



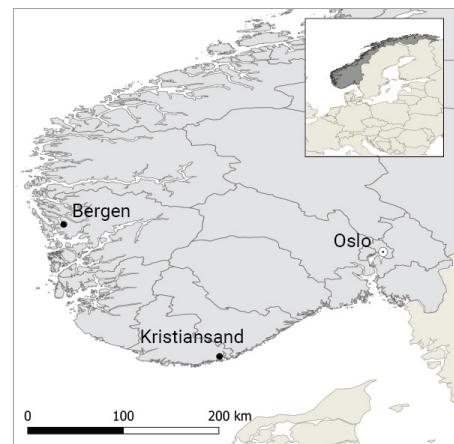
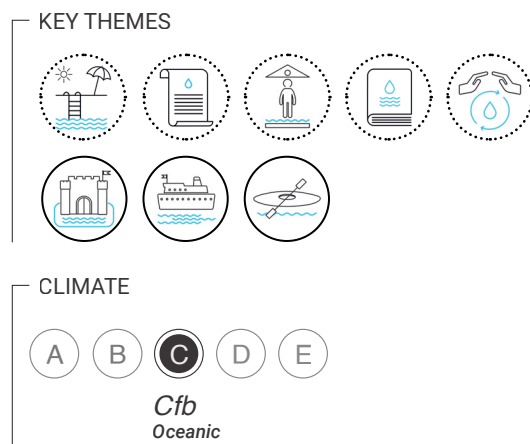


# Reconciling the Bryggen World Heritage Property with Bergen’s Strategy for Sustainable Urban Development through Heritage Impact Assessment

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*This case study sheds light on potential ways of embedding water-related heritage in an integrated strategy of sustainable urban development in Bergen, Norway. Particular attention is paid to the ongoing Heritage Impact Assessment (HIA) process in Bergen, which was started in 2019 to assess potential impacts of Bergen’s new transport strategy on the World Heritage site. Various HIA reports have been compiled and discussed with Bergen’s planning authorities, other experts and in a public hearing process. The municipality of Bergen has used the HIA to reconcile the preservation of the Bryggen World Heritage site and its historic harbor setting with its strategy for sustainable urban development. Hence, the HIA is serving as an essential tool to implement the UN Agenda 2030 for sustainable development.*



< Fig. 1 Fragment: The World Heritage Site of Bryggen and its setting, seen from Strandkaiaen (Source: Philipp Tebart).

## Introduction

The World Heritage site of Bryggen, located in Bergen, Norway, was inscribed in the World Heritage List in 1979. Today, Bryggen is the only place worldwide where the building structure of a Hanseatic “office” (*kontor*, trading post) is fully conserved. Bergen’s population is proud of its Hanseatic roots, but the preservation and sustainable development of Bryggen as a water-related heritage site is not a smooth process. Key issues relate to Bergen’s future sustainable development strategy, which may include the development of a new light rail line in the immediate vicinity of Bryggen. In addition, Bergen’s harbor is strongly dependent on cruise ship tourism, which is directly tied to Bryggen, thus causing both mass tourism and unsustainable tourist traffic. Also, water-related climate change will require new interventions in the historic harbor area.

## Vågen Harbor and Bryggen Hanseatic Office

Bergen, located in southwest Norway and known as “the city between the mountains,” is the second-largest city in Norway with nearly 300,000 inhabitants. Bergen’s favorable harbor conditions are considered a main reason why, by the Middle Ages, the city had become an important Northern European trading and shipping port. In 1350, the Hanseatic League

established an office in Bryggen and proceeded to dominate international trade for 400 years. In 1754, the Hanseatic office was closed and replaced by a Norwegian office, which most of the German merchants joined.

During the period of the Hanseatic office, Hanseatic merchants gradually acquired ownership of Bryggen and controlled the trade in stockfish from northern Norway through privileges granted by the Norwegian king. The Hanseatic office at Bryggen was one of four; the others were London, Bruges and Novgorod. Bryggen, named after its quay, which was called “bryggene” during the Middle Ages, is the only one of the four where the entire building structure of a Hanseatic office can still be experienced. Each trading house had its own part of the quay with private stalls and rocker booms for loading. Important elements of the context of the Hanseatic League related to the Norwegian king, the church and the city are still visible in the relation between landmarks of Bergenhus fortress, one of the oldest preserved fortresses in Norway, the churches and the ruins of the townhall. Mariakirken (St. Mary’s Church) is one of the oldest churches in Norway and served as the Hansa League’s church (Bergen Kommune 2020).

At present, the wooden buildings of Bryggen have become iconic of the Vågen harbor, which is still a fully active shipping port. Consequently, Bryggen was inscribed in the UNESCO World



^ Fig. 2 The World Heritage Site of Bryggen and its setting, seen from Strandkaiaen (Source: Philipp Tebart).

Heritage List as a northern version of a “fondaco” (the most famous of which is Venice’s Fondaco dei Tedeschi), unequaled in the world, where the structures have remained within the cityscape and perpetuate the memory of one of the oldest large trading ports of Northern Europe.

Due to its outstanding location, due to a relatively mild climate, access to the North Sea and fjord, shelter from the sea enhanced by the offshore islands, the city of Bergen had a central position as a military, administrative, political and religious center in Norway for several hundred years. The oldest Vågen harbor settlements were established along the east side of Vågen and the main features of medieval Bergen were centered on the harbor area. Building plots, streets and public spaces were oriented toward the harbor to facilitate easy access to each merchant’s quay. The quay in front of Bryggen was not publicly accessible until the late 1800s, when the private quays were purchased by the Port Authority. However, access to the harbor was important earlier than that. Consequently, in 1276, the city council designated spaces for public use (*allmenninger*) securing everyone’s right to access the sea and common areas. They are still visible in present-day Bergen. In short, Bryggen, Vågen bay, and the entire setting of this historic harbor area has been widely preserved until today.

### **Challenges for Bryggen and Vågen Harbor due to Norway’s Zero Growth Strategy for Carbon Emissions**

In the present day, Bergen’s unique location between the mountains and by the sea is both an asset and a problem. For hundreds of years, the sea was the most important transport route to and from the city. But this changed rapidly

when Bergen was connected to the east of the country by train and later, during the twentieth century, when car traffic arrived. Bergen, which at first had developed as a compact city around the harbor area, quickly developed into a suburbanized region connected mainly by motorized traffic.

To support more sustainable development patterns, Norway currently follows a zero-growth policy with regard to carbon emissions for large cities. Growth of passenger traffic should be covered by public transport, cycling and walking, while carbon emissions caused by vehicle traffic should be reduced to the lowest point possible. Consequently, Bergen, as the capital of Vestland County and a commuter hub for the surrounding municipalities, developed a Green Strategy with the overall goal to support sustainable urban development and to become a fossil-free municipality. This strategy promotes zero growth in vehicle traffic and its decrease by at least 20 per cent from 2013 to 2030 respectively. The Bybanen (city tram) light rail network opened in 2010. Connecting the different parts of the city, it functions as the backbone of Bergen’s future sustainable public transport system. One Bybanen line is currently in operation and a second was opened in November 2022. To extend this network, the municipality of Bergen is planning a third light rail line, which is meant to link Åsane, on the north side of Bergen, with the city center. Growing numbers of users of Bergen’s new Bybanen network show that this overall strategy is generally successful. However, one of the most discussed points of the planned Bybanen extension to the northern city districts is Vågen harbor and especially Bryggen. Part of the new Bybanen tram track is planned to be located directly on Bryggen Quay. These planned transformations in the immediate vicinity of the UNESCO World Heritage site have led to heated discussions among Bergen’s





^ Fig. 3 Vågen harbor and Hanseatic League quarters around 1870 (Source: Marcus.uib, Knut Knudsse , ubb-kk-2127-0158).



^ Fig. 4 Bergen today, Vågen harbor and Bryggen are visible in the foreground (Source: Philipp Tebart).

population for several years. The construction of the tram could have negative structural impacts on both the archaeological heritage and the groundwater levels that are crucial for the property's wooden foundations. It is also feared that the tram extension could have a negative visual impact on the iconic view of Bryggen in historic Vågen harbor. To assess potential impacts of the tram extension on Bryggen, city governance commissioned an Heritage Impact Assessment (HIA), which is currently being conducted with the participation of relevant stakeholders. The HIA process was planned in several phases and with visualizations designed to inform the public, experts, planning authorities and politicians. Due to the various assessment phases, the planned light rail track near Bryggen has been modified successively to mitigate negative impacts (Kloos 2022).

Bergen's Green Strategy will also affect Vågen harbor, which is at present Norway's largest cruise ship port. Because most of the tourists arriving by cruise ships are visiting Bryggen, the World Heritage property receives an extremely large number of visitors, especially in summer months. During the pandemic, the Port of Bergen, the tourist agency VisitBergen and several partners developed a plan for more sustainable cruise tourism in Bergen (Armland 2021). In May 2022, Bergen City Council decided that a maximum of 8,000 cruise ship passengers daily will be accepted in the future, and that the number of cruise ships per day will be reduced to three. Four ships will only be accepted if electrical power can be provided from the shore. According to Bergen City Council, all cruise ships mooring at Bergen should be able to connect to shore power and this should be a mandatory requirement by 2026 at the latest. To support this, Bergen harbor built the world's largest onshore power supply system, which can supply three cruise vessels with shore power simultaneously

(Port of Bergen n.d.). Additionally, Bergen plans to introduce requirements for zero emissions on air and sea traffic including cruise ships. The Norwegian Maritime Directorate is preparing regulations and setting an introduction date for the Western Fjords, another of Norway's World Heritage Sites.

### **Climate Change and Seafront Strategy for Vågen harbor**

Both Vågen harbor and Bryggen might also be affected by climate change. Severe threats for Vågen harbor from sea level rise are handled in Bergen's master plan for wastewater and water environment, 2019–2028. In the long term, adverse effects as a result of sea level rise are to be limited by establishing barriers at the entrance to Vågen and Store Lungegårdsvann, possibly in Damsgårdssundet at Puddefjordsbroen. The speed of climate changes will determine when it is necessary to build the barriers but planning of the barriers should start in this master plan period (2019–2028).

Bergen has also developed a seafront strategy which sets out frameworks and guidelines for the development of marine areas. Good links between the existing urban structure and the seafront must be clarified, and a continuous promenade with associated urban spaces has been proposed to connect diverse areas. The seafront strategy also aims to manage the upkeep of cultural heritage and to ensure that Bergen is further developed as a green, compact walking city. To this end, Bergen intends to upgrade its entire waterfront, which at the moment is not yet fully accessible (Bergen Kommune 2022).



^ Fig. 5 Planned Bybanen light rail on Bryggen Quay and modifications carried out throughout the Heritage Impact Assessment process (Source: Philipp Tebart /mkphc).

## Conclusion

From medieval times to the present, Bergen's urban development has been closely related with its harbor. Vågen harbor and the World Heritage Site of Bryggen are unique cultural assets which still truly represent the "heart of the city." However, the problems that must be solved indicate that an integrated strategy is needed that sets out directives for reconciling the preservation of this valuable area with Bergen's sustainable urban development strategy.

The HIA initiated by the city assessed the consequences of Bergen's plan to extend its light rail network on the Outstanding Universal Value of Bryggen. This was an important starting point from which to devise an integrated strategy for urban planning. The HIA shed light on a variety of interrelated challenges, including Bergen's future traffic development, cruise tourism, a need for a visitor strategy, climate change and the future protection of Bryggen and the harbor. In doing so, it was also an important basis for a public hearing process carried out to inform a broad range of stakeholders in Bergen. Visualizations of the planned new Bybanen line led to successive improvements of the plan, but also helped all stakeholders understand the complexities of the situation and alternatives to cope with potential risks to groundwater levels as well as

potential negative impacts on the historic setting of Vågen harbor, which can be considered fully intact at present.

The municipality of Bergen meanwhile recognized that the HIA process can help it achieve its ambitious sustainable development goals, as well as a strategy for integrated urban planning which includes the preservation of the World Heritage property and its unique setting. When Bryggen was inscribed in the World Heritage List in 1979, the unique setting of Vågen harbor and medieval Bergen was not included as part of the site. However, it has become obvious that it will be crucial to consider the setting in efforts to preserve the Historic Urban Landscape of Bergen as a unique water-related city and to pursue Bergen's sustainable development. To further support this, one of the recommendations of the HIA focused on the creation of a buffer zone around the World Heritage property to support both the protection of the unique historic setting as well as the sustainable development of Vågen harbor. Although a number of issues have yet to be resolved, the HIA has been a tool of support for the implementation of Agenda 2030, as well the related Sustainable Development Goals.



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