic, spatial, and political ambitions. Historically used for agriculture, ports, industry, and infrastructure, reclamation today is increasingly embedded in large-scale urban development strategies aimed at accommodating future urban growth.

Scholars such as Philip Steinberg and Kim Peters have emphasized the importance of "thinking with water," highlighting water as dynamic, mobile, and uncertain.[3] This perspective challenges planning and design approaches that seek to fully control water through fixed and permanent interventions, such as land reclamation. From this viewpoint, reclaiming land from the sea is not only a technical operation but also a spatial and cultural decision that shapes how cities relate to their maritime environments.

In many coastal and island cities, reclamation is driven not only by

1 N*ancy Couling and Carola Hein, The Urbanisation of the Sea: From Concepts and Analysis to Design (nai010 publishers, 2020), https://doi.org/10.7480/ISBN.9789462085930.*
2 Mario Martín-Antón et al., "Review of Coastal Land Reclamation Situation in the World," *Journal of Coastal Research* 75, no. sp1 (2016): 667–71, https://doi.org/10.2112/SI75-133.1.
3 Adam Grydehoj, "Making Ground, Losing Space: Land Reclamation and Urban Public Space in Island Cities," *Urban Island Studies* 1 (2015): 96–117, https://doi.org/10.20958/uis.2015.6.



Figure 1: View from Ørestad to Kalvebod Fælled. The area is characterized by large open landscapes, wetlands, and small water bodies, supporting a rich and varied natural environment. (photo taken by the author)

physical land scarcity but also by the high economic and symbolic value of coastal locations. At the same time, climate change and rising sea levels place increasing pressure on coastal development, positioning reclamation projects within debates on environmental risk, climate adaptation, and long-term resilience. As a result, reclamation reshapes not only the physical interface between land and water, but also governance arrangements, investment strategies, and the distribution of value within the city.

In this context reclaimed land becomes strongly connected to the governance structure of the city. Decisions to reclaim land are rarely neutral and are often driven by anticipated benefits under specific governance and development models. Reclamation is frequently used as a tool for land-based finance where value is created through the development of newly formed urban areas. Land-based finance refers to approaches through which governments fund public infrastructure and urban development by leveraging land and property markets, increasingly involving private actors in the provision of public goods. Rather than relying solely on public expenditure, these models establish shared responsibility between the state and developers, integrating infrastructure financing into planning and development processes.[4]

Within this context, debates on land-based development and private investment provide an important conceptual framework for understanding how value is created and governed on newly formed urban land. In *Public Infrastructure, Private Finance*, Demetrio Muñoz Gielen conceptualises land development mechanisms not merely as financial instruments but as forms of governmentality that shape public objectives and development priorities.[5] While this work does not explicitly address land reclamation, it offers a useful lens for examining how reclaimed land becomes subject to investment-driven governance structures that influence spatial outcomes and the production of public value. One of the key ways in which this form of governmentality operates in practice is through land value capture mechanisms, which translate governance objectives into concrete financial and spatial arrangements within urban development projects.

Here, land value capture plays a central role in shaping urban design

4 Demetrio Muñoz Gielen and Erwin van der Krabben, *Public Infrastructure Private Finance*, 1st ed., Routledge Research in Planning and Urban Design (Routledge, 2019).
5 Muñoz Gielen and van der Krabben, *Public Infrastructure Private Finance*.

decisions and the spatial consequences of reclamation extend beyond the project area to affect the wider city. Land value capture, within this framework, denotes specific mechanisms that enable the public sector to recover a portion of the land value increases generated by public investment, regulatory decisions, or development rights. This is commonly achieved through developer obligations, fees, or negotiated contributions, reflecting a shift in government–developer relations toward coordinated, accountable, and finance-driven urban development models.[6]

At the same time when reclamation is treated primarily as a financial or technical process the sea is often reduced to an empty surface for development rather than recognised as an integral part of coastal urban environments. Once reclamation is completed the new ground is commonly approached as entirely new land detached from its maritime context. This approach risks producing urban spaces that are poorly connected to existing environmental conditions cultural relationships with water and everyday urban life. From this perspective the interaction between governance and urban design becomes critical. Well-designed developer obligations can play a key role in improving project outcomes by ensuring that private development contributes to public space quality, environmental integration, and long-term resilience rather than purely maximizing land value.[7] How reclaimed land is planned designed and valued plays a decisive role in whether reclamation contributes to inclusive and spatially sensitive urban environments or reinforces profit-driven and detached forms of development.

This concern is closely tied to longstanding debates on the equitable distribution of land and natural resources, which argue that value derived from land should belong equally to all members of society rather than being concentrated in private hands.[8] From this perspective, land and natural opportunities are not produced by individuals but are collectively inherited, and any economic value generated from them carries an inherent social obligation. In coastal cities, this principle becomes particularly significant where the sea, an inherently common and shared resource, is transformed into developable land through reclamation. Examining how value is created from this shared environment, and whether its benefits are

6 Muñoz Gielen and van der Krabben, *Public Infrastructure Private Finance*.
7 Muñoz Gielen and van der Krabben, *Public Infrastructure Private Finance*.
8 Muñoz Gielen and van der Krabben, *Public Infrastructure Private Finance*.

distributed collectively or selectively, is therefore essential to understanding the political, economic, and ethical implications of using the sea as a basis for urban development.

Existing studies on urban development primarily focus either on governance models and land-based finance or on land reclamation as a technical and territorial process. These perspectives are rarely examined in conjunction, and their combined influence on architecture, urban design, and urban value creation remains largely unexplored. While many studies assess economic performance or policy outcomes, they often overlook how governance decisions and reclamation practices actively shape urban form, architectural typologies, public space, and everyday spatial experience, and how these spatial outcomes function as mechanisms through which economic, social, and environmental values are produced and distributed. Moreover, urban design is frequently treated as a secondary outcome rather than as a central medium through which development models and value creation processes become visible, negotiated, and experienced in the city. Existing scholarship also tends to lack a historical perspective explaining how reclamation practices and associated value creation strategies have evolved over time and become embedded within the architectural and urban development cultures of specific cities. This thesis addresses these gaps by examining governance structures and land reclamation together and by analysing their spatial, architectural, and value-related consequences across multiple large-scale urban projects and historical phases.

The research questions of this thesis are designed to investigate the relationship between governance structures, land-based finance, and the spatial outcomes of land reclamation. They focus on how entrepreneurial governance models influence architecture and urban design decisions in large-scale reclamation projects and how reclaimed land is used as a tool for value creation within urban expansion. By addressing both historical and contemporary phases of reclamation, the questions aim to reveal how governance approaches have evolved over time and how these changes have shaped urban form, public space, and architectural strategies. In addition, the research questions critically examine the spatial and architectural consequences of development models that prioritise financial gain, particularly in relation to public value and the future development of the city.

In this research Copenhagen was selected as the primary case study

due to its long history of land reclamation and its use of entrepreneurial governance models in contemporary urban development. Reclamation has played a significant role in the city's relationship with the sea and has become an important part of its urban development culture. This long-term engagement with land creation makes Copenhagen a relevant context for examining how governance structures and value creation processes influence urban design outcomes.

The research focuses on three large-scale and influential land reclamation projects that represent different phases of urban development. These projects were selected because they demonstrate the use of land-based governance models and reveal how this system has evolved over time. The projects also differ in their reclamation approaches and urban design strategies which allows for a comparative analysis of spatial outcomes under changing governance conditions.

The study is supported by site observations that had been done several times to historical city centre, Ørestad, Nordhavn and the peripheries of Lynetteholm since the exact project area is under reclamation process and closed to public. During the site visits photographs taken by the author that contribute to a clearer spatial understanding of the studied areas. Also to support arguments interviews had been done with professionals working on related projects and topics. An interview was conducted with Irene Blak Wilner from the Copenhagen-based office "SLETH", which plays a significant role in the development of Nordhavn. Also, two more interviews had been done with Magnus Maarjberg and Marshall Blecher who are the co-founder of Copenhagen based maritime architecture office "MAST". These interviews examined the situation in the city from two different perspectives regarding these developments. In addition, planning documents reports and materials produced by governmental units and other relevant stakeholders were reviewed to understand official development narratives and decision-making processes.

The thesis begins by introducing the culture of land reclamation in Copenhagen and outlining the historical evolution of reclamation practices in relation to shifting forms of value creation, including economic, social, and environmental values. The second chapter examines three selected case study projects; Ørestad, Nordhavn, and Lynetteholm; analysed under thematic headings to explore their governance structures, urban design

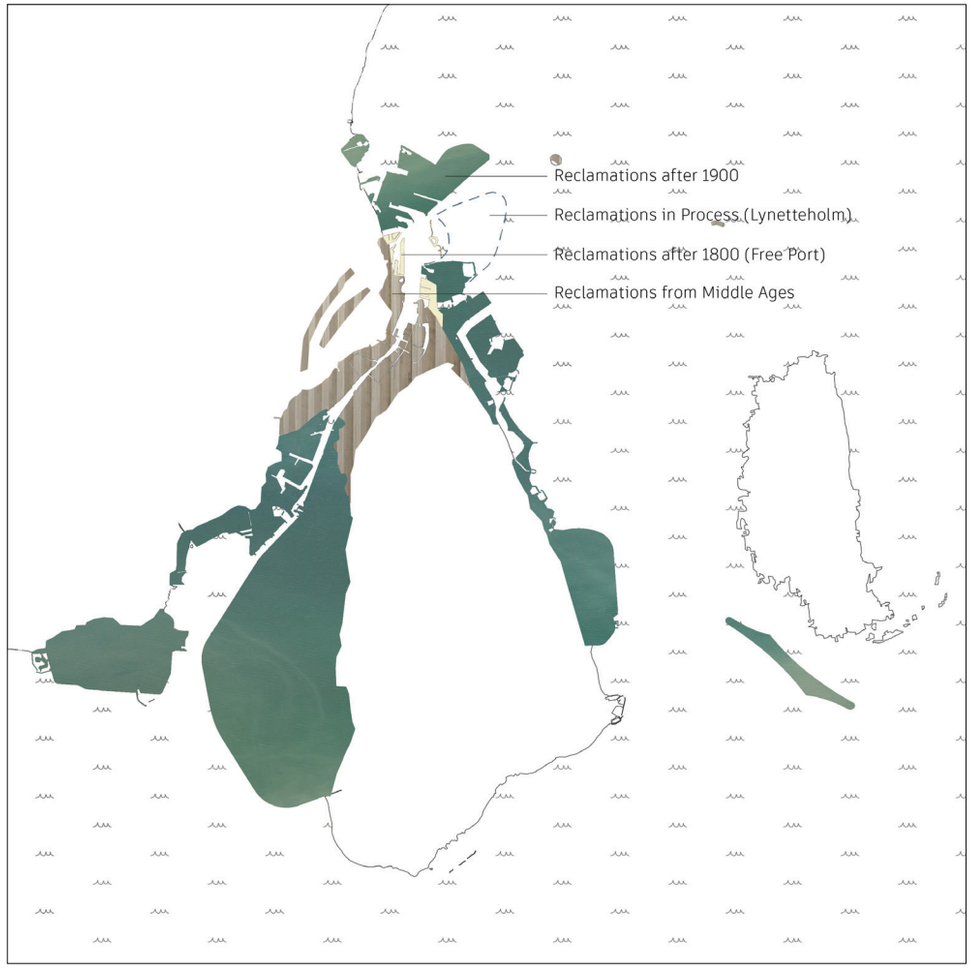


Figure 2: Reclamations in different periods in Copenhagen (source: Old Maps Online)

decisions, spatial outcomes, and the mechanisms through which different types of value are produced and prioritised. The final chapter brings together the historical context and contemporary projects to synthesise the findings, compare the varying approaches to governance-driven reclamation, and discuss their implications for value creation in architecture and urban design.

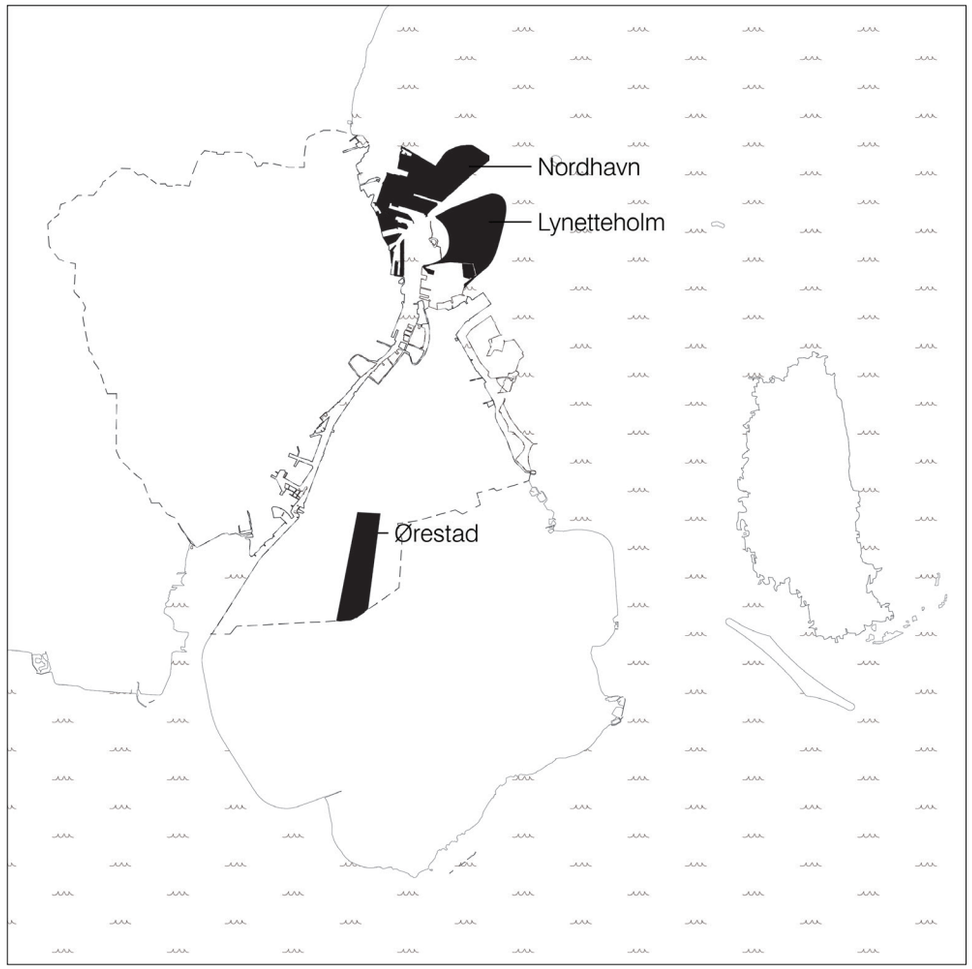


Figure 3: Copenhagen Key Reclamation Projects (source: By&Havn Archive)

HISTORICAL LAND CREATIONS IN COPENHAGEN, DENMARK: The Reasoning and Value Creations

The term land reclamation refers to the process of creating new land from water bodies such as oceans, seas, wetlands, or lakes, typically by filling the seabed to produce areas suitable for intensive human use.[9] This chapter examines broader spatial modifications involving both land and sea, including changes to topography through canal construction, land reclamation, and the reshaping of coastal areas for specific functional purposes. A broader historical examination of changes in land and sea can provide deeper insight into the motivations, systems, and techniques behind land reclamation.

Historically, land reclamation has served as a method to reshape cities. Changing time periods had different purposes for reclamation in the cities which have strong relation with water bodies. It was used for defence, control, commerce, and urban growth.[10]

The newly created or reshaped lands along the seashore were often privileged areas for the elite, military and port activities in history. These reclamation projects continue to generate significant economic value, particularly through increasing private investment. However, they also tend to produce socially exclusive spaces that primarily benefit more affluent groups, raising ongoing concerns about equity and accessibility.[11]

In island cities characterized by strong maritime connections and economic activity, land reclamation has played a particularly crucial role. In such cities, urban space is often limited and constrained by the surrounding sea, leaving little room for expansion. The natural geographic boundaries restrict the availability of land for housing, infrastructure, industry, and public amenities. With these constraints, land reclamation becomes an essential tool to create additional usable space by converting water areas into land.[12] This expansion not only alleviates pressure on the existing

9 Martín-Antón et al., “Review of Coastal Land Reclamation Situation in the World.”
10 Martín-Antón et al., “Review of Coastal Land Reclamation Situation in the World.”
11 Grydehoj, “Making Ground, Losing Space,” 96–117.
12 Grydehoj, “Making Ground, Losing Space.”



Figure 4: Zealand and Amager Islands in the Context of Copenhagen's Urban Expansion (Author's own map, based on Google Maps)

urban fabric but also generates significant economic and social value for inhabitants by enabling new development opportunities, improving connectivity, and supporting the city's growth and resilience.

Copenhagen, the capital of Denmark, has been shaped by sea reclamation throughout its history. The city is located on two islands: Zealand ('Sjælland' in Danish), the largest island in Denmark and home to most of the country's population, and Amager, which lies entirely within Copenhagen's boundaries. Copenhagen was first established on Zealand, and later urban development expanded to Amager.[13] In addition to the two principal islands, the municipal boundaries of Copenhagen also encompass several smaller islands, both natural and artificial. These islands have either been newly reclaimed or expanded in response to population growth, industrialization, and increasing demand for valuable land.[14]

Since medieval times, Denmark and other countries around the North Sea have engaged in extensive maritime exchange. This long history of seaborne trade and activity is also reflected in their urban planning. Modifications have taken place since then.[15] Today 29% of Copenhagen is on reclaimed land. It is more than 26 square kilometres. [16] Process of land modifications and reclamations is one of the key activities evident in the city's urban history. It occurred with different forms of value creation and stakeholders. These reclamation efforts and planning strategies contributed to the development of a structured approach aimed at generating public value for the city.

With changing urban conditions, the purposes, stakeholders, and methods of land reclamation in Copenhagen have evolved significantly. This chapter divides historical reclamation efforts into four key phases, each reflecting distinct socio-political and economic context.

The first phase, spanning from the early 17th to the late 19th century, corresponds to the monarchy period. During this time, reclamations were

13 "FUTURE OF THE ISLAND OF AMAGER, DENMARK," *Athens Center of Ekistics*, TRANSPORTATION IN METROPOLITAN AREAS, vol. 21, no. 125 (1966): 247–49.
14 "Land Reclamation, Management, and Planning in Coastal Region: A Geoinformatics Approach," in *Modern Cartography Series*, vol. 10 (Elsevier, 2021), https://doi.org/10.1016/B978-0-12-823895-0.00002-6.
15 Couling and Hein, *The Urbanisation of the Sea*, 10–12.
16 *By & Havn, "Copenhagen's reclaimed land and what it is used for," Byoghavn.dk, accessed July 12, 2025,* https://byoghavn.dk/lynetteholm/koebenhavns-opfyld-og-hvad-det-bliver-brugt-til_eng/.



Figure 5: Copenhagen land area in 1500 (white) and additional reclaimed lands until 2010 (grey) (Author's own map , based on By&Havn Archive)

centrally controlled by royal authorities and primarily aimed at reinforcing defence and asserting political power. The second phase, from the late 19th to the late 20th century, was shaped by the growth of port activities, as reclaimed land supported Copenhagen's economic expansion, industrialization, and naval industries. The third phase, beginning in the mid-19th century and continuing into the present, marks the modernization of urban life. This period saw reclamation projects addressing emerging urban challenges such as infrastructure, housing, and transportation, with planning increasingly involving mixed public-private partnerships. Finally, from the 1930s onwards, reclamation efforts have incorporated sustainable and climate-responsive approaches, reflecting growing environmental concerns and a focus on urban resilience.

Together, these phases reflect an evolution from land reclamation as a mechanism of centralized authority and economic exploitation toward more complex governance models aiming to balance economic growth with social equity and environmental sustainability. This progression reveals shifting motivations and allows for a critical analysis of how land ownership, governance structures, and the concept of 'public value' have changed over time. It also provides a framework to assess the role of private investments in each period and evaluate the extent to which reclamation outcomes have genuinely benefited the broader public.

Reclamations for Monarchical Authority and Naval Defence

One of the earliest settlement areas in Copenhagen was Slotsholmen, a natural island that underwent significant topographical modifications rather than full-scale land reclamation. During the reign of the monarchy, Slotsholmen was strategically transformed through canal excavation and the filling of shallow waters between the islets separating Zealand and Amager. [17] These interventions were primarily aimed at fortifying royal buildings and establishing a secure harbour. As such, Slotsholmen became a politically symbolic offshore island, representing centralized royal power within the city.

However, the island's limited size, constrained by its fortifications and surrounding waters, posed challenges for urban expansion. In response to the city's growing needs, the monarchy initiated the first true land reclamation project in Copenhagen: the creation of Christianshavn in the early 17th century. Unlike Slotsholmen; Christianshavn was purposefully reclaimed from shallow waters to provide space for both residential and commercial development. Commissioned by King Christian IV, the area was carefully planned to support urban growth and enhance security. The design reflected a deliberate urban strategy, with canals, plots, and fortifications integrated into a master plan that marked the beginning of Copenhagen's expansion through engineered land creation.[18]

The establishment of the first naval settlements in Christianshavn around early-17th century reflects the central role of land ownership and governance in shaping Copenhagen's development. The city's strategic location between two main islands made it well-suited for naval activities. Under King Christian IV, the expansion of the navy was closely tied to royal authority, as the king directed the development of shore facilities and infrastructure. These efforts, driven by state interests, illustrate how land was appropriated and developed not with public benefit in mind, but in service of military and political priorities.[19]

17 Josef W. Konvitz, *Cities & the Sea: Port City Planning in Early Modern Europe* (n.d.), 38–44.
18 Konvitz, *Cities & the Sea: Port City Planning in Early Modern Europe*, 38–44.
19 Martin Bellamy, *Christian IV and His Navy: A Political and Administrative History of the Danish Navy 1596-1648*, The Northern World, v. 25 (Brill, 2006), 163.

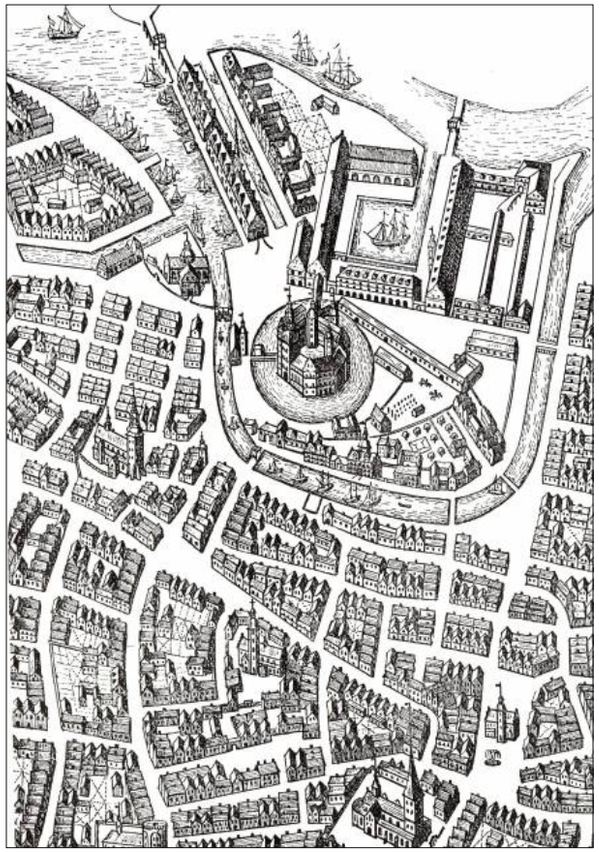


Figure 6: Slotsholmen map by Peder Hansen Resen, 1674 (source: sadelmager-dahlman.dk)

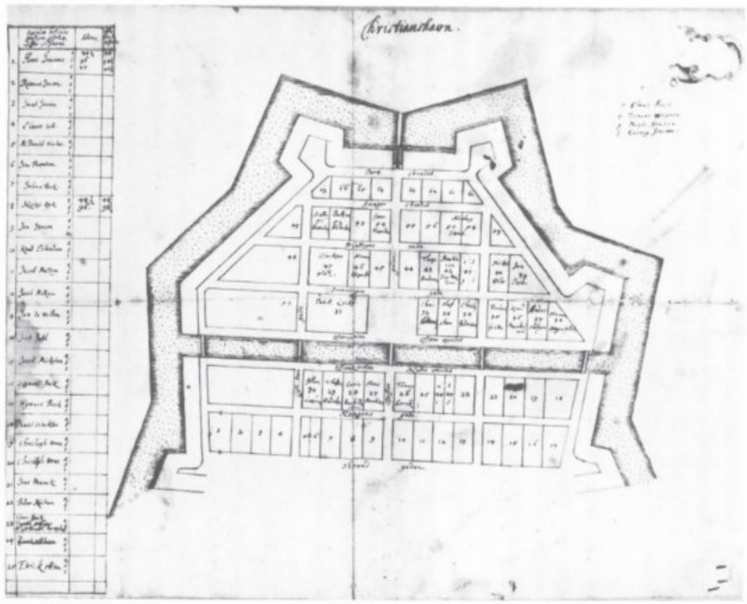


Figure 7: Christianshavn c.1640. The names of the plot owners are indicated on the map. (source: Copenhagen City Archives)

Later, around the 1690s, the naval base was relocated to the Holmen area to allow for expansion and to establish better access to the Øresund Strait which is connected to Baltic Sea. From 1690 to 1990, Holmen served as the primary base for the Danish navy. The area was developed through land reclamation, using soil, stones, and rubble to create five artificial islands. Holmen housed the Danish fleet's key facilities, including shipyards, storage buildings, arsenals, cranes, and the naval headquarters. It was here that ships were constructed for the Royal Danish Navy until 1972, after which the area continued to serve as a repair yard until the base's closure in 1990. Following its decommissioning, ownership of Holmen was transferred to public planning authorities, not private investors, marking a significant shift in its use and urban role. The area has since undergone extensive redevelopment, transforming into a mixed-use district that includes residential areas, cultural institutions, and educational facilities, while some naval functions remain on Nyholm. This evolution reflects broader urban transitions in Copenhagen, where former industrial and military zones have been repurposed to support civic and cultural life.[20]

In the 17th century, earthen embankments and five angular bastions projecting outward from the fortress walls were constructed by order of the King Christian IV. The transformation of the land highlights the strategic importance of the site as part of the city's fortifications.[21]

Kastellet, added in the 1660s, was designed in the shape of a pentagon with bastioned ramparts at each corner, reflecting its defensive function through its geometric form. Today, the island remains in the city centre and is still recognized as a political and administrative centre. [22]

Even though the city's fortifications and Kastellet are not entirely reclaimed land, they demonstrate the historical importance of altering the topography both for defensive purposes and for symbolic representation.

Between the 18th and 20th centuries, fortress islands such as Trekroner Fort, Middelgrundsfortet, and Flakfortet were constructed through land reclamation at strategic points along the Øresund Strait to strengthen

20 *Map View of Copenhagen (55.6779739, 12.5916831)*, Historisk Atlas, August 7, 2025.
21 Hodgson Stewart, "Christianshavn, Copenhagen: Touring the Heart of Danish Seafaring History," *Scandification*, n.d.
22 *Grydehoj, Adam. "Making Ground, Losing Space: Land Reclamation and Urban Public Space in Island Cities." Urban Island Studies 1 (2015): 96–117.* https://doi.org/10.20958/uis.2015.6.



Figure 8: Copenhagen 1659. Map illustrates Swedish siege of Copenhagen, Denmark, during the Second Northern War. (source: The magazine "Før og Nu", 1916-25)

the city's maritime defences. These projects demonstrate how land-making efforts initially served military and state-centered objectives, reinforcing sovereign control over both territory and infrastructure.

Similarly, the reclamation of Langelinie Pier in the Holmen district began with a military purpose but soon reflected shifting urban priorities. Originally designed as a controlled space for soldiers, the area was repurposed into a beach promenade and park catering to the bourgeoisie, with restricted, paid access that excluded the broader public. However, following public pressure during the 1848 uprising, Langelinie was opened to all citizens. [23] A subsequent harbourfront extension further adapted the site to support port infrastructure. This progression illustrates how reclaimed land gradually transitioned from exclusive or strategic use toward contested civic space, highlighting early tensions between private benefit and public access that remain central to contemporary debates on public value and investment in urban development.

While the city was still governed by the monarchy, most land was owned by the royal family, with land rights granted by the king in collaboration with elite, military, and commercial actors. Centralized ownership allowed land reclamation to serve as a means of reinforcing royal authority by creating strategic points for defence. These projects primarily served royal interests such as defence, symbolic authority, and urban control, without consideration for broader societal needs or benefits. As reclamation extended beyond the fortifications, the newly created land increasingly accommodated wealthy residents and business developments.

23 ECstep, Copenhagen, Denmark, "Langelinie – Long Line," *ECstep*, n.d., accessed August 7, 2025, https://ecstep.com/langelinie.



Figure 9: Land Reclamations in Copenhagen from 19th Century (Author's own map based on Google Earth)

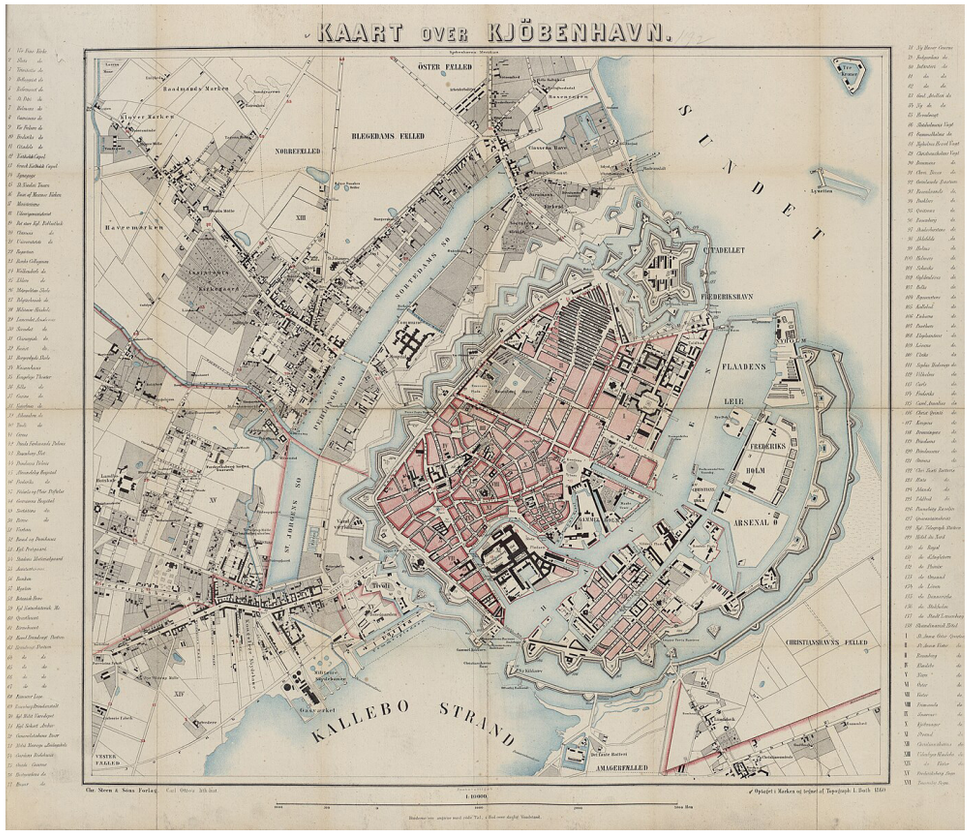


Figure 10: Copenhagen Map from 1860 displays the city's military fortifications, including ramparts, bastions, and moats. (source: Old Maps Online)

Reclamation for Port Activities and Industrialization

The earliest economic activities in Copenhagen history were always related to ports. Port operations initially began around Slotsholmen under the direction of King Christian IV but were later relocated as larger commercial ships could no longer access the original harbour. Over time, Holmen became the central site for maritime activities, including trade and shipbuilding. These activities depended on expanding the usable land onto the sea through engineered reclamation, using quay walls and seabed materials like dredged sand, construction waste, domestic waste and contaminated waste.[24]

Stretching along an 8-kilometer coastline from the Øresund Strait through the inner city, Copenhagen's harbour areas historically separated the island of Amager from the main island of Sjælland. As port activities intensified during the mid-20th century, large-scale land reclamation projects were undertaken to meet growing industrial and logistical demands. However, following the oil crises of the 1970s, the strategic and economic significance of the harbours declined, leading to widespread abandonment of these areas. [25]

By the 1980s, much of the city's waterfront was dominated by naval facilities, industrial shipyards, and underutilized port infrastructure. These conditions were increasingly incompatible with emerging visions for urban life. In response, the Danish government initiated a major transition by relocating naval operations outside the city and shutting down the Burmeister & Wain shipyard.[26] These decisions marked a turning point in how reclaimed land was managed and reimagined. It was not simply as industrial space, but as a potential site for urban regeneration. This shift laid the groundwork for future projects that sought to reallocate formerly strategic or industrial land toward public-oriented development, illustrating a broader transformation in the governance of urban land and the pursuit of public value.

24 J. K. Frederiksen et al., "Engineering Geology of Copenhagen," *Bulletin of Engineering Geology and the Environment* 62, no. 3 (2003): 201, https://doi.org/10.1007/s10064-003-0189-2.
25 "The Case of Copenhagen," *PORTUS the Online Magazine of RETE*, n.d.
26 "The Case of Copenhagen."



Figure 11: Burmeister and Wain Shipyard, Copenhagen in 1974. The site is located on the island of Refshaleøen in the city's harbor. (source: Ships Nostalgia)



Figure 12: First Reclamation for the Port of Copenhagen in 19th century. (Author's own map based on By&Havn Archive)

Historically, Copenhagen's expanding port activities spurred the creation of new land reclamations. In the last century, as ports were relocated, many of these reclaimed areas slowly evolved into urban spaces. This transformation has presented a new opportunity to create public value through further development of the land. With the decline of traditional port industries, the docklands became largely unused, which paved the way for urban-port integration planning. In late 19th century the port expanded around newly reclaimed lands like Refshaleøen, Nordhavn and Prøvestenen island. In 2007, the Port of Copenhagen's administration, along with the planning process for these areas, was transferred to By & Havn. This publicly owned new company, tasked with managing both urban areas and port activities, has enabled Copenhagen to better integrate its economy and urban life, ensuring both thrive.[27]

Early reclamation projects were primarily driven by centralized royal authority, focusing on strategic and economic interests. Over time, these reclaimed areas became crucial for employment and industrial growth, supporting Copenhagen's economic development. In the late 20th century, as the city's governance modernized and port activities were relocated from the inner harbor, large areas of waterfront land were intentionally repurposed for urban redevelopment. This shift marked one of the first major efforts to convert reclaimed land into public space, reflecting a broader agenda of creating public value and addressing societal needs.

27 Bruce Katz and Luise Noring, "THE COPENHAGEN CITY AND PORT DEVELOPMENT CORPORATION: A Model for Regenerating Cities," *The Brookings Institution* Centennial Scholar Initiative (n.d.).



Figure 13: Reclamations for port activties from 19th century (Author's own map based on By&Havn Archive)

Reclamations for Modern Urban Life and Infrastructure

For Copenhagen, fortifications in the 17th century were the urban limits, the artificial lakes and moats created around the core of the city. This distinctive shape we can easily see from the map even today was the urban centre for the city. After the military lifted the restriction about the expansion of the city in 1852, the city began expanding beyond the fortified area, opening to vibrant new neighbourhoods around the artificial lakes and main roads.[28]

While the cities are growing, reclaiming the land to solve some infrastructure problems and housing shortages is seen as a good way for the city both as a public value and economic value. With the modernization and increase in the population, the city needed to have solutions for transportation, public services and housing.

Since the monarchy period, cities filled with canals have changed slowly. Defensive moats, especially in the central area, turned into ring roads and urban areas in response to the demands of the Industrial Revolution and a growing population. In this period, we can see decreasing canalization in the city to make more space for infrastructural needs. Many projects proposed to fill canals, lakes and sea areas were proposed, though not all of them were realized.

With modernization, Copenhagen's future urban form became uncertain. There was a popularity of high-rise buildings, suburbanization and highways for car centric transportation. This kind of investment was seen as a way to help the city accommodate more people and grow the economy faster. Old port area Brygge Islands was seen as a place to create a high-rise building area for the modernization of the city. As part of the city's modernization efforts, a ring road was proposed and supported by Mayor Urban Hansen to improve car accessibility. This plan involved demolishing existing housing areas and reclaiming land around artificial lakes created during Christian IV's reign for inner-city fortification. The proposed ring road would have passed through these lakes, significantly altering the lake-

28 Thomas Hall, *Planning and Urban Growth in the Nordic Countries*, n.d., 16.



Figure 14: City expansions in 19th century (Author's own map based on &Havn Archive)

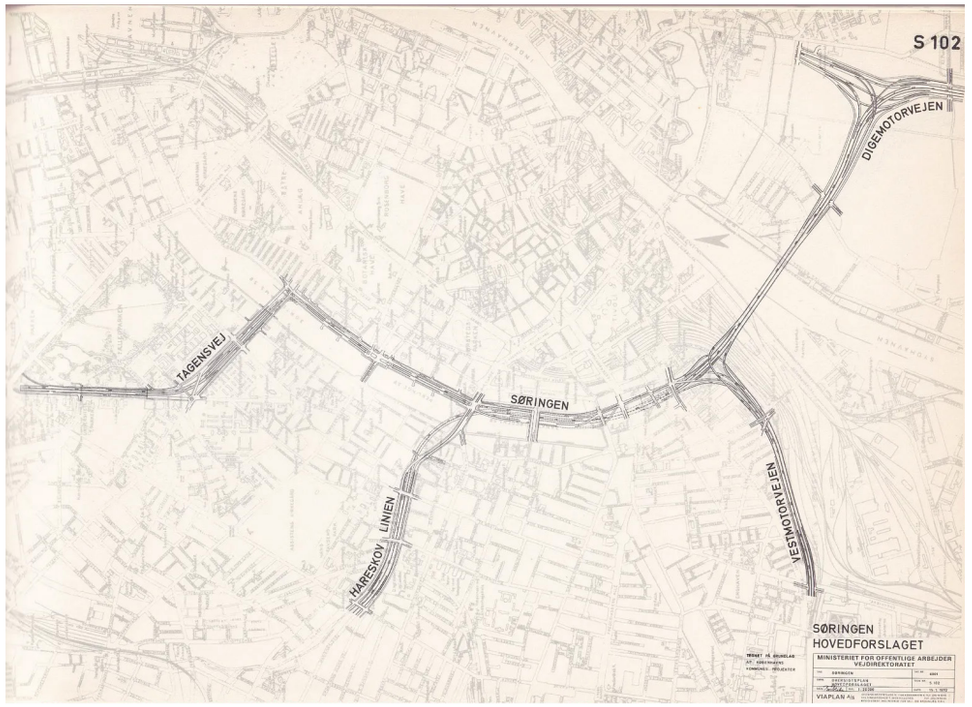


Figure 15: Søringen - The Lake Ring Project, 1958–1973. Never realised. (source: Medium)

shore, which is an area now vital to urban life. Although the housing areas were destroyed, the ring road proposal was eventually cancelled, and the cleared spaces were transformed into urban parks.[29]

These modernization proposals were ultimately set aside in favour of a city model that prioritized public infrastructure and low-rise, transit-oriented development. A defining moment in this shift was the 1947 Finger Plan, which contrasted sharply with the car-centric and high-rise urban strategies seen in other contemporary megaprojects.[30]

The Finger Plan, developed in 1947, is a strategic urban development plan for the Greater Copenhagen area. It guides the city's growth by directing expansion along five "fingers" or corridors, radiating outward from the central city like the fingers of a hand. These corridors follow major transportation routes, such as railways and highways, allowing for efficient transit and limiting urban sprawl. The green spaces between the fingers serve as protected natural areas, helping to preserve the environment and maintain a clear boundary between urban and rural zones. The plan aims to balance urban growth with sustainability, ensuring that development is concentrated, accessible, and environmentally conscious.[31]

The primary aim of the plan was to increase access to green spaces across the expanding city, while limiting urban sprawl. Guided by the principle of de-concentration, it sought to establish secondary centres along the city's "fingers," intended to serve as focal points for workplaces and social activity. While the plan is generally regarded as successful in shaping Copenhagen's growth, these external centres largely did not fulfil their original purpose. Instead of becoming active hubs for work and community life, they have primarily developed into shopping centres and peripheral residential areas.[32]

29 Mikael Colville-Andersen, "The Highway Projects That Almost Destroyed Copenhagen," *Medium*, March 31, 2022, https://colvilleandersen.medium.com/the-highway-projects-that-almost-destroyed-copenhagen-b84c6b130c57.
30 Richard D. Knowles, "Transit Oriented Development in Copenhagen, Denmark: From the Finger Plan to Ørestad," *Journal of Transport Geography* 22 (May 2012): 251–61, https://doi.org/10.1016/j.jtrangeo.2012.01.009.
31 Danish Ministry of the Environment, *The Finger Plan: A Strategy for the Development of the Greater Copenhagen Area* (n.d.).
32 Peter Hartoft-Nielsen, "Deconcentration of Workplaces in Greater Copenhagen: Successes and Failures of Location Strategies in Regional Planning," in *Employment Deconcentration in European Metropolitan Areas*, ed. Max Barlow et al., vol. 91, ed. Eran Razin et al., The GeoJournal Library (Springer Netherlands, 2007), https://doi.org/10.1007/978-1-4020-5762-5_3.

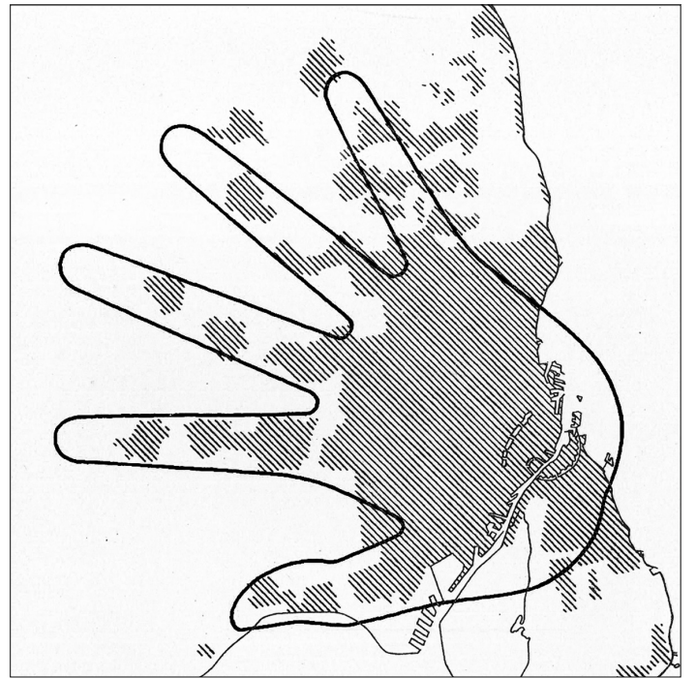


Figure 16: Sketch from the first Finger Plan created by the Regional Planning Office in 1947 (source: By&Havn Archive)

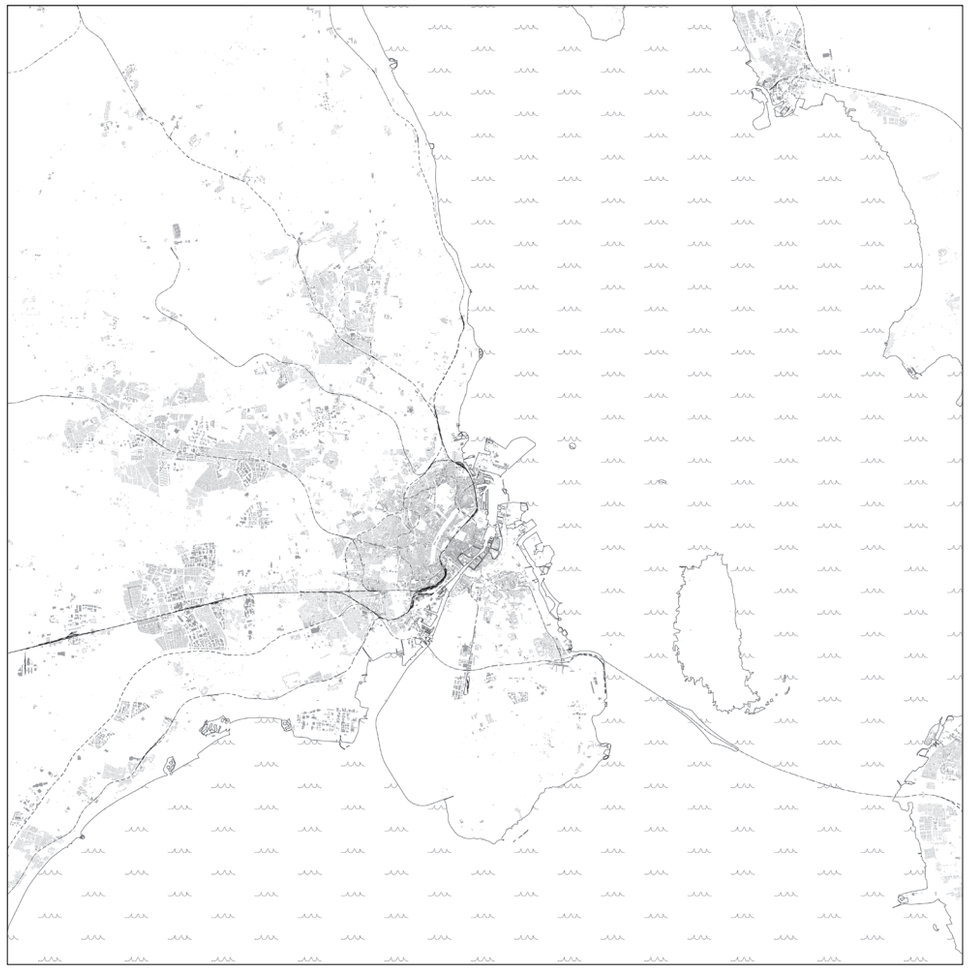


Figure 17: Finger Plan Development Today (Author's own map based on Københavns Kommune CAD files)

At the same time, these limitations prompted a broader reconsideration of how urban quality should be defined within this planning framework. During the 1960s and 1970s, Copenhagen, like many European capitals, also faced strong pressures toward car-oriented development, including proposals for inner-city highways and large-scale road infrastructure. While the Finger Plan had already established a structural approach that constrained sprawl and preserved green wedges, its implementation often emphasized functional efficiency over everyday urban life. From the 1970s onward, the ideas articulated by Jan Gehl contributed to the further development and refinement of this approach. By emphasizing human-scale environments, public life, and social interaction, these ideas complemented the structural logic of the Finger Plan and helped shift attention toward the qualitative experience of urban space.[33] While the city decided to develop itself with human centric approaches at the same time, since the 1990s, reclamation has also become about financial expansion, where land is commodified to attract private capital, fund infrastructure, and generate revenue.

The current wave of 21st-century reclamation projects still reflects the principles of the 1947 Finger Plan while giving importance of the financial importance. Ørestad, for example, was developed as an urban corridor extending south through Amager, with the adjacent Kalvebod Fælled preserved as public green space.[34] Similarly, ongoing projects such as Nordhavn and Lynetteholm are envisioned as a new "finger" extending northward along the Øresund Strait, built on former port areas.[35]

Today, new mega-projects such as Nordhavn and Lynetteholm are criticized by some Danish urbanists as copy-paste versions of 1950s-style developments, due to their similarities in infrastructure, housing density and typologies. Projects like Lynetteholm have also become focal points of environmental protests in the city, as many perceive them as primarily money-driven ventures rather than genuine solutions to climate change.[36]

By the 20th century, reclamations in Copenhagen had shifted, as land originally created for defence and port activities was progressively inte-

33 Jan Gehl, ed., *Cities for People* (Island Press, 2010).
34 Knowles, "Transit Oriented Development in Copenhagen, Denmark."
35 Danish Ministry of the Environment, *The Finger Plan: A Strategy for the Development of the Greater Copenhagen Area*.
36 Colville-Andersen, "The Highway Projects That Almost Destroyed Copenhagen."

grated into the city's expanding urban fabric rather than being reclaimed specifically for new urban growth. While early urban expansions in land reclamation projects in Copenhagen were intended to establish distinctive neighbourhoods and enhance the city's image, these areas gradually came to be seen as strategic investment zones. Reclaimed land offered high economic potential due to its central location and development opportunities, attracting sustained interest from private investors. From the outset, private actors have played a significant role in these projects, as the newly created land was among the most valuable in the city. Today, the governance of reclaimed areas continues to reflect patterns of privatization and selective access, raising concerns about equity and inclusion. Although contemporary megaprojects aim to return some of the generated value to the public, the high costs involved mean that public benefits are often limited to targeted infrastructure or services in specific areas, rather than serving the broader population.

Reclamations for Natural Reserves and Climate Change Solutions

Another reason for land reclamation in Copenhagen is related to natural and environmental concerns. While many of Copenhagen's earlier land reclamation projects were driven by military, economic, or industrial needs, recent decades have seen a growing emphasis on environmental protection and climate adaptation. However, even these seemingly public-spirited projects often reveal a deeper tension between ecological goals and urban development interests. As climate resilience and sustainability become key narratives in city planning, new reclamation efforts are increasingly framed as serving the public good. Yet in practice, they frequently involve significant commercial and residential development, enabled through private investment.

First example in the history of Copenhagen is related to Saltholm island. Saltholm is a natural island with a flat landscape and is home to many species. Human activity on the island is very limited, which helps protect its ecosystems. Today, Saltholm is a protected area due to its ecological value, but this was not always the plan for its future. In the 1960s–70s, when Copenhagen needed a new airport, the initial idea was to build an offshore airport on Saltholm, connecting it to the mainland and Malmö via the future Copenhagen–Malmö Bridge. This was seen as a practical solution for meeting the city's airport needs. Later, the idea was rejected by the public, and the airport was instead built in Kastrup.[37]

While the need for a connection between Copenhagen and Malmö remained, another proposal emerged: to use Saltholm as the support point for the new bridge between the two cities. As the second-longest bridge in Europe, spanning nearly 8 km, it required a stable support point and an entrance to the underwater tunnel connecting to Copenhagen. Although early plans considered building on Saltholm, this was later changed in order to protect its natural environment. Instead, a new artificial island called Peberholm was constructed closer to Saltholm, in the Øresund Strait. Peberholm supports the bridge and provide entrance for the tunnel that will

37 Francesco Zavatti, "The Øresund Bridge from Imagination to Innovation," *Memoria e Ricerca*, no. 2 (2017): 313–30, https://doi.org/10.14647/87201.

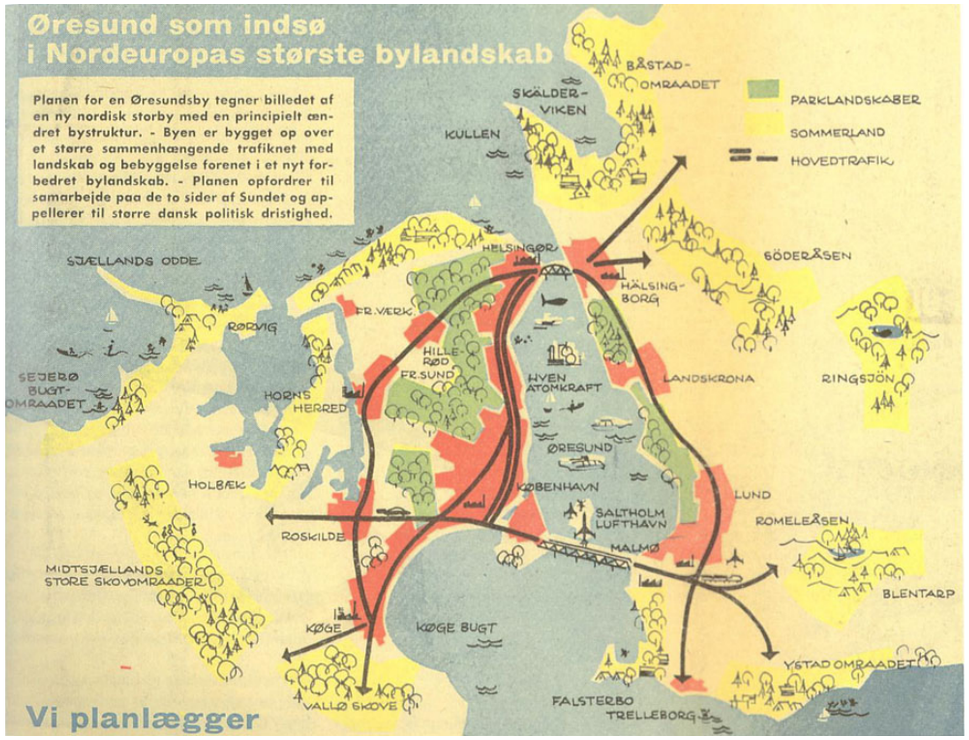


Figure 18: Øresund Strait Ilustration shows Saltholm Airport 1959 (source: Politiken Newspaper, 1959 October)

be connected to Coepnahgen but human access is restricted, and its landscape was designed to replicate Saltholm's to serve as an extended nature reserve for local species.[38]

While in Saltholm reclaimed area creation area directly tied to the sustainable solutions, creation of Ørestad was a way to solve the unemployment problem in Copenhagen. In the 1930s, during the global economic depression, Denmark, like many other countries, faced high unemployment. In response, the government launched large-scale public works projects to create jobs. One of these was a massive land reclamation project west of Amager, where 2,500 hectares of seabed were dammed and drained for future military use, creating what is now Ørestad.[39]

As military needs decreased, the 1973 Regional Plan proposed transforming the area into a large new urban district, inspired by the popular modernist planning ideas of the time.[40] However, this plan was never realized. In the 1990s, the Danish government launched a new development master plan, turning the area into the modern Ørestad urban district: a zone focused on business, education, and residential development. Meanwhile, in 1984, part of the reclaimed land was redesignated as a nature reserve. The area, known as Kalvebod Fælled, was later prepared for public use and fully opened in 2010 as a protected area for birds and other wildlife.[41] After different purposes, reclaimed area given to public as one of the largest green area close to the dense city centre.

Finally, one of the most recent reclamation projects, Lynetteholm, aims to protect the city from rising sea levels. Designed as part of Copenhagen's storm surge protection strategy, it includes natural landscapes such as forests and seashores that act as barriers to shield the historic city centre.[42] Although the government presents climate resilience as the primary goal of the project, a significant portion of Lynetteholm will be developed for housing and commercial use. These built-up areas are intended to help

38 Heiko Droste, ed., *URBAN LIFE IN NORDIC COUNTRIES*, Routledge Advances in Urban History (ROUTLEDGE, 2023), https://doi.org/10.4324/9781003346456.
39 Ministry of Green Transition, "History - Kalvebod Fælled," The Danish Nature Agency, accessed January 6, 2026, https://eng.naturstyrelsen.dk.
40 Hall, *Planning and Urban Growth in the Nordic Countries*.
41 Alina Pancewicz, "Urban Nature as an Active Means of Adapting Public Spaces to Climate Conditions: Case Studies from Copenhagen and Selected Polish Cities," *Civil and Environmental Engineering Reports* 32, no. 4 (2022): 123–46, https://doi.org/10.2478/ceer-2022-0049.
42 City of Copenhagen, *City of Copenhagen's Storm Surge Plan for Copenhagen* (Technical and Environmental Administration Finance Administration, 2017).



Figure 19: Reclamations for sustainable city future (Author's own map based on Google Earth)

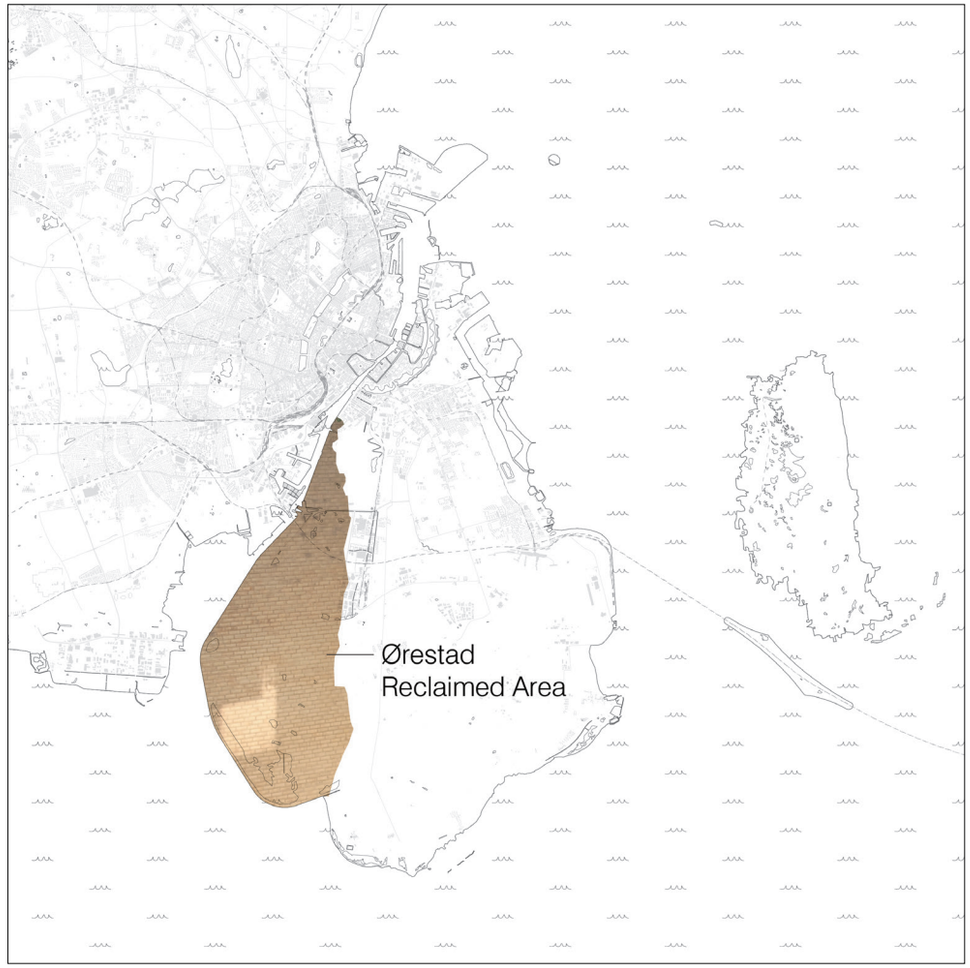


Figure 20: Reclaimed areas in Ørestad in the 1930s. (Author's own map based on By&Havn Archive)

finance the high costs of reclamation. The thesis will examine the Lynetteholm project as a one of the key projects in the next chapters.

Throughout Copenhagen's history, land reclamation has consistently affected environmental and climatic conditions, even though ecological considerations were rarely a primary motivation behind these projects. While examples like Peberholm and Kalvebod Fælled show efforts to integrate natural reserves into reclaimed areas, such cases are limited. In practice, the main driver has remained the creation of economic value and usable land. As the city continues to grow, reclamation increasingly responds to urban pressures such as housing demand and infrastructure needs. Even in projects framed as climate adaptation, like Lynetteholm, a significant portion of the reclaimed area is allocated for housing and commercial development. This reflects an ongoing pattern in which environmental goals are often secondary to the city's interest in capitalizing on newly created land.

Conclusion

Land reclamation has consistently served as a strategic tool for urban development in Copenhagen, though its purposes, stakeholders, and impacts have evolved significantly throughout the city's history. The monarchy period was characterized by centralized, royal-driven projects aimed at defines and political symbolism, with little regard for broader societal needs. In the port activity phase, decision-making shifted toward economic expansion and industrial growth, with value creation driven by trade and production, often without considering the urban or social consequences. In these first phases we see that value creation had a significant difference. It was focused on the specific actors and not for the overall public itself.

Later the lack of public interest in value creation created other problems in the city. In 1990s the city had problems like unemployment, housing shortages, and loss of valuable tax base.[43] We can see that again the direct solutions tried to be solved with reclamation projects, but these solutions didn't bring overall improvement, it was useful only for a small group and short period. All these needs must be solved with a new system that will follow modernist approach particularly for Copenhagen. While the city had positive approaches for the sustainable development of the city, it was not enough to be strong capital. New systems work as a public-private company to develop the city projects and economic aspects like port areas accepted. As the responsible company for projects mentioned, Ørestad, Nordhavn and Lynetteholm, The company By&Havn was responsible for many projects will be done related with housing, port activities and sustainable future of the city that is also reason for the reclamations in the city.

As modernization unfolded, a turning point emerged where urban planning began to address public needs such as housing, infrastructure, and transportation. While new approach help the Copenhagen for the improvement of the city life, it created some concerns about prioritising financial growth and commodification of the local needs like housing. During this period, we observe the first instances where private investments were mobilized not solely for profit but also in response to public demand.

43 Katz and Noring, "THE COPENHAGEN CITY AND PORT DEVELOPMENT CORPORATION: A Model for Regenerating Cities."

More recently, climate concerns have introduced a new layer to land reclamation projects. Historically, large-scale urban development and the protection of natural areas were often pursued in parallel, with reclamation enabling territorial expansion while allowing surrounding landscapes to be designated and preserved. In this context, sustainability strategies sometimes focused on protecting reclaimed land itself through controlled development, and at other times on reclaiming new land in order to reduce pressure on existing natural areas. In the 21st century, sustainability agendas have increasingly shifted toward climate adaptation, reframing land reclamation as an active tool for addressing sea-level rise, storm surges, and flood risk rather than solely as a practice requiring environmental mitigation. As cities increasingly turn to large-scale urban expansion through reclamation, this dual role of sustainability has become one of the most critical issues in contemporary planning debates. Despite being framed as climate- or environmentally driven, many of these initiatives continue to prioritize real estate development and commercial value, raising questions about how deeply ecological preservation is integrated into today's mega urban reclamation projects.[44]

These four phases; monarchy, port activity, modernization, and climate-responsive development; demonstrate how the drivers of land reclamation have shifted from strategic and economic control to a more complex interplay between public interest, private capital, and environmental responsibility. Despite changing contexts, the consistent underlying goal has been to generate value from newly created land, with urban development remaining the dominant purpose.

This historical overview provides a necessary foundation for understanding today's sea reclamation projects in Copenhagen. By recognizing the patterns, motivations, and power dynamics that have shaped past developments, we can better assess the current use of private investments and evaluate whether contemporary efforts are truly delivering public value.

The transition from historically state-driven and then economically-focused projects to the current complex model involving private capital, public interest, and environmental concerns raises a critical question: are new projects like Lynetteholm and the ongoing developments in Nordhavn and Ørestad simply a continuation of historical patterns of value extraction, or do they represent a new paradigm that genuinely prioritizes public benefit? A closer look at these contemporary mega-projects will examine the specific mechanisms of private investment, the stated public goals, and the potential risks to the city's quality of life to determine if Copenhagen is, in fact, navigating a new and more equitable path for its sea urbanization.

44 Ciara Nugent, "How an Artificial Island in Denmark Became One of Europe's Most Controversial Climate Projects," TIME, March 22, 2023, https://time.com/6264861/copenhagen-lynetteholm-artificial-island-climate-change/.

COPENHAGEN IN 21ST CENTURY: Condition and Land Reclamations

By the late 20th century, Copenhagen faced a combination of economic stagnation, social challenges, and structural changes in global urban development. Like many European cities, it was increasingly exposed to international competition, deindustrialization, and declining public finances. These conditions created pressure for new forms of urban growth and financing, marking a clear break from earlier welfare-oriented planning approaches. The following section examines the socio-economic and institutional conditions that shaped Copenhagen's turn toward large-scale urban development and land reclamation in the 21st century.

To understand this transformation, it is necessary to first consider the broader international context in which Copenhagen's development occurred. After the economic slowdown of the 1990s, major cities increasingly adopted megaproject-led development as a response to global economic pressures. This shift toward real estate–based growth strategies produced standardized urban neighbourhoods across American and European cities, reflecting a stronger reliance on private-sector investment and market-oriented governance.[45] Copenhagen was one of the cities has shown similar orientation.

As the capital of Denmark, Copenhagen serves as a competitive metropolitan hub shaping the country's position in Europe. Since the 1990s, national policy has increasingly focused on the city's development, aiming to meet the requirements of a social-democratic, welfare-oriented society.[46] In the Danish context, this means prioritizing social equity and universal access to public services. Housing, education, healthcare, and mobility are seen as collective rights, supported by strong state involvement.[47]

However, maintaining this welfare-oriented model increasingly required new sources of investment and alternative financing mechanisms.

45 Susan S. Fainstein, "Mega-projects in New York, London and Amsterdam," *International Journal of Urban and Regional Research* 32, no. 4 (2008): 768, https://doi.org/10.1111/j.1468-2427.2008.00826.x.
46 Patsy Healey, *Making Strategic Spatial Plans* (Taylor and Francis, 2006).
47 J. Jørgensen and Hans Thor Andersen, "Copenhagen," in *City Profile*, Vol. 12, no. 1 (1995).

The question of how to secure such financing became particularly urgent given the city's deteriorating economic situation. This transformation was not the product of a traditional municipal governance model. Instead, Copenhagen pursued a modernist approach to urban development, one that relied on innovative funding mechanisms to finance strategic change. The city's vision was to create and reinvest capital in ways that could produce lasting improvements in the urban environment.

Such a development model did not exist prior to the late 20th century. During the 1980s, Copenhagen faced severe socio-economic challenges, including high unemployment, substantial budget deficits, and a shortage of investment capital.[48] In the mid-to-late 1980s, unemployment reached approximately 17.5 percent, while the city's annual budget deficit amounted to around USD 750 million.[49] These difficulties were largely the result of deindustrialization and the decline of traditional port- and manufacturing-based activities. Under these conditions, existing welfare-oriented planning and financing mechanisms proved insufficient, creating pressure for a new strategic approach to urban development.[50]

At the same time, Copenhagen's fiscal position was further weakened by long-term suburbanization policies. Throughout the 20th century, municipal authorities actively purchased agricultural land on the urban periphery and facilitated its conversion into low-density residential suburbs, which were primarily developed as owner-occupied single-family housing. While this strategy responded to housing demand and living standards at the metropolitan scale, it redirected middle- and high-income households away from the city center. As a result, income tax revenues increasingly accrued to surrounding municipalities rather than to Copenhagen itself.[51] The city center consequently experienced a demographic shift toward lower-income groups, students, and pensioners, leading to a significant erosion of the municipal tax base and further constraining public investment capacity.[52]

48 Healey, *Making Strategic Spatial Plans*.
49 Katz and Noring, "THE COPENHAGEN CITY AND PORT DEVELOPMENT CORPORATION: A Model for Regenerating Cities."
50 Hans Thor Andersen and John Jørgensen, "City Profile Copenhagen," *Cities* 12, no. 1 (1995): 13–22, https://doi.org/10.1016/0264-2751(95)91862-A.
51 Katz and Noring, "THE COPENHAGEN CITY AND PORT DEVELOPMENT CORPORATION: A Model for Regenerating Cities."
52 Jürgen Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality: Entrepreneurial Governance and Urban Redevelopment Projects in Copenhagen and Hamburg," *Urban Studies* 59, no. 1 (2022): 161–77, https://doi.org/10.1177/0042098020951438.



Figure 21: Oil painting titled View of Copenhagen, 1650. The view through Copenhagen City Center from Amager Island. (source: Lot-Art)

Yet despite these fiscal constraints, Copenhagen maintained a historic capacity for territorial expansion that would prove central to its future development strategy. Since its earliest settlements in the 17th century, the city had continuously expanded through land reclamation and the drainage of marshes and bogs.[53] While these practices historically supported urban growth, the resulting urban fabric increasingly faced new vulnerabilities related to economic restructuring, environmental pressures, and future climate risks. As a low-lying coastal metropolis surrounded by the Øresund and the Baltic Sea, Copenhagen is now confronting multiple dimensions of climate change, including rising sea levels, more frequent and intense storm surges, and increasing rainfall. According to recent assessments, sea levels around Denmark are expected to rise by roughly half a metre or more by the end of the century, and extreme storm surges could raise water levels by several metres in rare but powerful events, threatening large parts of the city with flooding. Without continued and effective adaptation measures, hundreds of thousands of buildings and residents could be at risk in the coming decades, and the economic cost of flood damage is projected to reach tens of billions of Danish kroner if protective infrastructures are not implemented in time.[54] This combination of sea level rise, storm surge vulnerability, and heightened rainfall has made climate adaptation one of Copenhagen's foremost planning challenges. In this context, Copenhagen's legacy *of "land-making"* is no longer just a tool for growth; it has been reimagined as a strategic asset for climate resilience, utilizing reclaimed territories to host the large-scale protective infrastructure needed to safeguard the city's future.

Against this background of structural vulnerability and emerging long-term risks, questions about Copenhagen's future development increasingly entered political and planning debates during the late 1980s. Debates about Copenhagen's future were strongly influenced by the publication of Hovedstaden – Hvad vil vi med den? (The Capital — What Do We Want to Do With It?). Produced by a national initiative group, the report examined the role of the capital region within Denmark and identified growing concerns related to economic stagnation, population decline, and insufficient infrastructure investment.

53 Andersen and Jørgensen, "City Profile Copenhagen."
54 Christoffer Friis Christensen, "Copenhagen Under Water," *The Copenhagen Post*, February 20, 2025, https://cphpost.dk/2025-02-20/general/copenhagen-under-water-2/.



Figure 22: Hovedstaden - Hvad vil vi med den? /The Capital - What do we want with it? (source: By&Havn Archives)

The report's key contribution was to reframe metropolitan challenges as opportunities for strategic intervention. It argued for a more proactive, growth-oriented planning approach, emphasizing large-scale infrastructure projects, improved regional connectivity, and a clearer strategic vision for metropolitan development.[55] Although the report did not propose specific urban districts, it established a conceptual and political framework that later enabled major development initiatives, including the Ørestad project, by framing urban expansion and infrastructure investment as key instruments for revitalising the capital region.

Over the following decades, this institutional report become a foundation in Copenhagen's transformation from a declining industrial city into a competitive metropolitan region. Strategic zoning and land-based financing facilitated major investments in transport infrastructure, housing, and waterfront redevelopment, reshaping both the city's physical structure and its economic foundations. [56] While this approach delivered visible improvements in urban quality and connectivity, it also redefined the relationship between public planning and private capital.[57]

A defining feature of this development strategy has been its strong spatial concentration along the city's waterfront. Many large-scale investments were directed toward former port and industrial areas, often located on historically reclaimed or newly created land. [58] These areas were transformed into new urban districts comparable in scale to historical neighbourhoods, combining residential, commercial, and public functions. Reclaimed and redeveloped waterfront land played a crucial role in this process by providing investment-ready sites where public authorities could capture and reinvest rising land values. At the same time, environmental remediation and harbour clean-up projects expanded public access to the waterfront, enhancing everyday urban life. [59]

55 *Hovedstaden: Hvad Vil vi Med Den? (The Capital — What Do We Want to Do With It?)* (Initiativgruppen om Hovedstadsregionen, 1989).
56 Dag Detter and Stefan Fölster, "The Urban Wealth Fund: A Conduit for Maximizing Value," in *The Public Wealth of Cities: How to Unlock Hidden Assets to Boost Growth and Prosperity* (Brookings Institution Press, 2017).
57 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study* (Urban Regeneration KSB, n.d.).
58 *Copenhagen Islands A Strategy for the Development of the Greater Copenhagen Area* (2023), www. schonherr.dk.
59 Peter Bosselmann, *Transformations and City Extensions: Some Observations of Copenhagen's City Form at a Time of Global Change*, n.d.

In recent years, this model has increasingly been framed through the language of sustainability and climate adaptation. New land reclamation projects are presented as responses to rising sea levels, flooding risks, and extreme weather events, while simultaneously addressing population growth and housing demand. The involvement of private capital has been a key factor in enabling these capital-intensive interventions, particularly in contexts where public resources alone would be insufficient. [60]

However, the outcomes of this development model have not been uniformly positive. Despite its achievements, this development approach has generated significant debate. Critics question whether the concentration of investment in selected waterfront areas reinforces spatial and social inequalities, and whether the benefits of land value–driven development are distributed equitably across the city. [61] Large-scale urban projects are often interpreted as expressions of neoliberal urban governance, characterized by limited transparency and substantial local spatial impacts. These concerns highlight the tension between economic competitiveness, environmental ambition, and the pursuit of broader public value. [62]

These intersecting dynamics, including fiscal constraints, climate adaptation imperatives, private capital dependency, and questions of spatial equity, created the conditions for a fundamental reorganization of how urban development would be governed and financed in Copenhagen. The city's strategic turn toward large-scale waterfront development represented both an innovative response to multiple pressures and a departure from traditional welfare-oriented planning. However, this transformation required new institutional mechanisms capable of mobilizing public assets, attracting private investment, and coordinating complex development processes. The following section examines how Copenhagen structured this institutional capacity.

60 Roudaina Alkhani, "Understanding Private-Sector Engagement in Sustainable Urban Development and Delivering the Climate Agenda in Northwestern Europe—A Case Study of London and Copenhagen," *Sustainability* 12, no. 20 (2020): 8431, https://doi.org/10.3390/su12208431.
61 *Copenhagen Islands A Strategy for the Development of the Greater Copenhagen Area*.
62 Stan Majoor, "Progressive Planning Ideals in a Neo-Liberal Context, the Case of Ørestad Copenhagen," *International Planning Studies* 13, no. 2 (2008): 101–17, https://doi.org/10.1080/13563470802291978.

Urban Development Systems and By & Havn's Role in Copenhagen

In the 21st century, urban growth has required innovative approaches to maximize the value of public assets such as land, buildings, and infrastructure. Rather than being passively held as municipal resources, these assets are increasingly managed through corporate structures designed to generate revenue for urban development. In many cities, publicly owned assets are consolidated and managed strategically in order to unlock latent value and reinvest the returns into public needs. Such assets may include operational utilities such as electricity and water, transportation infrastructure such as ports, airports, or mass transit systems, as well as real estate, which often represents the largest share of public value. [63]

The institutional form through which cities manage these assets has become an important feature of contemporary urban development in Copenhagen. These arrangements typically operate through state-owned enterprises (SOEs), which mediate between public ownership and private-sector investment. [64] SOEs function as hybrid entities: while formally embedded in state authority, they adopt market-based logics and financial practices, thereby blurring the boundary between public and private sectors. In urban theory, SOEs are commonly interpreted as instruments of entrepreneurial or neoliberal urban governance, through which the state mobilizes land and infrastructure as vehicles for growth and competitiveness. In Copenhagen, this role is primarily carried out by By & Havn, which functions as the city's main state-owned enterprise responsible for managing publicly owned land and coordinating large-scale urban development. [65]

The rise of SOEs in Copenhagen was driven by the need to restructure how urban development is managed and financed. Rather than relying solely on traditional municipal planning tools and taxation, municipal and national authorities increasingly turned to SOEs as instruments for large-scale redevelopment. [66] This shift reflected both fiscal constraints within the

63 Detter and Fölster, "The Urban Wealth Fund: A Conduit for Maximizing Value."
64 Detter and Fölster, "The Urban Wealth Fund: A Conduit for Maximizing Value."
65 David Harvey, "From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism," *Geografiska Annaler: Series B, Human Geography* 71, no. 1 (1989): 3–17, https://doi.org/10.1080/04353684.1989.11879583.
66 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."

welfare-state model and the growing importance of land and real estate as sources of urban investment. By operating through SOEs, public authorities were able to develop land assets in a way that combined public ownership with private-sector development practices. [67]

Financially, this approach aimed to restore the municipal tax base, attract private investment, and stimulate economic growth without placing excessive pressure on public budgets. By leveraging publicly owned land and future land revenues, cities could initiate major infrastructure and redevelopment projects that would have been difficult to finance through conventional public funding mechanisms. [68] In this sense, the model marked a decisive shift toward a more entrepreneurial form of urban governance, in which land was treated not only as a spatial resource but also as a financial asset capable of generating investment capacity.

The practical implementation of this approach depends on specific operational mechanisms. This entrepreneurial role materializes through the preparation, development, and release of public land. Strategic sites are equipped with infrastructure and then leased or sold to private developers, generating substantial private investment while producing revenue for the public entity. Rather than flowing into general municipal budgets, these revenues are often reinvested into large-scale infrastructure projects, such as metro systems and other forms of urban mobility.[69] Through this process, increases in land value generated by public action are transformed into financial resources for long-term urban development.

Since the 1990s, Copenhagen has relied extensively on this model to organize large-scale redevelopment and infrastructure projects. [70] Through By & Havn, the city has been able to consolidate and manage extensive publicly owned land assets, capture rising land values, and leverage private capital in urban transformation. By 2007, Copenhagen's consolidated portfolio of publicly owned development land encompassed approximately 1,209 acres, making it the largest of its kind in Europe. [71] This framework has allowed public and private capital to be combined in a structured

67 *Copenhagen Islands A Strategy for the Development of the Greater Copenhagen Area*.
68 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."
69 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."
70 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.
71 Detter and Fölster, "The Urban Wealth Fund: A Conduit for Maximizing Value."



Figure 23: By&Havn Company in Ørestad (photo taken by the author)

manner, positioning land development as a central instrument in Copenhagen's contemporary urban development strategy.

The evolution of this system can be traced through two key institutional developments: the Ørestad Development Corporation and its successor, By & Havn. The Ørestad Development Corporation, established in the 1990s, marked the first step in this trajectory. As the city's first state-owned enterprise jointly owned by municipal and national government, it combined state financial power with municipal planning authority. This governance innovation became the precursor for subsequent public-private partnerships in the city. Similarly, By & Havn stands as the most prominent example of this approach today, illustrating the institutionalization of an entrepreneurial state model designed to maximize urban value creation in Copenhagen.[72]

While this development system has been operating in Copenhagen for several decades, concerns have been raised by practitioners working within it. Magnus Maarbjerg, a Danish local architect and co-founder of the maritime studio MAST, has worked on several projects on land governed by By&Havn. He suggests that the very efficiency of the By & Havn model may be its greatest limitation. Maarbjerg describes it a "closed system" where the concentration of decision-making power over land and timing leaves little room for external influence. He argues that by prioritizing a limited group of actors, the city risks a reproduction of the same, where urban forms are duplicated at the expense of design diversity. [73] While the system appears powerful in its capacity to deliver large-scale projects efficiently, Maarbjerg argues that By & Havn's institutional identity as a corporation, rather than a traditional public planning authority, ultimately restricts flexibility and innovation in the resulting urban environments.

To understand how this system operates in practice, it is necessary to examine its contemporary development and institutional structure. Copenhagen's contemporary development model began with the Ørestad project, which transformed former military land into a new urban district intended to attract residents and stimulate economic growth.[74] In 1992, to develop

72 Detter and Fölster, "The Urban Wealth Fund: A Conduit for Maximizing Value."
73 Magnus Maarbjerg, "Interview with Co-Founder of Maritime Architecture Studio 'MAST,'" October 20, 2025.
74 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.



Figure 24: Harbour in Nordhavn controlled by By&Havn (photo taken by the author)

the new area for the city, the Ørestad Development Corporation was established under the Ørestad Act. Jointly owned by the City of Copenhagen and the Danish Ministry of Finance, the corporation marked the city's initial step toward a transit-oriented development strategy.[75] Its primary responsibility was to finance and oversee the construction of a new metro line linking downtown Copenhagen to the airport and Øresund Bridge. [76]

The necessary capital was to be generated through land development in Ørestad. This strategy led to the construction of the first two metro lines: M1, which opened in 2002, and M2, which followed in 2007.[77]

At the same time, the port sector was experiencing significant changes. The Port of Copenhagen Ltd., long responsible for managing the city's harbor, had been running at a loss for several years and sought to offset these deficits by selling surplus land in the Copenhagen port area.[78] Following the opening of the Øresund Bridge in 2000, the port of Copenhagen experienced a sharp decline in traffic, losing around 25 percent. In the same year, Copenhagen Malmö Port AB (CMP) was established as a joint venture between the municipalities of Copenhagen and Malmö. CMP rented the land needed for port operations from the Port of Copenhagen and, by 2001, had already generated approximately $15 million in profits.[79]

These developments created both an opportunity and a necessity for institutional reorganization. By 2007, it had become clear that a more integrated approach was required to manage the redevelopment of former port areas in the city center. At this point, the Ørestad Development Corporation, which had already launched the Ørestad project and financed the metro, separated its transit infrastructure arm to continue overseeing transportation investments. Simultaneously, Port of Copenhagen Ltd. merged with the development functions of the Ørestad corporation, resulting in the creation of By & Havn (CPH City & Port Development). Ownership was divided between the City of Copenhagen, holding 55 percent, and the Danish

75 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."
76 Knowles, "Transit Oriented Development in Copenhagen, Denmark."
77 Katz and Noring, "THE COPENHAGEN CITY AND PORT DEVELOPMENT CORPORATION: A Model for Regenerating Cities."
78 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.
79 Katz and Noring, "THE COPENHAGEN CITY AND PORT DEVELOPMENT CORPORATION: A Model for Regenerating Cities."

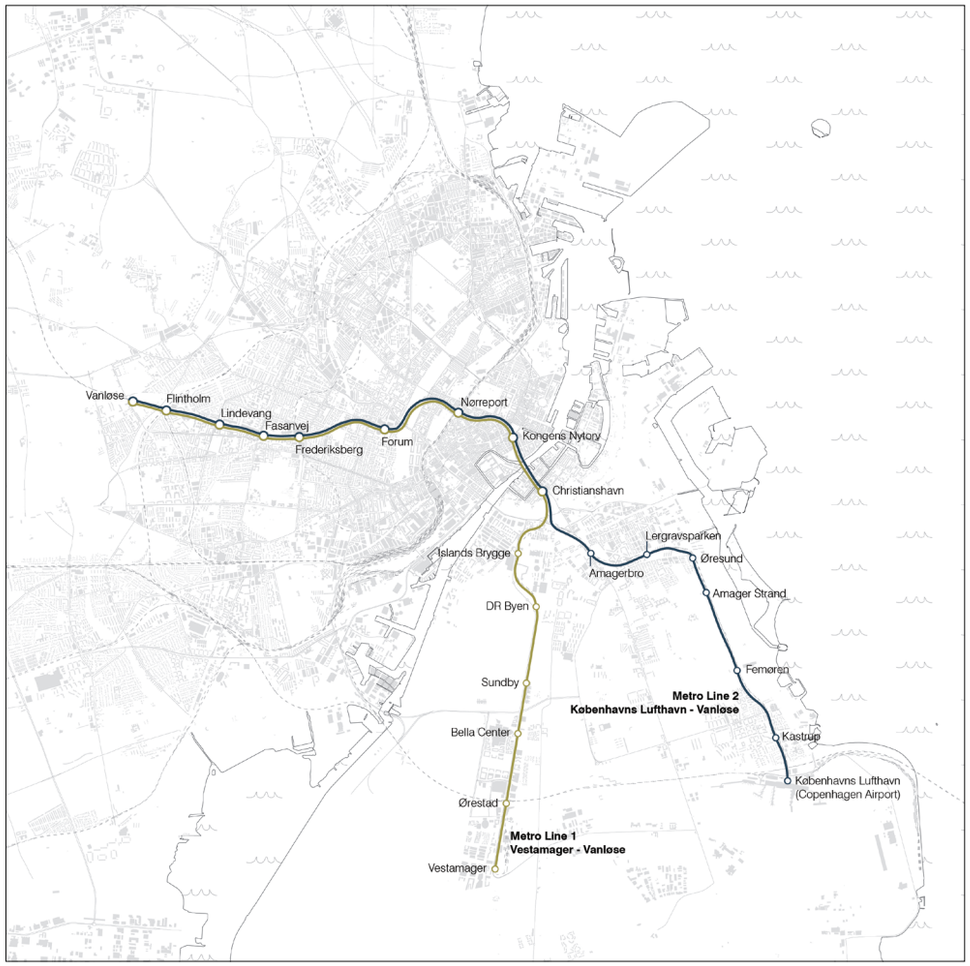


Figure 25: First two metro line in Copenhagen (Author's own map based on Google Maps)

national government, holding 45 percent.[80]

Since its establishment, By & Havn has been responsible for the city's largest urban development projects. Its activities have primarily focused on reclaimed land, either historically created through past reclamation or newly produced for urban expansion. Roughly half of Copenhagen's major development projects since 2007 have been led by By & Havn, relying on the creation and transformation of land to generate capital for infrastructure investments.

The company's co-ownership structure reflects the dual governance of Copenhagen's port-city relationship: while the national government owns the port, the municipality regulates zoning and urban development.[81] By & Havn functions as a mediating institution, enabling coordination between these two levels of government. The importance of the By&Havn company structure also emphasised by Blak Wilner, she states that this model supports the creation of a coherent structure plan defining infrastructure, density, building typologies, and green and blue networks. Unlike large-scale planning with multiple landowners, which is often fragmented and negotiation-driven, the By & Havn model enables a more holistic and long-term approach focused on citywide outcomes rather than short-term compromises.[82]

By & Havn's model allows long-term, large-scale port-urban projects to proceed with limited exposure to electoral cycles and short-term political pressures. The process typically begins with the acquisition of land, often transferred from public ownership, followed by securing loans, usually from the Danish National Bank, to finance infrastructure projects such as the metro.[83]

During development, land is rezoned for higher value uses, such as residential, commercial, or mixed-use projects, significantly increasing its market value. By & Havn then generates revenue through the sale or lease of these parcels, or, in some cases, by directly developing them. These funds are used both to repay government loans and to reinvest in further

80 Katz and Noring, "THE COPENHAGEN CITY AND PORT DEVELOPMENT CORPORATION: A Model for Regenerating Cities."
81 Katz and Noring, "THE COPENHAGEN CITY AND PORT DEVELOPMENT CORPORATION: A Model for Regenerating Cities."
82 Irene Blak Wilner, "Interview with Architect Working at 'SLETH,'" February 1, 2026.
83 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."



Figure 26: 11 areas developed by By&Havn Corporation - landfill sites reclaimed from the sea (Author's own map based on By&Havn Archive)

urban development, creating a self-reinforcing cycle where public assets finance city growth while simultaneously generating new infrastructure and economic value.[84] Strategic investment in key infrastructure, particularly public transportation, further enhances the attractiveness and value of the land, ensuring that public investment produces maximum returns for the city and its residents.

Today, By & Havn continues to implement this model across Copenhagen's largest urban development areas, including Ørestad, South Harbor, the North Harbor, and Paper Island. The governance structure itself has its roots in the Ørestad Development Corporation, which was established as a unique state–city partnership that combined public ownership with market-oriented financing.[85] While the basic principles of this model remain the same, specific approaches vary according to the characteristics of each site. These large-scale transformations not only reflect the city's future trajectory but also have significant social and spatial impacts on Copenhagen's residents, shaping how people live, move, and interact with the urban environment. Developments led by publicly owned companies are often influenced by financial objectives that shape key decision-making processes, with clear and lasting consequences to quality of urban life. The next chapter examines By & Havn's distinctive value-creation system in order to provide a clearer understanding of the development mechanisms underlying the projects discussed later in the thesis.

84 Detter and Fölster, "The Urban Wealth Fund: A Conduit for Maximizing Value."
85 Katz and Noring, "THE COPENHAGEN CITY AND PORT DEVELOPMENT CORPORATION: A Model for Regenerating Cities."



Figure 27: Naturpark Amager, Ørestad Poster by By&Havn (source: By&Havn Archive)

Financing Urban Development through Land Value Capture

Denmark has developed a distinctive way of financing and guiding urban growth. Instead of seeing land only as private property, the Danish system treats it as something that should generate public value whenever possible. The country uses different tools, known as land value capture instruments, which are ways for the public sector to recover part of the increase in land value that results from public actions such as building a metro line, creating a park, or changing zoning regulations.[86] In simple terms, whenever land becomes more valuable because of decisions made by society, the public sector makes sure that part of this extra value is returned to the community.

Copenhagen's application of land value capture draws conceptual inspiration from the English New Town principle developed in the post-war period.[87] In that model, government-backed development corporations acquired land at its existing undeveloped value, financed major infrastructure projects such as transit lines, and then sold or leased the newly valuable land. The profits generated were used to repay initial investments and fund further urban development. This approach allowed the creation of large-scale projects without relying on traditional public funding or commercial financing.[88] In Copenhagen, this principle has been adapted and applied systematically from the Ørestad project through to today's newly initiated Lynetteholm development, with infrastructure investments increasing land value even before land is leased or sold.

Denmark's political and planning system makes this approach possible. The country is organized across three levels of government: the national state, five regions, and 98 municipalities. Municipalities, each with at least 20,000 inhabitants, are the main players in urban planning.[89] They prepare long-term strategic plans and more detailed local development plans that determine how land can be used and what can be built. National planning reports provide guidance, but the municipalities decide most of the details. Even though land value capture is not written explicitly into national law, it has become common practice, especially in Copenhagen, where major projects are carried out through the By & Havn. As discussed in the previous section, this corporation plays a central role in financing infrastructure and redeveloping large areas of the city, particularly along the waterfront. Therefore, this institutional framework operates through several interconnected financing mechanisms, each designed to capture different dimensions of land value increase.

To complement this governance structure, Copenhagen relies on specific financing mechanisms that connect urban development with funding sources, ensuring that those who benefit most from new infrastructure also help pay for it. One of the most important tools used in Copenhagen is infrastructure levy. This means that property owners who benefit directly from new public infrastructure must pay part of the cost. A clear example is the metro fee. When a new metro station is introduced, By & Havn captures part of the resulting land value increase through what can be understood as a profit-sharing mechanism. In this way, the metro system is partly financed by those who benefit most from it like landowners who see their property values rise because the metro increases accessibility. In addition, a community fee is charged in new development areas to help maintain green spaces, roads, and other shared facilities. This fee is divided equally among property owners. [90] Although it does not cover all costs, it ensures that those who enjoy the improved quality of the area also contribute to its upkeep.

Another way Copenhagen captures value is through developer obligations. Whenever a private developer builds new housing or undertakes a densification project, they are required to provide certain public facilities as part of the development. These are not cash payments, but contributions in kind such as building roads, parking spaces, neighborhood centers, or affordable housing units. Once constructed, these facilities are handed over to local authorities or sometimes to community organizations. These are

86 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.
87 By&Havn, "Tidslinje," *Ørestad*, August 24, 2025, https://byoghavn.dk/orestad/tidslinje/.
88 "Land Value Capture - Housing, Communities and Local Government Committee - House of Commons - Garden Cities and New Towns," Governmental, UK Parliament, September 13, 2018, https://publications.parliament.uk.
89 OECD and Lincoln Institute of Land Policy, PKU-Lincoln Institute Center, *Global Compendium of Land Value Capture Policies*, OECD Regional Development Studies (OECD, 2022), https://doi.org/10.1787/4f9559ee-en.
90 Katz and Noring, "THE COPENHAGEN CITY AND PORT DEVELOPMENT CORPORATION: A Model for Regenerating Cities."

non-negotiable obligations, there are no exemptions.[91] This ensures that every private project also strengthens the wider urban fabric.

Among these obligations, housing requirements play a particularly significant role in maintaining social equity. In Copenhagen, between 25 and 30 percent of the units in new developments must be affordable or social housing. These can either be built within the same development or at another location in the municipality, but they must remain affordable for as long as they are managed by housing cooperatives. Denmark has a long tradition of cooperative housing (almen boligbyggeri), which ensures affordability for a wide share of the population. Today, around 20 percent of the population lives in such housing.[92] This means that land value capture is not only about raising money for infrastructure, it is also about maintaining social balance in the city.

Copenhagen also makes use of land readjustment, which means reorganizing land to make development possible. This tool is typically applied to derelict or abandoned areas, such as old industrial or harbour sites. Local governments or special-purpose bodies pool together land parcels, rezone them for new uses, and then redistribute or sell them. Once the land has been reorganized and prepared with infrastructure, it can be sold to private developers, with the revenues often financing large public projects.[93] The redevelopment of Copenhagen's harbor land, which financed part of the metro system, is one of the clearest examples. The principle here is that fragmented land cannot support major public projects, but when reorganized collectively, it can both serve the city and increase value.

However, the most distinctive feature of Copenhagen's land value capture system emerges in the context of reclaimed land, where public control extends from the very moment of land creation. When new land is reclaimed in Copenhagen, it is owned by the public sector from the moment it exists, through the state–municipal development company By & Havn. This means that public actors can control almost all key stages of the process: planning, phasing, plot subdivision, pricing and the selection

91 OECD and Lincoln Institute of Land Policy, PKU-Lincoln Institute Center, *Global Compendium of Land Value Capture Policies*.
92 By&Havn, *CSR REPORT 2020* (2021).
93 OECD and Lincoln Institute of Land Policy, PKU-Lincoln Institute Center, *Global Compendium of Land Value Capture Policies*.



Figure 28: Area developed by By&Havn in Ørestad with a vast area in front of the residential areas (photo taken by the author)

of developers. In such a setting, land value capture becomes more direct and efficient, because value increases created by public decisions and infrastructure can be channelled back into public investments rather than leaking away to pre-existing private landowners. Since the area is designed from scratch, there are no inherited parcel structures, no prior private owners and no long history of speculation or land-value inflation; instead, the city invests, raises value and then recaptures part of that value through land sales or leases in a relatively closed loop. This creates a rare opportunity for a highly integrated land value capture system, in which the rules of development are largely set by the public authorities rather than negotiated with many different landowners.

Although starting from a blank slate through land reclamation is often regarded as advantageous for maximizing land value capture, it raised significant concerns among practitioners involved in similar projects. Marshall Blecher, co-founder of MAST, emphasized that while planning from scratch may appear powerful, it also carries substantial risks. In another words, the conditions that appeal to investors often clash with the organic nature of city-making. Drawing on a decade of practice in Copenhagen, Blecher contends that public life cannot be fully masterplanned; rather, it emerges over time through social interaction and community formation. A blank slate can enable new ideas, but only if the planning framework allows space for unpredictability and adaptation.[94] This perspective suggests that even carefully planned developments require long-term commitment and incremental adjustment in order to evolve into liveable urban neighbourhoods.

Despite these concerns about masterplanning limitations, public land ownership remains central to Copenhagen's development strategy. Denmark applies a strategic approach to land management that focuses on long-term planning. Public authorities acquire land in areas expected to become important in the future, such as former military sites, old harbour zones, and industrial areas. By securing ownership early, the public sector is able to guide how these areas are developed once redevelopment begins. When the land is rezoned for more productive uses, developers are obliged to provide contributions such as affordable housing or public

94 Marshall Blecher, "Interview with Co-Founder of Maritime Architecture Studio 'MAST,'" October 16, 2025.

spaces. These contributions cannot be replaced by cash; they must directly improve the quality and equity of the area.[95] In Greater Copenhagen, for example, 30 percent of new housing units in rezoned areas must be affordable, while elsewhere in Denmark the requirement is 25 percent. These units must be similar in quality to market-rate housing and are transferred to housing cooperatives to ensure long-term affordability. This strategy allows Denmark to control urban growth and capture land value gains in a way that benefits the wider community.

Taken together, these instruments illustrate how Denmark has developed a comprehensive model for financing urban growth that links public planning, private investment, and community benefits, while also confronting the risks that accompany planning from scratch. While the mechanisms vary in form, they share a common underlying principle: land made valuable through collective decisions should contribute to the wider public good.[96] In Copenhagen, this principle is applied most clearly through urban development on reclaimed land, where large, publicly owned territories allow value creation, capture, and reinvestment to be coordinated within a single governance framework. Because reclaimed land enters the urban system without prior private ownership, public authorities can control the full sequence of development, from land creation and infrastructure investment to zoning, land release, and value capture, forming a relatively closed loop in which increases in land value are channelled back into public projects.[97] While these projects generate significant financial value, their urban life quality has been widely criticised across multiple dimensions for different projects. For this reason, reclaimed land projects provide a particularly revealing lens through which to assess both the potentials and limitations of Copenhagen's development model. The following chapters examine three major projects, Ørestad, Nordhavn, and Lynetteholm, each situated on reclaimed or transformed land and representing distinct historical moments and urban ambitions, from new town development to harbour regeneration and climate adaptation.

95 OECD and Lincoln Institute of Land Policy, PKU-Lincoln Institute Center, *Global Compendium of Land Value Capture Policies*. *Amager west development plan including Ørestad Area*

96 Remy Sietchiping and Jan Turkstra, *Managing Urban Land Information: Learning from Emergent Practices* (United Nations Human Settlements Programme, 2012).

97 OECD and Lincoln Institute of Land Policy, PKU-Lincoln Institute Center, *Global Compendium of Land Value Capture Policies*.

KEY PROJECTS

In the 21st century, Copenhagen has undergone significant transformation, particularly through large-scale urban development projects. The decision-making structures, governance arrangements and strategic priorities embedded in these projects have played a decisive role in shaping the direction of the city's contemporary urban development. In this thesis, three of the most influential projects are selected as key cases in order to examine more closely how Copenhagen manages this "modern change" on newly created or transformed land: Ørestad, often regarded as the first major development under the current state-led/entrepreneurial model; Nordhavn, presented as a flagship project for Copenhagen's future urban and sustainability ambitions; and Lynetteholm, a recent and highly debated project that pursues similar goals but has generated substantial public controversy.

Among the three projects examined, each represents a distinct approach to land reclamation, shaped by different historical contexts, functional objectives, and urban impacts. The first project is located on land that was reclaimed in an earlier period, and it was dammed seabed.[98] It remained largely undeveloped for an extended time before being incorporated into urban use. The second project involves an area that previously supported significant urban and industrial activity; as these functions declined, the site was gradually transformed for new urban purposes, with land reclamation occurring partly in the historical period and partly in more recent phases. The third project differs fundamentally from the others, as it is based on a fully new land reclamation initiative, primarily justified through objectives of climate resilience. This project has also generated the highest level of public controversy. Taken together, the three cases illustrate substantial differences in the timing, purpose, and scale of reclamation, as well as in their broader implications for urban development and public value creation in Copenhagen.

The three key projects are analysed using a shared comparative framework structured around six phases. These phases include: (1) *'The History of the Area'*, outlining the reclamation process and historical significance; (2) *'Project Motivations'*, explaining the rationale behind each project and the objectives defined at the planning stage; (3) *'The Masterplan'*, describing the planning strategies and architectural decisions; (4) *'The Development Model'*, detailing how the government and By & Havn organised the planning and construction process, including stakeholder involvement; (5) *'Project Regulations'*, addressing land sales, planning controls, and construction-specific rules for each area; and (6) '*Forms of Value Creation'*, examining post-development outcomes, public benefits, and related criticisms. This structure allows each project to be understood on its own terms while enabling direct comparison across a consistent set of analytical questions.

98 BY&HAVN, *Ørestad Fælled Kvarter* (n.d.), www.byoghavn.dk/ofk.

First Innovative Development: Ørestad

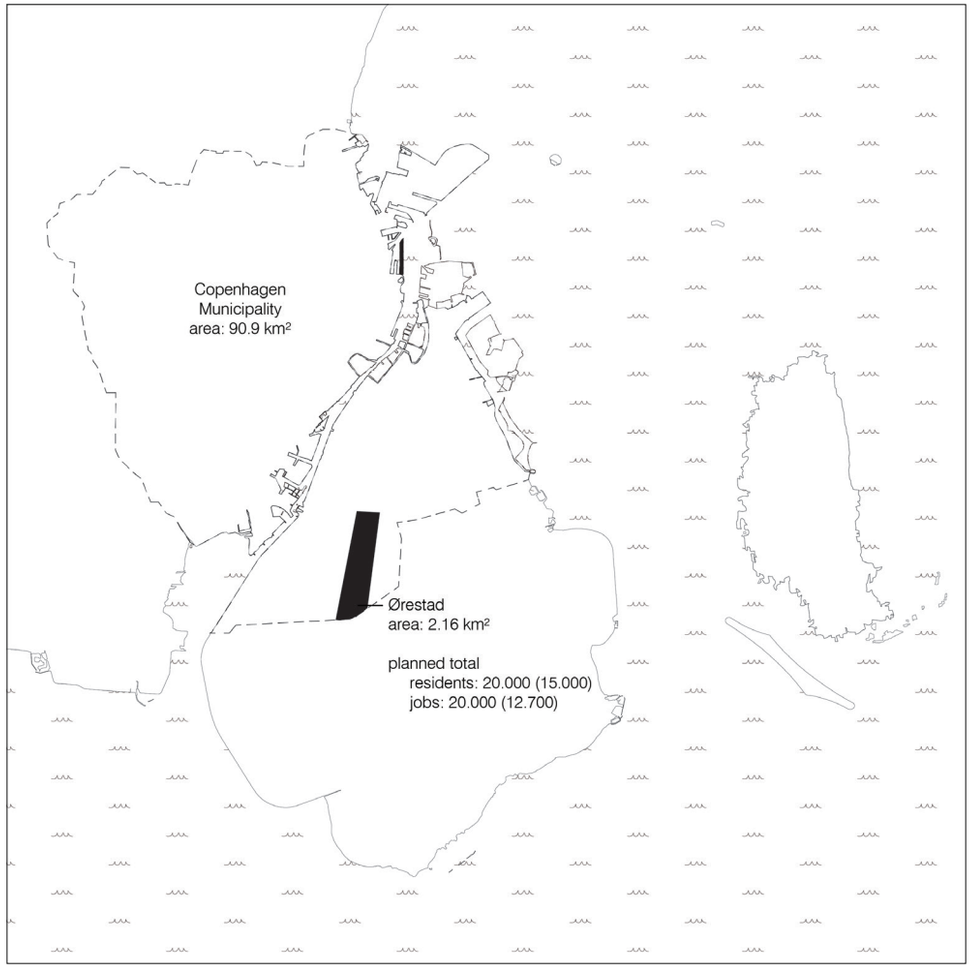


Figure 29: Ørestad Project Location in Copenhagen and the planned / existing population. (Author's own map based on By&Havn Archive)

To examine Copenhagen's modern urban development, Ørestad was chosen as first project since it represents the city's first large-scale urban project. The development plan extends as a corridor from the historical city centre to the newly developed southern Amager. This thesis focuses on the recently developed districts of Ørestad City and Ørestad South, located in the southeastern part of Amager Island. These districts show how an urban plan can be designed entirely from the ground up, as the land remained largely unused for decades after its reclamation.

While the other two selected case study projects are located on land reclaimed directly from the open sea for various purposes, Ørestad differs in that it was not entirely reclaimed. Instead, its development required extensive water drainage and landfilling rather than large-scale sea reclamation. The decision to establish an urban district came long after this drainage work was completed.[99] Nevertheless, Ørestad provides a valuable precedent because its land-ownership structure, investment model, and development objectives closely parallel those of more recent reclamation-based projects. As Copenhagen's initial experiment in mega-scale urban planning, Ørestad reveals how the city began integrating large new developments into existing urban fabric. Its outcomes offer critical insight into the lessons that later shaped subsequent reclamation and waterfront initiatives.

99 Anton Ösgård and Bas Spierings, "'It Just Didn't Really Happen': The Lived Space of Entrepreneurial Urbanism in Ørestad, Copenhagen," *Geoforum* 123 (July 2021): 117–28, https://doi.org/10.1016/j.geoforum.2021.05.004.

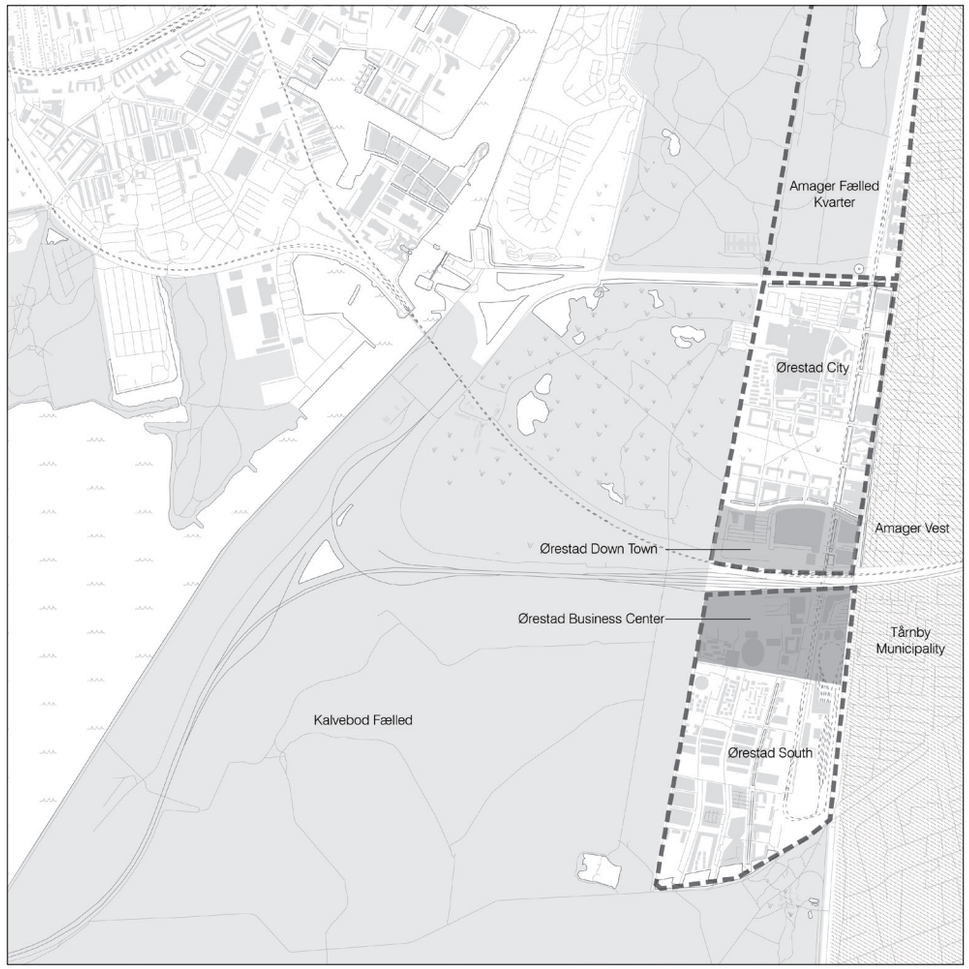


Figure 30: Ørestad Districts (Author's own map based on By&Havn Archive)

History of an Area

The development of Ørestad was not merely an urban expansion project but a strategic planning decision affecting a substantial portion of the island of Amager. It involved the transformation of much of western Amager, an area that includes extensive land reclaimed in earlier periods as well as the protection of large, ecologically significant natural landscapes. As a result, the planning of Ørestad extended well beyond the boundaries of the development area itself, requiring coordination at the scale of the entire island. The project is situated in close proximity to environmentally sensitive land, making ecological considerations an integral component of its planning and governance framework.[100]

The map illustrates six distinct zones in western Amager and their respective patterns of repurposing for the new development. (1) Amager Fælled is a dammed seabed encompassing 318 hectares within the Amager Nature Park. It serves primarily as a natural and recreational landscape, with most of its area under environmental protection and excluded from urban development. (2) The second zone represents the full extent of the Ørestad development area designated in 1992. (3) The third zone was identified in 2007 as a potential Ørestad extension, approved by a vote of 107 to 2; however, it has remained largely undeveloped to preserve natural conditions. (4) The fourth zone, Ørestad Fælled Kvarter (Ørestad Fælled Neighborhood), was subsequently earmarked for the creation of a sustainable urban district on non-protected land within Amager Fælled. (5) and (6) correspond to Kalvebod Fælled and the southern portion of Amager Nature Park, both protected natural areas characterized by expansive coastal meadows and diverse wildlife.[101] The map illustrates that Ørestad occupies only a limited portion of a much larger planning framework, within which dense urban development is concentrated along the southern part of the island, while surrounding natural preservation areas function as spatial boundaries that constrain and define urban expansion.

The Orestad was formerly part of the natural area Kalvebod Fælled.

100 Berit C. Kaae et al., "Nature Park Amager – Examining the Transition from Urban Wasteland to a Rewilded Ecotourism Destination," *Journal of Ecotourism* 18, no. 4 (2019): 348–67, https://doi.org/10.1080/14724049.2019.1601729.
101 BY&HAVN, *ØRESTAD FÆLLED KVARTER*.

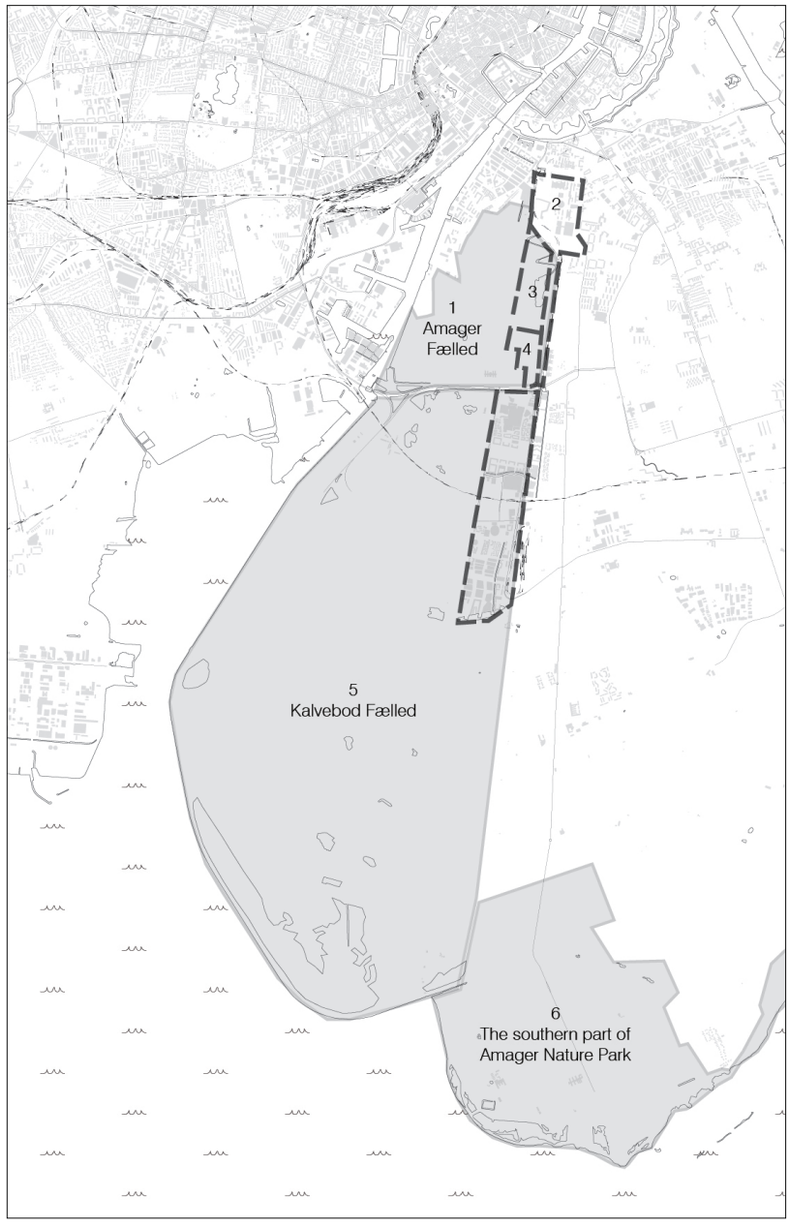


Figure 31: Amager west development plan including Ørestad area (Author's own map based on By&Havn Archive)

It gave the important characteristic to the Ørestad as a part of the natural protected land. The whole area is reclaimed land from 1930s. First reason for reclamation was the military use, later it used for many different purposes like agriculture, grazing or as wetlands. Some parts also used as a dump ground for Copenhagen's waste or as a chemical dump for military until 1967. Prior to the project, the area had little relevance for public life within the city. In 1992, the Ørestad project was initiated with the aim of integrating this territory more effectively into Copenhagen's urban structure and public use. Since the area was a military training ground, the first step of transformation involved clearing ammunition between 2000-2015.[102] Ørestad area was developed as urban area and rest of the Kalvebod Fælled also decided to use as a natural park.[103]

When looked closely, the Ørestad development area represents the first modern large-scale urban development on reclaimed land and is distinguished by its unique governance structure. Although it introduced a new approach for the city, characterized by its extended spatial reach and proximity to protected natural areas, it also constituted a continuation of the Finger Plan from the 1960s. Following more than half a century of urban growth guided by the Finger Plan, which structured Copenhagen's expansion along five main corridors, Ørestad emerged on the western side of Amager Island as a newly designated development corridor.[104]

The ambition behind the Ørestad project shows similarities with the twentieth-century modernisation paradigm, characterized by high-rise buildings and highway-oriented infrastructure, as discussed in the chapter "Reclamations for Modern Urban Life". Today, the Ørestad project is largely complete, marked by a series of landmark buildings and architecturally distinctive residential areas that define its urban identity. While the primary development framework has been realized, construction activity has not entirely ceased, as several residential projects remain underway. These ongoing developments reflect both the long implementation period of the project and its adaptive character in responding to changing housing demands and market conditions. Together, the completed and ongoing projects illustrate Ørestad's evolution from a strategic planning initiative into a consolidated urban district within Copenhagen's contemporary metropolitan structure.

102 BY&HAVN, *ØRESTAD FÆLLED KVARTER*.
103 Kaae et al., "Nature Park Amager – Examining the Transition from Urban Wasteland to a Rewilded Ecotourism Destination."
104 Knowles, "Transit Oriented Development in Copenhagen, Denmark."

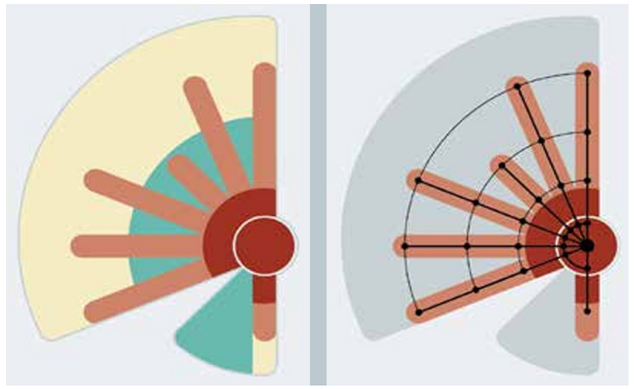


Figure 32: The finger plan structure: Cities and green wedges (source: Forslag til Fingerplan 2013)

Project Motivations

Conceived as a strategic link between the medieval city centre and the airport area, as well as through the Øresund connection to Malmö, the Ørestad district was envisioned as a development that would position Copenhagen as the new Europole of Scandinavia.[105] While this vision reflected strong ambitions for Copenhagen's global positioning, it also relied on optimistic assumptions regarding long-term economic growth and the city's capacity to attract international investment.

This newly developed, well-connected area was expected to generate significant land value in conjunction with the planned infrastructure investments. Drawing inspiration from the United Kingdom's post-war town development model, the central idea was to finance Copenhagen's first metro system through value capture mechanisms derived from these reclaimed lands.[106] This financing model assumed that projected land value increases would materialize as anticipated, transferring substantial financial risk from public budgets to future development outcomes.

Ørestad's strategic location and the availability of large undeveloped land made it one of the most suitable areas for the city's spatial expansion.[107] The aim of the project was not entirely about developing the area as a standalone urban district. The chosen rectangular site was intended to connect the city center from Amager Vest to Kastrup, where Copenhagen Airport is located. This connection would help the city grow as a more integrated whole while extending public transportation to a key transportation hub for both Denmark and Sweden. Additionally, the Øresund Bridge, connecting Copenhagen to Malmö, passes north of the area, further increasing its strategic importance of newly developed district.[108] This corridor-based development logic prioritized regional connectivity and mobility over localized urban integration, shaping the spatial character of Ørestad from the outset.

105 Patsy Healey, ed., "Plan of Hope and Glory: An Example of Development Planning in Denmark After Maastricht," in *Making Strategic Spatial Plans: Innovation in Europe*, Reprint (Routledge, 2006).
106 UK Parliament, "Garden Cities and New Towns."
107 Stan Majoor, "Urban Megaprojects in Crisis? Ørestad Copenhagen Revisited," *European Planning Studies* 23, no. 12 (2015): 2497–515, https://doi.org/10.1080/09654313.2015.1014780.
108 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."

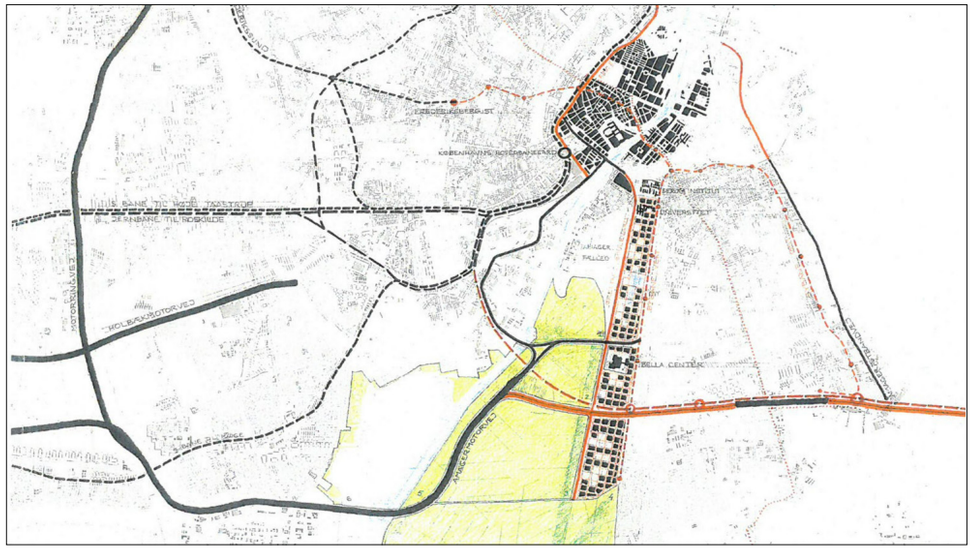


Figure 33: The Ørestad project idea from the preliminary phase. (source: By&Havn Archive)

In addition to its residential ambitions, Ørestad was conceived as a major business district for Copenhagen. Large areas were designated specifically for office development and spatially separated from residential neighborhoods, while programs such as hotels and convention centers were introduced to support business-related activities. The project therefore extended beyond the development of a new urban district, aiming simultaneously to strengthen Copenhagen's economic competitiveness and position the city as an attractive location for future business and international investment.[109]

As a result, Ørestad can be understood not only as an urban development project, but also as a large-scale investment strategy in which public value was expected to emerge through market-driven land development.

109 Majoor, "Urban Megaprojects in Crisis?," 2015.



Figure 34: Ørestad metro and office buildings in the background. (photo taken by the author)

Masterplan

Just fifty years ago, this area was largely undeveloped, but it has since been transformed into a new neighbourhood featuring large office buildings, modern housing complexes, a megamall, and a stadium. Its character is markedly different from the rest of the city. This difference is not only evident in its urban scale but also in its architectural style, governance approach, and financing model, all of which reflect a departure from Copenhagen's traditional city development practices.[110] These characteristics required a masterplan capable of coordinating large-scale investment, infrastructure delivery, and land development within a single planning framework.

Under the Ørestad Act of 1992, the Ørestad Development Corporation was established with the responsibility of preparing a comprehensive master plan for the new district. The plan drew on ideas and proposals generated through an international architectural competition named "Ørestad Idékonkurrence (Ørestad Ideas Competition)" in1994, which helped shape the vision for the area.[111]

Commissioned by the Ørestadsselskabet (Ørestad Development Corporation), the competition was organized and challenged participants to propose a master plan for the 3.1 million-square-meter Ørestad district. The competition was won by a partnership between Finnish architectural design office APRT and the Copenhagen-based Danish architecture office KHR. In addition to international competition, a series of public meetings was organized to inform public of the project's objectives, ensuring that the development process was communicated openly to the general public.[112] The overall plan for the district was finalized in 1995 and presented for public debate in early 1996. The final plan of the winning team was presented in 1997. [113]

The competition shaped the physical and spatial framework of the

110 Stan Majoor, "Urban Megaprojects in Crisis? Ørestad Copenhagen Revisited," *European Planning Studies* 23, no. 12 (2015): 2497–515, https://doi.org/10.1080/09654313.2015.1014780.
111 By&Havn, "Nabomøde i Ørestad (the Neighborhood Meeting in Ørestad)," November 27, 2023.
112 Healey, "Making Strategic Spatial Plans," Reprint.
113 Healey, "Making Strategic Spatial Plans," Reprint.

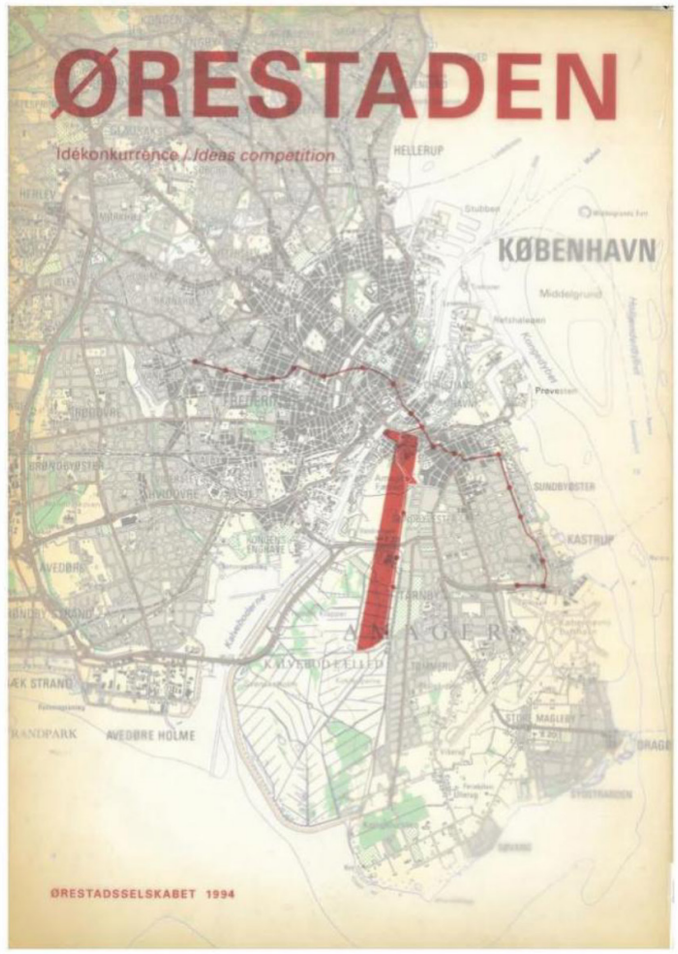


Figure 35: Ørestad - Idékonkurrence / Ørestad - Ideas competition (source: By&Havn Archive)



Figure 36: Entry for the Ørestad Urban Design Competition, Copenhagen (1994). The project proposes a framework for guiding urban development without an a-priori street grid, instead relying on a set of defined "growth rules." Urban development is projected in three ten-year phases. Project team: Bill Sharples, Chris Sharples, Cory Sharples. (source: building culture PLA)

city. The plan divided Ørestad into 4 districts. These districts could build relatively high and dense to allow the nature between these neighbourhoods. It is expected that 20.000 people will live, 20.000 people will study and 80.000 people will be employed in Ørestad.[114]

To ensure broad acceptance, the Ørestad development was carefully designed to reflect public needs and expectations for the new city extension. Two of the most influential stakeholders in the debate were *Danmarks Naturfredningsforening* (the Danish Society for Conservation of Nature) and *Friluftsrådet* (the Board on Open Air Activities), both organizations advocated for a plan that balanced urban growth with environmental and recreational considerations. To address these concerns, the master plan was structured in two main sections: the northern part, allocated primarily to public institutions and some residential areas, and the southern part, where approximately seventy-five percent of the land was designated for new residential, industrial, and commercial development.[115] While this division helped to accommodate environmental and recreational interests, it also concentrated intensive urban development in specific areas, raising questions about how evenly public value and environmental impacts were distributed across the project site.

They created mixed population that can make the area alive during the day. To realize this vision, large-scale architectural competitions were launched for individual buildings already designated within the master plan. These competitions helped the marketing of the Ørestad in Denmark and internationally.[116] By using competitions, Ørestad positioned itself not only as a financial project but also as a showcase of “Danish modern architecture”. This combination of mixed use plannings and prestige architecture were also a tool to gain higher land value.

The Ørestad Development Corporation (ODC) increased the efficiency of the project by combining the roles of landowner and planning authority in a single organization. This dual role gave ODC the power to guide development not only through planning rules but also through sales contracts, allowing it to control building heights, densities, design quality,

114 *Ørestad « APRT - Artto Palo Rossi Tikka Architects*, n.d., accessed September 24, 2025, https://aprt.fi/projects/orestad/.
115 Healey, “Making Strategic Spatial Plans,” Reprint.
116 Majoor, “Progressive Planning Ideals in a Neo-Liberal Context, the Case of Ørestad Copenhagen.”

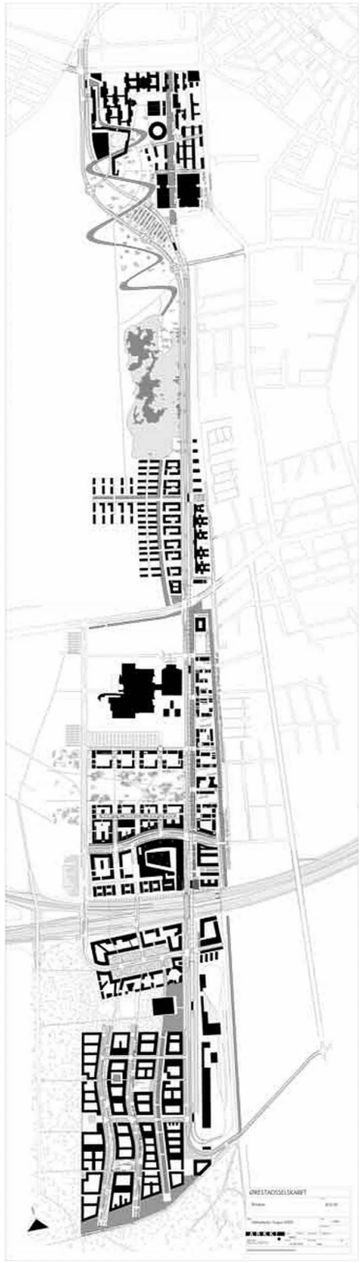


Figure 37: 1994 Ørestad Competition Plan by KHR Architecture (source: khr.dk)

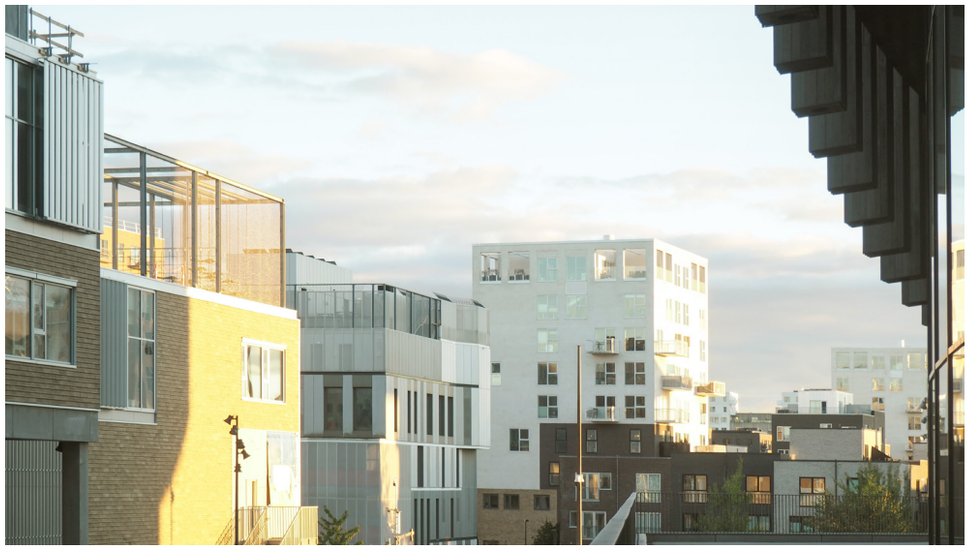


Figure 38: Housing area surrounding the Royal Arena (photo taken by the author)

and even requirements for affordable housing. By bringing the city and state together in this joint corporation, coordination of interests and financing of new transport became more manageable.[117] Although the municipality and the state could theoretically have managed these tasks independently, the scale and complexity of Ørestad rendered the establishment of a dedicated, project-oriented organization a more practical and efficient solution. This structure enabled the development to proceed quickly and strategically, supporting both sustainability objectives and Copenhagen's competitive image.

At the same time, ODC was responsible for preparing a master plan that balanced the needs of residents and key institutions with the requirements of high-density development. The plan also aimed to attract major cultural or institutional projects, which helped draw private developers and increase land values. By linking planning with strategic land sales and development incentives, Ørestad could advance sustainability goals, improve public transport accessibility, and create a coherent urban environment while generating public value from private investment.

The zoning and planning of the overall Ørestad represent an innovative approach for Copenhagen, contrasting with the city's traditional medieval, dense, low-rise structure.[118] The investment model, focused on private capitalization, influenced the master planning process. The most prominent aspect is the architectural scale: large plots sold to developers required high-rise buildings and high apartment counts to make the projects financially viable. This focus on profitability sometimes limited the *'human-scale'* qualities that foster vibrant street-level activity and a cohesive neighborhood atmosphere.

Despite these challenges, Ørestad includes notable residential projects. High-end housing such as VM House, Mountain Dwellings, and 8 Tallet (8 House) demonstrates innovative architectural design. At the same time, communal and sustainable housing projects like UN17 Village and Eco Village Grønne Eng show efforts to integrate social and environmental values into urban life.[119]

117 Karin Book et al., "Governing the Balance between Sustainability and Competitiveness in Urban Planning: The Case of the Orestad Model," *Environmental Policy and Governance* 20, no. 6 (2010): 382–96, https://doi.org/10.1002/eet.557.
118 Healey, "Making Strategic Spatial Plans," Reprint.
119 By&Havn, "Tidslinje."



Figure 39: Program areas (Author's own map based on By&Havn Archive)

The area was designed as a mixed-use urban development with programs such as education, arts, and cultural venues, alongside office buildings to generate employment. The first office building opened in 2001, and the first residential building followed in 2004. [120] Ørestad also hosts large-scale urban facilities that allow the city to host major events, such as concerts and exhibitions, attracting visitors and creating temporal increases in urban activity.[121] Some new universities or corporations moved into the area.[122]

Notable institutions within the district include the DR Village (Orestad Nord), Copenhagen Concert Hall (Orestad Nord), and Field's, Denmark's largest shopping mall. Additionally, Ørestad hosts the Bella Center and the Bella Sky Hotel, which hold the titles for the largest exhibition center and hotel in Scandinavia, respectively.

The relocation of educational institutions further anchored Ørestad as a knowledge and culture hub. In 2004, the University of Copenhagen South Campus and the IT University moved to new buildings in Ørestad. In 2007, Ørestad Gymnasium opened with innovative, open study environments and a media-oriented profile.[123]

However, the presence of these institutions stands in contrast to other major developments like Field's shopping mall. Field's illustrates the tension between financial viability and urban quality in large-scale, market-driven projects. As a large, inward-oriented "big box" structure occupying a prominent plot in Ørestad Centre, it contributed little to create engaging public spaces or lively street life. While the mall generated crucial revenue and attracted private investment to a largely undeveloped area, it became a symbol of the compromises made when economic pressures shaped urban design decisions. The criticism of Field's highlights a broader challenge in Ørestad's governance model: the reliance on a hybrid organization to balance public planning objectives and private market interests can yield efficient financial outcomes, yet sometimes produces urban forms that are socially or aesthetically contested.[124]

120 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.
121 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.
122 By&Havn, "Tidslinje."
123 By&Havn, "Tidslinje."
124 Majoor, "Urban Megaprojects in Crisis?," 2015.



Figure 40: 8 Tallet, designed by Bjarke Ingels Group, is located at the southern edge of Ørestad, oriented toward the surrounding natural landscape. (photo taken by the author)



Figure 41: Field's Shopping Center from Ørestads Boulevard (photo taken by the author)

Other key facilities strengthened Ørestad's role as a regional hub. Originally built in Bellahøj in 1965, the Bella Center moved to Ørestad in 1973–75 and is Scandinavia's second-largest convention and exhibition venue. The Bella Sky Hotel opened in 2011 to attract business tourism, the Danish Broadcasting Corporation (DR) relocated in 2006, and in 2017 the Royal Arena opened, further supporting the area's public value.[125]

A closer analysis of the Bella Center and Bella Sky district reveals that since the publication of the final local plan in 2019, development remains only partially completed. This area shares similarities with the other areas dominated by large-scale projects like Field's or the Royal Arena. The current focus remains on the large-scale imposing projects, while "secondary functions", specifically housing, remain underdeveloped. This imbalance has negatively impacted the area's image, leaving it feeling unpopulated and underutilized. According to local plan, the first step was the construction of the Bella Center and The Bella Sky Hotel, both of which are large, introverted structures Subsequent planning phases aim to transform this mono-functional event space into a vibrant, mixed-use urban quarter while keeping the Bella Center fully operational. This approach shows a strategy of urban repair around an oversized building, rather than traditional block-based city making.[126]

The local plan shows strong spatial differentiation. While along Ørestads Boulevard and Vejlands Allé there is high density and tall buildings, toward natural area Kalvebod Fælled, there is lower density and smaller scale. The main building type is the 3-6 story perimeter blocks, and in the quieter edges townhouses. We see particularly tall building in the north-east corner as a 75 m residential tower and there are office buildings up to 50m along Vejlands Allé.[127]

On the other hand, public space is conceived as a connective urban system rather than as a singular focal point or a collection of isolated squares. The local plan defines a structured network of public spaces, clearly identified and numbered in the public-space plan, where Metropladsen (1) functions as the primary urban gateway and activity node

125 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.
126 Københavns Kommune, "Kvarteret Ved Bella Center II Lokalplan nr. 571 (Local Plan for The neighborhood at Bella Center)," February 7, 2019.
127 Københavns Kommune, "Lokalplan nr. 571."



Figure 42: Ørestad Significant Buildings (Author's own map based on By&Havn Archive)



Figure 43: Local Plan for the second phase of the Bella Center area (source: Lokalplan nr. 571)

Tegning nr. 4 – Bebyggelseshøjder

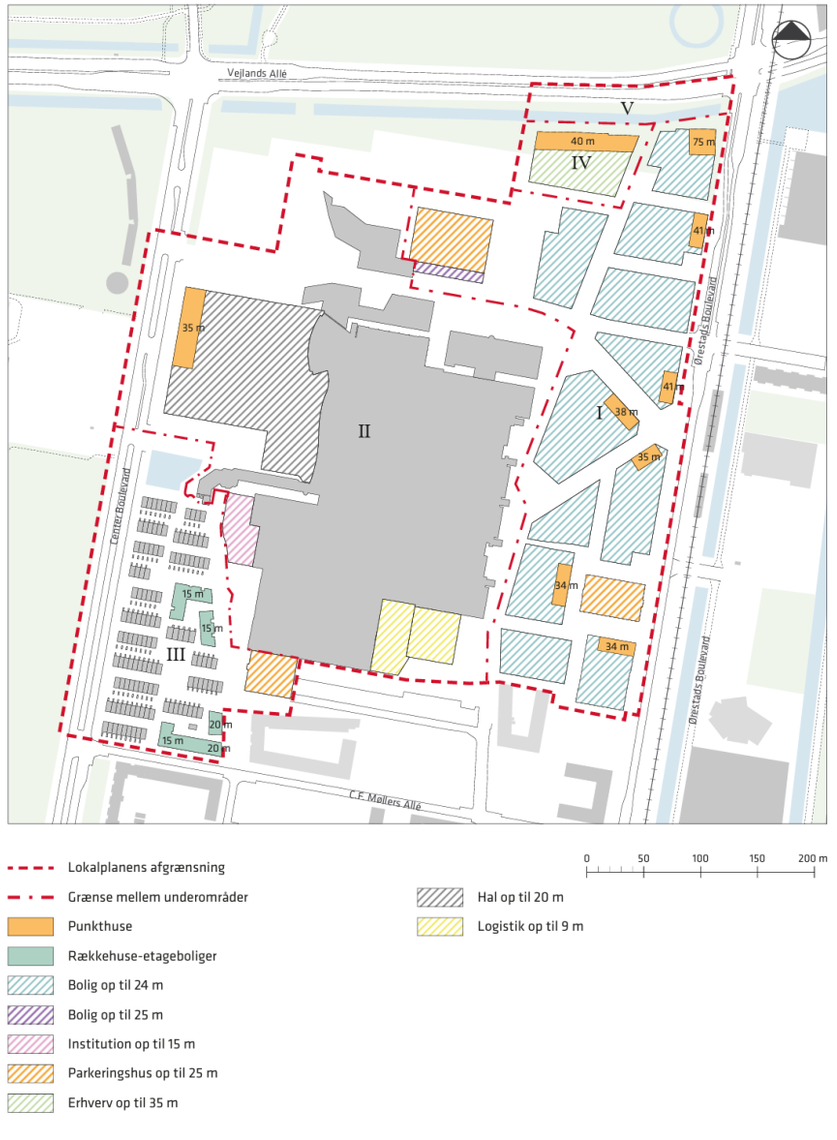


Figure 44: Height Strategy in the area. The legend shows the boundaries of the local plan; borders between subareas; point houses (relatively taller buildings); townhouses/apartment buildings; residential buildings up to 24 m and 25 m; institutional buildings up to 15 m; parking areas up to 25 m; business areas up to 35 m; halls up to 20 m; and logistics buildings up to 9 m. (source: Lokalplan nr. 571)

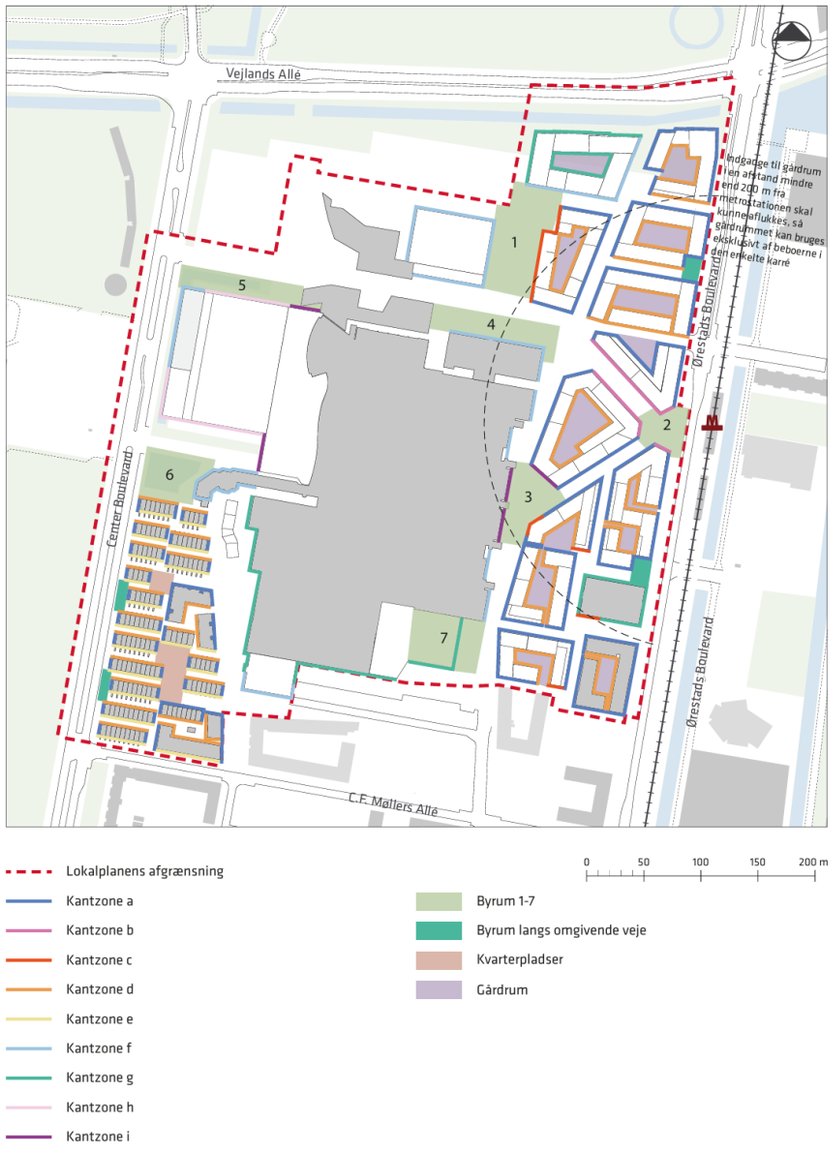


Figure 45: Public Spaces in the Bella Center area. The legend on the map on the right shows, in order, city spaces 1–7; urban spaces along surrounding roads; neighbourhood spaces; and courtyard rooms. (source: Lokalplan nr. 571)

directly associated with the metro station, and Bella Have (2) operates as the central green space within the quarter. These principal spaces are complemented by a sequence of smaller neighborhood squares, green streets, and pedestrian connections (3–7), which are distributed throughout the area to ensure spatial continuity and permeability. Also, we can see that here, urban life, together with open spaces and commercial areas, designed as a clusters, other than even distributions. Together, these spaces are designed to link the development internally while also establishing connections across major infrastructural barriers to the surrounding districts of Ørestad and Amager Vest, as well as to the open landscapes of Kalvebod Fælled. The public spaces are primarily structured to support movement, orientation, and accessibility rather than prolonged stay, reflecting both the large scale of the area and the presence of wide arterial roads and event-related functions. Public space thus operates as an organizing framework that mitigates infrastructural scale, supports everyday circulation, and gradually introduces urban life into an area historically dominated by mono-functional conference facilities and surface parking. [128]

Another important theme in the plan is the mobility in the area. The area framed by wide arterial roads on all sides. Internal plan apart from the arterial plan prioritizes pedestrian and cyclists as well as direct connection to metro and bus routes. The parking areas mostly removed from the surface level and parking houses are used in the area. Also, Bella Center facilitates extra parking space for the whole area.[129] However, parking in Ørestad was never fully addressed overall. Residents face high parking fees, mostly in shared multi-storey car parks in all project area. While this prevents cars from dominating streetscapes, it leaves mobility challenges unresolved and even discourages some businesses from investing.[130]

Although the local plan for Bella Center Area was formally adopted in 2019, the physical realization of the planned urban quarter has been slow and uneven. At the time of analysis, development is largely limited to elements that either predate the current planning framework or were initiated under earlier local plans, including the existing conference facilities, the landmark hotel tower, and the southern residential areas composed primar-

128 Københavns Kommune, “Lokalplan nr. 571.”
129 Københavns Kommune, “Lokalplan nr. 571.”
130 BY&HAVN, *Copenhagen Growing: The Story of Ørestad* (CPH City & Port Development, Copenhagen, Denmark, 2010).

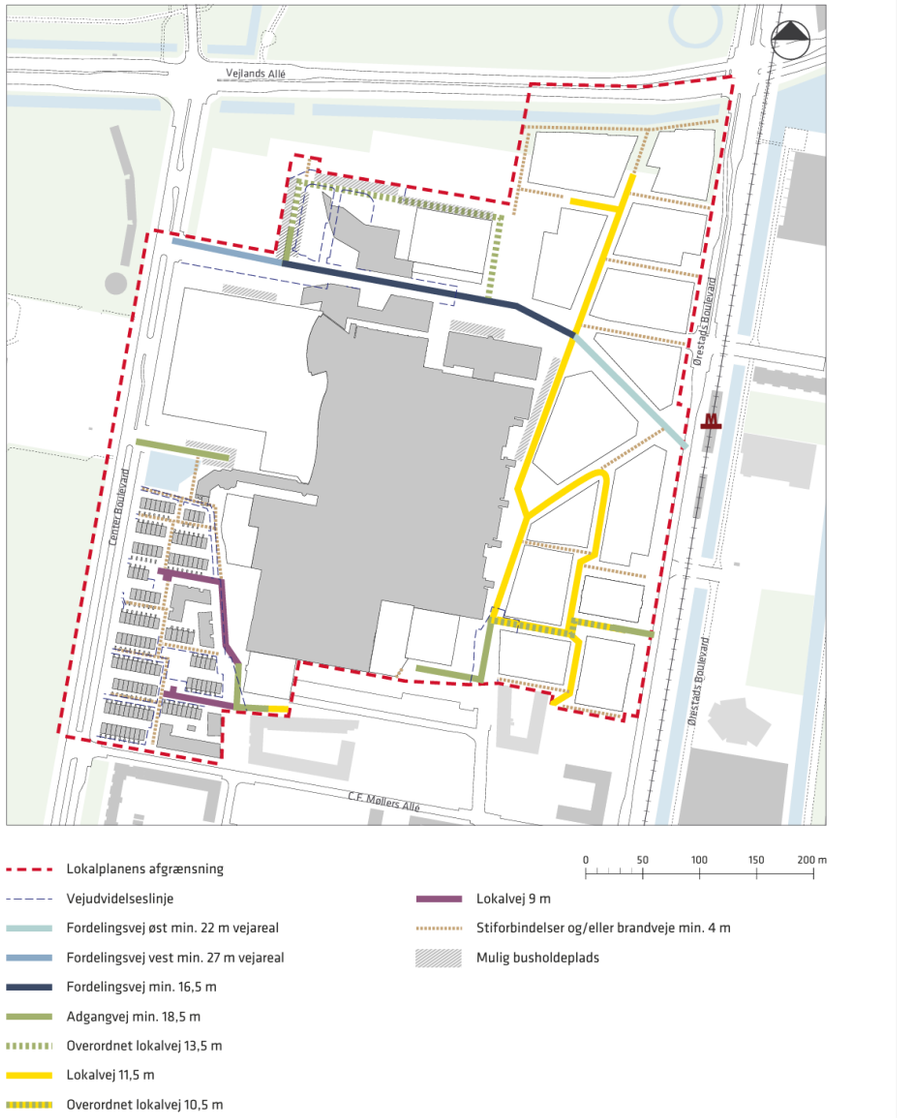


Figure 46: Traffic Structure of the area. The legend shows, in order, the boundaries of the local plan; the road extension line; the eastern distributor road with a minimum width of 22 m; the western distributor road with a minimum width of 27 m; distributor roads with a minimum width of 16.5 m; access roads with a minimum width of 18.5 m; overall local roads with a width of 13.5 m; local roads with a width of 11.5 m; overall local roads with a width of 10.5 m; local roads with a width of 9 m; path connections and/or fire escapes with a minimum width of 4 m; and a possible bus stop. (source: Lokalplan nr. 571)

ily of row houses and perimeter blocks. In addition, parts of the internal street network and selected green spaces have been established, providing an initial spatial structure for the area. However, several of the plan's most defining components remain unrealized or only partially implemented, including the planned high-rise residential building in the northern part of the area, large portions of the intended perimeter block development, the full realization of the public-space network, and the projected office development along the northern edge. As described in the phasing and background sections of the local plans implementation is strongly dependent on market conditions, the conference economy, and the gradual relocation of parking and event-related functions.[131] This prolonged and fragmented development process highlights a broader challenge of large-scale, master-planned urban development, where ambitious spatial visions may remain incomplete for extended periods, resulting in urban gaps, delayed public life, and a persistent transitional character in the built environment.

Ørestad shows both the potential and the limitations of large-scale, master planned urban development driven by centralized governance and market-oriented financing. While the masterplan and competition-based approach enabled rapid infrastructure delivery, high-profile architecture, and the attraction of major institutions, they also reinforced a masterplan defined by large plots, high densities, and mono-functional buildings. This has resulted in an environment where every day urban life is unevenly distributed and often delayed, particularly in areas dominated by large event-related programs. The slow and fragmented realization of housing and public spaces reveals a critical gap between long-term planning visions and lived urban conditions.

131 Københavns Kommune, "Lokalplan nr. 571."



Figure 47: Bella Center and Bella Sky Hotel at the background from and urban green area in Ørestad (photo taken by the author)

Development Model

The development of the Ørestad area is an innovative approach when it comes to physical and political decision-making. In this case, for the first time national and municipal governments worked together to create a mega urban development project.[132] While earlier urban extension projects were often slow and inefficient, Ørestad became the first project in which this new development system could be implemented, tested, and subsequently refined for future projects.

Before Ørestad project was initiated, almost all large-scale infrastructure in Denmark was traditionally financed directly by the national government. This centralized approach meant that whenever big investments were made in one place, especially in Copenhagen, it became a politically delicate issue. Denmark has long upheld a strong culture of redistribution, where public resources are expected to be shared fairly across the country. As a result, politicians and administrators from other regions were quick to demand that if Copenhagen received new infrastructure even as a capital, their own regions should benefit from equivalent investment. In practice, however, the state did not have the financial capacity to spread investments so evenly since country did not have financial power in 1990s.[133]

The financial situation was particularly strained. Both the Danish state and the City of Copenhagen were struggling with limited budgets and high levels of debt. This meant that neither party was in a position to take full responsibility of funding ambitious new transport projects needed in capital. The combination of political sensitivity and financial weakness created a deadlock: the traditional model of government-led investment simply was not workable under these conditions.

Out of this impasse came a clear realization. If Copenhagen were to move forward with necessary infrastructure, such as new public transport systems, new models of governance had to be explored.[134] This meant looking beyond the conventional state-financed approach and experimenting with alternative mechanisms that could attract resources without putting

132 Healey, *Making Strategic Spatial Plans*.
133 Healey, “Making Strategic Spatial Plans,” Reprint.
134 Healey, “Making Strategic Spatial Plans,” Reprint.

further strain on national or municipal budgets.

Before Ørestad development company, national government would finance almost all the public infrastructure except some private railroads. It was all works with the capital that comes from taxation. There were no ideas about self-financing infrastructure and it seen as certain injection of tax money was unavoidable to have proper public transport.[135] The approach focus on city-state partnership overcame national redistribution politics by framing the project as self-financed through land sales rather than tax money.

After this situation, the Ørestad Act was passed to allow the construction of new railway infrastructure with new governmental system.[136] As a result of this act, the Ørestad Development Company was established as the first example of a publicly owned but privately managed organization under this new governance model.

Ørestad Development company was tasked to develop the area to raise capital for the construction of the Copenhagen Metro Mass Transit System (first two stages M1 and M2 lines).[137] To finance the project, the Ørestad Development Corporation secured loans from international markets using the value of its land assets as collateral. Capital was raised through land development, and construction funded by these loans commenced in 1996. [138] The Ørestad site, covering a total of 3.1 km², was provided jointly by the municipal and national governments. [139] The municipality held responsibility for zoning, after which land was released for sale with terms ranging from 30 to 50 years.[140] Revenues from these land sales and income from metro were intended to enable the Ørestad Development Corporation to repay its debts.[141] Although the system was formally presented as self-financing, with the Ørestad Development Corporation expected to repay its debts through projected revenues, the loans were guaranteed by the state. This arrangement meant that both the state and the municipality ultimately carried the financial risk in the event of revenue shortfalls.

135 Healey, "Making Strategic Spatial Plans," Reprint.
136 Goran Vuk, "Transport Impacts of the Copenhagen Metro," *Journal of Transport Geography* 13, no. 3 (2005): 223–33, https://doi.org/10.1016/j.jtrangeo.2004.10.005.
137 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."
138 Simon Van Zoest and Tom A. Daamen, "Explaining Value Capture Implementation in New York, London, and Copenhagen: Negotiating Distributional Effects," *Urban Affairs Review* 60, no. 5 (2024): 1349–81, https://doi.org/10.1177/10780874231222174.
139 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."
140 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."
141 Healey, "Making Strategic Spatial Plans," Reprint.

Following the planning and zoning of Ørestad, the financing of its infrastructure relied heavily on land development and related revenues. However, the cost of constructing the Ørestad section of the metro was partly covered through land value capture, linking transportation investment directly to the economic potential of the reclaimed land. Despite this strategy, Ørestad's land development costs were significantly higher than initially anticipated, and the amortization period for the project has been extended to 2038 to accommodate the increased debt. [142]

The development of Ørestad was structured around a land-value-capture financing model combined with long-term debt financing, reflecting a deliberate strategy to enable large-scale urban expansion through upfront public investment. Central to this model was the construction of the metro, including the first development stages (M1 and M2) and the airport extension, which together required investments of approximately 12 billion DKK. These infrastructure costs significantly exceeded land-sale revenues generated during the early development phase, which by the mid-2000s amounted to around 4.65 billion DKK. As a result, Ørestadsselskabet relied heavily on borrowing within an approved loan framework of approximately 15.9 billion DKK, supported by joint state and municipal guarantees. [143] This financial arrangement allowed major infrastructure investments to precede urban development, with the expectation that increasing land values and future land sales would gradually offset accumulated debt over time. In this sense, Ørestad functioned as an investment-led urban development project in which public authorities assumed substantial long-term financial risk in order to unlock coordinated land development, infrastructure provision, and private investment. [144] While land sales generated considerable income, these revenues accrued unevenly and were insufficient to finance infrastructure directly at the time of construction, reinforcing a structural imbalance between early costs and delayed returns. The financial model therefore represents a clear shift away from traditional welfare-state funding mechanisms toward a more entrepreneurial mode of urban governance, in

142 Majoor, "Progressive Planning Ideals in a Neo-Liberal Context, the Case of Ørestad Copenhagen."
143 Jens Kramer Mikkelsen and Anne-Grethe Foss, *Årsrapport 2006* (Ørestadsselskabet, 2006).
144 Van Zoest and Daamen, "Explaining Value Capture Implementation in New York, London, and Copenhagen."



Figure 48: Residential building on Arne Jacobsens Allé (photo taken by the author)

which public value creation is closely tied to market performance and long-term development trajectories rather than immediate fiscal balance.

The financing model was risky because it depended on land prices rising enough to pay for the metro and other infrastructure. When the economy slowed down and land sales brought in less money than expected, the company struggled with debt. This showed how uncertain it can be to fund public projects through land markets.

After the construction period, site management and landowners association was important for the Ørestad to function smoothly. In Ørestad, each main district has its own landowners' association (grundejerforening). Everyone who owns property in Ørestad automatically becomes the member of the association. Property owners can vary like housing associations, developers, businesses or institutions. The specific association for every area in Ørestad, manage the shared urban area that are not handled by the municipality. Each of these associations has a board which is consist of 3-5 elected members to represent the landowners; a general assembly to vote one time a year about the important topics like board elections, budget, and major projects; and secretariat which is a professional administrative body which helps all areas for the coordination.[145]

These associations utilize structured systems to estimate yearly budgets for expenses like maintenance (drift &pleje), Water Association Contribution (Vandlaug), administration, special projects and reserve fund (Grundfond).[146] This budgetary framework is an important factor in the estimation of the income, which varies in different areas. The main source of income is annual membership fees. These fees fluctuate depending on the year and planned additional projects. In 2024 Ørestad South budget report it was about 13 dkk (~2 euros) per square meter.[147] This system ensures that the larger developments will contribute more to the area. While providing fairness between different scaled developments in the area, it may also reinforce inequalities between areas with different economic profiles, as districts with higher property values and commercial activity are better positioned to support extensive maintenance and special projects. If planned

145 "Ørestad - Grundejerforeninger og Vandlaug," *Ørestad*, n.d., accessed October 16, 2025, https://orestad.net/grundejerforeninger/.
146 "Ørestad - Grundejerforeninger og Vandlaug."
147 The Ørestad Syd Landowners Association, *OVERBLIK - Grundejerforeningen Ørestad Syd*, Budget no. 2024 (Ørestad, n.d.).

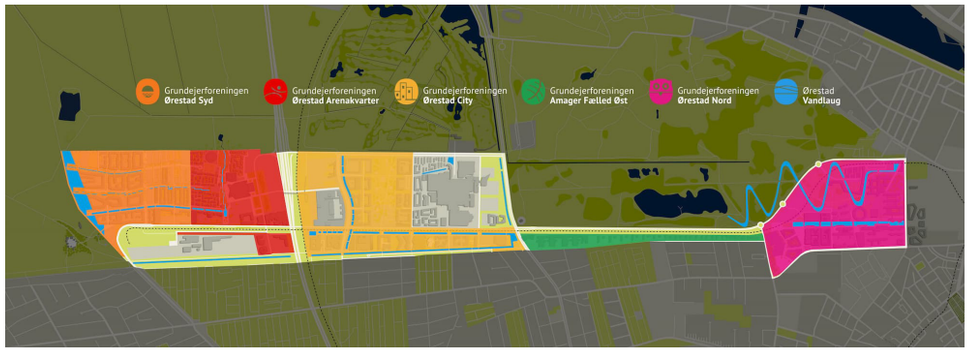


Figure 49: Geographical distribution of landowner association (source: orestad.net)

income does not match with the expenses, deficit will generally be covered by the reserve fund. Reserve fund represents the money saved from the past for future repairs and renovations. Different areas can have different numbers and management but they use similar systems.[148] In 2024 while Ørestad Syd had ~9 million DKK, Ørestad City had slightly larger income as ~10 million DKK. In addition, Ørestad Syd generally consists of newly built residential areas, therefore its spendings are more focused on developing public spaces and green areas. Ørestad city is a denser comparatively and has more commercial functions (especially like Field's), hence its spendings are more focused on upkeep of plazas and main streets.

This system gives the Ørestad property owners control and responsiveness over their own property. Owners can decide how the area maintaining and functioning without municipality's involvement. This gives to the area extra flexibility for the improvement of their area. This control by the owners also supported by the transparency of the documentation related with budgets, annual accounts and meetings. At the same time, this governance model privileges property ownership as the primary basis for participation, which may limit the influence of non-owning users of public space, such as visitors, workers, or temporary residents. who utilize the public spaces but have no formal voice in their management. Consequently, the very system that ensures local responsiveness for owners may simultaneously limit the influence of the broader public who experience the area's urban life.

The Ørestad development model demonstrates how new governance structures made it possible to deliver large-scale infrastructure and urban expansion at a time when neither the state nor the municipality could finance such projects alone. At the same time, the reliance on long-term borrowing, rising land values, and uneven development outcomes resulted in prolonged debt exposure and a strong dependence on market performance. After construction, the use of landowners' associations shifted responsibility for public-space maintenance and urban management from the municipality to property owners, directly tying urban quality to private budgets and ownership structures.

148 "Ørestad - Grundejerforeninger og Vandlaug."

Project Regulations

Ørestad as a project invested by private sector, the companies who has invested and bought land in Ørestad had certain regulations to built this new neighbourhood development according to the masterplans and overall strategy of the area. For each plot or area municipality issued local plans (lokalplaner) that explains the operative regulations for the building permit process. Also there were additional contractual obligations since By&Havn had specific contracts with the buyers. All these regulation related with each plot were reported by Copenhagen City for each area like Ørestad Syd and Ørestad City Center.

According to local plan typically ground floors had to be mixed uses like services, shops, restaurants and cafes on the main streets. Upper floors of these building consist of residential and offices. Relatively high buildings were allowed and creates density in the area differently from city canter. Each plot had maximum building heights for each plot and required a maximum floor-area ratio or total etagemeter limits. Footprints of the buildings, building lines and setbacks are all fixed to create continues street scapes, canals and green corridors. Intentionally parking areas were limited for the buildings and parking spaces had been solved with shared multi story parking. The aim was to reduce dominance of cars in the area. Many projects had to leave open public routes in their plot even the building is private. These routes helped the required access through plazas passages and waterfronts. Facades also followed a guidline for their alignment and material choices. Plans encouraged energy-efficient construction, green roofs and sustainable details. Together with this approach technical building regulations applied. For the phasing of the building there were some regulations also. According to plan infrastructure had to be built first and required developer obligations for the public had to be completed before the occupation.[149]

While this regulatory framework ensured a high level of control over urban form, land use, and infrastructure delivery, it also produced a highly standardized development environment. The strong emphasis

149 Københavns Kommune, *ØRESTAD SYD Lokalplan Nr. 398* (n.d.); Københavns Kommunes, *ØRESTAD CITY CENTER Lokalplan Nr. 325* (2012).

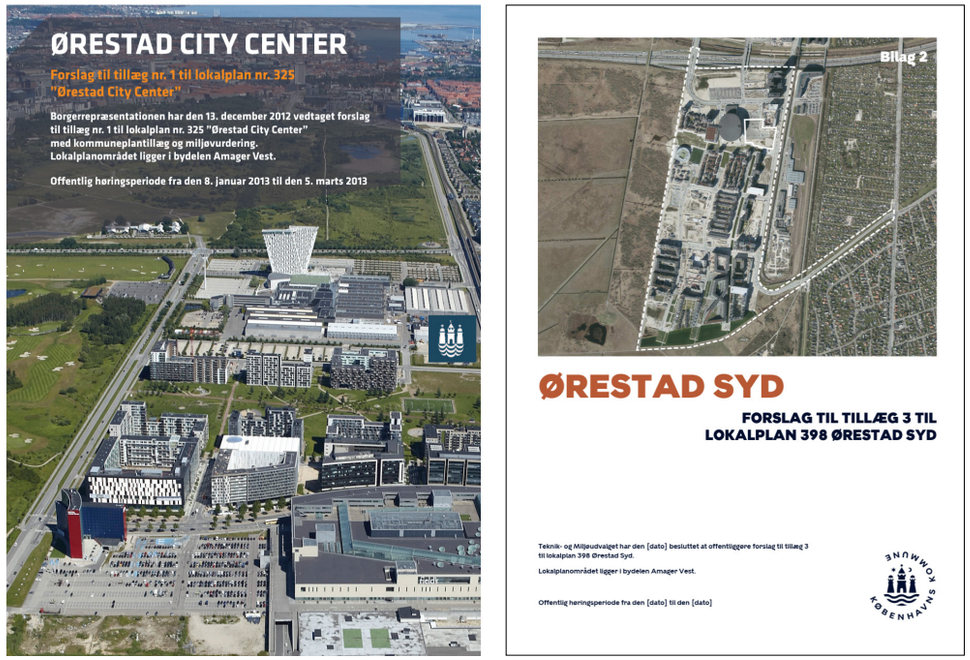


Figure 50: Ørestad City Center and Ørestad Syd Lokalplan (source: By&Havn Archive)

on predefined building envelopes, functional mixes, and architectural guidelines limited the scope for incremental adaptation and local variation. Although these regulations supported efficient implementation and protected public interests such as accessibility, sustainability, and mobility, they also reinforced a top-down planning logic in which flexibility and spontaneity were constrained. As a result, Ørestad's urban environment has often been criticized for prioritizing coherence and investment security over social diversity and everyday urban life, highlighting the tension between regulatory certainty, market-led development, and the broader ambition of creating vibrant public spaces.

Forms of Value Creations

The Ørestad project was not initially conceived primarily to promote urban life or city growth. Instead, it was designed as a way to generate capital by selling or leasing largely undeveloped land, which could then be used to finance public transport infrastructure. Here we can see that main value creation aim was economic other than social. Unlike many other projects, supporting public transport was a key element, making it an important part of Copenhagen's broader sustainable development strategy.[150] The Ørestad Act allowed the construction of new railway infrastructure, reflecting the government's dual goals: regenerating public transport while reducing road congestion in the Danish capital. Through Ørestad, the city established its first two metro lines, encouraging people to move back to the city and providing a central connection point linking different parts of Copenhagen, while enabling further investment around the new transport network.

Unlike earlier developments in Copenhagen, where motorways were built first and trains came much later, Ørestad was planned around the metro from the beginning. This gave the area strong accessibility and made the land more attractive to buyers, as the metro was seen as the key selling point. By ensuring that public transport came first, planners avoided the car dependency that shaped older projects and instead supported more sustainable mobility. This integration of land use and transport has helped raise land values, strengthen economic growth, and improve the overall image of the area.[151] The effect of new infrastructure was not limited to transportation only.

The Ørestad model also showed some weaknesses, especially in long-term planning. Decisions about the metro were made mainly to support Ørestad rather than to find the best solution for Copenhagen as a whole. This created a situation where the metro improved access to Ørestad but caused setbacks in other areas, such as fewer bus services and even more car use in some districts. Studies showed that the metro

150 Vuk, "Transport Impacts of the Copenhagen Metro."
151 Book et al., "Governing the Balance between Sustainability and Competitiveness in Urban Planning."

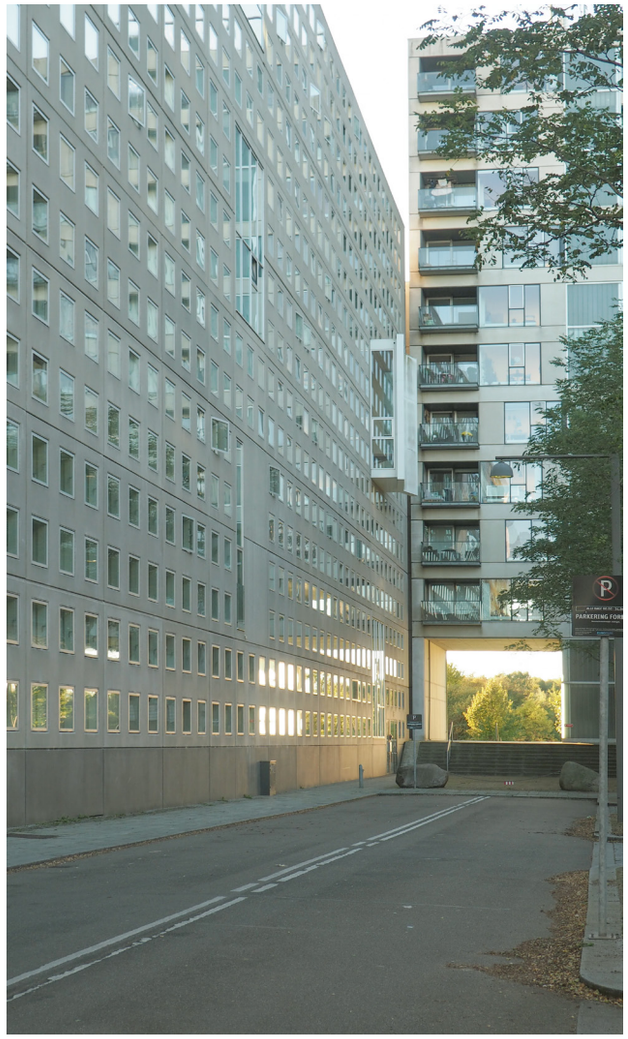


Figure 51: Large-scale residential complex with the connection to the natural area Kalvebod Fælled (photo taken by the author)

mostly attracted people who had already been using buses, meaning it did not reduce car traffic as much as expected. At the same time, linking the metro so closely to Ørestad created a "lock-in effect," where future projects continued with metro technology. As a result, the metro became more of a tool for boosting Ørestad's growth than for solving wider transport challenges in Copenhagen.[152]

The value of this natural reserve was not very clear until Ørestad project started to see as an important step for the Copenhagen city. The Project illustrates the tensions and compromises involved in pursuing environmentally conscious urban development within a highly contested context. The rezoning of the land from protected status to residential, commercial, retail, and educational functions attracted widespread criticism. The idea of introducing a sustainable development within a protected green area of Amager was initially met with strong scepticism, as the Ørestad Act effectively overrode the site's protected status. This early conflict gave the project a controversial "green" image that has persisted despite later efforts to integrate ecological considerations.[153] Environmental groups were involved in the master planning process, and the winning master plan sought to preserve the most valuable natural areas while introducing new green elements such as waterways, parks, and open spaces. In practice, Ørestad became a high-density, public transport-oriented development that combined urban growth with accessible green amenities, aiming to reduce land consumption and car dependency. However, the project demonstrates the environmental value creation complexity of aligning environmental objectives with urban expansion and market-driven development, as the need for competitiveness and economic viability often competed with strict ecological preservation. This balance highlights both the potential and the limits of creating genuine green public value in large-scale urban reclamation projects.[154]

In terms of sustainable value, Ørestad was planned as an urban district where transport and land use were closely integrated to promote

152 Karin Book et al., "Governing the Balance between Sustainability and Competitiveness in Urban Planning: The Case of the Ørestad Model," *Environmental Policy and Governance* 20, no. 6 (2010): 382–96, https://doi.org/10.1002/eet.557.
153 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.
154 Majoor, "Progressive Planning Ideals in a Neo-Liberal Context, the Case of Ørestad Copenhagen."



Figure 52: Orestad, Byparken (photo taken by the author)

environmentally friendly mobility. The metro was deliberately placed at the centre of development, supported by high-density building, mixed land use, and cycling paths, in order to reduce car dependency and encourage a more climate-conscious urban lifestyle. These measures created clear public value by laying the groundwork for lower emissions and more efficient land consumption compared to traditional suburban expansion. At the same time, the Ørestad Development Corporation (ODC) used its dual role as planner and landowner to ensure that sustainability measures, such as building standards and spatial patterns, were implemented consistently across the area. Yet the governance model also reveals tensions: sustainability was often advanced when it coincided with branding goals, meaning that green solutions risked being more symbolic than transformative.[155] For example, while the metro contributed to reducing pressure from private cars in Ørestad, it also largely replaced bus trips rather than curbing overall traffic growth, raising doubts about its long-term effect on emissions.[156] Moreover, the strong reliance on market-driven financing meant that ecological ambitions were tied to the success of land sales, making green sustainability vulnerable to economic fluctuations.[157] Thus, while Ørestad demonstrates how integrated planning can create environmental value, it also illustrates the fragility of sustainability when embedded within a governance model where competitiveness is prioritized over ecological integrity.

Housing prices in Ørestad relatively comparable to broader averages in Copenhagen. Area is popular with its new-build character and proximity to infrastructure and waterfront amenities. According to recent sales listings, apartments in Ørestad commonly sell at around 50,000-56,000 DKK per square metre, with individual transactions in late 2025 showing prices well within this range. In comparison, the overall average apartment price across Copenhagen in early 2026 is approximately 48,000-60,000 DKK per square metre. In the case of Ørestad, detailed neighbourhood-level price data are rarely available in academic studies; however, existing research and market analyses indicate that housing in well-connected, transit-orient-

155 Book et al., "Governing the Balance between Sustainability and Competitiveness in Urban Planning."
156 Willem Salet and Enrico Gualini, "Copenhagen Orestad: Public Partnership in Search of the Market," in *Framing Strategic Urban Projects: Learning from Current Experiences in European Urban Regions* (Routledge, 2007).
157 Karin Bäckstrand et al., eds., *Environmental Politics and Deliberative Democracy: Examining the Promise of New Modes of Governance* (Edward Elgar Publishing, 2010), https://doi.org/10.4337/9781849806411.

ed areas such as Ørestad is generally priced at levels similar to, or slightly higher than, Copenhagen's outer districts.[158] This pattern reflects the influence of major infrastructure investments and broader market pressures, as housing prices in the Copenhagen region have increased faster than the national average due to limited supply and strong demand. Overall it is seen that Ørestad was a important contribution for the lack of housing in the city with its average prices.

Today, Ørestad is still seen as a modern urban development characterized by a mix of residential areas, business districts, and large-scale functions. The urban layout allows residents to easily access vast green spaces, particularly the surrounding Kalvebod Fælled. The area includes a variety of functions such as schools, cultural centers, and sports facilities.

However, daily life in Ørestad remains fragmented and does not form a continuous urban fabric. Large empty areas and oversized buildings with single dominant functions interrupt the urban experience. Although housing quality is an important asset of the area, overall urban life is still less active than in the city center due to the low density of the built environment and the large scale of its buildings.

Ørestad exemplifies a complex model of urban value creation that combines financial, social, and environmental objectives. The project successfully linked land development with public transport, created large-scale urban facilities, and introduced innovative housing models, while also generating revenue through land sales and private investment. Yet compromises were necessary: high-rise developments, inward-oriented commercial spaces, and a reliance on market-driven financing sometimes conflicted with social, ecological, and urban quality goals.

158 Norbert Gaál and European Commission Economic, *Nordic Heat Wave: Recent Housing Market Developments in Denmark and Sweden*, no. 031 (2017).

Conclusion

Ørestad was the first of the three projects examined in this thesis. It was also a first for the city of Copenhagen because of its unique development model. This system used land value capture and private investment to achieve one main purpose: to provide the city with its first metro line. The reasons for the necessity of a metro system were clearly explained in the historical chapter. At the time, the city was facing a lack of tax revenue, as residents increasingly preferred to live in the suburbs due to poor living conditions in the inner city. The construction of a new metro line was therefore seen as the first step toward improving these conditions.

While building the metro was expected to solve several problems related to Copenhagen's urban life, it had to be realised without relying on existing municipal tax income. This constraint directly led to the idea of a new development system that used urban expansion to generate land value capture and attract revenue through private investment.[159] Although Ørestad was the first project implementing this approach as part of a necessary modern transformation of the city, it also became an important testing ground and reference for future large-scale urban projects. Developing Ørestad as a new urban district therefore became a strategic way to re-activate idle public land, while using the resulting land revenues to co-finance the metro, both within Ørestad and across the wider city.[160]

Other than infrastructural value creation, for the economic values, the ambition of establishing a new business centre for Copenhagen was intended to attract both local and international investors and businesses, thereby further strengthening the city's tax base. With this objective in mind, Ørestad placed strong emphasis on office spaces, hotels, and convention centres. Even before the project was realised, media sources referred to Ørestad as a *"Manhattan on Amager,"* clearly indicating an intention to create a dense, high-rise urban environment. [161] This imagination is critically reflected in *Manhattan på Amager*, which uses the metaphor to question how global images of density and verticality were projected onto Amag-

159 Healey, "Making Strategic Spatial Plans," Reprint.
160 Knowles, "Transit Oriented Development in Copenhagen, Denmark."
161 By&Havn, "Nabomøde i Ørestad (the Neighborhood Meeting in Ørestad)."



Figure 53: Ørestad before construction (source: By&Havn Archive)



Figure 54: Manhattan på Amager: Sagen om Ørestaden / Manhattan on Amager: the Case of Ørestad (source: By&Havn Archive)

er.[162] The book highlights the tension between this ambitious vision and the everyday urban life that later emerged in Ørestad. This vision strongly shaped the character of the neighbourhoods, producing areas with significantly different densities across the district and it revealed the conflicts between social and economic value creations.

Although the project aimed to integrate office and residential programmes, the large differences in scale significantly limited the integration of office buildings into smaller-scale urban life. While the ambition was to create a “Manhattan-like” environment, the existing population was clearly insufficient to support a lively and continuous urban realm between large towers and business centres. As a result, the area developed into a landscape where business zones function primarily during working hours, separated by vast open spaces with limited public and commercial activity.[163] The presence of mono-functional business areas, perceived as urban voids, can therefore be understood as a direct outcome of the project’s development logic.

From an urban design perspective, the case illustrates the limitations of attempting to introduce mixed-use, everyday urban life into areas originally structured around large-scale, mono-functional programs. Even when supported by comprehensive planning and connective public-space strategies, the dominance of oversized buildings and infrastructure can delay or constrain the formation of a coherent, inhabited urban environment. This highlights the challenge of reconciling human-scale urban design principles with investment-led, infrastructure-driven development. Residential areas, while more active than the business zones, also provide relatively limited commercial functions when compared to the traditional city centre.[164] As a result, urban vitality remains unevenly distributed across Ørestad and social value creation and urban design quality remained limited.

The densest and most active part of Ørestad can be clearly identified as the Field’s shopping centre. As the largest shopping mall in Scandinavia, Field’s dominates urban life within a large, inward-oriented enclosed structure. In this sense, urban life in Ørestad can be understood as being

162 Jens Blom-Hansen, *Manhattan på Amager: sagen om Ørestaden* (2000).
163 Lea Olsson and Jan Loerakker, “The Story Behind Failure: Copenhagen’s Business District Ørestad,” *Failed Architecture*, September 12, 2013, https://failedarchitecture.com/the-story-behind-the-failure-copenhagens-business-district-orestad/.
164 Olsson and Loerakker, “The Story Behind Failure.”

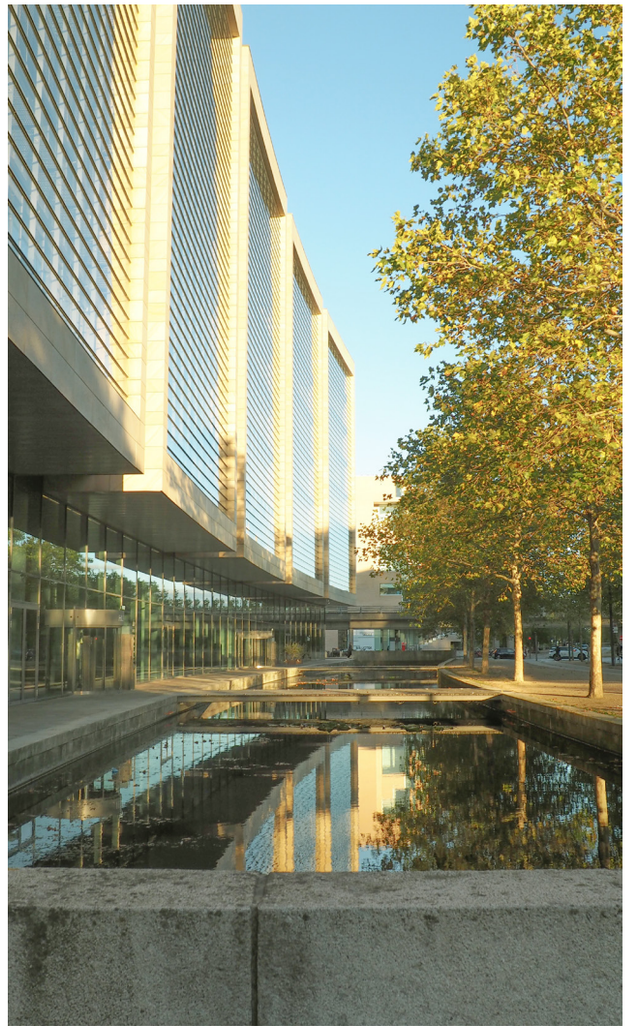


Figure 55: Business Area in Ørestad (photo taken by the author)

concentrated within a single commercial interior rather than distributed across public streets and open spaces. The design of the mall creates long blank façades along its perimeter, with only a few entrances, resulting in minimal interaction with the surrounding streets. This interaction is largely limited to the side facing the metro station. These design decisions later attracted significant professional criticism, particularly for prioritising internal commercial efficiency over public urban life, and for contributing to the loss of street-level activity in the surrounding area.[165] In one of the interviews Blecher states that the area often look polished, but they can feel socially thin. He emphasis on the lack of diversity in the area for urban life, people and programs. For him, in Ørestad and similar places, layered, informal urbanism that allows for spontaneity and difference is missing.[166]

Ørestad City is characterized by a large-scale and fragmented urban structure, in which public spaces often lack spatial coherence and qualitative depth. This condition can be partly linked to imbalances within the public–private partnership framework that shaped the area's development, where economic efficiency and buildability often took precedence over the spatial continuity of public space. [167]

The masterplan integrated high-density development along an elevated metro line, combining mixed uses with a strong emphasis on public transport, cycling infrastructure, and proximity to the extensive green landscape of Kalvebod Fælled. This strategy generated clear public value: the metro significantly improved regional accessibility, the development corridor concentrated urban growth rather than encouraging sprawl, and residents across Copenhagen gained easier access to both new facilities and a major natural area.[168] At the same time, however, the physical form of the district has been widely debated. Large development plots, inward-oriented commercial buildings, exposure to strong winds, and a relatively coarse street network have made several parts of Ørestad feel monofunctional and less vibrant than initially anticipated.

Although urban life in Ørestad has not been realized to the same degree as in Copenhagen's historic centre, more than two decades of

165 Majoor, "Urban Megaprojects in Crisis?," 2015.
166 Blecher, "Interview with Co-Founder of Maritime Architecture Studio 'MAST.'"
167 Olsson and Loerakker, "The Story Behind Failure."
168 Vuk, "Transport Impacts of the Copenhagen Metro."

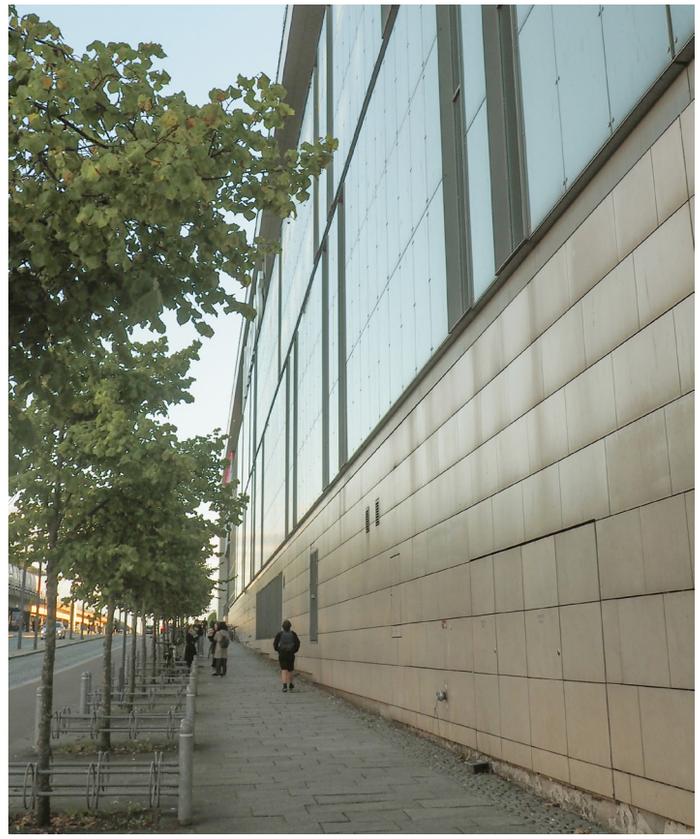


Figure 56: Approaching main entrance of the Field's from Ørestads Boulevard (photo taken by the author)

development have resulted in a district that today hosts over 50,000 people living, studying, or working in the area. Housing prices show a growing similarity to those in the city centre. Despite Ørestad's physical distance from the historic core, its close relationship with nature and water bodies, combined with efficient metro access, can be understood as key factors behind these competitive property values. [169]

In planning policies and public debate, Ørestad has consistently been presented as a new urban district intended to be accessible and attractive to a broad range of residents and users. Because the area developed gradually and was initially perceived as relatively distant from the historic city centre, housing prices in the early phases were less exclusive than those of later waterfront developments. As a result, Ørestad attracted a socially mixed population, including students, young families, and middle-income households. Over time, a wide range of schools, cultural institutions, and everyday services have been established, alongside smaller local festivals and events.[170] Together with metro and regional rail connections, these functions make Ørestad accessible not only to its own residents but also to users from other parts of Copenhagen, including lower-income groups who benefit from the public facilities, shopping center, and surrounding natural landscapes. The area accommodates a wide range of activities and programs, including education, sports, culture, and nature. When well connected to the city center, it generates broader social value for the city, extending beyond the Ørestad area itself.

The development of Ørestad primarily generated value for the metro system rather than for the urban fabric itself. Because the land reclamation had been carried out decades earlier, the project did not bear the direct costs of creating new land. In this sense, Ørestad illustrates both the strengths and limitations of land-based urban investment. The development made it possible to construct Copenhagen's first metro lines (M1 and M2), with total construction costs of nearly 12 billion DKK. However, land sales in Ørestad generated only around 4.6 billion DKK by the mid-2000s and were therefore insufficient to finance the infrastructure independently. [171] As a result, the project relied heavily on long-term borrowing backed by

169 Gaál and Economic, *Nordic Heat Wave: Recent Housing Market Developments in Denmark and Sweden*.
170 By&Havn, "Tidslinje."
171 Kramer Mikkelsen and Foss, *Årsrapport 2006*.

public guarantees. While this financial model enabled large-scale urban development and infrastructure delivery, it also transferred financial risk into the future and tied public value creation closely to real estate market performance.

In terms of environmental impact, the Ørestad project created certain positive outcomes for the protection of Copenhagen's natural areas, particularly Kalvebod Fælled. Prior to the project, these landscapes were not fully integrated into the city's spatial and political priorities. Through the concentration of development within a clearly defined area, large parts of Amager were designated and preserved as protected natural landscapes, while remaining accessible to the public. However, despite the emphasis placed on landscape protection, the project demonstrates a relatively limited commitment to sustainability in terms of construction methods and building design. [172] Environmental value creation were largely addressed at the territorial scale, while sustainability at the architectural and material level remained secondary.

Throughout its development, Ørestad also faced persistent challenges in establishing strong connections to social, civic, and cultural life. Particularly during its early phases, the project's exceptional planning framework became a focus of public criticism, as it limited opportunities for citizen participation and reduced the influence of non-governmental actors in the development process. [173] This top-down approach further contributed to the perception of Ørestad as a planned and controlled environment rather than an organically evolving urban district.

Overall, Ørestad can be understood as a starting point for Copenhagen's large-scale urban developments in the early twenty-first century. While the area contributed to the city in terms of social values like lack of housing, Tte area is characterized by a fragmented spatial structure composed of distinct office and residential zones, between which public spaces have remained relatively unsuccessful. A central issue in the limited quality of urban life can be linked to the dominance of large commercial structures, particularly the Field's shopping centre, whose scale and inward-oriented typology remain controversial within Copenhagen's estab-

172 BY&HAVN, *ØRESTAD FÆLLED KVARTER*.
173 Majoor, "Progressive Planning Ideals in a Neo-Liberal Context, the Case of Ørestad Copenhagen."



Figure 57: View of Ørestad when approaching the area from the north, with Bella Sky Hotel in the foreground and the Bella Center located to the right. (photo taken by the author)

lished urban pattern.[174] While urban space quality within the built area is often perceived as weak, the integration of the extensive natural landscapes of southern Amager has become one of Ørestad's most significant assets and important environmental value creation.

The rigid boundary between the urban development and the surrounding natural areas creates a sharp spatial contrast. Transitions between these two environments are abrupt, and the urban fabric largely fails to reflect or incorporate the historical and environmental characteristics of the landscape it borders. Although the Ørestad project contributed to the cleaning, improvement, and long-term protection of natural areas, other dimensions of sustainability were largely absent from the overall development strategy.[175]

At the same time, Ørestad's relative distance from the historic city centre led to the establishment of its own social infrastructure, including educational institutions and local activity centres. The area shows important social value in terms integration to life in the area. Together with homeowner associations and neighbourhood-based initiatives, these structures have supported local social life and contributed to a relatively mixed population, particularly appealing to families and students.[176] Housing prices are comparable to those in Copenhagen's city centre, despite the relatively recent construction of the building stock. However, despite these price levels, dedicated social housing projects remain limited. Ørestad's housing mix is mostly composed of new market-rate apartments and specialized rental housing, with student residences and small assisted housing developments but no large traditional social housing sector, making it distinct from the broader social housing landscape historically seen in Copenhagen's older neighbourhoods. This highlights an imbalance between market-oriented development and social inclusion.

In conclusion, Ørestad demonstrates significant economic, social, and environmental potential; however, the limited integration between these dimensions constrains its overall performance. While Ørestad contributed

174 Majoor, "Progressive Planning Ideals in a Neo-Liberal Context, the Case of Ørestad Copenhagen."
175 Majoor, "Progressive Planning Ideals in a Neo-Liberal Context, the Case of Ørestad Copenhagen."
176 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.



Figure 58: Small scale urban park adjacent to the townhouses (photo taken by the author)

to the initial expansion of Copenhagen's metro system, land-based development revenues covered only part of the costs of the M1 and M2 lines, resulting in long-term public debt and the need for subsequent large-scale developments to finance further extensions. Although Ørestad succeeded in delivering new neighbourhoods that remained relatively affordable for local residents, its spatial layout proved less successful, reflecting the challenges of planning an entirely new district from the ground up. The strong dependence on land-value generation as a financing mechanism limited spatial and urban design flexibility, demonstrating that large-scale developments initiated on undeveloped land require careful, long-term planning that is not primarily driven by short-term financial returns. Ørestad thus illustrates both the potential and the structural limitations of using urban development as a financial instrument for infrastructure delivery, underlining the need for more balanced planning frameworks in future projects.

MAIN AIM:
METRO
CONNECTION
THROUGH
LAND SALES

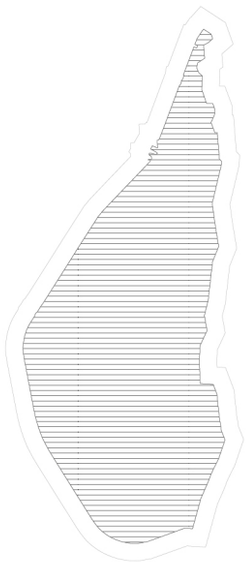
Economic Value

Historical Value

Spatial Value

Environmental Value

Social Value



1930s - RECLAMATION

1990s - START OF CONSTRUCTION

1995 - START OF METRO CONSTRUCTION

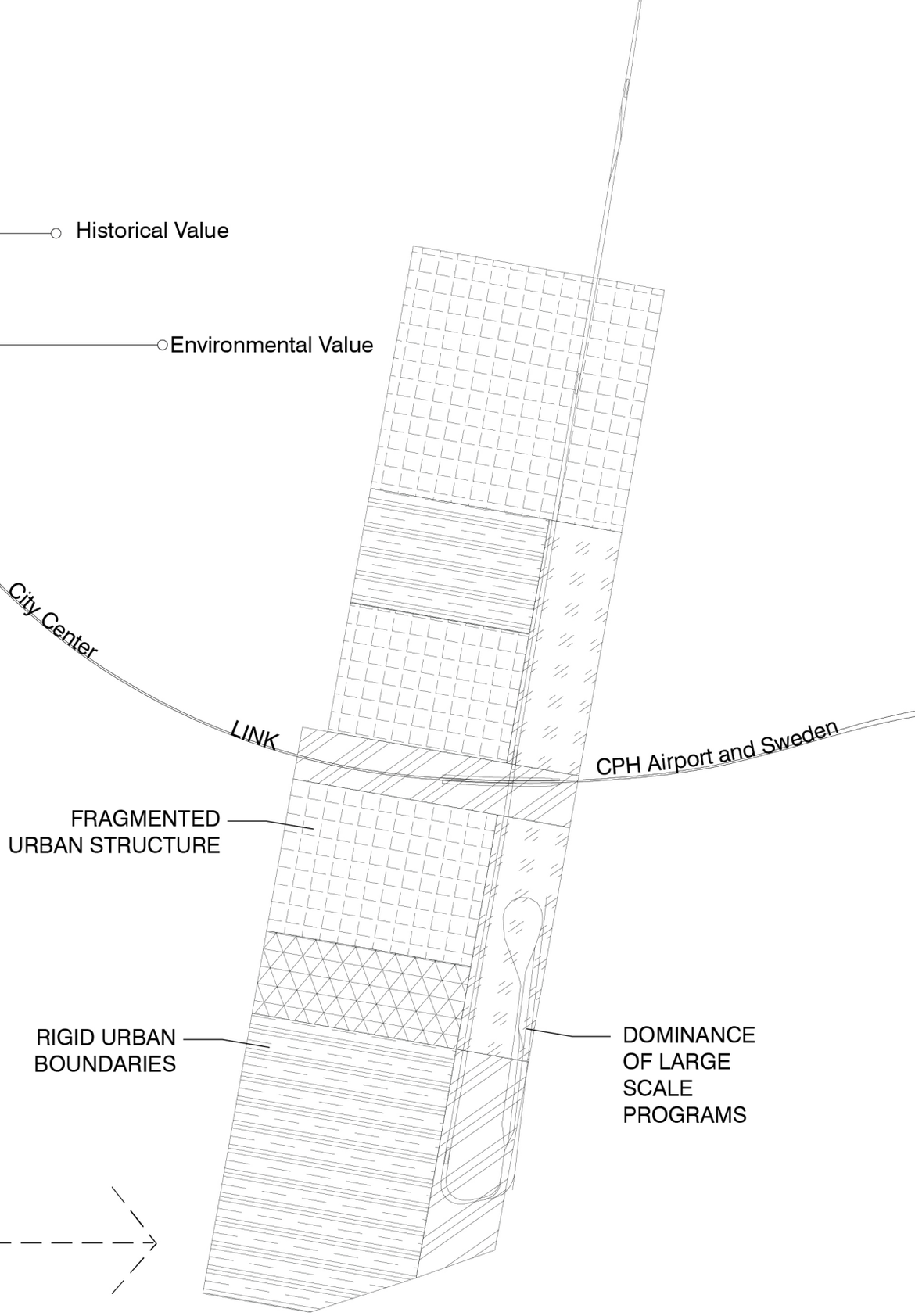
2004 - OPENING OF FIELDS

Lack of social housing



Comparable
housing
prices

Landowners'
Association



A Port Transformation Project: Nordhavn

After Ørestad on the southern side of Amager Island, Nordhavn in the North of Copenhagen became the next large urban development on reclaimed land in the city. In Copenhagen's history with various reclamations since the 17th century, Nordhavn has the largest reclaimed area already built. The idea here was again to sell or lease the land to private investors in order to help finance, among other things, the metro system. Although it is based on the same overall idea, the starting context was very different. Nordhavn was not an empty area, but an active port. The transformation involves moving port functions away from the inner city and reusing parts of the harbour, together with newly reclaimed land, for housing, green areas and industrial activities.[177] Nordhavn is therefore included in this research as it illustrates how a historically reclaimed landscape can be transformed and how newly reclaimed land can be integrated into the urban fabric as a new neighbourhood.

177 Rita Justesen, "Nordhavnen – a City District at the Water," *Portus Plus*, CPH City & Port Development, 2010.

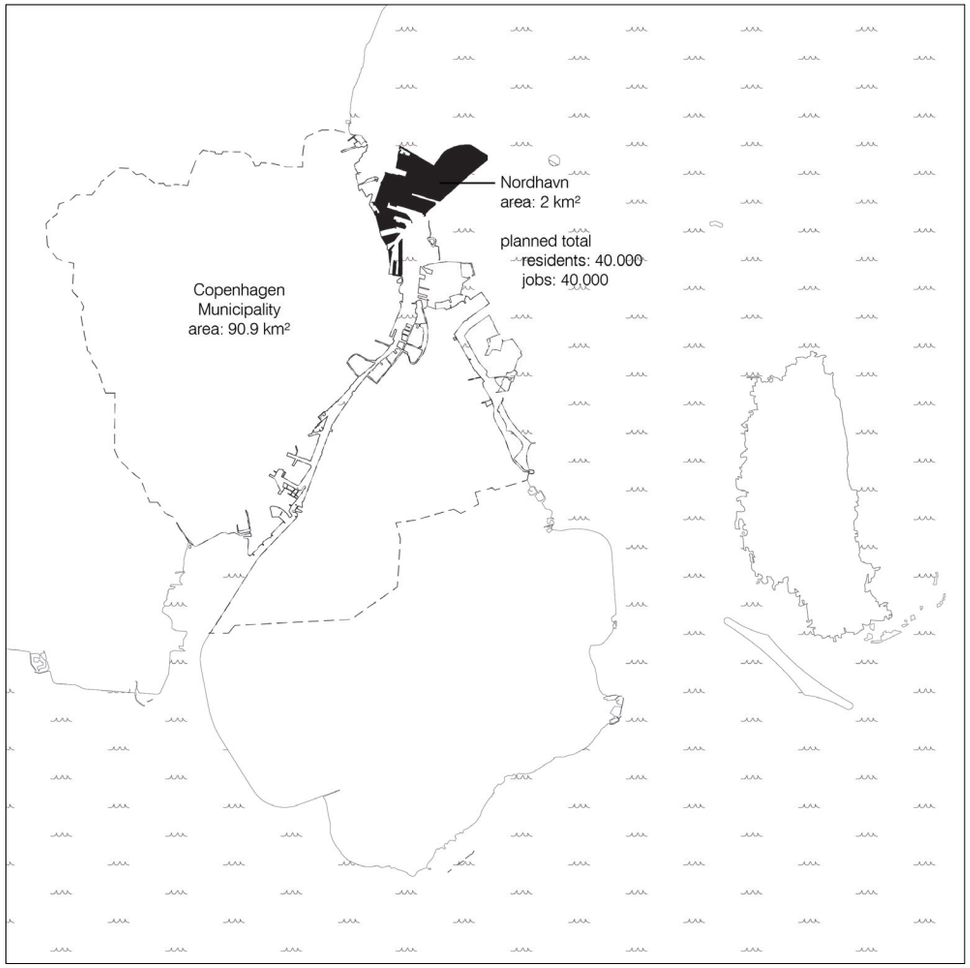


Figure 59: Nordhavn Project Location in Copenhagen and the planned / existing population. (Author's own map based on By&Havn Archive)

History of the Area

The first formations for Nordhavn began approximately 150 years ago, with the expansion of the city harbour through North of the city. The first part of the Nordhavn dates back to 1880s with the reclamation of the Nordbassinet and Redhavn basin.[178] In late 19th century, Copenhagen's demands for trade and industry was growing. Nordhavn develops out of the Free Port (Frihavnen), planned from the 1860s and constructed from 1891 onwards as Copenhagen's new industrial harbour. Excavated materials from the city was used to create new land and islands north of the existing city, making one of the early large-scale land reclamation works in this part of the harbour. The Free Port of Copenhagen opened on 9 November 1894.[179] The area was continued to be filled until beginning of 20th century for the increasing port activities. At that time, there was a high demand for harbour capacity in Copenhagen because of the economic activities and geological location. [180]

Nordhavn expanded during and after the First World War through the construction of new piers and reclaimed land, including Redmolen, Sundmolen, and Levantkaj, alongside harbour basins such as Skudehavnen, Kronløbsbassinet, and Orientbassinet. These expansions continued until 1930s, smaller islets were added giving the Nordhavn "archipelago" structure that we can see still today.[181]

For most of the twentieth century, Nordhavn functioned as a busy industrial port. The Free Port and surrounding basins were used for loading and unloading ships, handling bulk goods and containers, and strong materials in warehouses and silos. The area was dominated by heavy physical work and port infrastructure, and it was largely working-class environment with limited public access.

The late 20th century the industrial port was owned by the Copenhagen Port Authority (Københavns Havn) and after 1970s, there was a

178 Justesen, "Nordhavnen – a City District at the Water."
179 "Nordhavn," Architecture Office Website, *COBE*, November 2025, https://cobe.dk/projects/nordhavn.
180 Tina Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan* (City of Copenhagen, Greater Copenhagen Utility (HOFOR), DTU, 2014).
181 "Nordhavn."

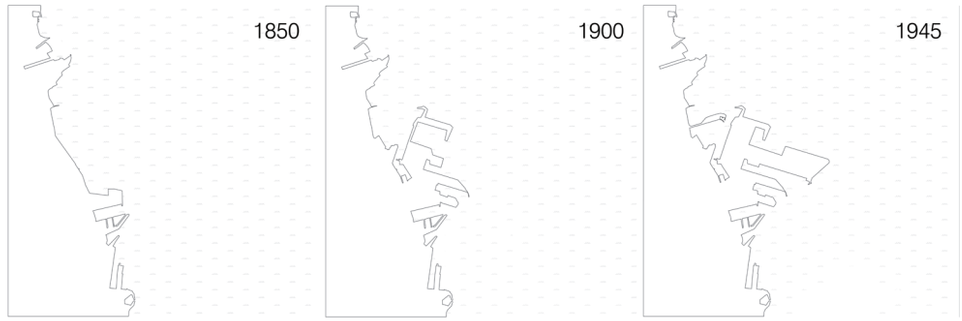


Figure 60: Reclamation Process in Nordhavn (Author's own diagram based on By&Havn Archive)



Figure 61: Detail of the map of 1888, immediately before work started on the Free Port. (source: danishdesignreview.com)

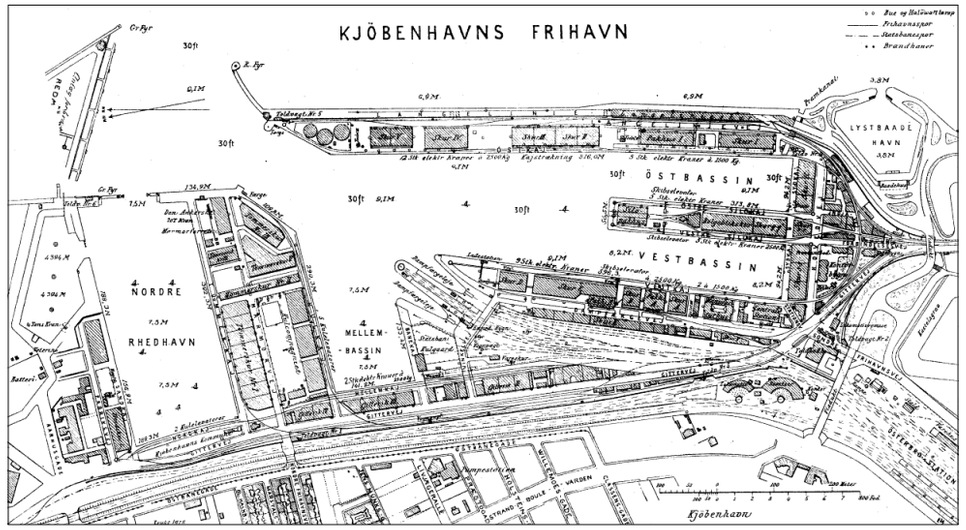


Figure 62: Early plan of the Free Port (source: danishdesignreview.com)

clear decline in the port activities. While half of the area is used for port activities, other half was abandoned or vacant land. [182] Large expanses of asphalt dominate the central and northwestern parts of the area, where harbour operations take place. These spaces are frequently occupied by cruise passengers, cargo, containers, stone materials and scrap. Also, as a brownfield area it was very close to the city centre.[183]

Only in 1980s city planners, politicians and public began to realize the harbour's vast potential for renewal.[184] In 2006, just before the first initiation to the project, the whole port area was 2.5 million square meters, and 429.000 square meters of this area was built-up. The local population was less than 10 and big parts of the people working here was workers. There were only 1 residential building and 490 commercial areas like enterprises and businesses. The area had 5100 jobs related with logistic, harbour and offices related to port.[185] In 2007, it was decided to transform the district by relocating the port to a new peninsula and adding residential and office areas, to make these former harbour areas become one of Copenhagen's most innovative and successful neighbourhoods.[186]

Following the decision to redevelop Nordhavn, port-related activities were progressively relocated away from the inner harbour areas to enable urban transformation. Heavy industrial and logistics functions, including container handling and bulk cargo operations, were transferred to Ydre Nordhavn, a newly reclaimed outer harbour area specifically planned to accommodate modern port operations.[187] This relocation process was coordinated by the Port of Copenhagen Malmö, with the aim of maintaining Copenhagen's role as an active commercial port while freeing central harbour land for urban development. Ydre Nordhavn was designed as a contemporary port zone with deeper waters, large-scale quay structures, and efficient transport connections, ensuring functional separation between heavy port activities and the emerging mixed-use neighbourhoods of Inner

182 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.
183 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.
184 Justesen, "Nordhavnen – a City District at the Water."
185 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*, 14.
186 Katrine Georg Rasmussen, "Lost in Translation? An Analysis of How Divergent Discourses Influence the Planning Process of Urban Sustainability in the Case of Nordhavn in Copenhagen" (Lund University Centre for Sustainability Studies, 2017).
187 The Editorial Team, "Copenhagen to Receive a New Green Container Terminal by 2023," Ports, *SAFETY4SEA*, October 25, 2021, https://safety4sea.com/copenhagen-to-receive-a-new-green-container-terminal-by-2023/.



Figure 63: Land Reclamations from 20th century in Nordhavn (Author's own map based on By&Havn Archive)

Nordhavn.

Project Motivations

Nordhavn is one of the Scandinavia's largest urban development projects, covering roughly 200 hectares and planned to be constructed over a period of 50 years.[188] The project was not initiated simply as an extension of the Copenhagen but mainly as a part of greater financial and infrastructural strategy. By&Havn as a publicly owned development company, is responsible for financing major transport infrastructure such as the Copenhagen metro by selling and redeveloping publicly owned land. Nordhavn was therefore identified early as a one of the key sites, similar to Ørestad, that could generate long-term revenue to pay metro expansion debts.[189]

Alongside its financial importance, Nordhavn was expected to contribute substantially to Copenhagen's housing supply, by creating new dwellings close to the inner city and well connected to public transport, rather than expanding the city further outwards. Also, overall housing area was framed as an opportunity to redefine sustainable urban development. In By&Havn's 2012 planning reports, sustainability presented not only as an environmental goal but also as a balance between economic value creation and social diversity.[190] Social sustainability is emphasized as a central part of the project's identity, and the district has been promoted as "the sustainable city of the future" [191] and "one of the most ambitious metropolitan developments in Scandinavia." [192] This broader definition positions Nordhavn as a district expected to demonstrate that sustainability is not solely about technical performance, but also about who can access and benefit from the city.

The project also formed part of a broader strategy to relocate and consolidate port activities further from the city centre, freeing inner-harbour areas for urban functions while keeping the harbour facilities few kilometres outer from the urban area. Another motivation behind the relocation was to reopen the waterfront to the public. For most of the twentieth century, large

188 Justesen, "Nordhavnen – a City District at the Water."
189 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.
190 By&Havn, *Nordhavnen Urban Strategy* (2009).
191 By&Havn, *Nordhavn Report 2012* (2012).
192 By&Havn, *Nordhavn Report 2009* (2009).

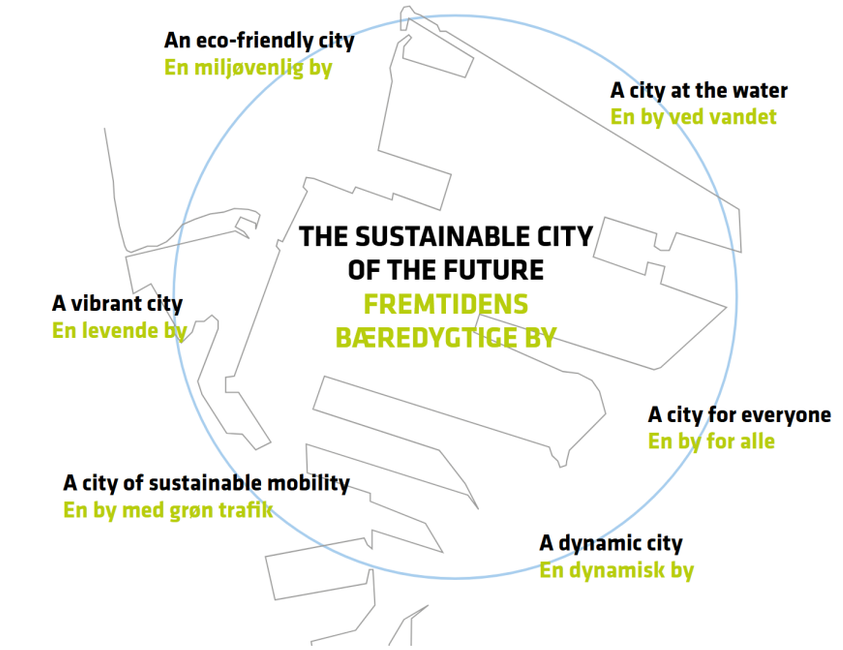


Figure 64: Visions for Nordhavn (source: By&Havn Archive)

parts of Copenhagen's harbour were reserved for industrial use, which limited everyday access for residents. In municipal planning documents, Nordhavn is described as an opportunity to reverse this condition and create new public spaces along the water. The redevelopment is therefore also framed as a cultural and spatial shift, transforming a formerly closed industrial harbour into an area where housing, recreation and public life can take place directly at the waterfront. [193]

Nordhavn was conceived as an experimental district and designated Copenhagen's Smart Urban Lab (SUL), testing smart energy systems, building technologies and digital infrastructure. To support this ambition, the DGNB certification system was applied at both building and district levels, establishing a shared sustainability framework.[194] From the beginning of the project, a planning workshop further shaped the project's direction. In addition to energy innovation, three priorities were highlighted on the workshops: smart buildings, early collaboration with developers and active citizen involvement. [195] This signalled a shift toward a governance model where innovation was linked to process, not only to new technology. [196]

Finally, Nordhavn plays a symbolic role in Copenhagen's global positioning. In the 2011 Municipal Plan, the district is central to the city's goal of becoming carbon-neutral by 2025. The plan describes Copenhagen as a platform for testing environmental technologies and sets quantitative targets, such as increasing employment in the cleantech sector. Nordhavn is presented as the central testing site for large-scale solutions, including geothermal heating, centralised solar installations and energy storage systems. [197] Even if specific targets are difficult to fully reach, the climate and cleantech agenda has helped to introduce new approaches in the Nordhavn area. In this way, the project is framed as a demonstration of how climate-responsive development can coexist with high-quality living, welfare and democratic values, and as part of Copenhagen's attempt to position itself among other "green" cities in international competition. [198]

193 Georg Rasmussen, "Lost in Translation?"
194 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.
195 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.
196 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*, 9.
197 City of Copenhagen, *Municipal Plan* (2011).
198 Nikolai Nissen, "NORDHAVN: A Governmentality Analysis Of Urban Planning" (Copenhagen Business School, 2014), 46–47.



Figure 65: Levantkaj area in Nordhavn. Port activties and the educational programs located close to each other. (photo taken by the author)

Masterplan

Nordhavn is a development area of approximately three to four million square metres, a scale comparable to existing areas in Copenhagen.[199] The project will significantly reshape the city; when fully developed, the area is expected to accommodate 40,000 residents and 40,000 workplace.[200]

The design phase of the project began with international competition. Competition concluded in March 2009 with the decision of the basis for further planning. The project chosen as the beginning phase of the design was “Nordholmene” by Urban Delta.[201] In this proposal Nordhavn is conceived as a system of urban islands (holme) separated by canals, each functioning as a walkable, mixed-use neighborhood. It establishes canals and basins as primary structuring elements, not decoration.[202] In the strategic plan from 2009, the jury described the winning proposal as:

‘The Nordholmene – Urban Delta entry stands out because it provides a visionary, compelling and well thought-out proposal for implementation of the vision for the development of Nordhavnen as a sustainable city district of the future, including environmental responsibility, social diversity and added value....’[203]

Together with the design competition, several architecture and engineering offices were appointed as main consultants. These were COBE; SLETH and Polyform. They are architecture and urban design practices with experience in larger-scale harbour and city developments. The chosen groups were responsible for the overall spatial concept, urban structure and public spaces. Rambøll is a multidisciplinary engineering consultancy. It was also one of the main consultants. It was responsible for contributing expertise in infrastructure, environmental assessments and technical solutions needed to realise the masterplan.[204]

199 Sydney Pagliocco, *Extended Urbanization in Tandem with Sustainability: Exploring the Nordhavn Suburb in Copenhagen, Denmark and Its Green Initiatives*, n.d., 42, Trinity College.
200 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*, 12.
201 *Nordhavnen Urban Strategy*, 1.
202 Københavns Kommune, “Århusgadekvarteret I Nordhavn Lokalplan nr. 463 med tillæg nr. 1, 2 og 3 (Local Plan for Århusgadekvarteret),” June 12, 2018.
203 *Nordhavnen Urban Strategy*, 12.
204 *Nordhavnen Urban Strategy*, 2.



Figure 66: “Nordhavnen Urban Strategy” winning proposal by Urban Delta (source: By&Havn Archive)

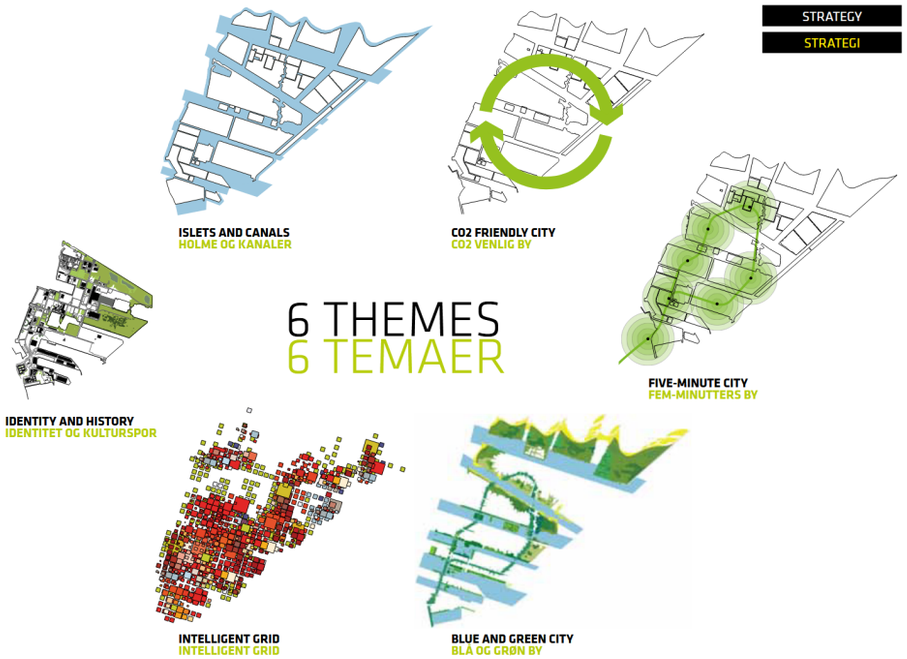


Figure 67: 6 themes for strategy (source: By&Havn Archive)

The masterplan is structured around six main strategies, derived from the overall visions discussed in the previous section. These visions created the framework for the overall design of the area.

Water is a central element in the design of the new neighbourhood, with the direct views towards the Øresund Strait. A key aim is to transform the harbour basins into blue recreational spaces. The overall structural concept divides the area into a series of relatively small islets separated by canals and basins. Also, water management, and climate adaptation are inseparable from this urban form with islets.[205] This layout follows the existing reclaimed-land structure and makes the water present throughout the district. It also keeps a visible connection to Nordhavn's history as a harbour created through land reclamation.

Each islet is planned as a local unit with its own mix of green areas and water edges. The islets are intended to have distinct characters, with combinations of commercial functions, public institutions, services, urban spaces, squares, parks, smaller "niche" parks, nature areas, cafés and restaurants. This variety is meant to create a dynamic environment across the district, rather than a single uniform harbourfront.[206]

The islet structure is closely linked to the idea of the "five-minute city". In the plan, a five-minute walking distance is approximated as about 400 metres, and each islet is designed so that daily needs can be reached within five minutes radius. This approach requires circulation nodes and street layouts that prioritise public transport, cycling and walking. Car use is still possible, but sustainable transport options are intended to be more convenient than driving within the area.[207] The cars tried to be kept away from the public space. More than 90% of the parking spaces are located in the centralized structures, not on the streets.[208]

The industrial history of Nordhavn is treated as an important part of the new development. The simple and rational structure of the area coming from the origins of the industrial harbour. Traffic routes, plots and buildings follow a right-angled pattern that connects to the existing built-up areas. This layout names as 'the intelligent grid'. It divides the islets into

205 *Nordhavnen Urban Strategy*, 5–22.
206 *Nordhavnen Urban Strategy*, 12–23.
207 *Nordhavnen Urban Strategy*, 27.
208 Københavns Kommune, "Lokalplan nr. 463."

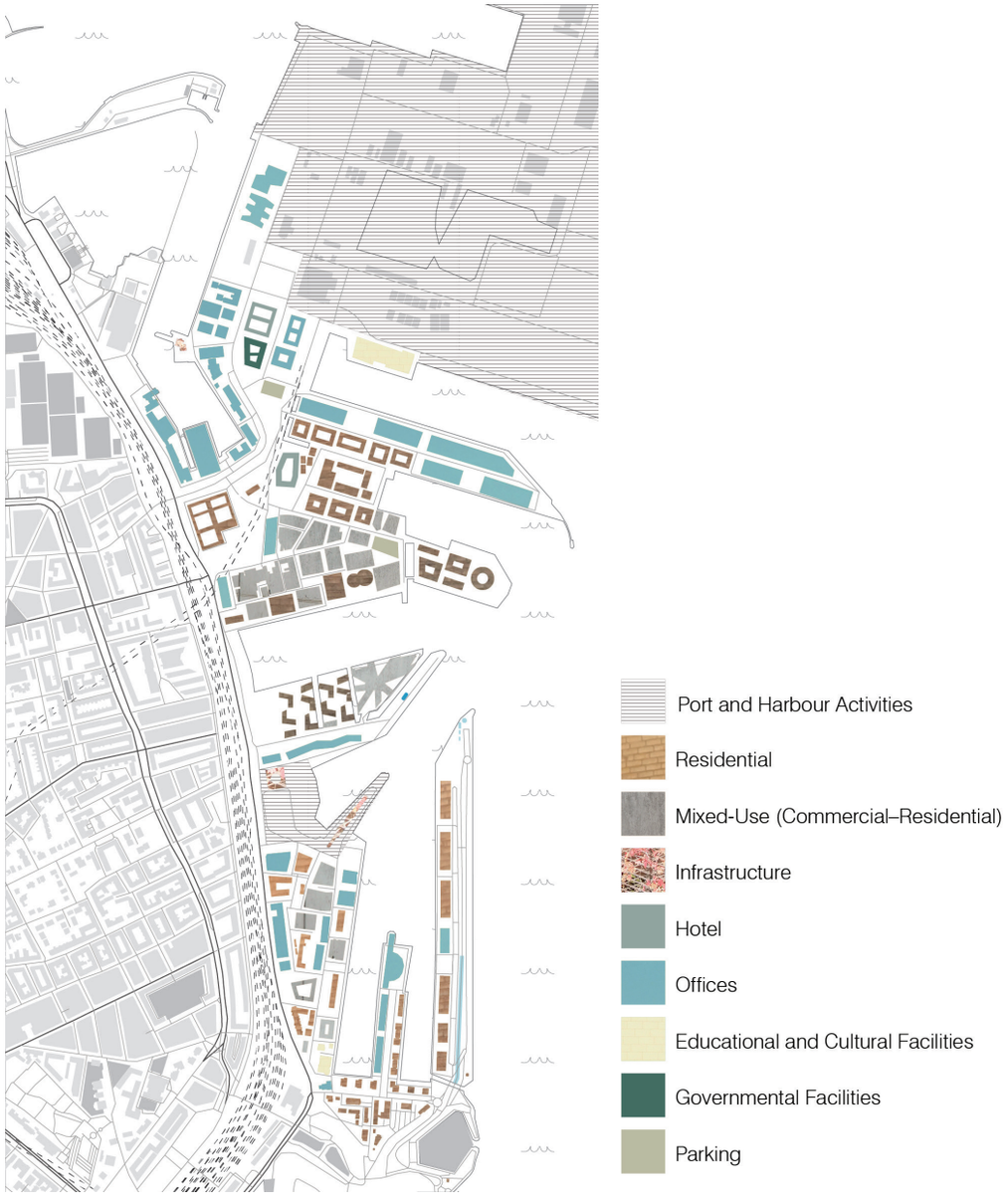


Figure 68: Nordhavn program as a port and development area (Author's own map based on By&Havn Archive)

flexible buildings zones while at the same time aligning with the already built structures. The grid is designed to be adaptable over time, so that different building typologies and programmes can be inserted as demand changes. It also helps to reduce problems with wind by staggering the building volumes, rather than creating long, uninterrupted facades that would produce wind tunnels.[209] Another benefit is about the islets and grid structure is with the project expected to span almost fifty years, its success depends on remaining flexible and responsive to shifts in political priorities, cultural contexts, and socio-economic dynamics. This adaptability is necessary to sustain both funding and engagement from all stakeholders over time.[210] The division into islets and the flexible 'intelligent grid' also supports a gradual development process, where plots can be serviced and released to private developers in stages. This makes it easier for By&Havn to match the pace of construction and investment to market demand and to the financing needs of large infrastructure projects such as the metro.

The planned density of the area was similar to inner city fabric of Copenhagen. While the general building height is moderate, industrial landmarks preserved from the old harbour stand higher than the surrounding. Landmarks consist of high silos, warehouses and industrial buildings is used as mixed use like residential, commercial or institutional areas. New buildings are arranged to follow the existing layout, in order to create a coherent urban structure. The street network for vehicles also builds on the former road infrastructure, allowing a gradual transition from industrial harbour to urban district. [211] As a result, this development approach facilitates a smoother spatial and functional transition from the former industrial harbour to a lived urban district, supporting continuity in urban identity while enabling the gradual integration of new residential, commercial, and public uses.

The first neighbourhood developed in Nordhavn was Århusgadekvarteret (ÅHG). Plans designed to work independently even if later phases were delayed. This let the neighbourhood to be liveable place from the early phase of the project.

209 *Nordhavnen Urban Strategy*, 22–32.
210 Quentin C Schuelke et al., *Nordhavn: Denmark's Most Sustainable Modern Housing Development*, 2022, 8.
211 *Nordhavnen Urban Strategy*, 1–27.

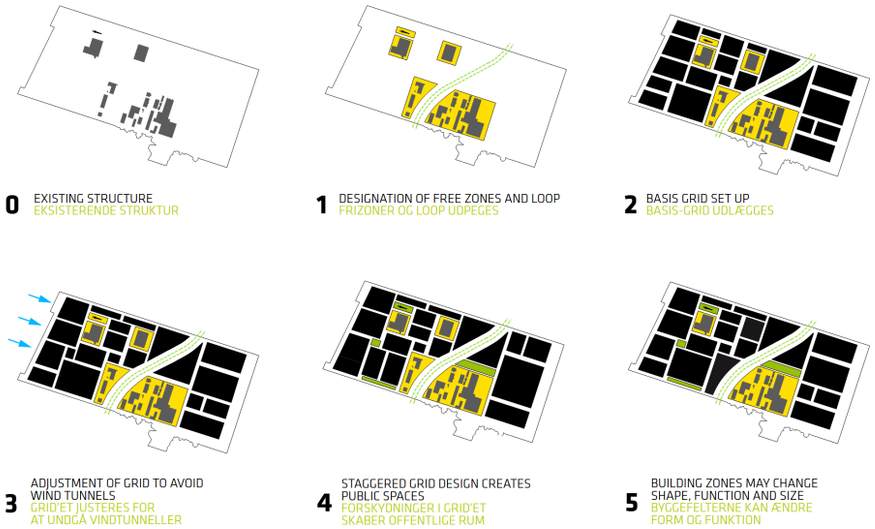


Figure 69: Intelligent Grid (source: By&Havn Archive)



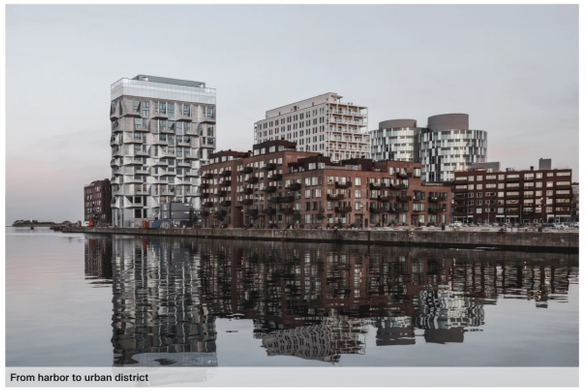


Figure 70: Nordhavn before and after the transformation (source: cobe.dk)

The neighbourhood is located in Inner Nordhavn and linked to Østerbro by the main access road and by the S-train/metro interchange at Nordhavn station. The local plan allows for around 350,000 m² of mixed residential and commercial floor area, with capacity for roughly 2,500–3,000 residents and 6,000–7,000 workplaces.[212]

Today Århusgadekvarteret functions as a dense, mixed-use urban quarter with a combination of converted industrial buildings and new blocks, a central shopping street along Århusgade, and public spaces such as Konditaget Lüders (Park 'n' Play) on top of the parking structure and the renovated Silo building at the waterfront.[213] The important land transformation is a new canal and new artificial island (Kronløbsøen) which gives area water driven design, canals define identity, edges, and public life. Shifted building volumes improve sunlight, wind comfort, and spatial variety. [214]

Public space is the primary organizing system of the plan. In Århusgadekvarteret, public space is not treated as residual space between buildings but as the primary organizing structure of the urban plan. The local plan establishes a clearly defined hierarchy of public spaces, ranging from regional and city-scale waterfront spaces, such as the south-facing Sandkaj promenade and the public destination at Redmolen, to district-scale streets and squares, including Århusgade as the main commercial axis and Århus Torv as a central meeting space, and further to local courtyards, pocket plazas, and neighborhood gardens embedded within the blocks. Each category of public space is assigned specific spatial characteristics, levels of accessibility, and programmatic roles, ensuring that public life is distributed throughout the quarter rather than concentrated in isolated nodes. A key principle of the plan is the legal guarantee of public access along all quay edges, preventing the privatization of the waterfront and integrating the harbor as an everyday urban space. This public-space network is reinforced through a continuous system of promenades, streets, and squares that are designed to support movement, stay, and social interaction, with particular attention to microclimatic conditions such as sunlight, wind protection, and human comfort.

Closely integrated with this public-space strategy is the detailed

212 Københavns Kommune, "Lokalplan nr. 463."
213 Københavns Kommune, "Lokalplan nr. 463."
214 Københavns Kommune, "Lokalplan nr. 463."



Figure 71: Local Plan for Århusgadekvarteret (source: Lokalplan nr. 463)

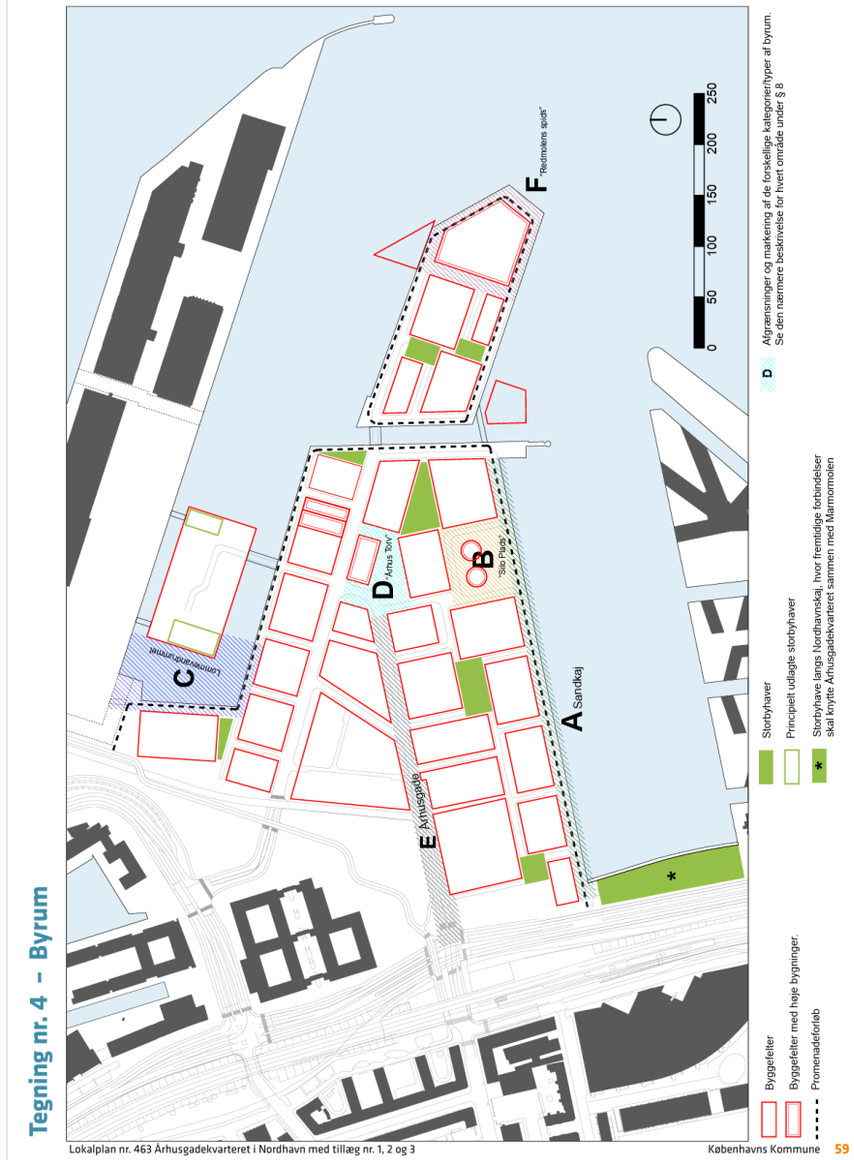


Figure 72: Plan shows public space structure in Århusgadekvarteret. The legend shows, in order, construction sites; construction sites with tall buildings; the promenade route; the metropolitan garden; and primarily planned urban gardens and a city park along Nordhavnskaj, where future connections will be established. (source: Lokalplan nr. 463)

regulation of ground floors and *kantzoner*, which are conceived as active transitional zones between buildings and the public realm. The local plan imposes specific requirements for ground-floor uses along key public spaces, concentrating retail, cafés, cultural, and other publicly oriented functions along Århusgade, major squares, and waterfront promenades, while allowing more private or semi-private uses in secondary locations. Beyond functional programming, the plan regulates the physical design of the building–public space interface, requiring transparency, frequent entrances, and articulated façades that contribute to street life. The kantzoner, spaces between the building façade and the public realm, are designed as flexible zones that can accommodate seating, planting, bicycle parking, informal activities, and seasonal uses, thereby softening the boundary between public and private space. By making these requirements legally binding rather than advisory, the local plan ensures that architecture actively supports urban life and social interaction, transforming public space into a continuous, legible, and programmed urban system rather than a collection of leftover or purely decorative areas.

The housing stock is dominated by relatively expensive, privately owned apartments, with a mix of smaller units (around 50–70 m²) and larger units around 95 m² on average, reflecting a market-oriented development within the broader framework of the Nordhavn masterplan.[215] Typical building height is 3-6 storeys with a few taller landmark buildings like The Silo and Portland Towers.[216] The plan aims high density but perceived as small-scale and varied. Mostly it uses small, fragmented building plots instead of mega blocks. While the area provides high-quality public spaces and strong connectivity, the dominance of high-priced private housing highlights ongoing questions about how public value and social accessibility are realized within investment-driven redevelopment projects such as Nordhavn.

Further out in Inner Nordhavn, new neighbourhoods are being developed around Sundmolen, Trælastholmen and Orientkaj. The area around Orientkaj, sometimes referred to as the white district (Den Hvide By), is characterised by newly built, predominantly white colored waterfront housing and offices, and is closely linked to the cruise terminal and harbour

215 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*, 24–25.
216 Københavns Kommune, "Lokalplan nr. 463."



Figure 73: Portland Towers by DGA. Twin silos turned into an office building (photo taken by the author)

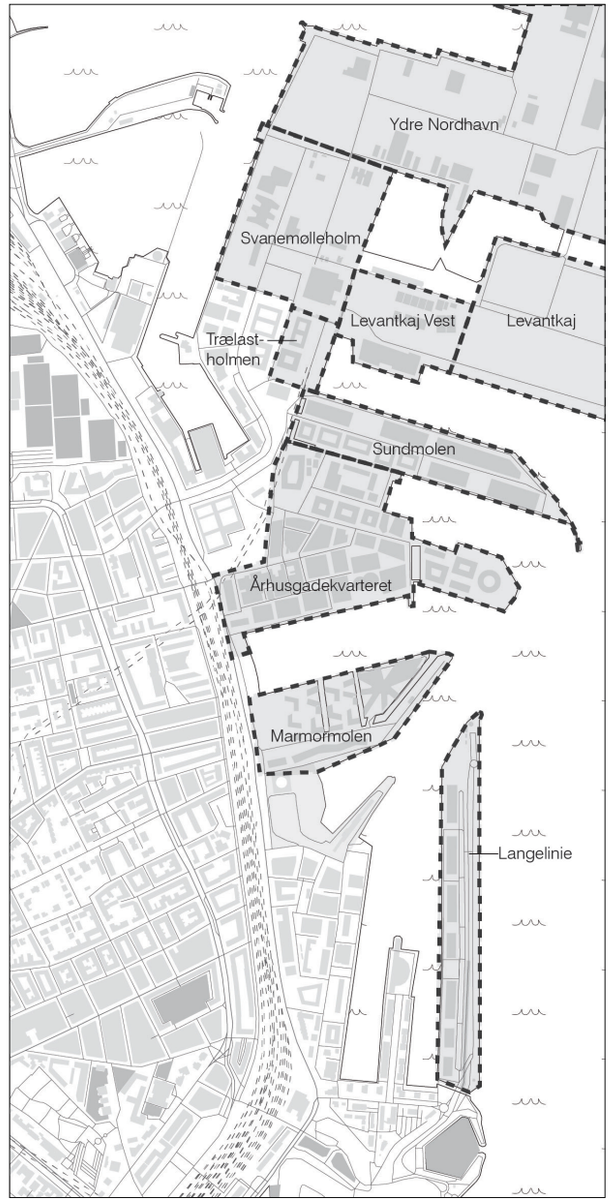


Figure 74: New development area in Nordhavn (Author's own map based on By&Havn Archive)

bus services. Together with Århusgadekvarteret, these areas form the first generation of urban neighbourhoods in Nordhavn and set the pattern for later phases further into the harbour.[217]

Nordhavn is currently served by two metro stations on line M4: Nordhavn and Orientkaj. The Nordhavn branch of M4 was approved in 2012 and opened in March 2020 as an extension of the Cityringen (M3), linking the emerging harbour district directly to the inner-city metro network. Nordhavn station is an underground station located at the edge of Århusgadekvarteret, where it connects the new development to the existing S-train network at Østerbro. Orientkaj is an elevated terminus station situated further out in Inner Nordhavn, serving the new white district. In the masterplan, these stations function as key nodes in the “five-minute city” structure, with higher densities and mixed uses organised within walking distance of the stops. Current plans extend M4 further into Ydre Nordhavn, with two additional elevated stations expected around 2030, so that most of the future development area will be located within a short walk of a metro station.[218]

As in Ørestad, the metro is clearly prioritized as a structuring element of development in Nordhavn; however, this accessibility is uneven. While areas such as Århusgadekvarteret benefit directly from proximity to metro stations, the zones located between Østerport and Nordhavn stations remain at a greater distance from rapid transit, resulting in variations in accessibility within the development area.

Despite the ongoing urban development, Nordhavn is still planned as an important area for port activities. At present, container traffic is handled at Levantkaj in Inner Nordhavn, but Copenhagen Malmö Port and By & Havn are relocating the container terminal a few kilometres out to Ydre Nordhavn, on newly reclaimed land, as part of a roughly 100-hectare extension that will also include a new nature area. The new terminal will be slightly larger than the existing one (around 165,000 m² compared to 140,000 m²), and together with the large cruise terminal at Oceankaj, which has a 1,100-metre quay and three terminal buildings designed to handle

217 Københavns Kommune / City of Copenhagen (CPH), *Forslag til lokalplan Svanemølleholm Øst*, n.d.; Københavns Kommune / City of Copenhagen (CPH), *Forslag til lokalplan Sundmolen Øst*, n.d.

218 “Extension of the M4 to Ydre Nordhavn,” Governmental, Metroselskabet, accessed December 2, 2025, https://metroselskabet.dk/en/projects-and-development/current-projects/extension-of-the-m4-to-ydre-nordhavn/.



Figure 75: Existing and Planned Metro Stations in Nordhavn (Author’s own map based on By&Havn Archive)

three large cruise ships at once, it concentrates the main port functions on the outer edge of the harbour.[219] In the masterplan, this gradual shift of container and cruise activities further out makes it possible to transform inner harbour areas such as Levantkaj and Inner Nordhavn into new urban districts on reclaimed land.[220]

The masterplan of Nordhavn has developed through an ongoing and flexible planning process and continues to evolve alongside discussions and decision-making. The plan allows for adjustments in response to changing priorities, including considerations related to green spaces and the preservation of culturally significant harbor environments. As Blak Wilner notes, this openness enables the masterplan to evolve as urban needs and strategic objectives shift over time.[221]

219 "Ny containerterminal i København," *By & Havn*, February 25, 2022, https://byoghavn.dk/ny-containerterminal-i-koebenhavn/.
220 Justesen, "Nordhavnen – a City District at the Water," 5–6.
221 Blak Wilner, "Interview with Architect Working at 'SLETH.'"

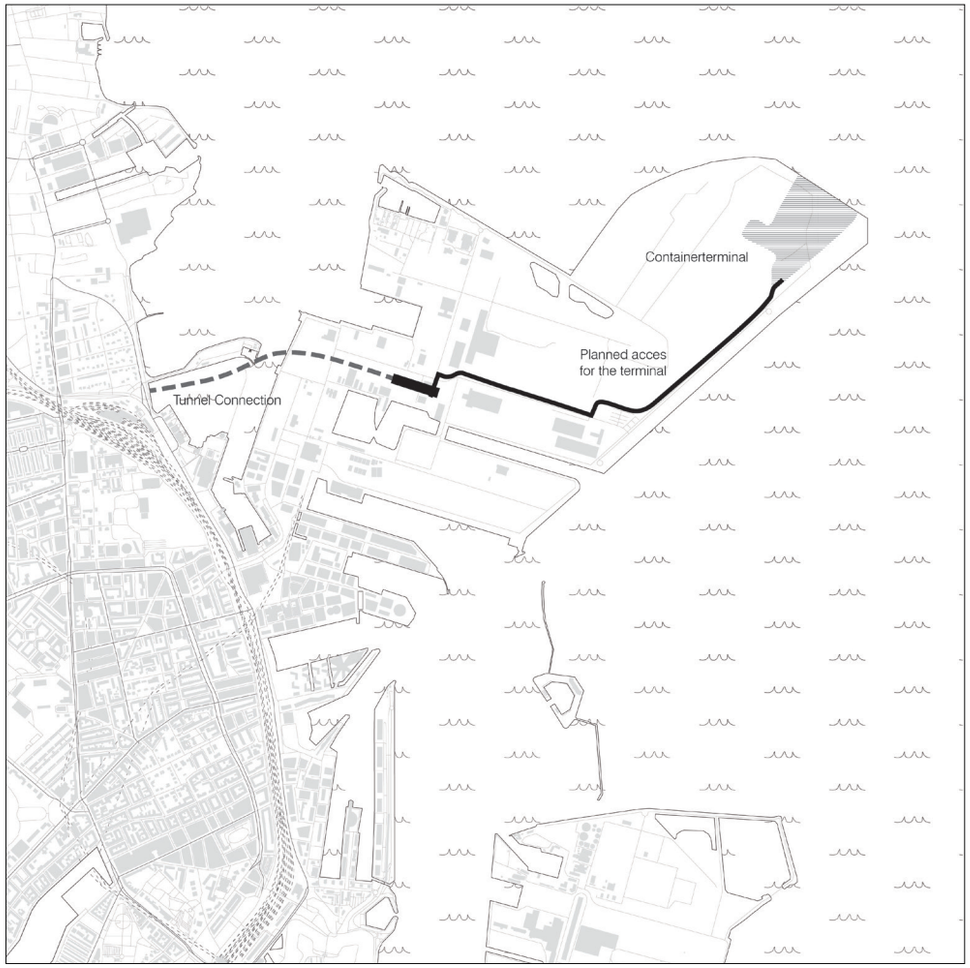


Figure 76: New Container Terminal by By&Havn (Author's own map based on By&Havn Archive)

Development Model

The development of the Nordhavn started with the land reclamation in the area in 2000s. This new reclamation became closely tied to major construction projects in Copenhagen, especially the Cityringen metro (M3). Soil and rock from the metro tunnels, together with surplus material from other building and infrastructure works in the city, were transported to the Nordhavn and used as fill material. In total, there was a capacity for around 18 million tonnes of material to be deposited in this way.[222] Until 2022, this landfill was largely brought to the area by truck, making heavy construction traffic a visible part of everyday life in and around.

Parallel with the land reclamation in Ydre Nordhvn, the urban development has been organised in stages. The first stage, initiated in 2013, focuses on Inner Nordhavn, which is separated from the Østerbro neighbourhood by a heavily trafficked ring road and railway corridor. In this stage, the plan adds around 400,000m^2 of new floor area and preserves approximately 70,000m^2 of existing building stock. The second stage, launched in 2018 and still under construction, is expected to provide more than 200,000m^2 of additional floor area. [223] The islets coming from the reclamation process of the Copenhagen port helped with the development of the area. The development process started to take place islets by islets. This helps the By&Havn while working together with the stakeholders in changeable environment. [224]

In total, Nordhavn development process is planned as nearly 50 years to be completed. It is not a single fixed project, but combination of different approaches working with flexibility. During this process, the model focused on public engagement, phased constructions, open communication with stakeholders and testing new solutions in sustainable urban technologies.

The first agreement had been done with the state related to construction of Metro Cityringen (M3) and next to it development of Nordhavn in 2005. The law published after two years in 2007. Next year 3 public workshops had been done to discuss the future development in the area. These

222 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*, 48–49.
223 *Nordhavnen Urban Strategy*.
224 *Nordhavnen Urban Strategy*.



Figure 77: View from Nordhavn through Østerbro. (photo taken by the author)

public workshops were the starting point for the idea of Nordhavn. Both citizens and stakeholders such as developers, architects, the cyclist union and local city government representatives are participated to workshops. More than 800 people participated 3 workshops. The different backgrounds created beneficial discussions for the future project.[225] In these workshops citizens expressed their ideas about the planning of Nordhavn, and these ideas shaped the brief for the international competition has been done for the preliminary masterplan for the Nordhavn.

Specifically, just for the Nordhavn project, city decided to make a new agreement will be signed voluntarily to achieve higher ambitions. “Urban development agreement” signed by the landowner By&Havn and City of Copenhagen. It is an additional plan to other planning tools like municipal plans or local plans. To meet the level of ambitions of the Masterplan from 2008 that focus on high level of sustainability and special architectural processes, this agreement was prepared. So, it was used to go beyond the minimum requirements for sustainability and design quality. The agreement was focusing on 13 themes. These themes were retail, energy, architecture, housing (small/affordable), municipal services, environmental sustainability (DGNB), waste, detailed local plan for subareas, local disposal of rainwater, harbour bath, parking, exemptions from detailed plan and the Silo. This agreement was concluded in 2011.[226] Also in 2014, the national government decided to change ownership shares of the By&Havn. The municipality gained a much larger responsibility, and it owns 95% of the company. National government owns remaining 5%.[227] The two steps open an easier way for Nordhavn to be experimental project for the future of the city.

In 2011 local plans for first phase of the project Århusgadekvarteret (ÅHG) was ready. After the public hearing, approval also had been done in the same year. In 2012 also agreement on Nordhavn metro had been done and after two years another agreement for additional metro and road tunnel under Svanmøllebugten to Nordhavn had been done. In 2020 metro branches Nordhavn and Orientkaj had opened. Metro was always important process in the development of the project. The revenues and costs would shape future decisions about the development of the metro.

225 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*, 19.
226 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*, 6–25.
227 Bruns-Berentelg et al., “Developing Urban Growth and Urban Quality.”



Figure 78: View of the Nordhavn area where construction is still ongoing. (photo taken by the author)

In Nordhavn project phase, the civic engagement was prominent in the model. The reports emphasised that planning process is focused on involving the citizens of Copenhagen, future users, and stakeholders. Municipality created a website, for Nordhavn and had a “Take part”(Vær med) section. Also it had a subsection entitled as “Influence the development” (Påvirk udviklingen). There is also opportunity to speak at the policy committee meetings if anything special wanted to draw attention to. These meetings are also public and it includes political discussions and decisions. Lastly, the municipality also created a forum named “Be heard” (Bliv Hørt) for the citizens to talk about different topics related to city of Copenhagen. In this forum, attention is given to the future development of Copenhagen’s districts, environmental issues, and the organisation and development of public institutions.[228] To further strengthen citizen involvement, the city organized an opening day for the Nordhavn district, which took place on August 31st 2014 and it is strongly promoted through the social media and newsletter channels. The opening program had guided tours of the district by walking or on the boat, presentations by stakeholders, apartment showcases. Also, there were water related activities like paddling, kayaking and rafting to showcasing the life in Nordhavn. [229] Although official hearings and public meetings clearly taken care by the planning authorities carefully, some critics believed that the project was never subject of a widespread media attention or intense party-political debate. However, this wasn’t implying lack of citizen engagements. Only these engagements were under a less visible urban geography.[230] Also some scholars states even though these public meetings were inclusive, very little activist contention or public discussion has addressed to the socio-economic or distributional issues. The socio-ecological concerns were more prominent.[231] Despite the range of participation platforms, the relatively low level of media attention and political contestation suggests that public engagement unfolded largely within institutionalized and less visible arenas, rather than as part of a broader citywide debate.

Another important element of the development model is the strong

228 Nissen, “NORDHAVN: A Governmentality Analysis Of Urban Planning.”
229 Nissen, “NORDHAVN: A Governmentality Analysis Of Urban Planning.”
230 Anders Blok and Marie Leth Meilvang, “Picturing Urban Green Attachments: Civic Activists Moving between Familiar and Public Engagements in the City,” *Sociology* 49, no. 1 (2015): 19–37, https://doi.org/10.1177/0038038514532038.
231 Anders Blok, “Urban Green Gentrification in an Unequal World of Climate Change,” *Urban Studies* 57, no. 14 (2020): 2806–9, https://doi.org/10.1177/0042098019891050.



Figure 79: Residential Street in Århusgadekvarteret (photo taken by the author)

emphasis on energy sustainability. Nordhavn has been developed in close collaboration with the main energy and utility stakeholders responsible for the district's supply systems. HOFOR (Greater Copenhagen Utility) is responsible for water supply, district heating, gas and district cooling, while DONG Energy (now Ørsted), HOFOR, the City of Copenhagen and the Ministry of Energy together contribute to the design and operation of an integrated low-carbon energy system. [232] The district is planned as a test area for new energy solutions: smart energy management is expected to optimise capacity and reliability; buildings are designed as "smart" houses with intelligent control systems; street lighting is intended to run on wind and solar power; heating is provided through low-temperature district heating; and groundwater and seawater are used for cooling instead of conventional, electricity-based systems. [233] Heat storage and a shared energy data platform are meant to monitor consumption and support reductions in overall energy use. To coordinate and demonstrate these solutions, the "EnergyLab Nordhavn" project was launched in January 2015 as a partnership between the City of Copenhagen, utilities, companies and research institutions, using Nordhavn as a full-scale laboratory for smart energy systems. [234]

In Nordhavn, the energy and water systems are planned as integrated, low-carbon infrastructure. Surface water is to be collected, treated and reused or discharged locally within the district, so that rainwater and runoff are managed as part of the urban environment rather than simply being led away through conventional sewers. The energy supply is organised around shared systems for electricity, heating and cooling, including a district-wide low-temperature heating network, central heat storage and a remote cooling system. Geothermal energy, groundwater and seawater are used for heating and cooling, while wind turbines and in the longer term also solar cells are expected to provide most of the electricity. In summer, seawater-based cooling is intended to reduce the need for conventional, electricity-intensive air-conditioning. [235]

DGNB certification was key to Nordhavn's sustainable residential areas. For the increasing number of renters and owners it was demanded.

232 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*, 19.
233 By&Havn, *Nordhavn From Idea to Project 2012: Inner Nordhavn* (2012).
234 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.
235 *Nordhavnen Urban Strategy*.

After Århusgadekvarteret used as a reference for sustainable solutions, in the second phase, the three district, Trælastholmen, Levantkaj Vest and Sundmolen covering a total of 26.2 hectares, received gold medal from DGNB certification in May 2013. [236]

The project was closely tied to Copenhagen's role as host city for COP15 and to the municipal ambition of becoming carbon neutral by 2025, and consultants describe how this created a "window of opportunity" to raise low-carbon ambitions well above usual practice in negotiations with City and Port Development. By contrast, questions of social mix and affordability appear only in a thin, ideological language of "diversity". These issues have attracted little activist or public debate, even as Nordhavn has become a "low-carbon enclave for the wealthy", with housing prices above the city average. While social sustainability is emphasised in the preliminary reports and publications clearly, later in the construction phase the ambitions tended to focus more on energy sustainability. The project focused on developing an area ambitious for low carbon-performance rather than social composition.[237]

Alongside governance, planning and energy systems, a central part of the Nordhavn development model is its financial structure, where rising land values are actively used to fund major infrastructure such as the metro. In 2014, Nordhavn was estimated to be worth around 3.1 billion DKK dollars more than the valuation at the start of the project in 2007. This increase in land value helped to finance the construction of the metro, including the two additional metro stations in Nordhavn. [238] Overall, the redevelopment project generated approximately 102 billion DKK dollars in revenue, of which about 39.4 billion DKK was allocated to building the metro line. [239] The remaining funds were earmarked for infrastructure and other investments in Nordhavn. Despite this, By & Havn has continued to borrow, and still carried a debt of around 16.3 billion DKK in 2022. [240]

Overall, the Nordhavn development model demonstrates how long-term, phased urban transformation can be coordinated through strong

236 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*, 29.
237 Blok, "Urban Green Gentrification in an Unequal World of Climate Change," 2806–9.
238 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."
239 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.
240 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."



Figure 80: New built areas and Copenhagen Infrastructure Partners office building at the background. (photo taken by the author)

public ownership, flexible planning instruments, and close integration with major infrastructure projects. While this approach enabled experimentation in sustainability, energy systems, and participatory planning, it also concentrated decision-making within institutional frameworks and market-driven processes. The emphasis on energy performance and land-value-based financing, combined with high development costs and rising housing prices, has contributed to an urban environment that is highly controlled and environmentally ambitious, yet socially selective. Nordhavn thus illustrates both the capacity and the limitations of using large-scale, infrastructure-led development models to shape future urban growth.

Project Regulations

The Nordhavn project is characterised by a relatively transparent planning and regulatory process. By&Havn's online interactive map shows both past and current phases of development, with each plot labelled according to its status, use, buyer and design team. In the map, approximately 90 different plots are identified. Around 60% of these, mainly for residential and business use, are already sold; about 15% are not currently for sale, and the remaining plots are under negotiation. Only one plot, planned for housing and scheduled to be built between 2027 and 2029, is currently advertised as for sale. The map is linked to the relevant local plans and project descriptions, so that the regulatory framework and the concrete projects can be read together for reach individual plot. [241]

Infrastructure investments are closely tied to the development model. In inner Nordhavn, the first urban areas were planned and partly built before the metro line was extended to the district. When the M4 branch to Nordhavn and Orientkaj was decided, By&Havn included a special clause in land transfer agreements: property owners close to the metro stations are required to pay surcharge pr square meter, reflecting the higher accessibility and land value created by the new infrastructure. [242]

Transport is also regulated through planning principles for traffic distribution. The City of Copenhagen set a goal that at least one third of all trips in Nordhavn should be made by bicycle, at least one third by public transport, on no more than one third by car.[243] The intention is to create a local mobility system where walking, cycling and public transport are easier and more attractive than car use, in line with other new development areas in Copenhagen.

At the scale of the urban fabric, the regulatory framework combines a fixed overall structure with flexibility at project level. The masterplan and local plans define the basic layout of the islets, the street network and the main distribution between housing, offices and other functions. However,

241 BY&HAVN, "Nordhavn - Interaktivt Kort," *Nordhavn Interactive Map*, n.d., accessed December 3, 2025, https://byoghavn.dk/nordhavn-interaktivt-kort/.
242 Katz and Noring, "THE COPENHAGEN CITY AND PORT DEVELOPMENT CORPORATION: A Model for Regenerating Cities."
243 *Nordhavnen Urban Strategy*, 28–30.



Figure 81: Area dedicated to bicycle park and storage for water related activities in the Park 'n' Play. (photo taken by the author)

the exact size, programme and placement of individual buildings within each islet are not fully determined until specific projects are designed. The mix between residential and commercial functions is defined in relation to the position of each islet in the wider urban structure, but inside each islet there is considerable flexibility. This creates a “buffer zone” where the urban structure is stable, while the detailed programming can adopt to changing market demand and investment conditions. [244]

Social housing regulation is shaped by national planning law and local choices. The Danish Planning Act (Planloven) in its amendment in 2015 introduced a new tool allowing municipalities to require up to 25% of dwellings in new local plan areas to be non-profit social housing. This 25% is a maximum, not a minimum, and it is not automatic. Each municipality decides whether and how to apply it. The 2015 national budget package that introduced this planning tool was accompanied by financial measures: municipalities can require up to 25% social housing, and social housing organisations can receive long-term loans (up to 50 years) with zero interest and zero repayment, which is intended to make projects in expensive development areas like Nordhavn more feasible. [245]

In the early phase of Nordhavn in Århusgadekvarteret, this instrument did not yet exist. As a result, only one project, Orienten, was built as a social housing, amounting to about 7% of the total housing stock in the part of the district. Beyond The Orient, additional social housing is planned in later phases, for example 100+ new almene dwellings at Svanemølleholm announced by By&Havn in November 2025.[246] Areas such as Levantkaj are planned with 25% social housing in their factsheet, and proposals for Sundmolen Øst and Svanemølleholm Øst also include 25% social housing share. [247] While planning phase considers social housings, there is still a risk of change in the ratios to reach the financial aims.

At the same time, the Planning Act requires that public land be sold at market value. In Nordhavn, where land values are high, this makes it difficult for non-profit housing developers to acquire sites, even with supportive loans. Average apartment prices in Nordhavn are around 3,5 times higher

244 *Nordhavnen Urban Strategy*, 39–40.
245 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.
246 “Mere end 100 nye almene boliger på vej i Københavns Nordhavn,” *By & Havn*, November 5, 2025, https://byoghavn.dk/mere-end-100-nye-almene-boliger-paa-vej-i-koebenhavns-nordhavn/.
247 Schuelke et al., *Nordhavn: Denmark’s Most Sustainable Modern Housing Development*.



Figure 82: Orienten Social Housing (source: nordicarch.com)

than the Copenhagen average.[248] This combination of market-value land sales and limited room for non-profit actors contributes to the district's profile as a high-income area.

Finally, in Nordhavn sustainable building is regulated partly through voluntary certification. DGNB certification has been a central reference for Nordhavn's building regulations and development agreements. The system aims to integrate economic, environmental and social dimensions of sustainability, but it remains a voluntary standard that developers can choose to adopt. The KMC building, owned by By&Havn and co-financed and used by the city of Copenhagen, was the first DGNB-certified building in Nordhavn and illustrates how the certification framework is used to signal quality and sustainability within the overall regulatory model.[249]

Overall, the regulatory framework in Nordhavn combines a high degree of transparency and structural control with significant flexibility at the project level, allowing development to adapt to changing market conditions. While this approach supports phased implementation, infrastructure coordination, and high design and sustainability standards, it also embeds market logic deeply into planning outcomes, particularly through market-value land sales and infrastructure surcharges. As a result, social housing provision and broader affordability remain structurally constrained despite formal regulatory tools, contributing to an urban environment where regulatory ambition and social outcomes are not fully aligned.

248 Schuelke et al., *Nordhavn: Denmark's Most Sustainable Modern Housing Development*.
249 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.



Figure 83: KMC building in Nordhavn (source: ccoarch.com)

Forms of Value Creations

Nordhavn is an important example of how harbour areas can be transformed into an urban environment while retaining port functions and spatial characteristics. Rather than relocating the harbour to a completely different part of the city, the strategy has been to reuse and extend the existing port landscape, integrating housing, offices and public spaces with ongoing container and cruise activities further to the north. The main value creation in the project is to give the coastal area to the city back as an urban space.

The district clearly reflects its past as an industrial harbour, with both small and large-scale port structures still visible.[250] The urban layout is straightforward and functional, with a right-angled road and plot structure that continues the logic of the former Free Port. This geometric framework remains a defining element and contributes to the area's distinctive character. As a former port area, the relationship to the water is still one of the most important qualities: promenades, bathing zones and squares along the harbour edge have turned parts of Nordhavn into a new public waterfront for the city. Together with the two metro stations, which link the district directly to the city centre, these features make Nordhavn more than a simple city extension: it functions as a public space for Copenhagen residents, with a strong identity connected to history of harbour harbour.

At the same time, the way value is created in Nordhavn has clear social and economic consequences. High land values in the area leave limited room for experimentation in housing typologies, and the residential stock is dominated by relatively large, expensive owner-occupied apartments. This creates a contrast between the high quality and openness of public spaces, and the limited affordability of the housing that surrounds them. Although the City of Copenhagen has presented Nordhavn as a "city for everyone", the prices of newly built dwellings make this difficult to realise in practice.[251] Housing prices in Nordhavn are the highest in Copenhagen, with average apartment prices of approximately 58,000–60,000 DKK per m^2, exceeding the general Copenhagen average of around

250 Justesen, "Nordhavnen – a City District at the Water."
251 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.



Figure 84: Canals in Nordhavn open for water related activities (photo taken by the author)

50,000–55,000 DKK per m², reflecting its position as a premium waterfront district .[252] By & Havn's interactive map for inner Nordhavn shows that most building plots have been acquired by large private actors.[253] Buyers include private housing developers such as Kuben Byg and Casa Nord in the first residential projects, and NCC, which converted existing harbour silos into office space. Large institutional investors play a key role, for instance PFA and PensionDanmark/Nordkranen in projects like Nordø and Kronløbsøen, the investment fund NREP at Nordhavns Plads and Trælastholmen, and corporate or institutional buyers such as the law firm Accura and Copenhagen International School.[254] None of these actors are social housing organisations, and in the first phase only one project, Orienten, provides non-profit housing, corresponding to about 7% of the dwellings. Although the 25% social housing rule is prominent in later planning documents, it has so far had limited visible impact in the built parts of Nordhavn. Business floor area is also slightly higher than housing, indicating that the project is not only about creating sustainable residential environments, but also about generating high-value workspace and economic activity.[255] In terms of social value creation, as a new development that could have contributed more strongly to relieving Copenhagen's housing shortage, Nordhavn does relatively little to address the lack of affordable housing.

These tensions are also visible in everyday use of the area. The combination of high-quality public waterfront spaces and expensive housing has created frictions between different user groups. Online news sources and local debates point to conflicts around the harbour baths and adjacent areas, where noise, long crowded hours and pollution from visitors are perceived as a disturbance by some residents.[256] In this sense, Nordhavn's public spaces are successful in attracting people from across the city, but this very success generates new management challenges and questions about whose preferences will be prioritised.

252 "Nordhavn: Sustainable City of the Future," Danish Architecture Center - DAC, accessed January 11, 2026, https://dac.dk/en/magazine/places/nordhavn-sustainable-city-of-the-future-288.
253 Nissen, "NORDHAVN: A Governmentality Analysis Of Urban Planning."
254 BY&HAVN, "Nordhavn - Interaktivt Kort."
255 Schuelke et al., *Nordhavn: Denmark's Most Sustainable Modern Housing Development*, 16–20.
256 Anders Legarth Schmidt, "'Du Aner Ikke, Hvor Meget Det Sviner«: Udvidelse Af Den Mest Populære Badezone i København Vækker Modstand' (You Have No Idea How Much It's Getting Dirty": Expansion of the Most Popular Bathing Area in Copenhagen Arouses Opposition)," Politiken - Den Levende Avis, August 19, 2025.



Figure 85: Canals in Nordhavn open for water related activities (photo taken by the author)

Nordhavn also creates environmental value as a laboratory for sustainable building and energy systems. DGNB certification has been important for the residential and mixed-use areas, and several buildings in the first phase already hold DGNB or LEED certificates, with more planned. This adds an extra layer of quality assurance and has helped to position Nordhavn as a flagship for sustainable architecture in Copenhagen. However, the scope of DGNB does not fully cover the broader ambitions originally formulated for Nordhavn. While the system includes social criteria, these are largely focused on aspects such as indoor comfort, daylight and accessibility, rather than questions of social justice or income inequality. [257] In other words, DGNB supports environmental and technical performance at building and district level but does not directly address the distributional issues that comes from the broader development model.

Finally, the project is closely linked to value creation through infrastructure and material flows. The construction of the metro and the development of Nordhavn have been intertwined from the beginning, both in financial and physical terms. Land sales in Nordhavn generate revenue that is used to finance the metro lines and stations serving the district, while surplus soil from metro construction and other building projects in Copenhagen is used as fill material for further reclamation in outer Nordhavn. This coupling of land development, infrastructure funding and material reuse is often presented as an example of resource-efficient and integrated planning. At the same time, it has side effects: for many years heavy truck traffic bringing soil to the area has affected the local environment, and new reclamations raise concerns about impacts on the marine ecosystem. Moreover, although Nordhavn was expected to contribute significantly to reducing the debt from earlier metro lines and to financing new ones, By & Havn still carries substantial debt. [258] The project thus illustrates how value creation through reclamation and urban development can support major infrastructure, but also how such models remain dependent on long-term borrowing and continued high land and property values.

257 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.
258 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.

Conclusion

Nordhavn is a project area with a long history of step-by-step land reclamation. For more than a century, the harbour and free port supported Copenhagen's economy through trade and industrial activities, while gradually extending the city into the Øresund. Today, the same landscape is being reused as a strategic development area, presented as a "sustainable city district of the future" and a flagship for low-carbon urbanism. [259] In parallel with this transformation, active port functions have been shifted further outward to Ydre Nordhavn, allowing inner harbour areas to be repurposed for urban development. In this sense, Nordhavn illustrates a shift from harbour-based value creation to urban development and property-based value creation on reclaimed land, while also leaving open the possibility of future adjustments in the balance between port operations and urban expansion as development pressures increase.

Nordhavn is the second project examined in this thesis. It is an important case for understanding the change in purpose from port activities to urban development through reclamation. Following Ørestad, the project introduced adjustments in both the development system and the spatial character of the urban area, reflecting lessons learned from earlier large-scale expansions.

In contrast to Ørestad, high-rise office buildings and large programs such as shopping malls were generally not preferred in Nordhavn. Instead, office spaces tend to follow a more horizontal typology. One of the most valuable aspects of the project has been the adaptation and reuse of historical and industrial references, which has helped the area develop a distinct identity.[260] Housing areas integrated with the waterfront further reinforced the water-related character of Nordhavn and contributed to a stronger overall image of the development. The adaptation of former industrial port typologies supported both the construction process and the creation of a recognizable urban identity.[261] This shift may reflect lessons learned from earlier urban expansions, particularly critiques of Ørestad, and indicates a

259 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.
260 Pagliocco, *Extended Urbanization in Tandem with Sustainability: Exploring the Nordhavn Suburb in Copenhagen, Denmark and Its Green Initiatives*.
261 Justesen, "Nordhavnen – a City District at the Water."



Figure 86: Reuse of building in the port area as office spaces. Photo taken from the top floor of the car park 'Park n Play' (photo taken by the author)

deliberate move away from large-scale, investment-driven building types toward a more liveable urban form.

The Nordhavn local plan demonstrates the strengths of a fine-grained, public-space-led approach in structuring dense urban development. The emphasis on walkability, active ground floors, and a clear hierarchy of public spaces supports everyday urban life at the human scale. At the same time, the premium waterfront context and high development standards contribute to a highly curated urban environment, raising questions about inclusivity and social diversity. While quality of urban space in Nordhavn supports the social value creation for the city, it is not as successful while protecting the equality in the area.

One important difference between Nordhavn and Ørestad concerns the economic value generated through access to the waterfront. Due to its proximity to the city centre and its extension into the Øresund Strait, housing in Nordhavn benefits from direct waterfront access, which has significantly increased land prices and, consequently, development revenues. While this value generation has supported development, it has also contributed to Nordhavn being perceived as an exclusive and luxury neighborhood within Copenhagen. In contrast, Ørestad has not experienced a comparable increase in value linked to water access.

Although social housing has been planned as a permanent component of Nordhavn, the realised share in early phases such as Århusgadekvarteret was limited to 10%, and the social housing that has been built differs noticeably in quality from other developments in the area. In later development phases, this approach has shifted, with 25% of all new housing designated as social housing in accordance with the municipal master plan (Kommuneplan), and local plans now formalising agreements between the municipality and developers on the distribution of housing types, including social and youth housing, to promote a more diverse resident population.[262] Compared with Copenhagen as a whole, where social housing (almene boliger) makes up a substantial share of the housing stock, Nordhavn currently includes only a limited amount of social housing, making its housing mix more market-oriented than the city average.

As an area constructed through successive phases of reclamation,

262 Blak Wilner, "Interview with Architect Working at 'SLETH.'"



Figure 87: Area in Nordhavn where construction is still ongoing; the road is used to access the cruise ship terminal. (photo taken by the author)

Nordhavn has largely retained hard shorelines around the reclaimed land. This condition has limited space for natural habitats while supporting dense urban activity along the waterfront.[263] While it allows for flexible and active public spaces, it leaves relatively little room for natural life. This shows that in the project ecological value creation was not prioritized as environmental values like sustainability.

In terms of sustainable value creations, ambitious goals were defined for the newly built areas, and significant efforts were made to achieve them, even if not all targets were fully realized. Especially after the first development phase, parts of Nordhavn received sustainability certifications, and infrastructure systems such as electricity and water were adapted to incorporate more sustainable solutions. [264] Although sustainability has become an important objective in contemporary urban expansion, it has also been criticized, as these technological solutions increased the housing prices and create environments that sustainability is only affordable to higher-income groups.[265] Overall, sustainability in Nordhavn appears less as a fully realised outcome and more as an ongoing process shaped by technical, economic, and spatial constraints.

At the level of everyday urban life, the spatial structure of Nordhavn, characterized by islets consisting of small clusters of housing and commercial functions with different identities, has contributed to a lively and varied environment. This structure has made the area attractive not only for Nordhavn residents but also for people living in other parts of Copenhagen.

The current development model relies on phased implementation, allowing parts of Nordhavn to become functional relatively quickly. The first neighbourhoods in Inner Nordhavn already provide housing, offices, and public waterfront spaces, while later phases remain under construction or in planning. The extension of the metro, with two stations serving Nordhavn, plays a central role in this model: it connects the district directly to the city centre, supports higher densities, and is partly financed through land value capture.[266] In addition, the reuse of surplus soil from metro construction and other projects as fill material for further reclamation demonstrates how

263 *Nordhavnen Urban Strategy*.
264 Schuelke et al., *Nordhavn: Denmark's Most Sustainable Modern Housing Development*.
265 Blok, "Urban Green Gentrification in an Unequal World of Climate Change."
266 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."

physical expansion, infrastructure financing, and material flows are deliberately interconnected.

Available financial data indicate that Nordhavn follows a land-value-driven development model in which rising property values contribute to financing major infrastructure. Between 2007 and 2014, land values increased by approximately 3.1 billion DKK, and total redevelopment revenues are estimated at around 102 billion DKK, of which about 39.4 billion DKK was allocated to metro construction, including two stations in Nordhavn.[267] Despite these revenues, the development corporation continued to rely on borrowing and carried a remaining debt of approximately 16.3 billion DKK in 2022.[268] In paper Nordhavn seems more successful than Ørestad when it comes to the revenue. Blecher raises concerns about tying public infrastructure investment too closely to real estate development. He argues that this creates pressure to build quickly and sell at high prices, which does not always align with long-term public interests. He further emphasizes the risk that financially driven development models may end up shaping the city more strongly than collectively defined urban visions.[269]

Unlike Ørestad, there are no publicly available sources that report how much revenue has been generated specifically from land sales and development in Nordhavn. Financial reporting by the responsible public development corporation aggregates revenues across multiple development areas, making it impossible to isolate Nordhavn as a separate financial unit. What is documented, however, is that major infrastructure investments, most notably the metro connection, were financed through a combination of long-term borrowing and public guarantees rather than being fully covered by local land revenues. As a result, Nordhavn follows a similar investment-led development model, in which infrastructure is delivered upfront and costs are expected to be recovered gradually through land development and market-driven value creation over time.[270] In this respect, while documentation related to Ørestad was relatively transparent in terms of design, construction, and finances, a comparable level of financial transparency is not evident in the case of Nordhavn. This suggests

267 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.
268 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."
269 Blecher, "Interview with Co-Founder of Maritime Architecture Studio 'MAST.'"
270 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.



Figure 88: Orientkaj Metro Station (photo taken by the author)

that while waterfront access has been effective in generating land value, it has also contributed to the perception of Nordhavn as an exclusive urban district.

Finally, Nordhavn brings significant economic, environmental, and social value to the city. However, there are concerns that the benefits of these value creations are concentrated among specific groups. It raises questions related to climate risk and the long-term consequences of extending the city further into the Øresund. As new neighbourhoods are built farther from the historic shoreline, they become more exposed to wind, waves, and future sea-level rise. One of the key arguments behind the proposed Lynetteholm project is to establish a new land barrier east of the city that could reduce storm surge risk and partially protect inner areas such as Nordhavn.[271] If such protective structures are not realised or are significantly delayed, Nordhavn's exposed position may become a vulnerability; if they are implemented, the physical and environmental conditions around the district will once again be reshaped through new reclamation. This uncertainty highlights how long-term climate considerations remain closely tied to future reclamation decisions rather than being fully resolved within the current development.

271 Amalie Emanuel Mørk, "City of the Anthropocene. A Case Study of Lynetteholm, Copenhagen." (Malmö University, n.d.).

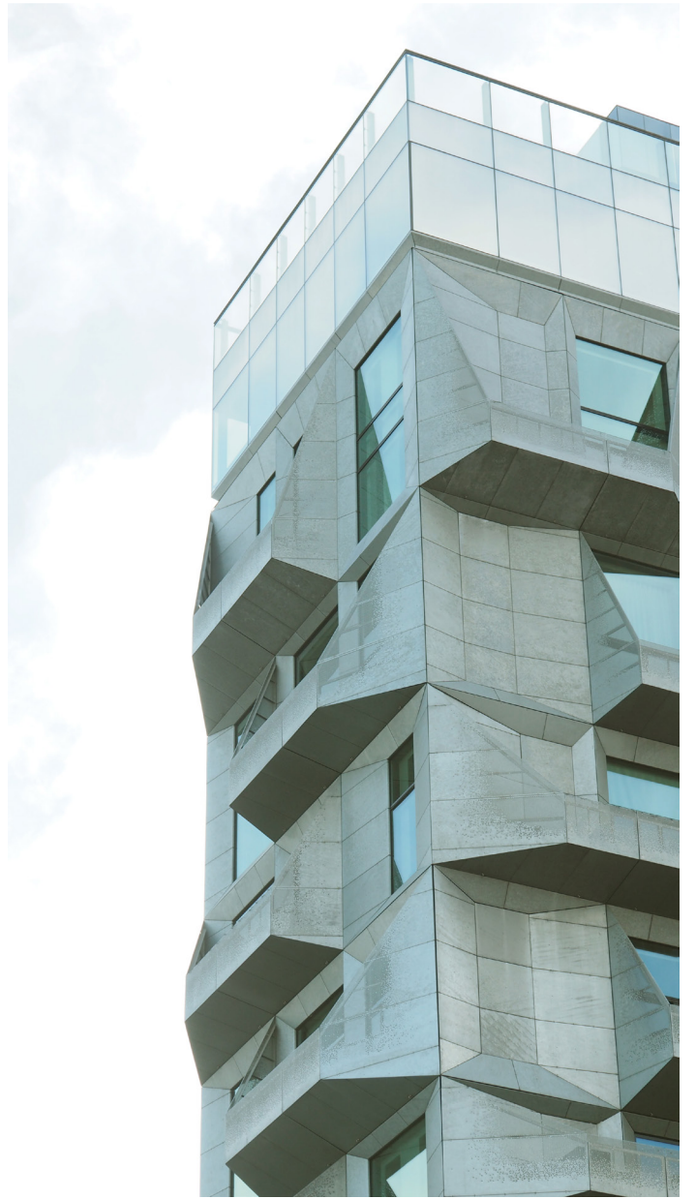
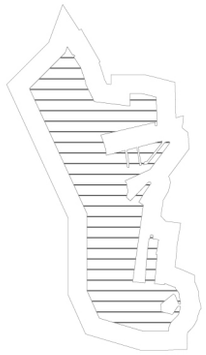
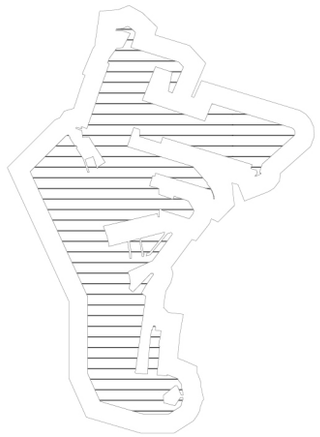
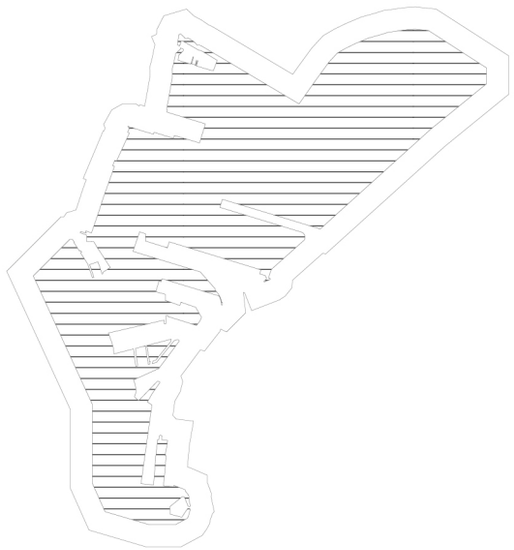


Figure 89: The Silo by COBE. Reuse of industrial silos as residential building (photo taken by the author)







MAIN AIM:
METRO
EXTENSION AND
PORT AREA
DEVELOPMENT

- Economic Value
- Historical Value
- Spatial Value
- Environmental Value
- Social Value

1880s - FIRST RECLAMATION

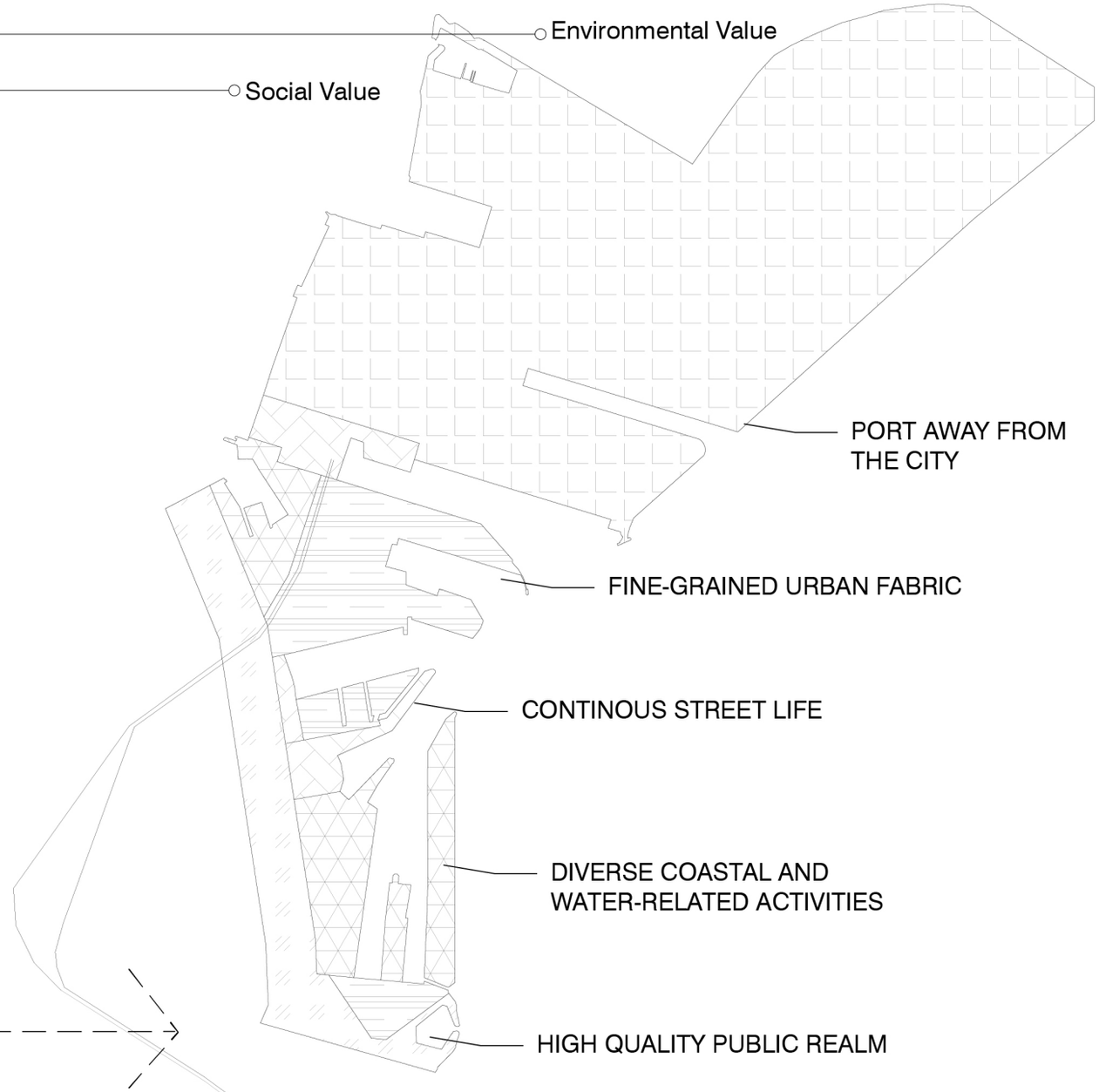
2009 - START OF CONSTRUCTION

2019 - ORIENTEN SOCIAL HOUSING COMPLETED

Social Housing Target: 25%

Higher housing prices

Public opening and participatory feedback mechanisms



- PORT AWAY FROM THE CITY
- FINE-GRAINED URBAN FABRIC
- CONTINOUS STREET LIFE
- DIVERSE COASTAL AND WATER-RELATED ACTIVITIES
- HIGH QUALITY PUBLIC REALM

SUSTAINABLE FUTURE: Lynetteholm

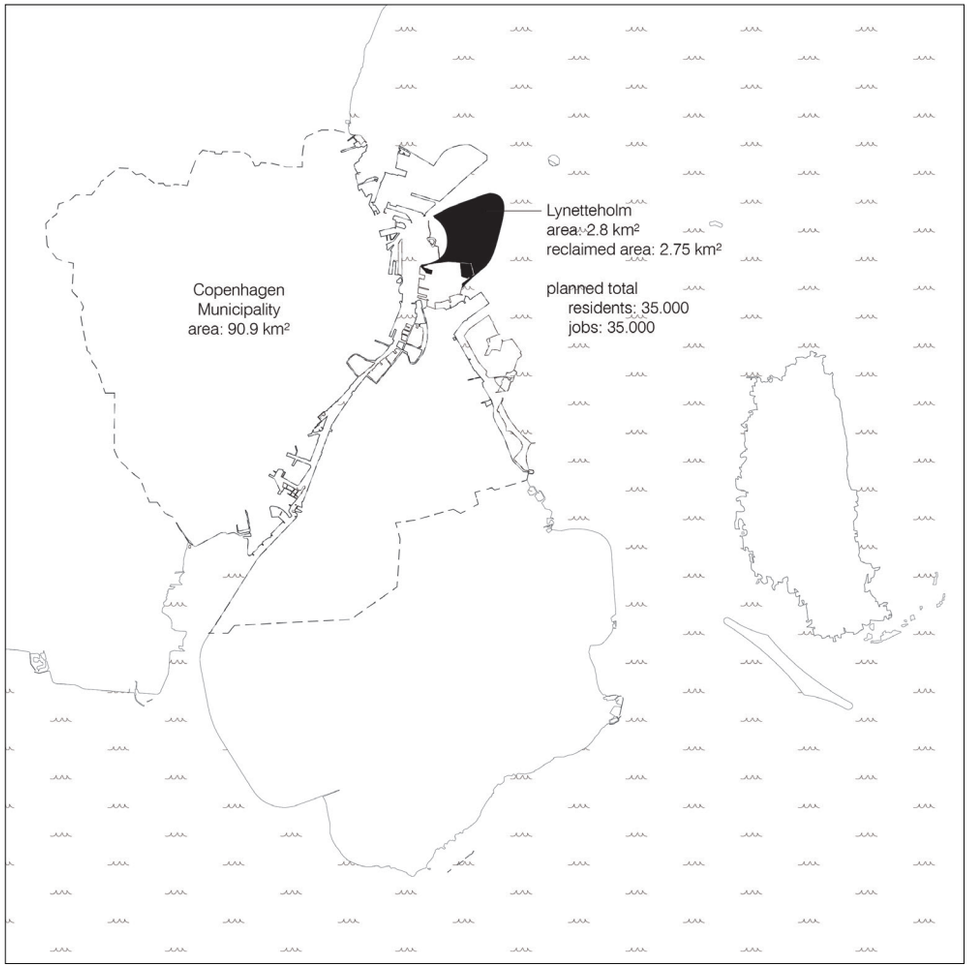


Figure 90: Lynetteholm Project Location in Copenhagen and the planned population. (Author's own map based on By&Havn Archive)

Lynetteholm is today's ongoing major land-reclamation project in Copenhagen, and it has been promoted as a future-oriented intervention, especially in relation to climate resilience and coastal protection. Even before Nordhavn was fully developed Lynetteholm emerged as the next idea just across to harbour in North of the Island of Amager. Its development and financing logic resembles Nordhavn and other mega urban development projects that rely on land-based finance. In this sense, Lynetteholm can be read as part of the continuing evolution of Copenhagen's large scale urban expansion model, where land reclamation and value creation through development are closely connected. At present, there are no official, concrete plans publicly adopted for additional large land-reclamation islands in Copenhagen beyond Lynetteholm.[272]

Even though environmental studies and impact assessments are included as a preliminary part of the project by government and development company By&Havn, Lynetteholm has gained a large and diverse group of local opponents, including environmentalists, architects, urbanists and scholars working on climate and ecology-related issues. While the project is introduced as climate resilience for the future, critics argue that the expected economic benefits and the overall development strategy still strongly depend on a high-income real estate and investment driven growth.[273] As a result, Lynetteholm has become one of the most controversial urban development proposals in Copenhagen in relation to land-based finance and land reclamation. Even in its preliminary phase, it highlights important dynamics around how these mega-projects are currently produced, justified and contested in the city.

272 BY&HAVN, "Copenhagen's Reclaimed Land and What It Is Used For," *Lynetteholm*, n.d.
273 Alkhani, "Understanding Private-Sector Engagement in Sustainable Urban Development and Delivering the Climate Agenda in Northwestern Europe—A Case Study of London and Copenhagen."

History of the Area

Located close to Copenhagen's harbour areas, the site has experienced successive phases of land reclamation that have shaped its urban development over time. The earliest land reclamation within what is now the Lynetteholm project area was Trekroner, created in 1732. Initially, it functioned as a fortification island in the Øresund Strait, but this defensive role was short-lived. In 1766, a smaller sea battery known as Lynetten was constructed on a semicircular embankment at the harbour entrance. Subsequently, the previously abandoned island of Trekroner was reconstructed and given a more permanent architectural form. During the 18th century, these two islands constituted the only reclaimed land within the present Lynetteholm project area.[274] Their strategic placement in the Øresund Strait indicates that early land reclamation in this area was primarily driven by defensive considerations.

In 1868 reclamations continued for the Refshaleøen area, which is the part of the Lynetteholm project that connects to the Amager Island. First, Copenhagen Port Authority began filling the area which is consist of sandbanks and shallow sea. Later, Burmeister & Wain's Iron Foundry established their new shipyard on this newly formed island. Over the following century, Refshaleøen gradually expanded in response to industrial activities. Expansions continued until it merged with the Lynetten island.[275]

In second half of the 19th century the trade was very important in the harbour and land area was changing constantly. In 1894 Free Port of Copenhagen is opened in the area today known as Nordhavn. Between the sea fortifications Lynetten and Trekroner, the Copenhagen Port Authority built two breakwaters. They were designed to protect the harbour entrance and to shield shipping from harsh weather conditions.[276]

At the beginning of 20th century, Copenhagen's sewage system has not yet been well developed. Much of the city's sewage flowed directly into the waters where the harbor meets the Øresund Strait, leaving the

274 BY&HAVN, "Fra befæstning til stormflodssikring (From fortification to storm-surge protection)," *Havnebygmesterens studiesamling*, n.d., accessed December 12, 2025, https://byoghavn.dk/udstilling/fra-befaestning-til-stormflodssikring/.
275 BY&HAVN, "From fortification to storm-surge protection."
276 BY&HAVN, "From fortification to storm-surge protection."

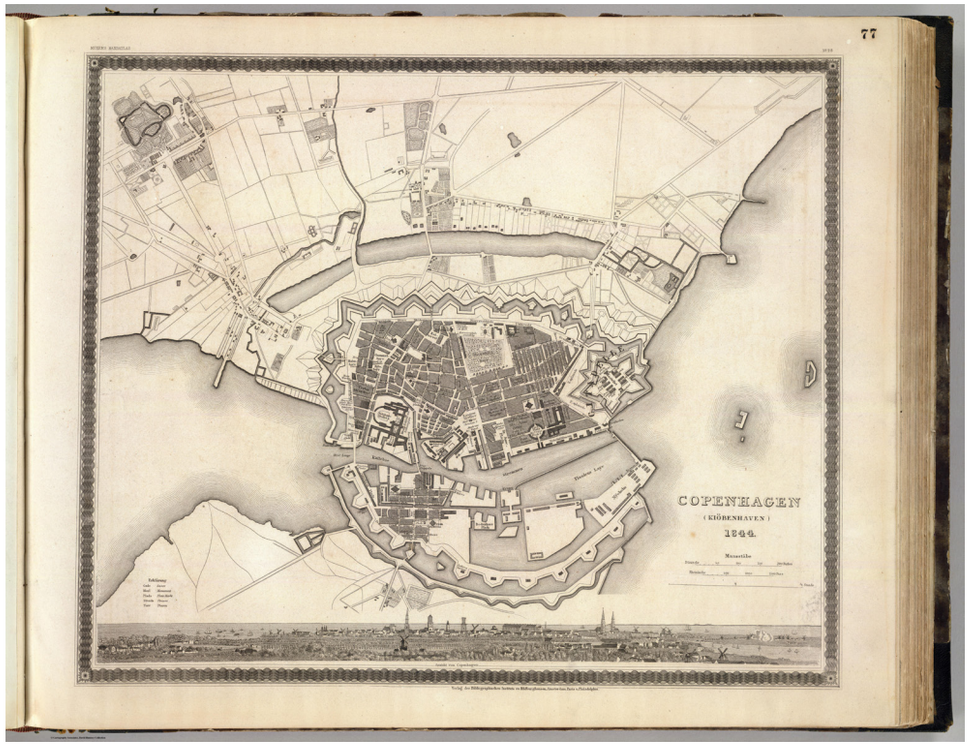


Figure 91: By the end of the 18th century, the sea fortresses Trekroner and Lynetten stand guard over the harbour entrance. Two islands on the left of the Copenhagen City Center. Map by Joseph Meyer1860. (source: David Rumsey Map Collection)

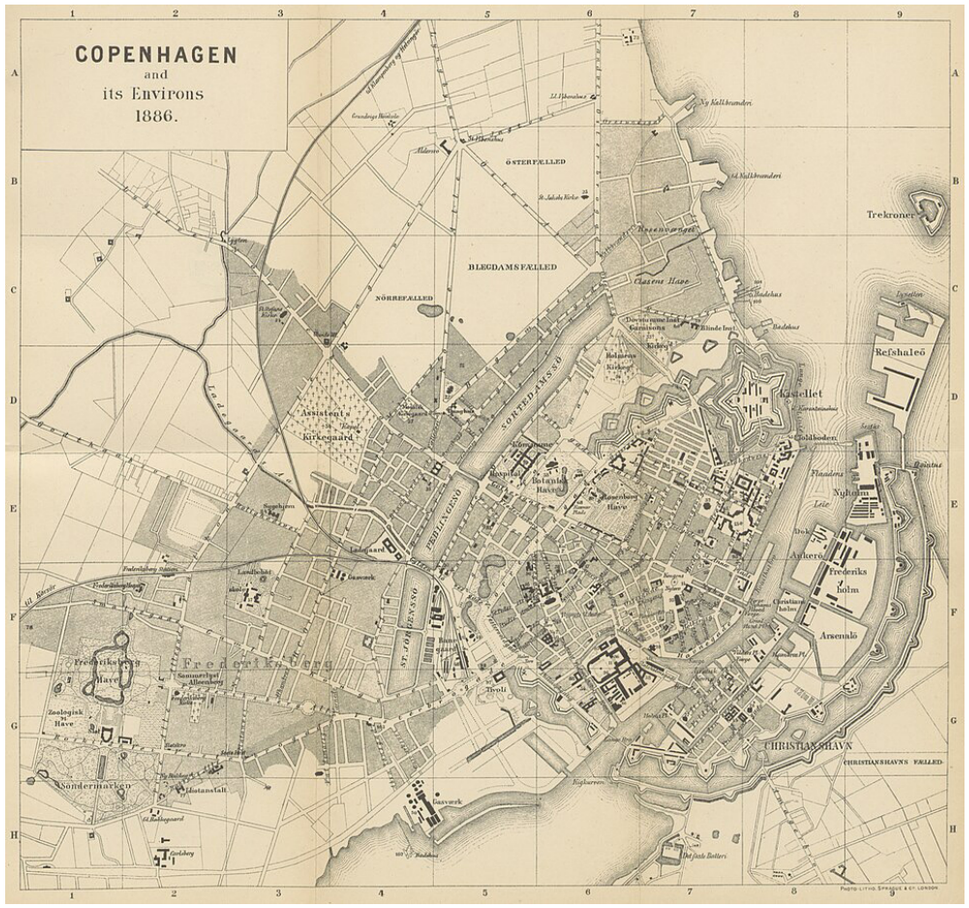


Figure 92: Land reclamations merged the Refshaleøen and the sea fortification Lynetten together. (source: British Library)

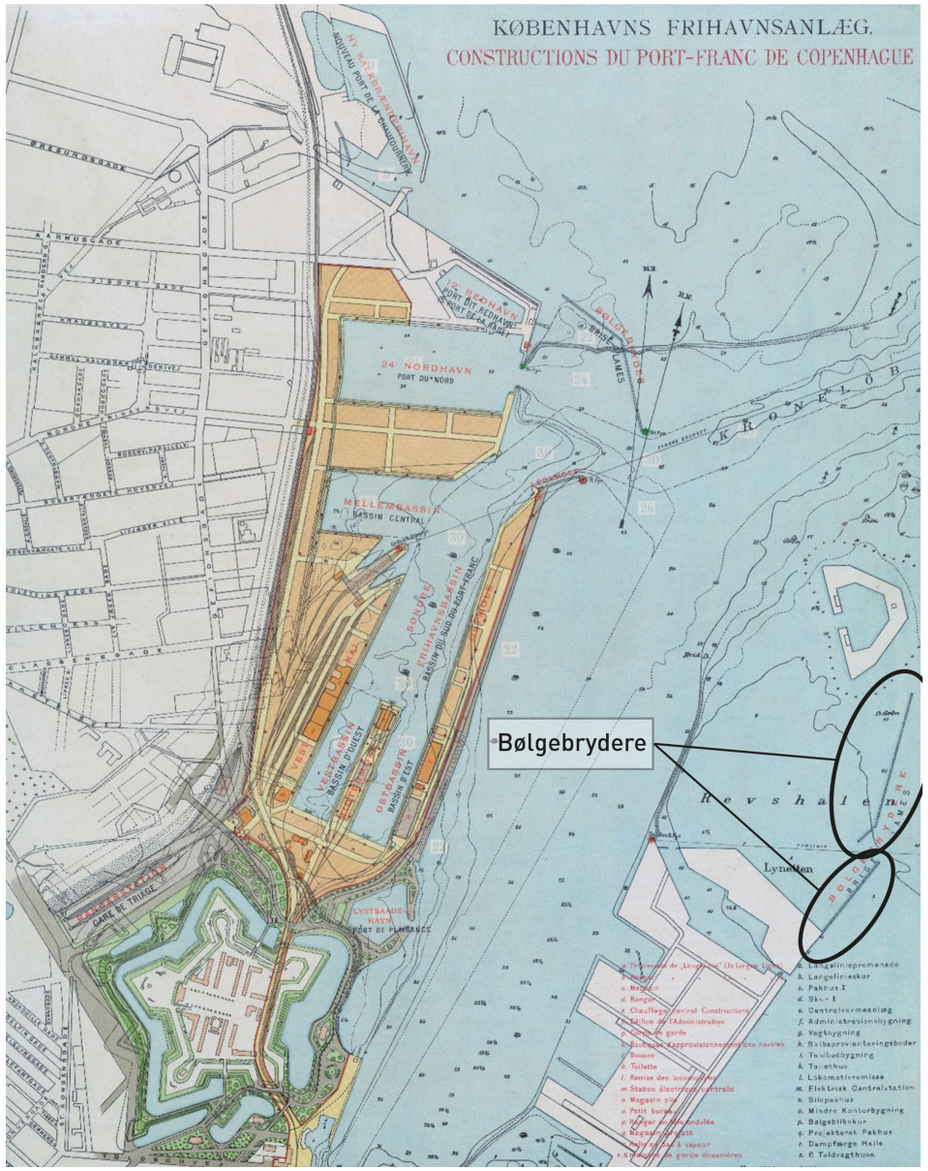


Figure 93: The stone embraces protecting the harbour entrance from the waves. (source: By&Havn Archive)

channel visibly murky and pungent. This foul-smelling, brown water was unfortunately one of the first sights to greet air visitors as they approached the capital. To address these environmental issues, a construction project was launched in 1973 to establish a new wastewater treatment plant at Lynetten.[277] This required extensive land reclamation to accommodate this facility. Over the years, the plant played an important role in improving water quality and supporting Copenhagen's turn to a "blue harbour".[278]

As a very important area through the history for military force and port activities, it had significant changes constantly with land reclamation. While Burmeister & Wain occupied the site for a brief period, the area remained primarily under municipal jurisdiction until the 21st century, when control was transferred to By & Havn following its establishment. In 2022 By&Havn began constructing the new peninsula for the storm surge plan of Copenhagen.[279] The idea of storm surge protection was also used in the same area in the history for the protection of the new port.

The planner of the project Arkitema explains the long tradition of land reclamations in Copenhagen, and it creates a connection with the history of the Copenhagen to use reclamation as a defence mechanism against dangers like enemies or in this century from climate change. They explain the connection as:

"*The main concept and design of Lynetteholm build on the need for a new so-called fortification of Copenhagen. For centuries, the Danish capital has built defence structures around the city to keep enemies out, and the islet will be the third city ring, protecting the city against climate change.*"[280]

277 *Lynetteholm - Copenhagen's MEGAPROJECT Folly*, produced by Mikael Colville-Andersen, Coolville, 2021, Youtube Video, https://www.youtube.com/watch?v=K4icpF0S5BM&t=1s.
278 BY&HAVN, "From fortification to storm-surge protection."
279 "Copenhagen Storm Surge Plan 2021," n.d.
280 Arkitema, "Lynetteholm: Establishment of New Island East of Copenhagen," Arkitema, accessed December 13, 2025, https://www.arkitema.com/.



Figure 94: In the end of the 20th centruy, Copenhagen's wastewater treatment plant, Lynetten, is constructed. Google Earth view from 2000 (source: Google Earth)

Project Motivations

The project is overall presented as having four main benefits for the city. The main motivation behind Lynetteholm was first introduced as part of Copenhagen's storm-surge protection planning. Even though the risk of storm surge is often seen as greatest from the south, the risk coming from the north is described as increasing, and it is considered more fragile because of the proximity to the dense city centre and because parts of the reclaimed waterfront areas are already close to sea level within the existing urban environment.[281] According to the Copenhagen Risk Management Plan (2021), sea level rise is accelerating, and a 70–100 cm rise is expected by 2100. Copenhagen's relatively flat landscape means that this could affect large areas. In the last serious storm in 2013, wind forced a large amount of water into Copenhagen harbour, raising water levels to 1.68 metres.[282]

Second motivation is the clear housing pressure in Copenhagen. By 2050, the city expects around 160,000 additional residents. The project argues that Lynetteholm will provide more space for urban growth and help prevent housing prices from rising even further. When fully developed, Lynetteholm is expected to include around 35,000 new residents. While the amount is similar to the other reclamation projects mentioned, the required housing for the future is much more than what Lynetteholm can provide.

As a third aim, similar to the other two projects, Lynetteholm is also based on a land-based finance model, where land sales are used to fund new infrastructure. Land sales on Lynetteholm are expected to bring in around 17–23 billion DKK, and this revenue is planned to support construction of a new metro line and an Eastern Ring Road around the city. The aim is to lead traffic around the city centre rather than through it.

As a final motivation, metro construction in Copenhagen produces large amounts of surplus soil that needs to be stored or reused somewhere in the city. Lynetteholm is planned to be built using excavated material from metro construction, which is presented as a more sustainable approach for

281 *LYNETTEHOLM Fact Sheet -Climate Proofing and Coastal Landscape* (BY&HAVN, n.d.).
282 Københavns Kommune and Køge Bugt, *Risikostyringsplan 2021 (Risk Management Plan 2021)* (n.d.).



Figure 95: Feasibility study of storm surge protection around Copenhagen (source: By&Havn Archive)

handling surplus material.[283]

In addition, even though it is often kept separate from the Lynetteholm urban development, the ring road through Nordhavn and Lynetteholm is developing in parallel. This infrastructure is justified as a means to enhance accessibility and support wider traffic management.[284] However, the planned new ring road will likely influence traffic patterns, not only in Lynetteholm area but throughout Copenhagen, potentially incentivizing private vehicle use especially in the new development areas.

283 Transport og Boligministeriet and Københavns Kommune, "Om Lynetteholm," n.d.
284 Transport og Boligministeriet and Københavns Kommune / City of Copenhagen (CPH), "Metro Til Lynetteholm," n.d.

Masterplan

As the project remains in a preliminary phase, the masterplan for the Lynetteholm area has not yet been finalized and is expected to be completed by 2030. The first local development plans for Lynetteholm are anticipated in the late 2030s.[285]

The first ideas about the new reclaimed land have been published around 2018. While the first visuals published by the government press for the project showed different shape and less land area, the final shape which reclamation started was enlarged.[286] After the presentation in 2018 for principal agreement stage, the footprint increased from the 190 hectares which was mentioned at the press conference to 282 hectares with the peninsula projecting significantly further into the Oresund Strait.[287]

For the reclamation 80 million tons of soil will be used to give the shape of the project. The amount of reclaimed area is one of the highest in the history of Copenhagen. The sewage treatment facility that has operated in the area since the 1970s will be relocated, with an estimated relocation cost of 10 million DKK.[288] The new location for the sewage plant is not yet decided.

While the island is an urban development project, at the same time it acts as a storm-surge barrier protecting Copenhagen from north.[289] Even though it gave significant importance to the natural area and storm protection, the project was still discussed in an independent citizens' assembly. This was a short-term deliberative forum where a broadly representative group of residents meets to learn about an issue and give advisory recommendations. During this process, participants were asked to state their preferences on the scale of Lynetteholm, even though the law enabling the project had already been passed: 63% preferred a much smaller solution, while 37% supported the current large island, but with a clear preference for

285 BY&HAVN, *By & Havns Modtagelse Af Borgersamlingens Anbefalinger* (2023).
286 "Ny bydel skyder op i Øresund," October 5, 2018, https://regeringen.dk/nyheder/2018/regeringen-og-koebenhavns-kommune-vil-bygge-en-helt-ny-bydel/.
287 Christina Ihler Madsen and Frederik Roland Sandby, "Why Lynetteholm must be stopped!," Klimabevægelsen i Danmark, September 5, 2023, https://www.klimabevaegelsen.dk/nyhedsblog/lynetteholm-must-be-stopped.
288 *Lynetteholm - Copenhagen's MEGAPROJECT Folly*.
289 Transport og Boligministeriet and Københavns Kommune, "Om Lynetteholm."



Figure 96: Lynetteholm Masterplan by Arkitema and Third Nature (source: thirdnaturearchitects.com)

minimal car traffic. [290]

The overall form and scale of the island, together with the landscape design of the coastal storm surge protection area, have been developed by Arkitema, a Copenhagen-based architecture and urban design practice with extensive experience in large-scale urban development and climate adaptation projects.[291] To control the storm surge, new island will be extended almost until the other reclaimed island Nordhavn. Between the Lynetteholm and Nordhavn there will be only distance enough for a ship-caisson. This space also can be closed in case of a storm surge.[292]

Compared the large reclaimed area, the project only planned to accommodate approximately 35,000 residents and 35,000 jobs, in line with the scale of comparable other mentioned urban development projects in Copenhagen. The difference in this project is that reclaimed area do not have any other purposes like port activities, its significant amount of the area is planned to be kept as a natural space.

The coastal landscape surrounding the northern side of the Lynetteholm will have different types of coastlines specially compared to the last project Nordhavn. Flat landscape with the pebble and sand beaches will take the some part of the energy of the waves coming through Copenhagen center. Differently from Nordhavn, also flat coast will let the people be closer to the water. In Lynetteholm coastal landscape planned will be approximately 60 hectares out of the total 275 hectares for Lynetteholm. [293]

The infrastructure of the new island also was an important topic in the preliminary studies. The planning of metro infrastructure for Lynetteholm is still not decided, but a new solution is expected to help relieve overcrowding on the existing M1/M2 lines by around 2035. In the pre-feasibility study, three main options are discussed. The first is an extension of the existing M4 line from Orientkaj, adding six stations and continuing via Refshaleøen to Kløverparken, which would connect Nordhavn and Lynetteholm directly. This is presented as the cheapest option, estimated at around 5–7 billion DKK, but it is generally not considered a full solution to the wider capacity

290 Byens Liv, “Lynetteholm bør have minimal biltrafik, små grunde og grønt overalt,” Text, Magasinet KBH, October 5, 2023, https://www.magasinetkbh.dk/indhold/lynetteholm-borgersamling-slutrapport.
291 Arkitema, “Lynetteholm: Establishment of New Island East of Copenhagen.”
292 *LYNETTEHOLM Fact Sheet -Climate Proofing and Coastal Landscape*.
293 *LYNETTEHOLM Fact Sheet -Climate Proofing and Coastal Landscape*.

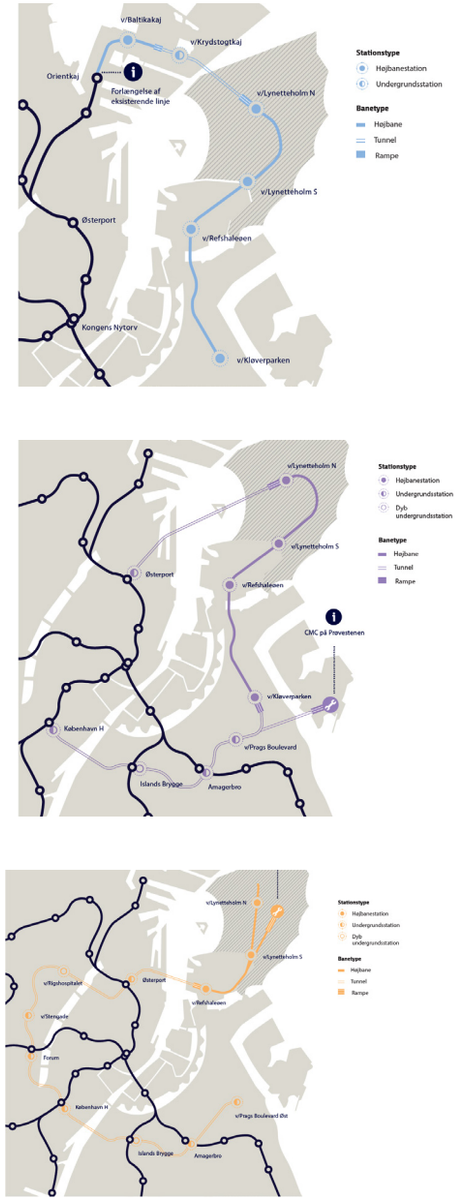


Figure 97: Option 1, 2 and 3 for the new metro construction (source: By&Havn Archive)

problem. The other two options are variants of a new line, M5: one would connect Lynetteholm directly to Østerport and København H, with an estimated cost of about 19 billion DKK; the other proposes a larger network that also serves areas such as inner Nørrebro and Rigshospitalet, which currently lack metro access despite high levels of housing and employment. This larger option could include up to 11 stations and five interchanges with other lines and is the most expensive, estimated at around 20 billion DKK, but it would also improve accessibility the most by 2035. While around 27,000 residents, jobs, and study places are currently located close to a metro station in the area, this figure is expected to rise to approximately 78,000 after the project.[294]

Pre-feasibility studies have also looked at connecting Lynetteholm to the proposed Eastern Ring Road (Østlig Ringvej), a road tunnel project that is presented as a way to reduce traffic in central Copenhagen, save up to 2.5 million hours of travel time per year across the region, and improve access to the commercial harbour, the airport, and the Øresund Bridge. Two main corridors are assessed, with nine variants in total: Corridor East runs from Nordhavn via Lynetteholm along the east coast of Amager to the Øresund motorway near the airport (five variants, approx. 22–25 billion DKK), while Corridor West runs from Nordhavn via Lynetteholm and Refshaleøen and continues under parts of Amager to the Amager motorway (four variants, approx. 26–31 billion DKK). The studies suggest the corridor choice does not differ greatly in basic traffic routing, and that the main differences relate to tolling and traffic-calming impacts. [295] Reports also states that 15% of the island will be car parking. The car road will cost 25 billion DKK.

Both ring road and metro projects will give a city new solutions for traffic. Lynetteholm as an urban development project seem as a main source for the development of these infrastructure projects. Although the infrastructure projects focus on the Lynetteholm, together with the cost of reclamation, Lynetteholm will not be the only income to develop all the major infrastructure projects.

294 Transport og Boligministeriet and Københavns Kommune / City of Copenhagen (CPH), "Metro Til Lynetteholm."
295 Transport og Boligministeriet and Københavns Kommune, "Østlig Ringvej," n.d.

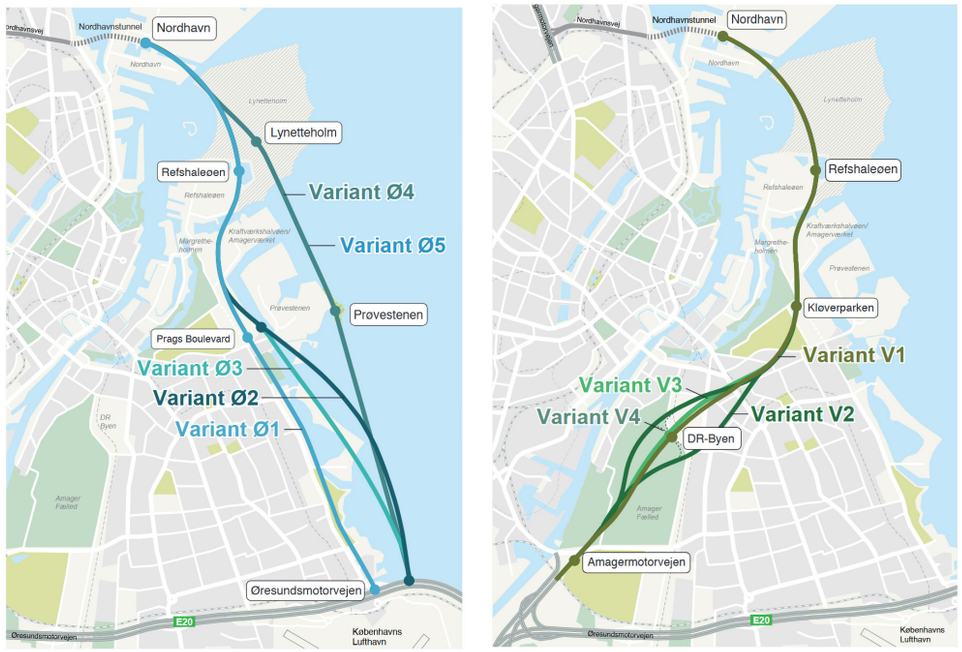


Figure 98: Corridor East and Wes Variations (source: By&Havn Archive)

Development Model

The Lynetteholm project formally began with the drafting of a political agreement on the construction of a new artificial island in October 2018. This draft stated that Lynetteholm contributes three main problems in the city. These are insufficient housing, traffic density and climate risks. According to this agreement Lynetteholm will have non-profit housings, improve the infrastructure in the city with new metro stops and tunnel roads and work as a storm surge protection. The finance planned through property sales, land sales, metro service payments and toll payments from the road.[296]

After the parliament approval, next step for Lynetteholm project was the act passed by the Danish Parliament in 4 June 2021. The act stated that Lynetteholm will be constructed between Refshaleøen and Nordhavn with a coastal landscape facing the Øresund Strait. This will help protect Copenhagen from storm surge from the north.[297]

During the approval process, analyses conducted by the City of Copenhagen argued that external storm-surge protection is socially preferable to constructing seawalls along all of the city's quaysides. According to these assessments, reliance on quay-side protection over the next 100 years would require seawalls of approximately 4.3 metres in height in the area planned for Lynetteholm. The project is therefore presented as an alternative to a city-wide seawall solution that would otherwise be necessary. The same calculations estimate that, without adequate preparation for storm surges, Copenhagen could face direct damages of approximately 7–12 billion DKK over the next century for the City of Copenhagen alone, excluding impacts on neighbouring municipalities and indirect economic losses. Finally, the report links this risk-management approach to Copenhagen's broader development model, suggesting that financing storm-surge protection through land sales to private investors could create a self-financing system and reduce reliance on general taxation.[298]

Later, By & Havn and Ramboll published a report on Lynetteholm

296 Regeringen, *Principaftale Om Anlæg Af Lynetteholmen*, Bilag 1 (n.d.).
297 *LYNETTEHOLM Fact Sheet -Climate Proofing and Coastal Landscape*.
298 *LYNETTEHOLM Fact Sheet -Climate Proofing and Coastal Landscape*.

as part of the public hearing process. The report discusses the project's potential impacts from several angles and clarifies key issues such as the land reclamation approach, the use of surplus soil, access routes, and storm-surge protection. It presents Lynetteholm as serving multiple objectives: contributing to climate protection, creating a new area for urban development, providing a destination for surplus soil from construction activities in the city, and supporting the financing of infrastructure investments such as metro extensions.[299]

After the public hearing, in 2021 an independent citizens' assembly was created by City of Copenhagen, the Ministry of Transport and By&Havn. This was the important step to keep the citizen involvement in the city. Members for this assembly were chosen via Statistics Denmark. Around 60 chosen members represented Copenhagen and surrounding municipalities' locals and studied about a year for the recommendation report for the Lynetteholm project. The core question to answer was "*How can Lynetteholm become a district that supports sustainable development for people, nature and environment?*". [300]

At the first and second phase of the meetings participants prepared a recommendation list consist of 8 subjects. Later By&Havn answered all these recommendations according to their feasibility or whether they will pass this to other authorities/politicians to their examination.

The report outlines a broad set of recommendations addressing governance, sustainability, spatial quality, social inclusion, and mobility in the development of Lynetteholm. A recurring concern among participants was the need for stronger and more permanent forms of public oversight. Suggestions included the establishment of a permanent citizens' council, an independent expert council, and a strong local residents' council. By & Havn responded that it already organises local residents' councils in other development areas, such as Ørestad, and confirmed that a similar council would be established for Lynetteholm. At the same time, it stated that the creation of a permanent citizens' council or an independent expert council would exceed its mandate and that these proposals would therefore be passed on to the relevant political authorities. Environmental and climate-related objectives formed another central theme in the recommendations. Participants emphasised that Lynetteholm should be both climate- and energy-neutral, an ambition that By & Havn fully supported. In this context, the developer highlighted its intention to test and apply "best available techniques" as part of the project. Closely related to this, residents expressed a strong desire for a development that is closely connected to nature, calling for extensive urban greenery, green corridors, areas of wild nature, an accessible coastline, and opportunities for outdoor activities. By & Havn agreed with this overall vision and noted that many of these elements were already incorporated into the planning process. However, it expressed caution regarding proposals for canals running through the island, arguing that such features must be carefully balanced against Lynetteholm's primary function as storm-surge protection. This suggests that Lynetteholm is likely to adopt a different spatial structure from Nordhavn, particularly in terms of water and canal systems.

Social considerations were also prominent in the discussions, particularly in relation to affordable housing, recreation, and the economic model of the project. By & Havn confirmed that the statutory requirement of 25% affordable housing would apply to Lynetteholm. At the same time, it emphasised that decisions regarding economic structure and infrastructure financing are made by the state and the municipality. Unlike earlier development projects, affordable housing in Lynetteholm is planned to be constructed only after 75% of the non-affordable housing has been completed and has generated sufficient revenue, a process expected to take approximately 50 years. In this model, income from market-rate housing is intended to finance the later delivery of affordable housing.[301]

Participants also called for a more incremental, small-scale development approach guided by citizen-defined criteria. By & Havn expressed support for this direction, referring to efforts to reduce visual impacts and to the use of non-price criteria in land allocation. In this context, non-price criteria refer to evaluation methods that go beyond the highest financial bid and include aspects such as architectural quality, environmental performance, public-space provision, affordable housing commitments, and mobility solutions.

Further recommendations focused on social diversity and everyday

299 Ramboll and By&Havn, *Lynetteholm Miljøkonsekvensrapport* (2020).
300 BY&HAVN, *By & Havns Modtagelse Af Borgersamlingens Anbefalinger*.
301 Ramboll and By&Havn, *Lynetteholm Miljøkonsekvensrapport*.



Figure 99: Corridor East and Wes Variations (source: By&Havn Archive)

livability, including an emphasis on young residents, residence obligations to ensure that homes are actively lived in, and a mix of ownership models. While By & Havn acknowledged the importance of diversity, it noted that certain obligations fall within the responsibility of the municipality. It also pointed out that, as the land is owned by By & Havn, land sales must be conducted at market prices, which limits flexibility in providing lower-cost housing options. Related discussions highlighted the need for flexible housing types that can accommodate different life stages and allow residents to move within the same area as their needs change. By & Havn described this as an interesting approach and stated that such possibilities would be explored in future developments.

Mobility and transport formed another key topic. Participants argued for strong collective transport solutions and opposed the construction of a motorway on Lynetteholm. By & Havn supported the emphasis on public transport but clarified that parking standards and major road infrastructure are political decisions determined by the state and the municipality. It also noted that a district of this scale would inevitably require some level of vehicular access for services such as waste collection, deliveries, and emergency response. [302] It is clear that the necessity for some road infrastructure is required, the ongoing motorway project is passing by the Lynetteholm. Even though it is a tunnel motorway, this will effect the car traffic in the area very importantly.

The construction of the island body started in 2022. Urban development planned to start around 2035 and full build out is expected to finish around 2070.[303] Estimated cost for the island will be 25 billion DKK, without the metro construction. From the land and property sales, estimated revenue is between 12-23 billion DKK, which will not be enough for the overall development of the island.

302 BY&HAVN, *By & Havns Modtagelse Af Borgersamlingens Anbefalinger*.
303 . Transport og Boligministeriet and Københavns Kommune, “Om Lynetteholm.”

Forms of Value Creations

While the overall approach for the project can give an insight for the value creations in this project, the value that will be created for the future urban life for Lynetteholm is not clear yet since the urban environments is not designed. Before planning, the reports highlight the importance of value creation in relation to the area's transportation characteristics. The presence of highways and a significant amount of car parking will affect the urban character of Lynetteholm. Although the highway planned as tunnels, the new road infrastructures will affect the user preferences and it might be reason for increase in traffic in Lynetteholm.[304]

In addition, the project is not planned or assessed as a single, integrated development. Instead, land reclamation, urban development, metro construction, and highway infrastructure are treated as separate phases and projects.[305] As a result, the phased development effects the overall understanding of value creation in the area, and their combined impacts are not evaluated as a whole but are instead assessed individually across different reports.

The ongoing project since the beginning of the process having high number of contradictions differently from two other project examined. Lawyers, NGOs, citizens, scientists, Swedish authorities and the Danish Environmental Association argue the project itself is inappropriate and contrary to EU environmental directives. Their main concern is that environmental impacts are being downplayed to secure political approval; by the time impacts from infrastructure and urbanisation are assessed, those steps will already have passed parliament.[306] Here, we can see that economic value creation is prioritized over social and environmental concerns.

The highway planned to support the new developed areas in the city and help with the traffic is having similarities with the urban highway proj-

304 *Lynetteholm - Copenhagen's MEGAPROJECT Folly*.
305 Ihler Madsen and Roland Sandby, "Why Lynetteholm must be stopped!"
306 B Schneider, "Klimabevægelsen svarer By & Havn: Udskyd Lynetteholm et år, så vi kan få undersøgt alt inden anlægsstart," April 13, 2021, https://byrummonitor.dk/nyheder/; Danmarks Naturfredningsforening, "Lynetteholmen," Danmarks Naturfredningsforening, accessed December 12, 2025, https://dn.dk/vi-kaemper-for/et-levende-hav/lynetteholmen/.



Figure 100: Reclamation process of Lynetteholm Island (source: By&Havn Archive)

ects in the history that is planned to pass from city centre of Copenhagen and never realised fortunately. Research shows that building more roads does not solve congestion and instead induces more car traffic. The project heavily prioritises new road infrastructure, and the unsustainable aspects of this choice are not addressed.[307]

Here in the project, the way the social value created is also not supported. The social housings are important part of the mega urban developments since they aim to solve housing shortages for all group of people. Lynetteholm aimed to planned differently from two other projects that we mentioned previously. Since the social housing projects always bring economic problems in the land-based development model because the land price kept the same both for normal housing and social housing. Also in these projects social housings will be the last one developed, that can even be built after 2070. This shows that project itself does not have chance the solve housing problem next 50 years.

Delay on the social housing. Urban experts argue that financing a small share of affordable housing via many high-priced units increases socio-economic imbalance and does not secure diversity in the long run.[308] At the same time, Lynetteholm is planned to be financed entirely through municipal loans with variable interest rates and without guaranteed instalment schedules, placing long-term financial responsibility on the municipality. [309] The loan system also creates concerns about economic values of the new reclamation.

As a one of the main value creation environmentally in Lynetteholm for Copenhagen, storm surge is worked on deeply in the process of the project. While the climate change effects are highly evaluated for whole Copenhagen, when it comes to take action, we only see the Lynetteholm project. Climate protection from the south is not on the municipal agenda, raising doubts about whether Lynetteholm's location is optimal for flood defence. There are some questions whether Lynetteholm is the best solution at all, given that rising waters cross municipal borders and the coastline stretches well beyond Copenhagen's jurisdiction; a more regional, cross-municipal strategy might be environmentally and long-term more

307 Mørk, "City of the Anthropocene."
308 *Lynetteholm - Copenhagen's MEGAPROJECT Folly*.
309 Mørk, "City of the Anthropocene."

appropriate.[310] It creates questions about the aim of the project since the only part they wanted to do storm surge plan is Lynetteholm while other side of Copenhagen will be affected with higher risk.

Subsequent reports on Lynetteholm indicate a narrowing of the project's political scope. The principal agreement explicitly states that climate-protective initiatives extending beyond the construction of Lynetteholm itself fall outside the agreement. [311] This limitation weakens the project's broader ambition to support sustainable urban development. While Lynetteholm was initially presented as a key measure to protect Copenhagen from storm surges, this wider protective role appears to be gradually detached from the project's development process and planning framework.

Although the project has received broad political support, it has also faced opposition from environmental organizations and sections of the public. This opposition has included public demonstrations, most notably during the official launch of construction in January 2022, when protesters confronted Copenhagen's mayor, the transport minister, and the CEO of the project developer By & Havn at the symbolic "first shovel" ceremony. Despite these protests, the project has continued to progress according to plan.[312]

The public Facebook group "Stop Lynetteholm!" provides insight into public opinion on the project and documents the efforts of residents and activists who have raised concerns about the future of the area. Discussions within the group highlight recurring worries related to contamination risks, environmental degradation, and a perceived lack of transparency in the planning process.[313]

The most significant opposition to the Lynetteholm project has come from environmental organisations and independent experts concerned about its ecological impacts especially related to saltwater balance between seas. [314] In 2021, Klimabevægelsen i Danmark submitted a petition to the European Parliament, arguing that Danish authorities had failed to

310 COWI, *Stormflod Og Havvandsstigninger* (2018).
311 Mørk, "City of the Anthropocene."
312 "A Bold Project to Mitigate Sea Level Rise: Lynetteholm, Copenhagen, Denmark," BLOG, *Marine Construction Magazine*, n.d.
313 "STOP Lynetteholm!," Social Media Platform, Facebook, accessed January 1, 2026, https://www.facebook.com/groups/stoplynetteholm/.
314 Ihler Madsen and Roland Sandby, "Why Lynetteholm must be stopped!"



Figure 101: Posters against Lynetteholm (source: Instagram)

carry out an adequate environmental impact assessment. The European Commission later closed the case.[315]

Much of the criticism relates to Lynetteholm's location in the Øresund Strait, a narrow and ecologically sensitive waterway shared by Denmark and Sweden that connects the North Sea and the Baltic Sea and plays a key role in regulating water and salt exchange. The planned island is positioned near the Kongedyb, one of the few deep channels supplying saltwater to the Baltic Sea, raising concerns that construction could permanently obstruct this flow.[316] While Danish political authorities have argued that the reduction in water and salt exchange will be limited to approximately 0.25%, several experts have questioned these estimates and warned that even small reductions may lead to cumulative effects over time.

From an international perspective, Swedish authorities participated in the assessment process and requested an independent review of the hydrodynamic studies, reflecting concerns about potential transboundary impacts. Although By & Havn has stated that the issue has been addressed to Sweden's satisfaction, the project proceeded despite remaining uncertainty.[317] Hydrodynamic studies estimate a reduction in water and salt exchange of approximately 0.2–0.25%, with uncertainty allowing for impacts of up to 0.5%.[318]Although these changes are numerically small, they depart from Denmark's earlier practice of requiring no measurable alteration to Baltic Sea water flow.

Despite these conflicts project continued without detention.[319] This outcome suggests that environmental risk and uncertainty are accepted as necessary trade-offs for land reclamation, urban development, and future real-estate value creation. Public environmental costs are absorbed at the regional scale, while the primary economic value generated by land development is captured locally, revealing an uneven distribution of risk and benefit within the Lynetteholm project.

315 *European Parliment Petition for Impact of Artificial Island Lynetteholm* (2024).
316 Ihler Madsen and Roland Sandby, "Why Lynetteholm must be stopped!"
317 Nugent, "How an Artificial Island in Denmark Became One of Europe's Most Controversial Climate Projects."
318 Deltares, *Independent Review of the Hydrodynamic Studies on the Impact of Lynetteholm on Exchange of Water and Salt through Øresund* (2022).
319 Coalition Clean Baltic et al., *Denmark's Change of Practice on Permitted Changes to the Flow of Water into the Baltic Sea and the Lack of Espoo Hearings on the Construction of the Lynetteholm Project* (2022).

Conclusion

Lynetteholm, as the final project examined in this thesis, represents a similarly structured urban expansion, yet one that has attracted significant public controversy from the earliest stages of its proposal. While the project follows a development logic comparable to earlier cases, combining urban expansion with major infrastructure investment, it has been framed primarily through a different narrative. The project has been presented as a response to storm surge risk and long-term climate adaptation.[320] Although Copenhagen is widely recognized as vulnerable to future climate impacts, this framing has been met with scepticism among professionals and local residents, many of whom question whether the project effectively creates environmental value and addresses these risks or whether it primarily advances economic urban development objectives.

The Lynetteholm project reinforces the thesis that land reclamation is not only a byproduct of development, but an integral component designed into the project from its inception. It is the first project that main value created by the environmental aims for the city. In contrast to earlier reclaimed areas such as Nordhavn, the newly created land in Lynetteholm is characterized by short shorelines and designed water-edge landscapes, intended to enhance proximity to natural elements and to function as protective boundaries against future storm surges from the Øresund Strait.[321] While this approach may improve the quality of natural and recreational spaces, the creation of reclaimed land also constitutes a substantial cost within the overall project.

Regarding land reclamation and the development of new islands, Maarbjerg states that while this model has previously been used to support metro expansion, it carries significant risk. He argues that the costs of land reclamation and development are increasing, while expected financial returns are uncertain. Linking critical public infrastructure to volatile land markets, he suggests, places the city in a vulnerable position. From his perspective, public infrastructure should instead be financed through more transparent and stable funding mechanisms.[322]

Environmental groups have raised concerns that the impact assessments related to Lynetteholm address only limited portions of the project. According to critics, the government divided the project into smaller components, a strategy often referred to as the “salami method,” resulting in environmental and climate reports that focus primarily on the construction of an empty peninsula rather than the full scope of the infrastructure and urban development envisioned by political actors.[323] This approach has influenced the understanding of real value creation. These assessments produced by key stakeholders, including development companies such as By & Havn and consulting firms such as Ramboll.[324]

In addition, the planned relocation of the wastewater treatment plant introduces further uncertainty regarding the project’s overall budget and its implications for the city’s infrastructure system.[325] Alongside financial concerns, strong opposition has emerged in relation to the project’s potential impact on the Øresund Strait. Critics argue that the new reclaimed landmass may disrupt water flows and affect the strait’s salt balance, a concern that has become one of the central points of controversy surrounding Lynetteholm.

Another significant value creation here was related to infrastructure. One of the aspects of the project is the proposed ring road and tunnel crossing Lynetteholm. This additional infrastructure component differentiates the project from earlier urban extensions and has led some observers to question its compatibility with Copenhagen’s broader urban and mobility values. While previous projects clearly prioritized metro expansion and non-motorized transport, reports indicate that the costs associated with Lynetteholm’s reclamation and road infrastructure are expected to exceed projected revenues from land sales and construction.[326]

Given its location east of Nordhavn along the Øresund Strait, it is also likely that housing development in Lynetteholm will follow a similar pattern of high land values and expensive residential units, comparable to those

320 *LYNETTEHOLM Fact Sheet -Climate Proofing and Coastal Landscape*.
321 Arkitema, “Lynetteholm: Establishment of New Island East of Copenhagen.”
322 Maarbjerg, “Interview with Co-Founder of Maritime Architecture Studio ‘MAST.’”
323 Ihler Madsen and Roland Sandby, “Why Lynetteholm must be stopped!”
324 *Lynetteholm Trafikale Forhold*, Baggrundsrapport til miljøkonsekvensrapport no. 2 (2020).
325 *Lynetteholm - Copenhagen’s MEGAPROJECT Folly*.
326 Transport og Boligministeriet and Københavns Kommune, “Østlig Ringvej.”



Figure 102: Reclamation process in Lynetteholm (source: By&Havn Archive)

observed in Nordhavn.[327] At the same time, social housing has already been identified as a later phase within the development sequence.[328] This creates concerns about the future social value creations in the area.

Overall, Lynetteholm shows a clear change in public attitudes toward large-scale urban expansion on reclaimed land. In the earlier projects, Ørestad and Nordhavn, there were criticisms, but these never reached a level of strong public opposition. Environmental groups did not bring the projects to the European Commission, and there were no major protests that could stop or significantly delay development. In the case of Lynetteholm, however, public reactions have been much stronger from the beginning, especially regarding environmental impacts and decision-making processes.[329]

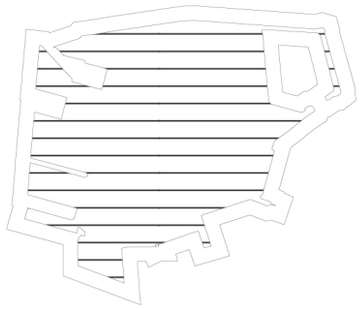
A significant distinction between these developments lies in their scale. While Lynetteholm is considerably larger than Ørestad or Nordhavn, its projected population density is much lower, as the number of residents does not increase proportionally with its size. [330] Consequently the project's total cost is high compared to the projected revenue from land sales and development. Ørestad and Nordhavn maintained a stable financial balance that generated surplus revenue to subsidize metro infrastructure. Lynetteholm however lacks a similar balance. This discrepancy makes the project more difficult to justify purely from an economic perspective.

This also raises questions about the future urban life of the area. It is unclear whether Lynetteholm will develop in a way that reflects everyday life in Copenhagen, or whether high land values will lead to very expensive housing and large, money-driven projects such as shopping centres, office towers, or landmark developments, similar to what was seen in parts of Ørestad. In this sense, Lynetteholm not only differs from earlier projects in scale and justification, but also reflects changing priorities in urban development, where financial ambition, infrastructure provision, and public value are increasingly difficult to align.

327 Alkhani, "Understanding Private-Sector Engagement in Sustainable Urban Development and Delivering the Climate Agenda in Northwestern Europe—A Case Study of London and Copenhagen."
328 Mørk, "City of the Anthropocene."
329 Ihler Madsen and Roland Sandby, "Why Lynetteholm must be stopped!"
330 Mørk, "City of the Anthropocene."

MAIN AIM:
FUTURE STORM
SURGE
PROTECTION

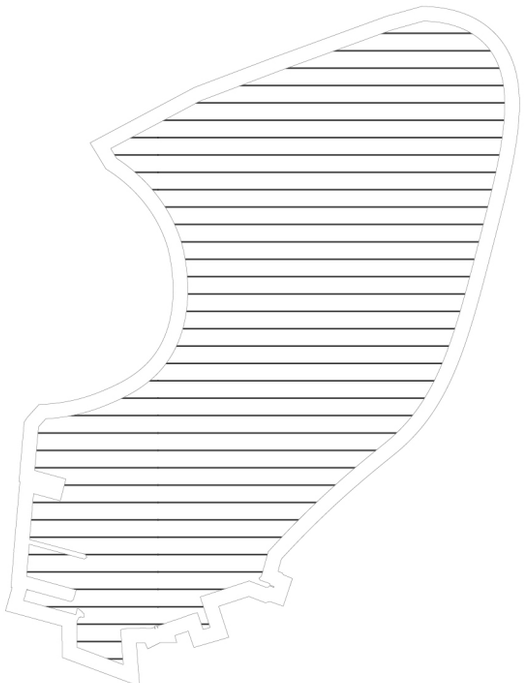
- Economic Value
- Social Value
- Long-Term Value
- Environmental Value



2022 - START OF
RECLAMATION

2029 - FIRST STAGE OF
COASTAL LANDSCAPE

2050 - RECLAMATION
EXPECTED TO FINISH



2070 - PROJECT
EXPECTED TO FINISH

Social Housing
Target: 25%

Higher
housing
prices
expected

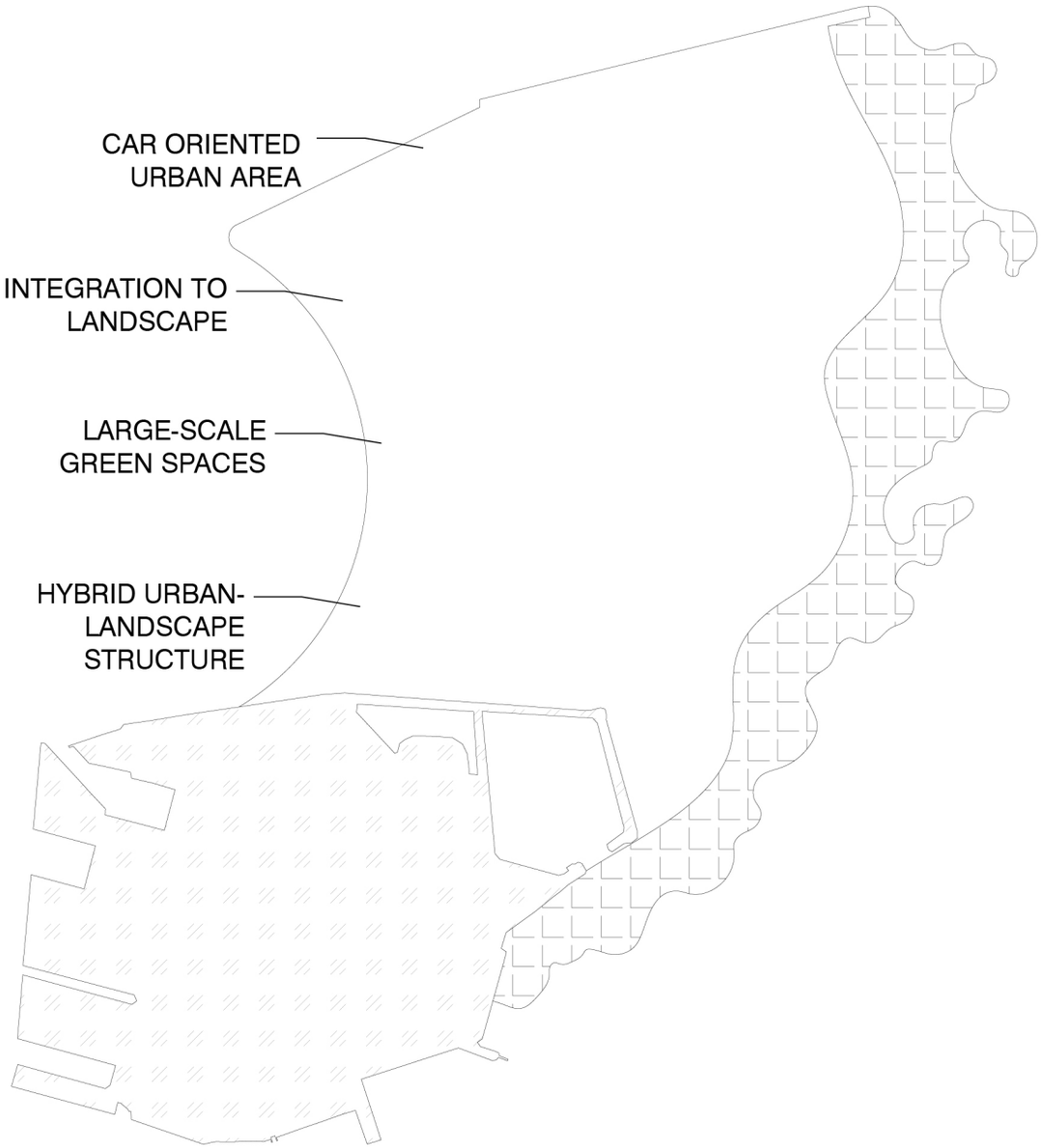
Independent
citizens'
assembly

CAR ORIENTED
URBAN AREA

INTEGRATION TO
LANDSCAPE

LARGE-SCALE
GREEN SPACES

HYBRID URBAN-
LANDSCAPE
STRUCTURE



REFLECTIONS AND FINDINGS

This chapter, Reflections and Findings, serves as a transitional space between the case-based analysis of Copenhagen's reclaimed mega urban projects and the concluding discussion of the thesis. Rather than offering an evaluative judgment, it brings together insights from the preceding chapters to synthesize the cases as a whole and to clarify what becomes visible when they are considered collectively. The aim is to consolidate the analysis in order to identify and better understand the main forms of value creation shaping this system, particularly across economic, social, and environmental dimensions.

The discussion will focus on change in historical context in reclamation projects, as well as today's most important projects and their progress through development. By placing the projects side by side, the chapter identifies cross-case patterns, divergences, and recurring tensions, while also situating these findings within the broader historical phases of land reclamation in Copenhagen. These reflections are further informed by the author's on-site observations and by perspectives drawn from interviews with professionals involved in or connected to the projects, which are used to contextualize and enrich the analytical discussion of value creation rather than to establish definitive conclusions.

The chapter concludes by outlining a set of open questions and unresolved issues, particularly concerning the future of large-scale urban development on reclaimed land. These questions provide a foundation for the final chapter, where the findings are interpreted in relation to the thesis's main research question concerning public value creation.

When considered across the full historical scope of Copenhagen's development, land reclamation emerges as a long-lasting practice that has consistently functioned as a response to changing uncertainties rather than as a singular planning strategy. From the beginning, reclamation was understood as a practical way to respond to emerging needs, a perception strongly supported by the physical landscape of the area. Copenhagen developed within a territory characterized by wetlands, shallow waters, and islands, where land and water did not exist as two clearly separated realms



Figure 103: Visualisation of Lynetteholm as a Storm Surge Protection (source: By&Havn Archive)

but rather as interconnected and continuously interacting environments.[331] Within such conditions, altering land through reclamation was not an exceptional intervention but an almost inevitable response to settlement and survival to create various values for different groups.

Throughout its history, land reclamation in Copenhagen has repeatedly emerged as a response to changing forms of uncertainty. In its earliest phases, reclamation functioned primarily as a defensive strategy, reshaping land and water to strengthen territorial control under military threat. [332] While the reclamation supported the value creation, it was not effective for everyone living in Copenhagen that time, but only for small group. As these uncertainties shifted, economic development and trade became dominant drivers, with new land created to support port activities and maritime infrastructure. In this phase, land reclamation started to support economic value creation in the city and effected larger part of the population. Later, with population growth and the consolidation of urban life, reclamation was again mobilized to accommodate housing, infrastructure, and spatial expansion.

In the contemporary context, the underlying logic of responding to uncertainty remains, while the nature of that uncertainty has changed. Today, climate change is increasingly framed as a central challenge, positioning reclamation once more as a protective strategy aimed at safeguarding the city from rising sea levels and environmental risk. [333] Across centuries, reclamation has thus remained a recurring mechanism through which Copenhagen reshapes its territory in response to evolving urban conditions, setting the foundation for shifting relationships between land and water. Today, value creations by reclamation are connected to social, economical and environmental aspects.

While land reclamation has repeatedly reshaped the physical territory of Copenhagen for different purposes, it has also continuously transformed the city's relationship with water in everyday urban life.[334] Reclamation strategies do not merely add land but redefine how the sea is perceived and used for whether as infrastructure for trade, a setting for leisure, or

331 *Copenhagen Islands A Strategy for the Development of the Greater Copenhagen Area*.
332 Bellamy, *Christian IV and His Navy*.
333 "The Case of Copenhagen."
334 Grydehoj, "Making Ground, Losing Space."

an integrated element of urban space. This evolving relationship between land-making and water is clearly visible across the key projects examined in this thesis.

In Ørestad, which was developed on land reclaimed long before the project itself, the relationship with water is largely absent from the everyday urban experience. Despite the area's origins as shallow waters and wetlands, contemporary Ørestad is characterized by dense urban development with limited direct contact with water, aside from small ponds within urban parks. While walking through the Ørestad neighbourhood, it is difficult to perceive the historical process through which this land transformed from shallow waters. The primary remaining connection to its former landscape appears at the edges, particularly through proximity to Kalvebod Fælled, a protected wetland area. Within the developed neighborhood itself, however, traces of the original water landscape are largely erased.

In contrast, Nordhavn's identity is strongly shaped by its port structure, where water remains a defining spatial and visual element. Here, reclamation has not eliminated the presence of water but has reorganized it, maintaining close physical and symbolic connections between urban life and the harbor.[335] Waterfront access, maritime character, and visual openness toward the sea are actively emphasized as qualities of the development.

Lynetteholm presents yet another configuration. As a project where reclamation and urban planning are occurring simultaneously, the relationship with water has been a central topic from the outset.[336] At this stage, however, water appears primarily as a surrounding condition rather than as an integrated element within the interior of the reclaimed land. While future master plans may further develop this relationship, current proposals suggest a more controlled and peripheral engagement with water.

Taken together, these cases demonstrate how different reclamation strategies produce distinct urban relationships with water, shaping not only spatial form but also everyday experience and creates public values from it. As water plays a significant role in Copenhagen's urban identity and daily life, changes in how it is accessed, perceived, or excluded through recla-

335 By&Havn, *Nordhavn From Idea to Project 2012: Inner Nordhavn*.
336 Arkitema, "Lynetteholm: Establishment of New Island East of Copenhagen."



Figure 104: Nyhavn, Copenhagen in mid-17th century. Area created by reclaiming land and excavating a canal to create commercial port. Today, the area is a popular touristic location in the hearth of the urban life. (source: Danish Design Review)

mation directly affect how residents interact with the city.

This shift in the land–water relationship also highlights how the social reach of land reclamation has expanded over time. When water is reclaimed, the effects of this transformation extend beyond the physical territory itself and increasingly shape how public space is experienced across the city.

As previously discussed, reclamation was not always closely connected to everyday urban life, nor did it initially affect large or diverse social groups. In its earliest phases, reclamation primarily created value for the interests of limited actors, first the royal authorities and later groups directly connected to port and maritime activities.[337] During these periods, the spatial and social consequences of land-making remained relatively contained. However, as reclamation became increasingly integrated with urban development, particularly through large-scale projects addressing infrastructure, housing, and mobility, value creation began to affect a much broader population. Decisions related to reclamation were no longer limited to specific functional needs but became matters with city-wide significance, influencing daily life for residents across Copenhagen.

In this sense, reclamation evolved from a tool benefiting relatively small groups into a central component of urban development with wide-reaching consequences for the city as a whole. Alongside its social and spatial effects, this expanded role also brought growing economic significance, as reclaimed land increasingly became a source of land value, investment potential, and long-term financial capacity for urban development.

Generally, reclaimed land has offered cities a unique opportunity to develop urban areas from the ground up, allowing urban needs to be addressed without the constraints of existing structures and creating maximum value. At the same time, this condition has also made reclaimed land particularly suitable for investment-oriented development, as it enables land to be prepared in ways that support financial strategies through obligations and land value capture tools.[338] This dual potential has increasingly drawn attention to the capacity of reclamation to generate economic benefits

337 Konvitz, *Cities & the Sea: Port City Planning in Early Modern Europe*.
338 Detter and Fölster, “The Urban Wealth Fund: A Conduit for Maximizing Value.”



Figure 105: Small pond in the natural area near Ørestad. Natural water elements in the area originate from the former landscape typology, characterized by shallow waters and wetlands. (photo taken by the author)

for the city. Especially in Copenhagen's contemporary urban expansion projects, economic aspects have become central to value creation strategies. Since Ørestad, the city has increasingly expanded through land reclamation with an explicit aim of generating financial benefits, particularly by using land development to fund infrastructure without raising taxes. The establishment of the publicly owned company By&Havn further reflects the growing importance given to financial outcomes in these expansion processes. While Copenhagen continues to emphasize welfare-oriented public services, this approach introduces additional priorities for decision-makers, such as economic growth, competitiveness, and the creation of investment-friendly urban environments.[339]

As a result, urban development is no longer shaped solely by the aim of meeting social needs but is increasingly influenced by considerations of capital generation. In some cases, this shifts priority toward investors over residents, as newly designed areas are expected to be attractive not only for everyday urban life but also for capital flows. Public assets and land increasingly function as financial tools, with land value being mobilized to generate revenue for major infrastructure projects such as the metro.[340] This creates a context in which financial value must be carefully balanced in order to produce public value.

Across the three projects examined in this thesis, this balance appears uneven. While public value is created in certain respects, concerns emerge regarding limited affordability, inequality, and exclusion. Lynetteholm highlights these tensions. Although decision-makers present the project as an alternative to using public tax revenues through land value capture mechanisms, public skepticism remains strong, as many residents struggle to see how long-term benefits will serve the broader population rather than primarily investors. Viewed through the evolution of these projects, the shift from managerial to entrepreneurial urban governance did not occur abruptly but intensified over time, accompanied by growing public disagreement as financial success increasingly diverged from perceived public value.

Although land-based development can generate financial value that is reinvested in urban infrastructure and framed as serving the public,

339 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."
340 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."

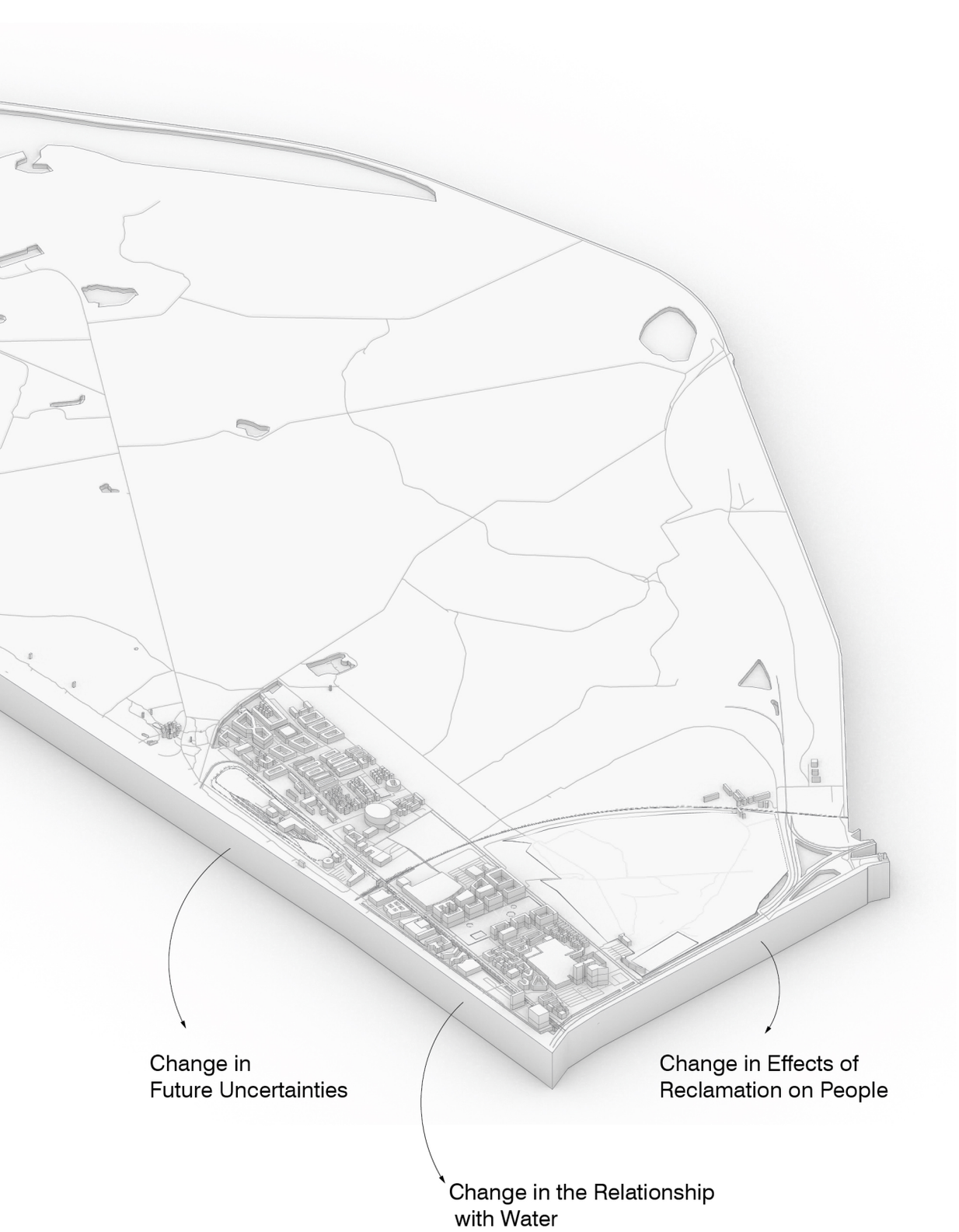


Figure 106: Resilience Based Value Creation

these investments are inherently exposed to fluctuations in land and real estate markets. Infrastructure is not financed through immediate returns but through long-term debt structures that rely on future land value appreciation.[341] This reduces the certainty of land-based development as a stable funding mechanism.

At the same time, the costs of land reclamation and large-scale urban development continue to rise, while expected returns are neither fixed nor guaranteed. As a result, it becomes increasingly difficult to assess the actual value created for the city, particularly because financial outcomes unfold over long time horizons.[342] Delays caused by shifting economic conditions can further extend development timelines, complicating evaluations of public benefit. In this context, relying on volatile land markets to finance critical urban infrastructure places the city in a vulnerable position.[343]

Due to the financial risks involved in large-scale reclamation projects, expected returns on investment play an important role in shaping development decisions. Higher financial returns increase the capacity of these projects to attract private capital and support the financing of urban infrastructure.[344] At the same time, a key challenge lies in balancing the pursuit of economic return with the creation of high-quality and inclusive urban spaces.

Across the projects analyzed in this thesis, areas allocated for business and commercial use tend to receive particular attention, as these functions generally generate higher returns and are expected to stimulate further investment.[345] Ørestad was initially introduced as Copenhagen's new business district, yet following its development, several media sources described the area as unsuccessful in fulfilling this role. One contributing factor was the strong spatial separation between business districts and residential areas, which resulted in mono-functional zones that lacked everyday urban life outside working hours.

In Nordhavn, by contrast, business functions are less explicitly promoted as a defining identity of the project, yet a significant proportion of

341 Knowles, "Transit Oriented Development in Copenhagen, Denmark."
342 "Land Reclamation, Management, and Planning in Coastal Region."
343 Maarbjerg, "Interview with Co-Founder of Maritime Architecture Studio 'MAST.'"
344 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."
345 Ösgård and Spierings, "'It Just Didn't Really Happen.'"



Figure 107: Field's Shopping Center in Ørestad as a result of investment-oriented development. It is one of the important functions which presents the characteristic of the area. (photo taken by the author)

development plots are still allocated to commercial uses rather than housing. This approach appears to be motivated by economic considerations, but it is accompanied by a greater degree of integration between business and residential functions. As a result, urban life in Nordhavn is more evenly distributed across different times of day.

While the inclusion of business activities in both projects has contributed to rising land values and stronger financial performance, an unbalanced concentration of high-return uses can also shape the character of these areas, often reinforcing exclusive or high-end urban environments.

In newly reclaimed areas, waterfronts often become key sites of value creation alongside business and commercial functions. New reclamation projects typically produce entirely new waterfronts, which gain high economic and symbolic value as part of urban expansion.[346] This newly created value frequently attracts high-end real estate development and luxury housing investment.

In Ørestad for example, direct interaction with water is limited, and projects that do offer such proximity tend to be among the most exclusive developments in the area. The residential project '*8 Tallet'* is often regarded as one of the higher-end developments in Ørestad both in terms of architectural recognition and housing prices partly due to its stronger relationship with water and landscape.[347]

In Nordhavn, by contrast, access to water is more evenly distributed across the neighborhood, and the overall urban environment is strongly shaped by its waterfront character. While this creates attractive and well-designed public spaces that support everyday urban life, it also contributes to rising property values across the area.[348] As a result, these waterfront environments increasingly function as high-end urban districts.

While the creation of new urban waterfronts generates significant value for the city, it simultaneously raises questions about who ultimately benefits from this value. Increased housing prices and exclusivity can limit access to these spaces, suggesting that value creation through waterfront development may not be equally shared across different social groups.

346 Danish Architecture Center - DAC, "Nordhavn."
347 By&Havn, "Tidslinje."
348 Schuelke et al., *Nordhavn: Denmark's Most Sustainable Modern Housing Development*.



Figure 108: Office spaces in Ørestad (photo taken by the author)

Alongside the development of new waterfronts and business districts, public space also evolved differently in these two projects. In Ørestad, urban spaces are generally less diverse and mainly consist of small parks located between residential blocks or enclosed courtyard spaces. Greater emphasis was placed on large-scale urban facilities such as concert halls, shopping malls, and sports complexes. While these programs contribute to the city at a metropolitan scale and attract users from outside Copenhagen, facilities like shopping malls tend to reduce everyday urban activity by concentrating life within large, enclosed interiors rather than activating the surrounding public realm.

In Nordhavn, this situation developed quite differently. Commercial activities are distributed along the waterfront and at the ground floors of buildings, creating more active and continuous urban spaces. Even large-scale business areas incorporate commercial functions and public spaces, allowing urban life to remain present throughout the district. Overall in Nordhavn, ground floors are predominantly used for commercial and public functions, and public spaces are dispersed across residential areas, business districts, and along the coastline. This illustrates how the urban design layout was gradually improved to support a more vibrant and integrated public life.

Housing prices have also risen significantly in newly developed districts. While higher housing prices increase the financial viability of these projects and support investment in infrastructure, they simultaneously contribute to the formation of socially exclusive urban areas.[349] In Ørestad, high housing prices were initially less pronounced; however, in Nordhavn, the combination of reclamation, a prestigious waterfront location, and a carefully curated master plan has resulted in particularly high land values and housing costs.

These conditions limit the possibility of creating a city accessible to a broad range of social groups and creates contradiction with the Copenhagen's social housing traditions. The Danish social housing system is based on a non-profit model that is formally open to all residents, with access regulated through waiting lists rather than income criteria, and with strong traditions of tenant participation and public oversight. At the city scale, this

349 Bruns-Berentelg et al., "Developing Urban Growth and Urban Quality."



Figure 109: The Ramboll headquarter in Ørestad. Ramboll is one of the biggest development companies in Denmark. It represents the business focus in the Ørestad area. (photo taken by the author)

system has played a key role in providing long-term housing stability and supporting social mix in Copenhagen.[350] However, its ability to participate in recent large-scale urban development projects such as Ørestad and Nordhavn has been limited. While social housing was not a central priority in Ørestad, Nordhavn includes only a limited area designated for social housing, which is spatially separated from other developments and lacks the architectural quality associated with adjacent high-end residential projects.[351]

These areas are shaped by high development costs, land reclamation, and major infrastructure investments, which favour development models oriented toward high land values and market-based returns. While significant economic value is generated through these projects, this value is primarily captured within the development areas themselves and reinvested in further growth and infrastructure, rather than being directly channelled into expanding or strengthening the social housing sector. As a result, social housing remains marginal within these flagship developments, revealing a disconnect between Copenhagen's established social housing logic and contemporary value-driven urban expansion. The prestige of the area, making it difficult to prioritize socially mixed neighbourhoods, particularly given the significant financial obligations linked to metro construction and infrastructure financing.

As a result, housing affordability has become one of the most frequently criticized aspects of these development models. During on-site observations in Nordhavn, these inequalities were clearly visible. From the rooftop public space at the Park 'n' Play parking structure, luxury residential buildings could be easily observed, characterized by large windows, open-plan layouts, and carefully designed interior spaces. These visible spatial qualities reflect how housing design and pricing contribute to the exclusive character of the area.

These observed patterns of rising housing prices and spatial exclusivity are closely linked to the underlying development logic of large-scale reclamation projects. In areas such as Nordhavn, the high costs of land reclamation, climate adaptation measures, and major infrastructure invest-

350 Josefine Fokdal, *Power and Space: Appropriation of Space in Social Housing in Copenhagen*, Habitat - International 10 (Lit, 2008).
351 Schuelke et al., *Nordhavn: Denmark's Most Sustainable Modern Housing Development*.

ments create strong pressure to prioritise development types that can sustain high land values and housing prices. This economic logic helps explain why high-end residential development has become dominant and why socially mixed housing remains limited within the project area itself. Consequently, the contribution of these developments to the wider city is less visible at the neighbourhood level and is more often realised indirectly, through infrastructure provision and overall growth management within Copenhagen, rather than through direct improvements in housing affordability for a broad range of social groups.

As new development areas such as Nordhavn become more exclusive, public opinion increasingly shifted against large-scale reclamation projects. These projects came to be criticized more openly as financially driven developments, with growing skepticism about whether their contributions to society justified their economic and spatial impacts.[352] In the early phases of Copenhagen's contemporary reclamation projects, public opinion was not a central component of the development model.

During and after the Ørestad project, criticism focused less on the idea of developing new urban areas and more on the quality of everyday living environments. Large-scale programmatic decisions were perceived as insufficiently connected to daily residential life, producing spatial and functional divisions within the district. Although public influence was limited during the initial planning stages, the later establishment of a landowners' association supported by By & Havn allowed residents to gain greater involvement in local decision-making. While this contributed to public engagement, it occurred after the major development decisions had already been made.[353]

In Nordhavn, public participation was incorporated more explicitly from the early planning stages, and public opinion played a more visible role throughout the project process. The development was often presented as a flagship project, yet public concerns remained strong, particularly regarding housing affordability and social exclusivity.

Lynetteholm represents a further shift in this trajectory. Although local commissions and consultation processes were formally included from the

352 Nicholas Falk, *Applying Land Value Capture Tools*, n.d.
353 "Ørestad - Grundejerforeninger og Vandlaug."

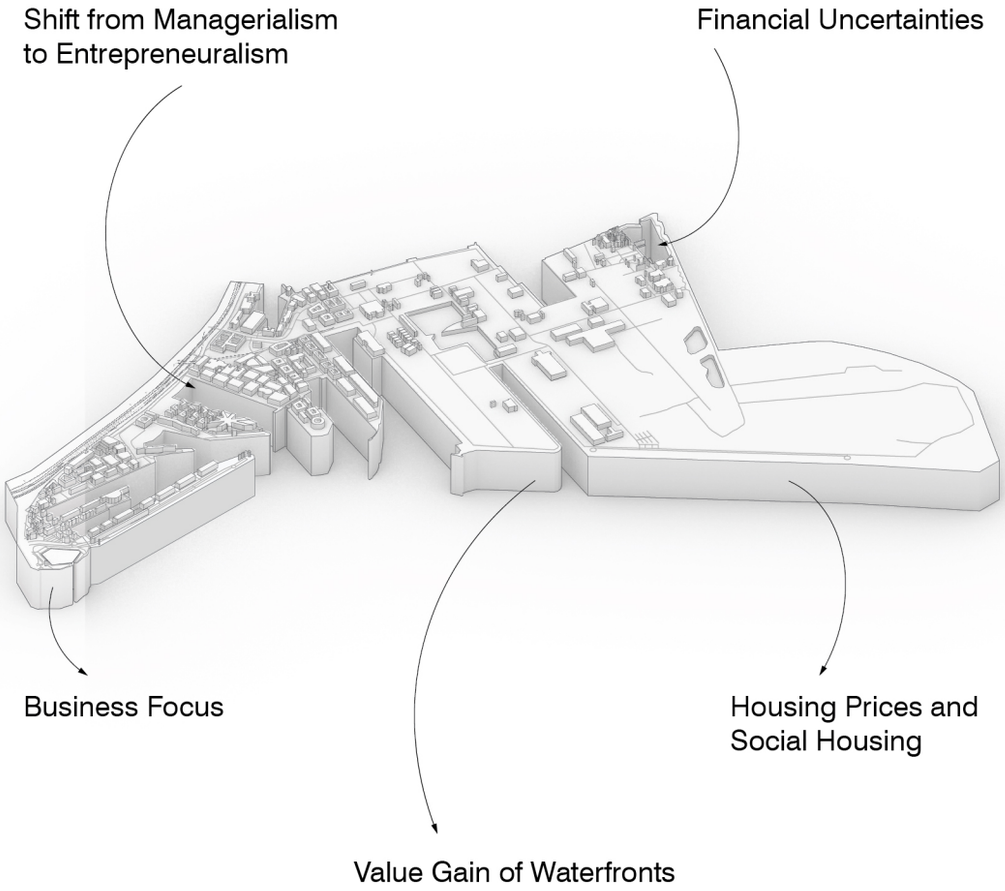


Figure 110: Economic Value Creations



Figure 111: The Silo and residential unit (photo taken by the author)

outset, the project generated significant conflict from its earliest stages and became one of the most contested reclamation initiatives in Copenhagen, especially in public debate.[354]

Viewed across these three project phases, public participation has become an increasingly prominent element of reclamation-led development. At the same time, the public image of land reclamation projects has continued to evolve, shaped not only by past development experiences but also by changing conditions of information access and communication. The growing role of digital media and social platforms has made planning processes, visualizations, and projected impacts more visible to wider audiences, allowing potential long-term consequences to be discussed and contested at earlier stages.[355] This has created an environment in which residents more actively scrutinize future reclamation proposals, question underlying assumptions, and articulate concerns about how such projects may affect the city they inhabit. In this context, urban development is no longer evaluated solely through institutional planning frameworks but also through public interpretation, debate, and critique, expanding the scope of accountability beyond formal decision-making structures.

Under these conditions, architects and urban designers assume an increasingly significant role, as their decisions, representations, and design strategies shape not only built outcomes but also public understanding and debate around large-scale urban projects. Although the master plans for the projects examined in this thesis emerged from international design competitions, they often place greater emphasis on spatial form and public space quality than on the structural social challenges commonly associated with mega-scale developments.

In the case of Nordhavn, for example, the adaptive reuse of port infrastructure and the application of a “five-minute city” concept have contributed to spatial accessibility and high-quality public spaces.[356] However, these strategies have not been equally successful in supporting inclusive everyday urban life beyond open public areas.[357] As Maarjberg notes, development programs frequently lack alternative housing models

354 Ihler Madsen and Roland Sandby, “Why Lynetteholm must be stopped!”
355 *Lynetteholm - Copenhagen’s MEGAPROJECT Folly*.
356 By&Havn, *Nordhavn From Idea to Project 2012: Inner Nordhavn*.
357 Falk, *Applying Land Value Capture Tools*.



Figure 112: Protest against land reclamations for Lynetteholm in Copenhagen. (source: Instagram)

and genuinely mixed communities, resulting in well-designed public spaces that can nonetheless feel empty or socially exclusive. In this context, social diversity is not sufficiently embedded within the underlying urban structure but remains largely confined to surface-level design interventions.[358] Differently, Blak Wilner notes that Nordhavn's public spaces are accessible to everyone and are designed to invite people from across the city to use the waterfront, cafés, restaurants, and cultural facilities. The urban spaces in Nordhavn are socially inclusive and active throughout the day and night. In other words, the social equality in Nordhavn is addressed through both housing policy and high-quality urban spaces. So even though not everyone can afford to live in Nordhavn at least the public functions as a shared urban space are supporting a broader sense of social equality.[359] The two interviews reveal contrasting perspectives on the extent and effectiveness of social inclusion in the area.

The existing concerns are further reflected in the absence of social centers, community facilities, or local associations that could support everyday public life and respond to social needs within the area. A similar tension can be observed in Lynetteholm, where public debate initially focused on the scale and environmental impact of land reclamation. Despite this heightened sensitivity, proposals developed by Urban Nature and Arkitema included an even larger reclaimed landmass, perceived by many as forming a closed barrier within Copenhagen's inner sea.[360] Rather than mitigating public concern, these design choices intensified controversy and further highlighted the gap between professional design intentions and public interpretation.

At the same time, these design approaches tend to focus primarily on the project areas themselves, while their integration with the existing urban fabric remains limited. Although the developments are frequently described as *"extensions of the city,"* the transitional zones between reclaimed land and established neighborhoods often lack active urban life and are instead dominated by large-scale infrastructure or undefined open spaces. As a result, urban continuity is interrupted rather than gradually extended.

In Ørestad, this condition is visible in the project's linear form and

358 Maarbjerg, "Interview with Co-Founder of Maritime Architecture Studio 'MAST.'"
359 Blak Wilner, "Interview with Architect Working at 'SLETH.'"
360 Mørk, "City of the Anthropocene."



Figure 113: The office of COBE in Nordhavn. COBE is the one of the important stakeholders in the Nordhavn development project as an architectural office. (photo taken by the author)

infrastructural boundaries. Pedestrian and cycling connections across these boundaries remain limited, and the transition toward Kalvebod Fælled is similarly abrupt, marked by a sharp contrast between dense residential development and protected natural landscape.[361]

Nordhavn presents a different but related condition. Developed as a new district rather than an incremental extension, its main connection to the city runs through the former harbour area. While the metro provides efficient access to parts of Nordhavn, pedestrian connectivity from surrounding districts remains weak. Walking from Østerport Station, for example, involves a long and inhospitable route alongside railway lines and major roads, reinforcing the area's relative spatial isolation despite its central location. Although only a few metro stops separate central Copenhagen and Nordhavn, this distance corresponds to an approximately 40-minute walk, creating a spatial discontinuity defined by transport infrastructure rather than a seamless urban extension.

In the case of Lynetteholm, physical integration with surrounding residential areas appears even more challenging due to its offshore location and proximity to port infrastructure. Although potential future connections to Nordhavn are discussed, the project currently risks functioning as a self-contained urban enclave rather than as an integrated part of the existing city.

Viewed together, these projects reveal an expansion strategy that differs from Copenhagen's historically gradual and adaptive growth patterns. As Maarjberg notes, such developments set a clear direction for the city's physical expansion, yet rely on assumptions that are increasingly uncertain, including projected population growth and stable climatic conditions. By prioritizing large-scale expansion and spatial control, these projects risk binding the city to development models that may prove difficult and costly to adapt in the future.[362] This raises broader questions about whether land reclamation projects can be more deeply integrated into urban life at the design stage, particularly given that extending the city into the sea inherently complicates connections with established urban environments and increases the tendency to create new districts defined by clear

361 Word Bank Group, *The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study*.
362 Maarbjerg, "Interview with Co-Founder of Maritime Architecture Studio 'MAST.'"



Figure 114: The view of the central boulevard from the northern edge of Ørestad. The boulevard separates the urban area from the protected natural landscape of Kalvebod Fælled and continues as a strong linear axis throughout Ørestad. (photo taken by the author)

boundaries rather than continuous urban fabric.

This issue also highlights the importance of design and planning decisions made at the stage of land reclamation. Whether working with already reclaimed land or creating new land through reclamation, these processes involve early decisions that significantly shape the future urban environment. The physical boundaries and form of reclaimed land constrain and guide the development of master plans, as urban design must respond to land that is already defined by the surrounding sea.[363]

In Ørestad, development took place on a large reclaimed area that had long been protected due to its ecological value and natural diversity. The planning approach involved reallocating a portion of this reclaimed land to accommodate urban growth, connectivity, and investment, which required changing its protected status.[364] The master plan was shaped around these functional needs, while the remaining reclaimed area became one of the city's largest protected natural landscapes.[365] In this case, reclamation preceded planning, and urban development was introduced by redefining the status and use of existing reclaimed land.

In Nordhavn, reclamation and planning were more closely intertwined. The existing reclaimed port land provided the foundation for the overall master plan, while additional reclamation shaped both the spatial structure of the project and its phased development. Here, the reclamation process itself became an integral part of the planning strategy, directly informing the master plan's form and implementation.[366]

In Lynetteholm, reclamation is not only the starting point but also the primary response to the project's central challenge. The shape of the reclaimed land is designed to address storm surge protection while simultaneously creating a boundary condition that functions as a new natural landscape within the Øresund Strait.[367] Across the three projects, different relationships between reclamation and master planning become evident: in Ørestad, planning altered the status of reclaimed land; in Nordhavn, reclamation informed the master plan; and in Lynetteholm, the form of reclama-

363 Grydehoj, "Making Ground, Losing Space."
364 Knowles, "Transit Oriented Development in Copenhagen, Denmark."
365 Kaae et al., "Nature Park Amager – Examining the Transition from Urban Wasteland to a Rewilded Ecotourism Destination."
366 Hjøllund et al., *Copenhagen, Nordhavn Implementation Plan*.
367 Arkitema, "Lynetteholm: Establishment of New Island East of Copenhagen."



Figure 115: From Nordhavn through the city center. The road descending from the railway tracks is used to access Nordhavn from Østerport. (photo taken by the author)

tion itself serves as the core planning solution.

These differences in reclamation processes also shaped how each project was approached and perceived. In Ørestad, the land had already been fully reclaimed long before the development process began, and reclamation itself was therefore not treated as a central issue during planning. The project focused primarily on how to urbanize an existing landmass rather than on the implications of land creation.

In Nordhavn, reclamation played a more limited and incremental role. Historically, large parts of the area had already been reclaimed for port and industrial activities. During the development process, additional reclamation mainly involved the creation of residential islands and the opening of new canals, as well as the relocation of port functions further north.[368] Because the scale of new reclamation during the project phase was relatively modest and closely tied to returning waterfront access to urban life, reclamation itself did not attract significant public concern.

By contrast, Lynetteholm was introduced as a large-scale reclamation project developed from the outset. The project was presented positively by By & Havn, particularly through the argument that the reclaimed land would be formed using surplus soil from metro construction.[369] While this was framed as an efficient and circular approach from an institutional perspective, it also raised substantial public concern. Questions emerged regarding potential sea pollution caused by industrial residues in the excavated soil, as well as the broader environmental impact of introducing such material into the marine ecosystem. The situation reflects anxieties about disrupting natural systems and altering the existing relationship between land and water.

These concerns are closely connected to the importance of the relationship between land and water, revealing different approaches across reclamation projects. Although both Nordhavn and Lynetteholm are the result of land reclamation, the technical processes through which land is created and stabilized differ significantly, leading to distinct shoreline conditions and urban-water relationships.

In Nordhavn, reclamation occurred gradually as part of port expan-

368 Justesen, “Nordhavnen – a City District at the Water.”
369 *LYNETTEHOLM Fact Sheet -Climate Proofing and Coastal Landscape*.

sion, where land was formed through infill and structurally reinforced using deep pile foundations to support heavy port infrastructure and later urban development. In this approach, reclaimed land remains closely tied to former seabed conditions, and pile-supported construction becomes an essential method for making the ground usable.[370] This process results in predominantly hard shorelines, where water is sharply separated from land.

In contrast, Lynetteholm represents a contemporary large-scale reclamation approach in which perimeter dikes are constructed in open water and filled with excavated soil, creating a continuous and newly established landmass. This contained soil-infill model produces broader, softer shoreline conditions composed of sand and soil.[371] While both projects replace water with land, they reflect fundamentally different technical responses shaped by scale, site conditions, and intended urban use.

These technical differences directly influence how urban life interacts with the sea. In Nordhavn, hard shorelines support certain water-related activities such as swimming but otherwise limit physical engagement, often reducing the sea to a visual element within the urban environment. They also restrict the potential for diverse natural habitats along the water's edge. In Lynetteholm, softer shorelines may allow greater ecological integration and enable closer everyday interaction with the sea, creating conditions where natural processes and urban activities can coexist more fluidly. This approach supports the regeneration of natural systems following the disruptive process of land reclamation. It is particularly significant from an ecological perspective, as it demonstrates that landscape design can contribute to the long-term sustainability of reclaimed land itself, rather than functioning only as the addition of urban green spaces. By integrating ecological processes into the overall landscape structure, reclaimed areas can support natural habitats while remaining part of the urban fabric.

Lastly, sustainability has emerged as a central consideration both in the creation of reclaimed land and in the development of new neighbourhoods upon it; however, within large-scale urban projects, the meaning of sustainability has been diverse and evolving. Although its interpretation has shifted over time across social, ecological, and economic dimensions, looking at the history of land reclamation in Copenhagen particularly in

370 Frederiksen et al., "Engineering Geology of Copenhagen."
371 Arkitema, "Lynetteholm: Establishment of New Island East of Copenhagen."



Figure 116: Park 'n' Play by JAJA Architects. A playground on top of the parking building in Nordhavn (photo taken by the author)

relation to 21st-century mega-projects, an increasing emphasis on sustainability can be observed. In Ørestad, the decision to preserve and open the surrounding natural green areas for public use represented an important citywide value, acknowledging sustainability at an urban and territorial scale.[372] However, within the built fabric of Ørestad itself sustainable strategies were limited. The metro infrastructure standing out as one of the few systemic interventions, while architectural development largely prioritised iconic and prestigious projects over broader sustainability agendas.

A decade later, the approach in Nordhavn marked a clear shift. Nordhavn functioned as an experimental project aimed at advancing Copenhagen's image as a sustainable city, yet sustainability was primarily framed through building technologies and smart city systems.[373] Despite being described as a "city for everyone" in reports by By & Havn, social and ecological sustainability played a secondary role.[374] This narrow focus has contributed to the perception that sustainable technologies are accessible mainly to higher-income residents rather than the broader population.

In Lynetteholm, although the project remains in a preliminary phase, sustainability is presented as a central justification, particularly in relation to future climate-change adaptation. While this framing positions the project as a comprehensive sustainable solution, public discourse increasingly questions whether economic profit and land value creation are the dominant driving forces.[375] Taken together, these projects illustrate how rapidly the definition and prioritisation of sustainability have shifted in Copenhagen's urban development, reflecting changing political, environmental, and economic conditions.

The reflections presented in this chapter emerge from the comparative analysis of the selected case studies and historical context. The chapter explains various forms of value creation and their dynamics. Rather than serving as final conclusions, they articulate key outcomes and critical positions developed through the research. Building on these reflections, the following section expands the discussion to broader questions and future challenges of land reclamation and reclaimed urban development.

372 BY&HAVN, *CSR Report 2019* (2019).
373 City of Copenhagen, *Copenhagen Carbon Neutral by 2025, Copenhagen Climate Adaptation Plan - 2011* (2011).
374 Nissen, "NORDHAVN: A Governmentality Analysis Of Urban Planning."
375 Ihler Madsen and Roland Sandby, "Why Lynetteholm must be stopped!"

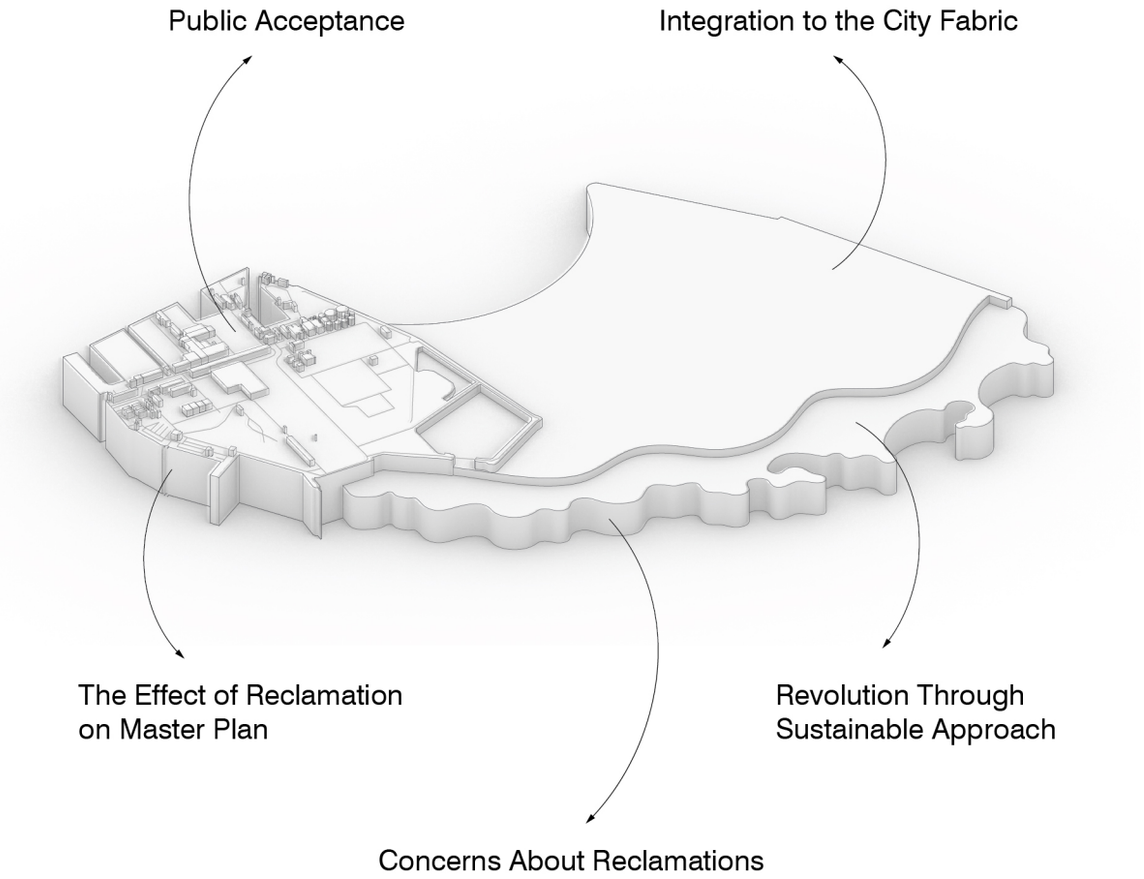


Figure 117: Future Oriented Value Creations

Open Questions and Future Directions

Land reclamation occupies an increasingly central position in the future planning of coastal cities. In Copenhagen, reclaimed land has been mobilized as a strategic tool to support urban expansion, infrastructure financing, and climate adaptation. While the preceding chapters have examined how these projects operate and what they produce, a number of unresolved questions remain regarding their long-term implications. Rather than offering definitive answers, this section outlines key open questions and potential future directions related to resilience, public value, ownership, and alternative forms of urban development.

One of the central open questions concerns whether land reclamation can effectively support urban resilience under changing future conditions. Historically, resilience was not a primary consideration in reclamation projects, and many reclaimed areas were later revealed to be vulnerable to rising sea levels and storm surges. In Copenhagen, climate change has become a more explicit concern, yet its integration into contemporary projects remains uneven.[376]

In Ørestad, vulnerability to flooding has been mitigated by surrounding wetlands, which function as a natural buffer. In contrast, Nordhavn's identity as a water-oriented and prestigious urban district has placed strong emphasis on waterfront living, while strategies for storm surge protection remain less visible within the project narrative. This raises questions about whether protection of Nordhavn is implicitly dependent on larger infrastructural interventions such as Lynetteholm, and how risk is redistributed across the city, particularly in relation to critical port infrastructure that supports goods supply and economic activity.

More broadly, as cities face increasingly complex challenges related to climate change, population dynamics, and economic uncertainty, it remains unclear whether large-scale reclaimed districts can provide the flexibility required to adapt over time.[377] This uncertainty raises the question of whether reclamation supports resilience socially, economically, and

376 City of Copenhagen, *City of Copenhagen's Storm Surge Plan for Copenhagen*.
377 "Land Reclamation, Management, and Planning in Coastal Region."



Figure 118: In Nordhavn some structures related to port still actively used. (photo taken by the author)

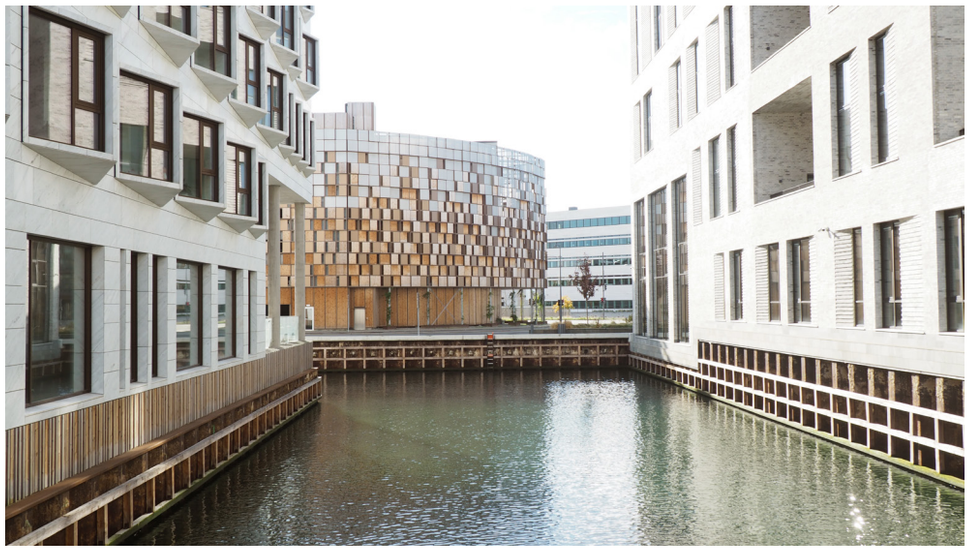


Figure 119: Residential buildings adjacent to the existing canal from the port activities. (photo taken by the author)

physically or whether it introduces new forms of long-term vulnerability.

Another unresolved issue concerns how reclamation reshapes patterns of ownership and access within the city. When water is transformed into land, space that was previously open and collectively accessible becomes commodified. While water within the city is generally understood as a shared and flexible urban space, reclaimed land is legally treated as property that can be sold, developed, and privatized.[378]

This shift introduces new ownership structures and raises questions about who benefits from land creation. As reclaimed areas are often developed for financial return, they are more likely to be acquired by private actors, reinforcing exclusivity and contributing to high housing prices. The legal frameworks governing maritime urbanization and land ownership remain underdeveloped, leaving open questions about long-term public access and equity when shorelines move outward.[379]

As Blecher observes, turning water into land often results in a loss of democratic space, as waterfronts become real estate rather than shared urban environments. This highlights a fundamental tension between financial value creation and public value, one that remains unresolved in current reclamation-led development models.[380]

In light of these concerns, a key future direction lies in exploring alternatives to large-scale, fixed land reclamation. While mega-projects dominate current development strategies, they leave limited room for smaller-scale, flexible, and adaptive interventions. The risk of concentrating land ownership and development control further intensifies this concern.

As Maarjberg suggests, urban growth does not necessarily require the creation of new land. Opportunities remain within existing urban areas and surrounding regions to rethink land use, densification, and development near public transport. In addition, adaptive approaches that respond to climate risks without expanding the city's physical footprint offer alternative pathways.[381]

One such approach is floating and amphibious architecture. Rather

378 Couling and Hein, *The Urbanisation of the Sea*.
379 Couling and Hein, *The Urbanisation of the Sea*.
380 Blecher, "Interview with Co-Founder of Maritime Architecture Studio 'MAST.'"
381 Maarbjerg, "Interview with Co-Founder of Maritime Architecture Studio 'MAST.'"

than replacing water with land, floating structures operate with water as an active component of urban life. Blecher describes floating development as a more flexible and resilient response to uncertain futures, capable of adapting to changing water levels while avoiding heavy, carbon-intensive construction.

The Lynettelagunen project by MAST, provides a useful conceptual contrast to Lynetteholm. Unlike Lynetteholm's fixed landmass created through large-scale infill, Lynettelagunen proposes a floating urban lagoon that remains spatially and ecologically connected to the sea. This approach does not seek to stabilize water through land-making but instead embraces water dynamics as part of the urban system.[382] While Lynettelagunen is not a replacement for Lynetteholm, it illustrates how floating urbanism can support adaptability, public access, and environmental integration in ways that challenge conventional reclamation logic.

Taken together, these open questions highlight the need to reconsider how cities approach expansion, resilience, and value creation in coastal environments. While reclaimed mega-projects continue to shape Copenhagen's development trajectory, their long-term social, environmental, and economic consequences remain uncertain. Exploring alternative models such as floating and adaptive urban structures opens space for rethinking how urban growth can respond to future challenges without relying exclusively on land reclamation. These questions provide a foundation for the concluding chapter, where the broader implications of reclamation-led development for public value creation are addressed.

382 MAST, "Lynettelagunen," MAST, accessed January 16, 2026, https://mast.dk/.

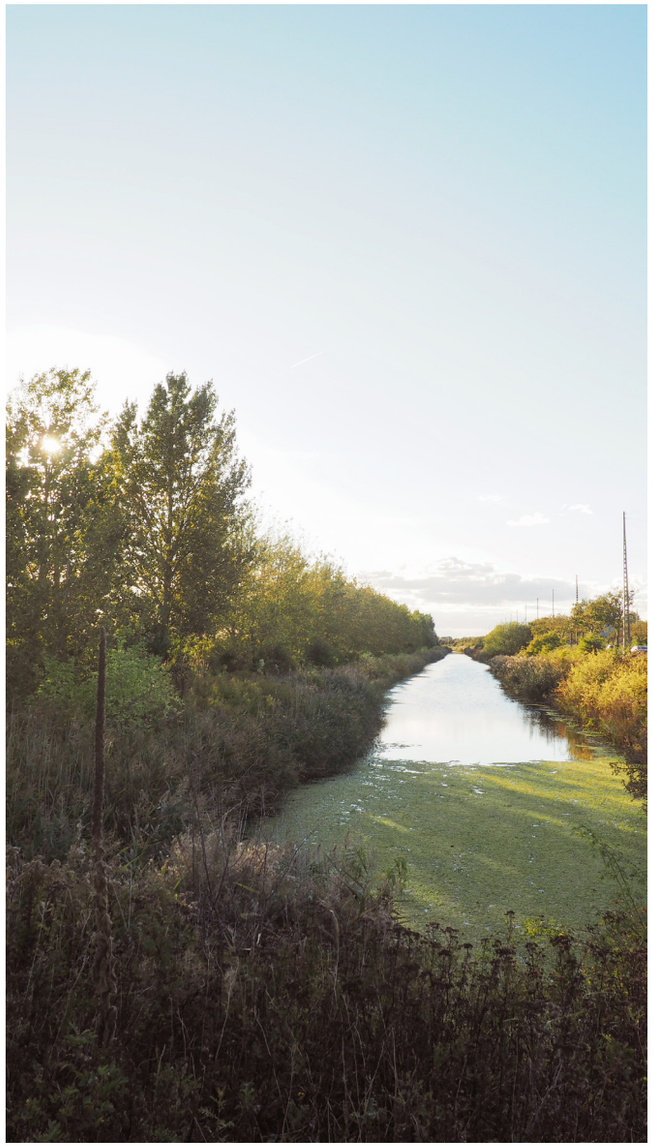


Figure 120: Natural areas in Ørestad where water elements are an integral part of the landscape. (photo taken by the author)

CONCLUSION: The Real Value of Reclaimed Land

This thesis set out to understand how value is created through entrepreneurial governance in contemporary urban development by examining land reclamation as a central spatial and architectural condition. Rather than approaching reclamation only as a technical or economic process, the research combined a historical reading of reclamation practices with a comparative analysis of large-scale contemporary projects. This structure made it possible to trace how reclamation has evolved into a key instrument of urban expansion and value creation, as well as, how this evolution has shaped urban form architectural typologies and public space in Copenhagen. By moving from historical context to specific case studies the thesis established a clear framework for understanding reclaimed land not as isolated development sites but as part of a longer urban and cultural process.

The conclusions presented in this chapter are the result of a multi-layered research approach that brings together historical analysis, case studies, site observations, professional interviews and the critical reading of academic literature and planning documents produced by governmental units and related stakeholders. This combination was essential in revealing the connections between governance structures, financial strategies and their spatial and architectural consequences. Through this framework the thesis demonstrates that while land-based development on reclaimed land is effective in generating economic value, its contribution to public value remains uneven and contingent on governance priorities. The findings therefore do not emerge from a single project or perspective but from the systematic comparison of different projects periods and decision-making contexts which strengthens the validity of the conclusions and highlights the broader implications for urban design and architecture.

The investigation of value creation in reclaimed urban expansion projects in Copenhagen indicates that reclaimed land has historically benefited specific groups rather than the wider public. Historically it served specific groups such as the monarchy, the military, port industries and later private investors. Although contemporary reclamation projects are publicly



Figure 121: Lynettelagunen by MAST (source: mast.dk)

framed as serving broader urban needs such as infrastructure housing and climate adaptation, this shift has not removed the underlying imbalance in how value is created and benefits are distributed. Reclaimed land remains a powerful tool for value creation, but its outcomes continue to depend on governance priorities and the way urban space is designed and managed.

While this thesis examines the city's three major large-scale expansion projects, governmental sources indicate that no additional large land-reclamation projects are currently planned beyond Lynetteholm. Although Copenhagen still faces unresolved storm-surge risks in other parts of the city, the negative public response to the most recent project may slow, postpone, or even halt similarly large-scale transformations in the future. While existing urban development plans extend into the 2070s, the situation for further land-reclamation projects in Copenhagen remain uncertain.

The case studies demonstrate that land-based finance strongly shapes architectural and urban design decisions. When large-scale development is used as a long-term financial strategy, economic pressure directly influences urban form building typologies and the organisation of public space. In projects initiated during the 1990s, income generation played a decisive role in shaping program and scale resulting in large plots, mono-functional districts and event-based public spaces. In these cases, architecture and urban design operated primarily as instruments for economic return rather than as frameworks for everyday urban life. This approach limited adaptability, social inclusion and long-term urban quality.

Over time the development model evolved and lessons were learned. Later projects such as Nordhavn show a shift toward finer urban grain, continuous street life and stronger relationships between buildings, public space and the waterfront. Also, the effects of money-driven investments to urban space were decreased with better strategies with private actors. Programs like shopping malls which prioritise the capital gain and has negative effect the urban life is avoided. While both projects include significant natural elements that shape the character of their urban spaces, such as Kalvebod Fælled in Ørestad and the sea in Nordhavn, the relationship between the built environment and nature is stronger in Nordhavn. This is closely related to the area's historical uses and its land typology. The strong connection to the sea gives Nordhavn a distinct identity and enhanc-

es the quality of its urban spaces. In contrast, Ørestad generally lacks this level of integration, as the area does not fully capitalize on its surrounding natural assets to define its urban character. From an architectural and urban design perspective, this represents a clear improvement in spatial quality and public life. However, this improvement has been accompanied by rising housing costs and selective accessibility. This reveals a persistent tension between improved design quality and social inclusion. Better urban design alone does not guarantee broader public benefit when development remains driven by financial logic. Here, we can see that the real social value created effected by the dynamics between housing prices and quality of urban space.

Sustainability was the main value creation in recent reclamation projects, particularly since the 2010s. Reclaimed land offers a rare opportunity to experiment with new urban and architectural approaches at the scale of entire districts. However, the findings show that most experimentation has focused on infrastructure delivery, financing mechanisms and technical solutions. Sustainability also became a tool to increase the profit. Less attention has been given to architectural adaptability, affordable living and everyday climate resilience. As a result, sustainability often operates as a development justification, rather than as a guiding principle for urban form and social life.

From the outset of land reclamation activities, reclamation has generated different types of value for different societal groups. Initially, its primary contributions were related to safety for specific user groups and economic value for broader populations through industrial development. As cities expanded, reclamation projects increasingly began to create value for the urban population as a whole, encompassing social, economic, and environmental dimensions through various large-scale developments.

The first Ørestad project was primarily designed to generate economic value in order to finance Copenhagen's initial metro system. However, it also produced additional economic value through the establishment of business districts and social value through new housing developments. Moreover, the project affected the surrounding natural areas and ultimately contributed to their protection; thus, environmental value became an indirect outcome, even though it was not an explicit objective of the project.

Subsequently, the Nordhavn port transformation primarily generated social value with impacts extending across the entire city. Through this transformation, Copenhagen gained a significant new public waterfront space overlooking the Øresund Strait, which has become an important public area within the city. At the same time, economic value creation continued in a manner similar to Ørestad, with metro investments financed by reclaimed land and new business developments. Nevertheless, social value related to housing affordability remained limited and was subject to criticism in the area. Finally, the Lynetteholm project explicitly emphasized environmental value creation, with storm surge protection presented as the main justification for reclamation. Although environmental objectives were central to the project narrative, economic value creation remained an integral part of the planning process. In this case, economic benefits were planned to support not only metro expansion but also highway infrastructure, which raised concerns regarding the sincerity and extent of the project's environmental ambitions.

Taken together, the evolution of reclamation projects demonstrates that changing project objectives have reshaped both the distribution of benefits among different societal groups and the types of value produced, resulting in varying configurations of social, economic, and environmental value creation over time.

This differentiated distribution of benefits is also reflected in the outcomes of recent projects at the urban scale. In the case of recent large-scale urban development projects in Copenhagen, such as Ørestad, Nordhavn, and the planned Lynetteholm, uneven distribution of benefits can also be observed in demographic terms. These projects have mainly supported the city's capacity to accommodate population growth and have been especially attractive to young adults, working-age residents, and smaller households, reflecting the dominance of new apartments and strong transport connections. Families with children are included, but their presence has increased more slowly and is closely linked to the later provision of schools, childcare, and local services.[383] As a result, the demographic benefits of these urban expansions have been more immediate for economically active groups and newcomers, while benefits for families

383 København Kommune / City of Copenhagen (CPH), "BY2: Population 1. January by Municipality, Size of the City, Age and Sex," Statistics Denmark, March 2, 2026, https://www.statbank.dk/BY2.



Figure 122: Visualisation of Landscape in the North of Lynetteholm (source: By&Havn Archive)

have depended on longer-term social infrastructure development. This pattern also reflects the limited integration of social housing within these projects, despite Copenhagen's long-standing social housing tradition. Overall, the projects contribute to Copenhagen's growth without fundamentally altering the city's general demographic structure, while offering limited support for socially mixed housing outcomes.

The observed demographic patterns are not incidental but closely related to the underlying development logic of contemporary reclamation projects. Copenhagen cases illustrate a structural tension inherent in contemporary reclamation-led urban development. The combination of land reclamation, climate adaptation, and large-scale infrastructure requires substantial upfront investment, which tends to favor development models capable of generating high land values and housing prices. Within this framework, value creation is primarily oriented toward economic return and project viability, while mechanisms for capturing and redistributing this value toward social housing remain weak or indirect. While this approach enables the delivery of complex projects and supports overall urban growth, its social benefits are primarily indirect and unevenly distributed. In the absence of clearly articulated mechanisms for redistributing value toward affordable housing or socially mixed neighbourhoods elsewhere in the city, the contribution of these projects to social equity remains limited. As such, reclamation projects play a stronger role in supporting economic viability and spatial expansion than in directly improving housing accessibility for a broad range of social groups in Copenhagen.

Overall, the research shows that Copenhagen's land-based development model has evolved in its urban design approach but not in its fundamental priorities. Architecture and urban design have increasingly improved in spatial quality while remaining embedded in a system that prioritises economic growth, infrastructure delivery and land value capture. Reclaimed land can support innovative urban environments but only when architectural quality social accessibility and long-term public life are treated as central objectives rather than secondary outcomes of financial success. These findings highlight that urban form, architectural decisions and public space are not neutral outcomes but are closely shaped by governance structures and value-driven development models.

From this perspective the thesis can be positioned within critical

urban theory that examines the relationship between urban development governance and land-based value creation. In this context, it aligns with arguments put forward by David Harvey, who describes urbanisation as a process closely connected to capital accumulation and economic growth.[384] The findings support this view by showing how entrepreneurial governance models rely on large-scale urban redevelopment projects to generate financial value and fund infrastructure. However rather than focusing on a single project or governance structure, this thesis expands the discussion by examining three major projects together and situating them within a longer historical trajectory. This makes it possible to trace how governance decisions shape different urban design outcomes over time. At the same time, the thesis engages with scholarship on land reclamation and public space, particularly the work of Adam Grydehøj, who highlights how reclamation creates new urban ground while often reshaping or limiting public space.[385] While existing studies frequently treat reclamation as a technical or territorial act, this research connects it more directly to governance structures and architectural and urban design decisions. It demonstrates that reclaimed land offers a highly flexible and controllable spatial condition that enables entrepreneurial governance models to operate at larger scales and with greater control. As a result, architecture and urban design on reclaimed land become closely tied to financial logic, infrastructure funding and development efficiency which intensifies their spatial and social consequences.

By bringing entrepreneurial governance models together with large-scale land reclamation and its spatial and architectural consequences, this thesis addresses a gap in existing urban theory. Studies on entrepreneurial governance explain well how development models operate and where their risks lie, but they rarely examine how these models interact with reclaimed land as a specific spatial and cultural condition. Similarly, studies on reclamation often focus on land creation itself rather than on the architectural form, urban design scale and public space outcomes that follow. This research shows that when entrepreneurial governance is combined with reclamation, the effects on urban design are intensified. Projects developed from a near-zero condition tend to be more strongly shaped by profit-driven planning priorities resulting in large-scale developments controlled public

384 Harvey, "From Managerialism to Entrepreneurialism."
385 Grydehoj, "Making Ground, Losing Space."



Figure 123: Orientkaj Metro Station. It is the last stop for the Metro 4 after Nordhavn Station (photo taken by the author)

spaces and limited adaptability. While reclaimed land can be an effective solution for applying new development models it also produces distinctive architectural and urban design characteristics that affect the entire city rather than only the local area.

From an architectural and urban design perspective this positioning highlights a critical issue. In the examined cases urban design projects are closely connected to economic value creation as infrastructure financing and profit generation. This thesis argues that while infrastructure investment is important it should not be the primary justification for urban design development. Reclamation projects operate at a metropolitan scale and their spatial consequences extend far beyond the new neighbourhoods themselves. Decisions on scale density and program should therefore address not only financial performance but also long-term urban quality, public life and social inclusion. By analysing three large-scale projects together and relating them to shifts in governance, this thesis contributes a spatial and architectural perspective to urban theory showing how reclaimed land and entrepreneurial governance together shape contemporary urban form.

Architecture and urban design in reclaimed land projects are not neutral design practices but are closely shaped by governance models and financial priorities. In the examined cases urban form, building typologies and public space were strongly influenced by the need to generate value and support infrastructure investment. This produced large-scale controlled and highly planned environments, where architectural decisions often served economic efficiency rather than everyday urban life. Reclaimed land intensifies this condition since development starts from a near-zero state and allows stronger control over scale program and spatial organisation. For architecture and urban design this raises a critical concern. When urban projects are directly tied to profit-oriented objectives; design quality, social inclusion and long-term adaptability risk becoming secondary. In large-scale reclamation projects, decisions related to scale density and program therefore affect not only the new district but the wider city and should be treated as collective urban questions rather than development-driven choices.

While these implications highlight the broader relevance of the findings for architecture and urban design, it is also important to acknowledge the limits within which this research was conducted. This research



Figure 124: Royal Arena in Ørestad (photo taken by the author)

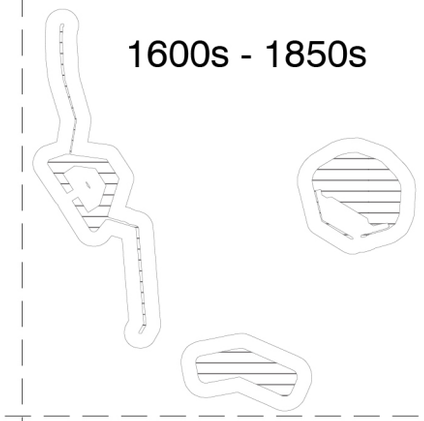
is limited by its focus on Copenhagen as a single urban context with a specific planning culture governance structure and long history of land reclamation. While this enables an in-depth analysis the findings may not be directly applicable to cities with different political and spatial conditions. In addition, much of the available data on contemporary projects is produced by public development authorities such as By&Havn. Although this material provides valuable insight into official planning narratives, it primarily reflects the perspective of a single institution and its political agenda, often emphasising institutional goals and positive outcomes over everyday spatial experience. This limitation highlights the need to approach such sources critically. To address this, the thesis complements the archival material with interviews and on-site observations, bringing together different perspectives, particularly those of architects and practitioners. In doing so, the research broadens the range of viewpoints and supports a more critical and balanced understanding of the situation.

Research related to topic could further explore how new technologies in land reclamation can support more environmentally responsive and spatially sensitive urban development. As cities continue to rely on reclamation, as a solution for growth and climate adaptation it becomes increasingly important to investigate methods that reduce ecological impact while improving long-term urban quality. In this context floating architecture could be further studied as an alternative approach that challenges permanent land creation while offering more adaptive and reversible spatial solutions. Since land reclamation turns land into a commodity and creates different ownership structures through built land and floating structures, the ethics of land reclamation are an important topic for understanding who benefits from these processes and how more equitable urban development can be achieved in the future. In addition, further research is needed on governance and managerial models to understand how urban design and architectural quality can be protected from purely money-driven development priorities. Comparative studies across different cities could help identify alternative approaches where financial mechanisms support rather than dominate spatial design decisions. Such research would contribute to more balanced reclamation practices that align technological innovation, economic responsibility and urban design quality.

RECLAMATIONS

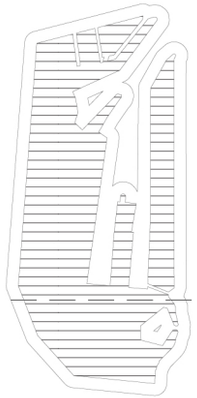
MONARCHY & NAVAL POWER

1600s - 1850s



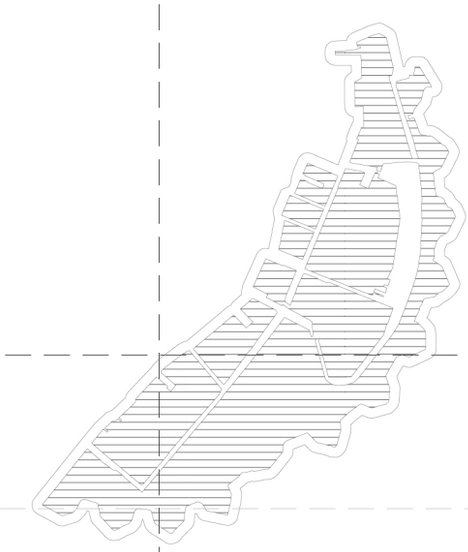
PORTS & INDUSTRIAL GROWTH

1870s - TODAY



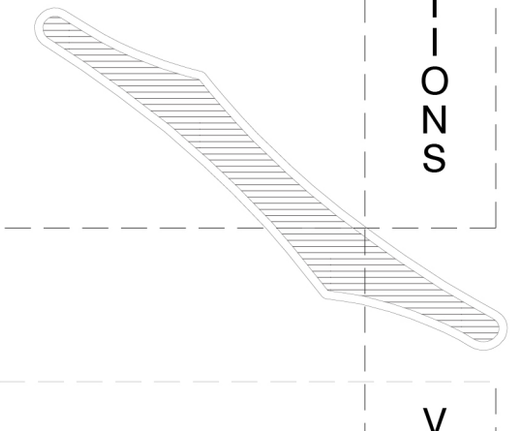
URBAN DEVELOPMENT & INFRASTRUCTURE

1830s - TODAY



ENVIRONMENTAL PROTECTION & CLIMATE ACTION

1930s - TODAY

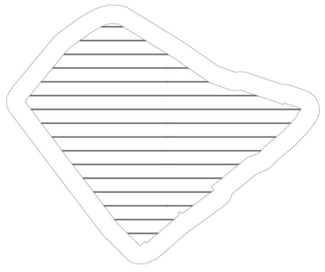


RECLAMATIONS

VALUE CREATIONS

Defence of the royal family

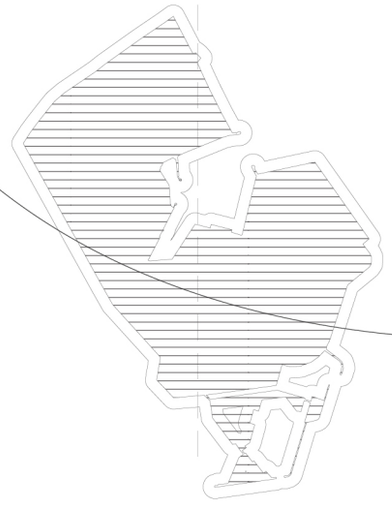
Defence of the city



Economic benefits

New job opportunities

Industrial development



Modernization

Improved quality of public life

Creation of an attractive city for locals

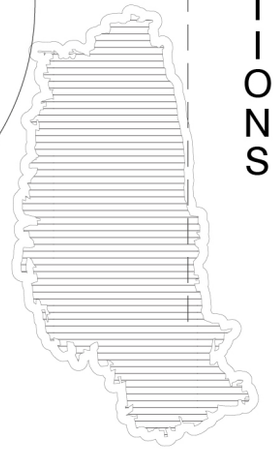
Active urban life

Climate change adaptation

Sustainable city

Green neighbourhoods

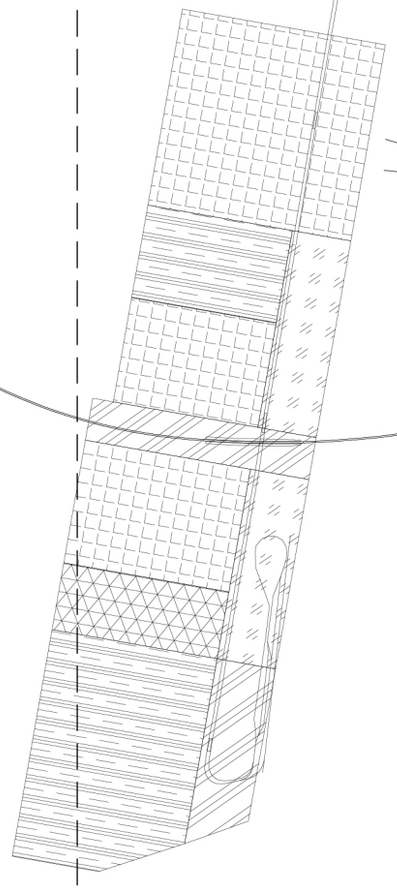
Protection of Natural Life



KEY PROJECTS

- Ørestad
- Nordhavn
- Lynetteholm

VALUE CREATIONS



RECLAMATION

1880s - NORDHAVN

1930s - ØRESTAD

2022 - LYNETTEHOLM

CONSTRUCTION

1990s - ØRESTAD

2009 - NORDHAVN

2029 - LYNETTEHOLM

URBAN DESIGN EVOLUTION

Rigid urban boundaries, fragmented urban structure, dominance of large-scale programs

Fine-grained urban fabric, continuous street life, diverse coastal and water-related activities, high-quality public realm

AFTER CONSTRUCTION

2004 - ØRESTAD
Opening of Field's

2019 - NORDHAVN
Orienten Completed

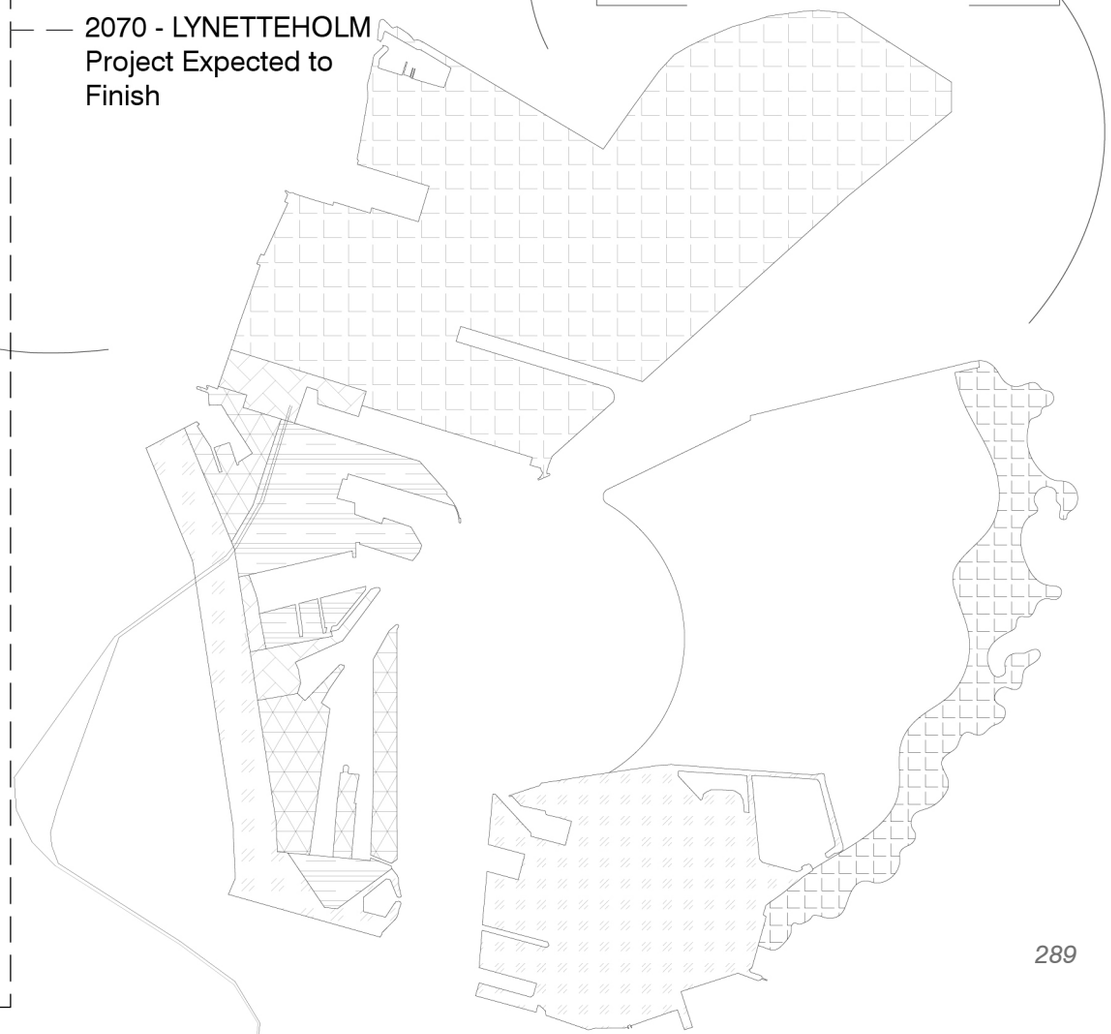
2070 - LYNETTEHOLM
Project Expected to Finish

VALUE CREATION

Economic Value

Spatial Value

Long-Term Value



BIBLIOGRAPHY

"A Bold Project to Mitigate Sea Level Rise: Lynetteholm, Copenhagen, Denmark." BLOG. Marine Construction Magazine, n.d.

Alkhani, Roudaina. "Understanding Private-Sector Engagement in Sustainable Urban Development and Delivering the Climate Agenda in Northwestern Europe—A Case Study of London and Copenhagen." Sustainability 12, no. 20 (2020): 8431. https://doi.org/10.3390/su12208431.

Andersen, Hans Thor, and John Jørgensen. "City Profile Copenhagen." Cities 12, no. 1 (1995): 13–22. https://doi.org/10.1016/0264-2751(95)91862-A.

Arkitema. "Lynetteholm: Establishment of New Island East of Copenhagen." Arkitema. Accessed December 13, 2025. https://www.arkitema.com/.

Bäckstrand, Karin, Jamil Kahn, Annica Kronsell, and Eva Lövbrand, eds. Environmental Politics and Deliberative Democracy: Examining the Promise of New Modes of Governance. Edward Elgar Publishing, 2010. https://doi.org/10.4337/9781849806411.

Bellamy, Martin. Christian IV and His Navy: A Political and Administrative History of the Danish Navy 1596-1648. The Northern World, v. 25. Brill, 2006.

Blok, Anders. "Urban Green Gentrification in an Unequal World of Climate Change." Urban Studies 57, no. 14 (2020): 2803–16. https://doi.org/10.1177/0042098019891050.

Blok, Anders, and Marie Leth Meilvang. "Picturing Urban Green Attachments: Civic Activists Moving between Familiar and Public Engagements in the City." Sociology 49, no. 1 (2015): 19–37. https://doi.org/10.1177/0038038514532038.

Blom-Hansen, Jens. Manhattan på Amager: sagen om Ørestaden. 2000.

Book, Karin, Lena Eskilsson, and Jamil Khan. "Governing the Balance between Sustainability and Competitiveness in Urban Planning: The Case of the Orestad Model." Environmental Policy and Governance 20, no. 6 (2010): 382–96. https://doi.org/10.1002/eet.557.

Bosselmann, Peter. Transformations and City Extensions: Some Observations of Copenhagen's City Form at a Time of Global Change. n.d.

Bruns-Berentelg, Jürgen, Luise Noring, and Adam Grydehøj. "Developing Urban Growth and Urban Quality: Entrepreneurial Governance and Urban Redevelopment Projects in Copenhagen and Hamburg." Urban Studies 59, no. 1 (2022): 161–77. https://doi.org/10.1177/0042098020951438.

Byens Liv. "Lynetteholm bør have minimal biltrafik, små grunde og grønt overalt." Text. Magasinet KBH, October 5, 2023. https://www.magasinetkbh.dk/indhold/lynetteholm-borgersamling-slutrapport.

BY&HAVN. By & Havns Modtagelse Af Borgersamlingens Anbefalinger. 2023.

BY&HAVN. Copenhagen Growing: The Story of Ørestad. CPH City & Port Development, Copenhagen, Denmark, 2010.

BY&HAVN. "Copenhagen's Reclaimed Land and What It Is Used For." Lynetteholm, n.d.

BY&HAVN. CSR Report 2019. 2019.

By&Havn. CSR REPORT 2020. 2021.

BY&HAVN. "Fra befæstning til stormflodssikring (From fortification to storm-surge protection)." Havnebygmesterens studiesamling, n.d. Accessed December 12, 2025. https://byoghavn.dk/udstilling/fra-befaestning-til-stormflodssikring/.

BY&HAVN. "Nordhavn - Interaktivt Kort." Nordhavn Interactive Map, n.d. Accessed December 3, 2025. https://byoghavn.dk/nordhavn-interaktivt-kort/.

By&Havn. Nordhavn From Idea to Project 2012: Inner Nordhavn. 2012.

By&Havn. Nordhavn Report 2009. 2009.

By&Havn. Nordhavn Report 2012. 2012.

By&Havn. Nordhavnen Urban Strategy. 2009.

BY&HAVN. ØRESTAD FÆLLED KVARTER. n.d. www.byoghavn.dk/ofk.

By&Havn. "Tidslinje." Ørestad, August 24, 2025. https://byoghavn.dk/orestad/tidslinje/.

City of Copenhagen. City of Copenhagen's Storm Surge Plan for Copenhagen. Technical and Environmental Administration Finance Administration, 2017.

City of Copenhagen. Copenhagen Carbon Neutral by 2025, Copenhagen Climate Adaptation Plan - 2011. 2011.

City of Copenhagen. Municipal Plan. 2011.

Coalition Clean Baltic, Klimabevægelsen i Danmark, and Danmarks Naturfredningsforening. Denmark's Change of Practice on Permitted Changes to the Flow of Water into the Baltic Sea and the Lack of Espoo Hearings on the Construction of the Lynetteholm Project. 2022.

Colville-Andersen, Mikael, prod. Lynetteholm - Copenhagen's MEGAPROJECT Folly. Coolville. 2021. Youtube Video. https://www.youtube.com/watch?v=K4icpF0S5BM&t=1s.

Colville-Andersen, Mikael. "The Highway Projects That Almost Destroyed Copenhagen." Medium, March 31, 2022. https://colvilleandersen.medium.com/the-highway-projects-that-almost-destroyed-copenhagen-b84c6b130c57.

Copenhagen Islands A Strategy for the Development of the Greater Copenhagen

Area. 2023. www. schonherr.dk.

Couling, Nancy, and Carola Hein. The Urbanisation of the Sea: From Concepts and Analysis to Design. Nai010 publishers, 2020. https://doi.org/10.7480/ISBN.9789462085930.

COWI. Stormflod Og Havvandsstigninger. 2018.

Danish Architecture Center - DAC. “Nordhavn: Sustainable City of the Future.” Accessed January 11, 2026. https://dac.dk/en/magazine/places/nordhavn-sustainable-city-of-the-future-288.

Danish Ministry of the Environment. The Finger Plan: A Strategy for the Development of the Greater Copenhagen Area. n.d.

Danmarks Naturfredningsforening. “Lynetteholmen.” Danmarks Naturfredningsforening. Accessed December 12, 2025. https://dn.dk/vi-kaemper-for/et-levende-hav/lynetteholmen/.

Deltares. Independent Review of the Hydrodynamic Studies on the Impact of Lynetteholm on Exchange of Water and Salt through Øresund. 2022.

Detter, Dag, and Stefan Fölster. “The Urban Wealth Fund: A Conduit for Maximizing Value.” In The Public Wealth of Cities: How to Unlock Hidden Assets to Boost Growth and Prosperity. Brookings Institution Press, 2017.

Droste, Heiko, ed. URBAN LIFE IN NORDIC COUNTRIES. Routledge Advances in Urban History. ROUTLEDGE, 2023. https://doi.org/10.4324/9781003346456.

ECstep, Copenhagen, Denmark. “Langelinie – Long Line.” ECstep, n.d. Accessed August 7, 2025. https://ecstep.com/langelinie.

European Parliment Petition for Impact of Artificial Island Lynetteholm. 2024.

Facebook. “STOP Lynetteholm!” Social Media Platform. Accessed January 1, 2026. https://www.facebook.com/groups/stoplynetteholm/.

Fainstein, Susan S. “Mega-projects in New York, London and Amsterdam.” International Journal of Urban and Regional Research 32, no. 4 (2008): 768–85. https://doi.org/10.1111/j.1468-2427.2008.00826.x.

Falk, Nicholas. Applying Land Value Capture Tools. n.d.

Fokdal, Josefine. Power and Space: Appropriation of Space in Social Housing in Copenhagen. Habitat - International 10. Lit, 2008.

Francesco Zavatti. “The Øresund Bridge from Imagination to Innovation.” Memoria e Ricerca, no. 2 (2017): 313–30. https://doi.org/10.14647/87201.

Frederiksen, J. K., J. Brendstrup, F. S. Eriksen, et al. “Engineering Geology of Copenhagen.” Bulletin of Engineering Geology and the Environment 62, no. 3 (2003): 189–206. https://doi.org/10.1007/s10064-003-0189-2.

Friis Christensen, Christoffer. “Copenhagen Under Water.” The Copenhagen Post, February 20, 2025. https://cphpost.dk/2025-02-20/general/copenhagen-under-water-2/.

“FUTURE OF THE ISLAND OF AMAGER, DENMARK.” Athens Center of Ekistics, TRANSPORTATION IN METROPOLITAN AREAS, vol. 21, no. 125 (1966): 247–49.

Gaál, Norbert, and European Commission Economic. Nordic Heat Wave: Recent Housing Market Developments in Denmark and Sweden. no. 031 (2017).

Gehl, Jan, ed. Cities for People. Island Press, 2010.

Georg Rasmussen, Katrine. “Lost in Translation? An Analysis of How Divergent Discourses Influence the Planning Process of Urban Sustainability in the Case of Nordhavn in Copenhagen.” Lund University Centre for Sustainability Studies, 2017.

Grydehoj, Adam. “Making Ground, Losing Space: Land Reclamation and Urban Public Space in Island Cities.” Urban Island Studies 1 (2015): 96–117. https://doi.org/10.20958/uis.2015.6.

Hall, Thomas. Planning and Urban Growth in the Nordic Countries. n.d.

Hartoft-Nielsen, Peter. “Deconcentration of Workplaces in Greater Copenhagen: Successes and Failures of Location Strategies in Regional Planning.” In Employment Deconcentration in European Metropolitan Areas, edited by Max Barlow, Wolf Tietze, Paul Claval, et al., vol. 91, edited by Eran Razin, Martin Dijst, and Carmen VÁZquez. The GeoJournal Library. Springer Netherlands, 2007. https://doi.org/10.1007/978-1-4020-5762-5_3.

Harvey, David. “From Managerialism to Entrepreneurialism: The Transformation in Urban Governance in Late Capitalism.” Geografiska Annaler: Series B, Human Geography 71, no. 1 (1989): 3–17. https://doi.org/10.1080/04353684.1989.11879583.

Healey, Patsy. Making Strategic Spatial Plans. Taylor and Francis, 2006.

Healey, Patsy, ed. “Plan of Hope and Glory: An Example of Development Planning in Denmark After Maastricht.” In Making Strategic Spatial Plans: Innovation in Europe, Reprint. Routledge, 2006.

Hjøllund, Tina, Jørgen Boldt, Niels Hendriksen, and Sieverts Nielsen. Copenhagen, Nordhavn Implementation Plan. City of Copenhagen, Greater Copenhagen Utility (HOFOR), DTU, 2014.

Hovedstaden: Hvad Vil vi Med Den? (The Capital — What Do We Want to Do With It?). Initiativgruppen om Hovedstadsregionen, 1989.

Ihler Madsen, Christina, and Frederik Roland Sandby. “Why Lynetteholm must be stopped!” Klimabevægelsen i Danmark, September 5, 2023. https://www.klimabevaegelsen.dk/nyhedsblog/lynetteholm-must-be-stopped.

Jørgensen, J., and Hans Thor Andersen. “Copenhagen.” In City Profile, Vol. 12, no. 1. 1995.

Justesen, Rita. “Nordhavnen – a City District at the Water.” Portus Plus, CPH City & Port Development, 2010.

Kaae, Berit C., Jesper Holm, Ole Hjorth Caspersen, and Natalie Marie Gulsrud. “Nature Park Amager – Examining the Transition from Urban Wasteland to a Rewilded Ecotourism Destination.” Journal of Ecotourism 18, no. 4 (2019): 348–67. https://doi.org/10.1080/14724049.2019.1601729.

Katz, Bruce, and Luise Noring. “THE COPENHAGEN CITY AND PORT DEVELOPMENT CORPORATION: A Model for Regenerating Cities.” The Brookings Institution Centennial Scholar Initiative (n.d.).

Knowles, Richard D. “Transit Oriented Development in Copenhagen, Denmark: From the Finger Plan to Ørestad.” Journal of Transport Geography 22 (May 2012): 251–61. https://doi.org/10.1016/j.jtrangeo.2012.01.009.

Københavns Kommune. ØRESTAD SYD Lokalplan Nr. 398. n.d.

Københavns Kommune / City of Copenhagen (CPH). “BY2: Population 1. January by Municipality, Size of the City, Age and Sex.” Statistics Denmark, March 2, 2026. https://www.statbank.dk/BY2.

Københavns Kommune / City of Copenhagen (CPH). Forslag til lokalplan Sundmolen Øst. n.d.

Københavns Kommune / City of Copenhagen (CPH). Forslag til lokalplan Svanemølleholm Øst. n.d.

Københavns Kommune, and Køge Bugt. Risikostyringsplan 2021 (Risk Management Plan 2021). n.d.

Københavns Kommunes. ØRESTAD CITY CENTER Lokalplan Nr. 325. 2012.

Konvitz, Josef W. Cities & the Sea: Port City Planning in Early Modern Europe. n.d.

Kramer Mikkelsen, Jens, and Anne-Grethe Foss. Årsrapport 2006. Ørestadsselskabet, 2006.

“Land Reclamation, Management, and Planning in Coastal Region: A Geoinformatics Approach.” In Modern Cartography Series, vol. 10. Elsevier, 2021. https://doi.org/10.1016/B978-0-12-823895-0.00002-6.

Legarth Schmidt, Anders. “‘Du Aner Ikke, Hvor Meget Det Sviner«: Udvidelse Af Den Mest Populære Badezone i København Vækker Modstand’ (You Have No Idea How Much It’s Getting Dirty”: Expansion of the Most Popular Bathing Area in Copenhagen Arouses Opposition).” Politiken - Den Levende Avis, August 19, 2025.

Lynetteholm Trafikale Forhold. Baggrundsrapport Til Miljøkonsekvensrapport No. 2. 2020.

LYNETTEHOLM Fact Sheet -Climate Proofing and Coastal Landscape. BY&HAVN, n.d.

Majoor, Stan. “Progressive Planning Ideals in a Neo-Liberal Context, the Case of Ørestad Copenhagen.” International Planning Studies 13, no. 2 (2008): 101–17. https://doi.org/10.1080/13563470802291978.

Majoor, Stan. “Urban Megaprojects in Crisis? Ørestad Copenhagen Revisited.” European Planning Studies 23, no. 12 (2015): 2497–515. https://doi.org/10.1080/09654313.2015.1014780.

Majoor, Stan. “Urban Megaprojects in Crisis? Ørestad Copenhagen Revisited.” European Planning Studies 23, no. 12 (2015): 2497–515. https://doi.org/10.1080/09654313.2015.1014780.

Map View of Copenhagen (55.6779739, 12.5916831). Historisk Atlas. August 7, 2025.

Martín-Antón, Mario, Vicente Negro, José María Del Campo, José Santos López-Gutiérrez, and M. Dolores Esteban. “Review of Coastal Land Reclamation Situation in the World.” Journal of Coastal Research 75, no. sp1 (2016): 667–71. https://doi.org/10.2112/SI75-133.1.

MAST. “Lynettelagunen.” MAST. Accessed January 16, 2026. https://mast.dk/.

“Mere end 100 nye almene boliger på vej i Københavns Nordhavn.” By & Havn, November 5, 2025. https://byoghavn.dk/mere-end-100-nye-almene-boliger-paa-vej-i-koebenhavns-nordhavn/.

Metroselskabet. “Extension of the M4 to Ydre Nordhavn.” Governmental. Accessed December 2, 2025. https://metroselskabet.dk/en/projects-and-development/current-projects/extension-of-the-m4-to-ydre-nordhavn/.

Ministry of Green Transition. “History - Kalvebod Fælled.” The Danish Nature Agency. Accessed January 6, 2026. https://eng.naturstyrelsen.dk.

Mørk, Amalie Emanuel. “City of the Anthropocene. A Case Study of Lynetteholm, Copenhagen.” Malmö University, n.d.

Muñoz Gielen, Demetrio, and Erwin van der Krabben. Public Infrastructure Private Finance. 1st ed. □ Routledge Research in Planning and Urban Design. Routledge, 2019.

Nissen, Nikolai. “NORDHAVN: A Governmentality Analysis Of Urban Planning.” Copenhagen Business School, 2014.

“Nordhavn.” Architecture Office Website. COBE, November 2025. https://cobe.dk/projects/nordhavn.

Nugent, Ciara. “How an Artificial Island in Denmark Became One of Europe’s Most Controversial Climate Projects.” TIME, March 22, 2023. https://time.com/6264861/copenhagen-lynetteholm-artificial-island-climate-change/.

“Ny bydel skyder op i Øresund.” October 5, 2018. https://regeringen.dk/nyheder/2018/regeringen-og-koebenhavns-kommune-vil-bygge-en-helt-ny-bydel/.

“Ny containerterminal i København.” By & Havn, February 25, 2022. https://byoghavn.dk/ny-containerterminal-i-koebenhavn/.

OECD and Lincoln Institute of Land Policy, PKU-Lincoln Institute Center. Global Compendium of Land Value Capture Policies. OECD Regional Development Studies. OECD, 2022. https://doi.org/10.1787/4f9559ee-en.

Olsson, Lea, and Jan Loerakker. “The Story Behind Failure: Copenhagen’s Business District Ørestad.” Failed Architecture, September 12, 2013. https://failedarchitecture.com/the-story-behind-the-failure-copenhagens-business-district-orestad/.

“Ørestad - Grundejerforeninger og Vandlaug.” Ørestad, n.d. Accessed October 16, 2025. https://orestad.net/grundejerforeninger/.

Ørestad « APRT - Artto Palo Rossi Tikka Architects. n.d. Accessed September 24, 2025. https://aprt.fi/projects/orestad/.

Ösgård, Anton, and Bas Spierings. “‘It Just Didn’t Really Happen’: The Lived Space of Entrepreneurial Urbanism in Ørestad, Copenhagen.” Geoforum 123 (July 2021): 117–28. https://doi.org/10.1016/j.geoforum.2021.05.004.

Pagliocco, Sydney. Extended Urbanization in Tandem with Sustainability: Exploring the Nordhavn Suburb in Copenhagen, Denmark and Its Green Initiatives. n.d. Trinity College.

Pancewicz, Alina. “Urban Nature as an Active Means of Adapting Public Spaces to Climate Conditions: Case Studies from Copenhagen and Selected Polish Cities.” Civil and Environmental Engineering Reports 32, no. 4 (2022): 123–46. https://doi.org/10.2478/ceer-2022-0049.

Ramboll, and By&Havn. Lynetteholm Miljøkonsekvensrapport. 2020.

Regeringen. Principaftale Om Anlæg Af Lynetteholmen. Bilag 1. n.d.

Salet, Willem, and Enrico Gualini. “Copenhagen Orestad: Public Partnership in Search of the Market.” In Framing Strategic Urban Projects: Learning from Current Experiences in European Urban Regions. Routledge, 2007.

Schneider, B. “Klimabevægelsen svarer By & Havn: Udskyd Lynetteholm et år, så vi kan få undersøgt alt inden anlægsstart.” April 13, 2021. https://byrummonitor.dk/nyheder/.

Schuelke, Quentin C, Serena Shah, and Rupin Vaidya. Nordhavn: Denmark’s Most Sustainable Modern Housing Development. 2022.

Sietchiping, Remy, and Jan Turkstra. Managing Urban Land Information: Learning from Emergent Practices. United Nations Human Settlements Programme, 2012.

Stewart, Hodgson. “Christianshavn, Copenhagen: Touring the Heart of Danish Seafaring History.” Scandification, n.d.

“The Case of Copenhagen.” PORTUS the Online Magazine of RETE, n.d.

The Editorial Team. “Copenhagen to Receive a New Green Container Terminal by 2023.” Ports. SAFETY4SEA, October 25, 2021. https://safety4sea.com/copenhagen-to-receive-a-new-green-container-terminal-by-2023/.

The Ørestad Syd Landowners Association. OVERBLIK - Grundejerforeningen Ørestad Syd. Budget No. 2024. Ørestad, n.d.

UK Parliament. “Land Value Capture - Housing, Communities and Local Government Committee - House of Commons - Garden Cities and New Towns.” Governmental. September 13, 2018. https://publications.parliament.uk.

Van Zoest, Simon, and Tom A. Daamen. “Explaining Value Capture Implementation in New York, London, and Copenhagen: Negotiating Distributional Effects.” Urban Affairs Review 60, no. 5 (2024): 1349–81. https://doi.org/10.1177/10780874231222174.

Vuk, Goran. “Transport Impacts of the Copenhagen Metro.” Journal of Transport Geography 13, no. 3 (2005): 223–33. https://doi.org/10.1016/j.jtrangeo.2004.10.005.

Word Bank Group. The Copenhagen Model: A Publicly Owned, Privately Run Company - Case Study. Urban Regeneration KSB, n.d.

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