



PRELIMINARY REPORT

Heritage Impact Assessment of the planned Bybanen Light-Rail Extension on the World Heritage Property Bryggen / Bergen

16 October 2020

PRELIMINARY REPORT - Heritage Impact Assessment of the planned Bybanen Light-Rail Extension on the World Heritage Property Bryggen, Bergen

HERITAGE IMPACT ASSESSMENT – Background and Objectives

The planned Bybanen Light-Rail Extension linking the Bergen regions to the centre is now been projected in its second phase, through Bergen city northwards. The approved location of the planned Light Rail Extension lies in the immediate proximity to the World Heritage Property Bryggen.

Byantikvaren commissioned this Heritage Impact Assessment in order to provide an assessment of the impact of the planned Light-Rail Extension (Bybanen) on the Outstanding Universal Value (OUV) of the World Heritage Property Bryggen from an independent point of view.

Both potential beneficial and adverse impacts of the planned Bybanen Light-Rail Extension on the Outstanding Universal Value (OUV) of the UNESCO World Heritage property Bryggen should be assessed according to the ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties 2011.

The main issues s Preliminary Heritage Impact Assessment report, to be answered are:

- a) *Will the Bybanen Light Rail Extension be compatible with the World Heritage Property of Bryggen?*
- b) *To what extent is the Outstanding Universal Value threatened by the project?*

PRELIMINARY REPORT – Results

In general, the ambitious strategy to use Bybanen to develop Bergen into a fossil free municipality according to Bergen’s Green Strategy and “Environmental Pledge - Miljøløftet” and promoting zero growth in vehicle traffic and decrease of traffic by at least 20 % from 2013 to 2030 is acknowledged.

Similarly, it is acknowledged that there have been great efforts undertaken to refurbish the public spaces around Vågen area in the course of the development of the planned Bybanen Light-Rail Extension along Bryggen.

In general, the assessment highlights that the Vågen harbour area is a key attribute of the Outstanding Universal Value of the World Heritage Property Bryggen. It is both the medieval setting of the World Heritage property Bryggen and a high potential for Bergen’s sustainable urban development.

Consequently, it is states that there is a unique chance to build up a Bybanen network which supports both Bergen’s Green Strategy goals and the safeguarding of Bergen’s World Heritage within its setting of Vågen area.

This PRELIMINARY REPORT leads to the conclusion that the planned daylight-option of the Bybanen Light-Rail Extension along Bryggen generates both beneficial and adverse impacts on the Outstanding Universal Value of the World Heritage property Bryggen.

It is therefore suggested to use current discussions about Bybanen’s impact on the OUV of World Heritage property Bryggen as a starting point to elaborate an integrated strategy for Bryggen’s (World) Heritage Management.

PRELIMINARY REPORT – Recommendations

The following recommendations define MAIN ISSUES and suggest NEXT STEPS to be taken in this context:

Recommendation 1_Develop all options to an optimum standard:

Step 1: Further development of the planned Bybanen Light-Rail Extension (daylight option)

Step 2: Development of the alternative tunnel option in parallel

Step 3: Assess and compare both options concerning their impact on the Outstanding Universal Value of World Heritage property Bryggen

Recommendation 2_Develop an integrated Management Plan for the World Heritage property Bryggen and its setting:

Step 1: Identify risks and potentials in the entire Vågen area

Step 2: Combine World Heritage management, urban planning and transport planning to an integrated approach for the entire Vågen harbour area.

Step 3: Investigate how the planned Bybanen Light-Rail Extension can contribute to the sustainable development of the World Heritage property and its setting in the Vågen area.

Abstract



1. Background and Objectives
2. Working Process and Methodology
3. World Heritage Value: Outstanding Universal Value and Attributes
4. Planned Bybanen Project
5. Impact Assessment
6. Recommendations

Content

1

Background and Objectives

What is the goal of this Preliminary Report?



Main issues:

Will the planned Bybanen Light-Rail Extension be compatible with the World Heritage Property of Bryggen?

In case of yes, to what extent the Outstanding Universal Value is threatened by the project?

- World Heritage Property Bryggen, the old wharf of Bergen, testimonies the town's importance as part of the Hanseatic League's trading empire from the 14th to the mid-16th century.
- The historic harbour district was inscribed in the UNESCO World Heritage List in 1979.
- The new Bybanen light-rail line linking the Bergen regions to the centre is now been projected in its second phase, through Bergen city northwards. The approved location of the light rail extension lies in the immediate proximity to the World Heritage Property.
- HIA should provide an assessment of the impact of the proposed extension of the light-rail network (Bybanen) on the Outstanding Universal Value (OUV) of the World Heritage property Bryggen from an independent point of view.
- Both potential beneficial and adverse impacts of the planned Bybanen Light-Rail Project on the Outstanding Universal Value (OUV) of the UNESCO World Heritage property Bryggen should be assessed.
- Recommend future steps to mitigate potential adverse impacts and to enhance beneficial impacts respectively regarding the World Heritage Property's OUV so as to avoid, reduce, or compensate for negative impacts and to possibly amplify positive impacts.

Background



With regard to the above-mentioned background, this Preliminary Report has the following objectives:

- *Inform* all stakeholders about the background of the requested Heritage Impact Assessment (Chapter 1)
- *Outline* the working process and methodology of the HIA (chapter 2)
- *Analyse* World Heritage Values: inscription criteria and attributes conveying the OUV of the World Heritage Property Bryggen (Chapter 3)
- *Analyse* the current state of the planned Bybanen light-rail project, as well as other aspects relevant to the assessment (Chapter 4)
- *Summarise* preliminary results with regard to the potential beneficial and adverse impacts of the planned Bybanen light-rail project on the OUV of the UNESCO World Heritage property Bryggen. To this end, this report inter alia contains visualisations of the planned Bybanen light-rail project (Chapter 5)
- *Inform* all stakeholders about these first findings and recommendations for future steps to take (Chapter 6).

Objectives



2

Process and Methodology

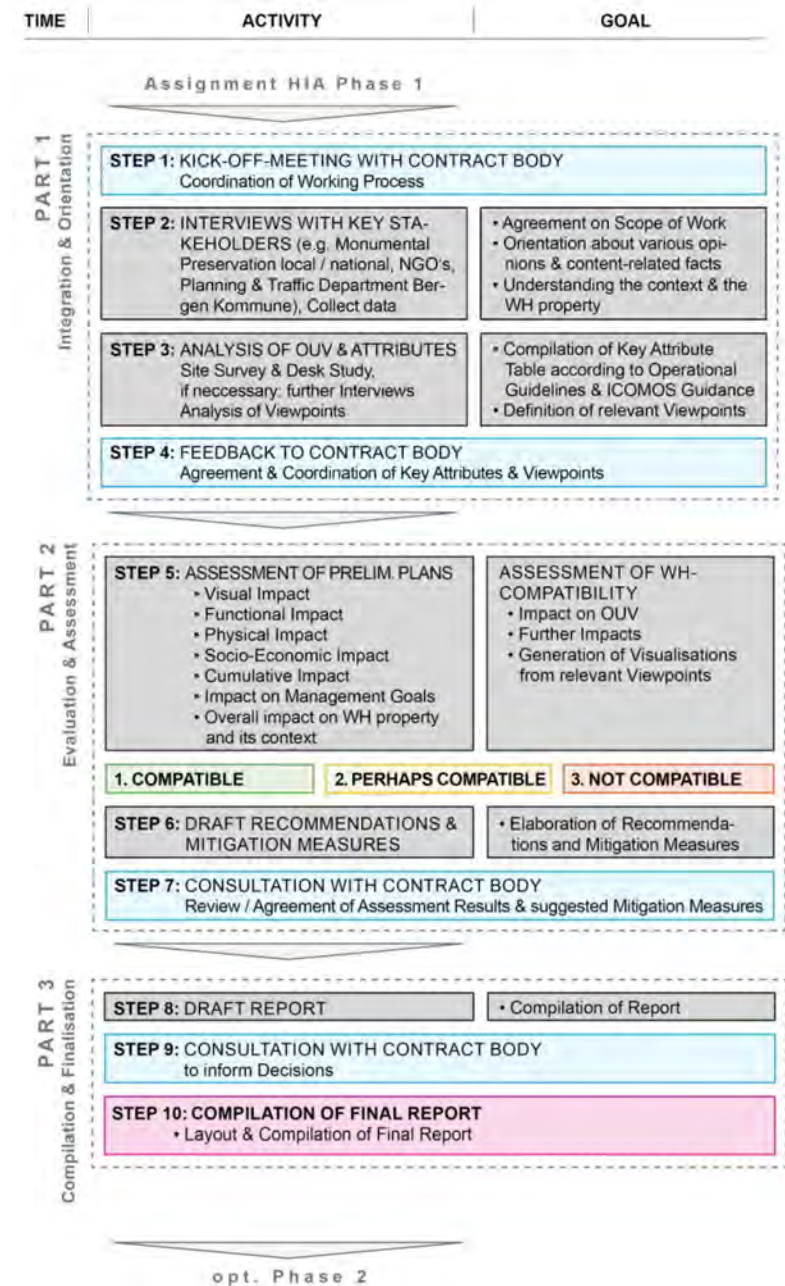
Where we are...

Phase 1: Interviews with key stakeholders + Analysis

Phase 2: Assessment + Recommendations

Present State: Preliminary Report

Working Process





The three pillars of Outstanding Universal Value (@ IUCN)

Outstanding Universal Value =
 World Heritage Criteria +
 Integrity and Authenticity +
 Protection Management

Outstanding Universal Value is not movable!

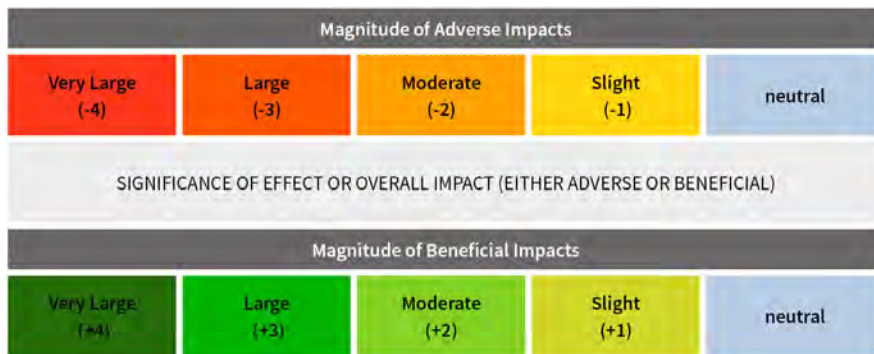
Operational Guidelines, §49:

„Outstanding Universal Value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole. The Committee defines the criteria for the inscription of properties on the World Heritage List.“

Operational Guidelines, §51:

“At the time of inscription of a property on the World Heritage List, the Committee adopts a *Statement of Outstanding Universal Value* (see paragraph 154) which will be the key reference for the future effective protection and management of the property.“

Starting Point of HIA: World Heritage Values



(© ICOMOS / mkphc)

Grading has to be related to attributes which convey the Outstanding Universal Value World Heritage property (physically or on immaterial level):

Attributes (Operational Guidelines, § 82):

- form and design;
- materials and substance;
- use and function;
- traditions, techniques and management systems;
- location and setting;
- language, and other forms of intangible heritage;
- spirit and feeling; and
- other internal and external factors.

Methodology – Assessment / Magnitude of Impact



Heritage Impact Assessment (© mkphc)

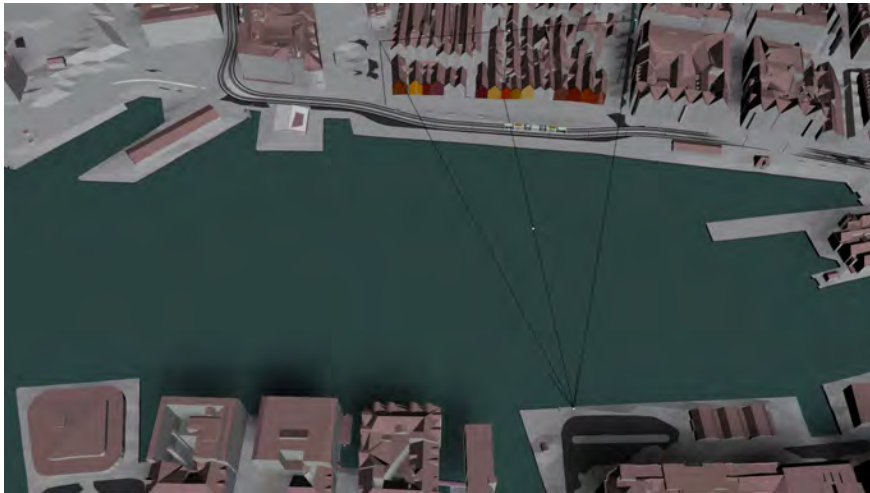
“A process of **identifying**, predicting, **evaluating** and communicating the probable effects of a current or proposed development policy or action on the cultural life, institutions and resources of communities, then **integrating** the findings and conclusions into the planning and decision making process, with a view to **mitigating** adverse impacts and **enhancing** positive outcomes.”

Def. International Association of Impact Assessment (IAIA)

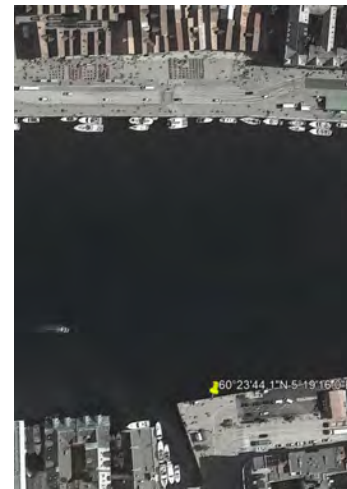
Main Steps of Heritage Impact Assessment



Bryggesporden, 360° panorama stitch



Location determination and camera position in 3d model



Generation of Visualisations – 3D Model + digital photographs



Core photo with mesh overlay

Superposition of 3D-Model and Photographs

BACKGROUND

1. Introduction
2. Explanation of the HIA-methodology
3. Planning background and working process

FORMAL ANALYSIS: World Heritage Values

4. Outstanding Universal Value (OUV)
5. Attributes of the World Heritage property *Bryggen*

CONTENT ANALYSIS

6. Planned Bybanen Light-Rail Extension
7. Visual Impact of the planned Bybanen
8. Assessment of other Impacts
 - a. Functional Impact
 - b. Direct physical impact
 - c. Socio-economical impact
 - d. Estimation of cumulative impact
 - e. Impact on goals of the WH-management
 - f. Impact on the entire World Heritage property

RECOMMENDATIONS

9. Conclusion and recommendations

APPENDIX

10. Background Information and sources

Conclusion: Structure of Preliminary Report



3

World Heritage Value

OUV / Attributes

Outstanding Universal Value is not movable!

Criterion (iii)

“[...] It is a type of northern “fondaco”, unequalled 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.”

Integrity

“[...] Bryggen can be experienced as an entity within a larger harmonious urban landscape. It is connected more closely to the areas of small wooden dwellings beyond Bryggen and in the medieval city centre than to the larger 20th century buildings in its close proximity.”

Authenticity

“[...] However, from the 1960s the former trading in stockfish and commodities was gradually replaced by small arts and crafts businesses. An increase in the number of visitors has led to the establishment of restaurants and tourist businesses. This has resulted in inevitable changes in the spirit of the place, particularly along the front facades, whereas the atmosphere of the Hanseatic period can still be sensed in the more secluded area further back.”

Criteria (as inscribed in 1979) The Outstanding Universal Value of Bryggen as adopted by the World Heritage Committee at the time of inscription (after criterion iii):

Criterion (iii): Bryggen bears the traces of social organization and illustrates the use of space in a quarter of Hanseatic merchants that dates back to the 14th century. *It is a type of northern “fondaco”, unequalled 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.*

Integrity (2013)

Only around a quarter of the original buildings that existed in Bryggen remained after demolitions at the turn of the 19th century and several fires in the 1950s; the property is comprised of these remaining buildings. Notwithstanding, the medieval urban structure is maintained and the buildings include all elements necessary to demonstrate how Bryggen functioned: offices and dwellings at the front, warehouses in the midsection and assembly rooms (“Schøtstuer”), kitchen facilities and fireproof stone cellars at the back.

Bryggen can be experienced as an entity within a larger harmonious urban landscape. It is connected more closely to the areas of small wooden dwellings beyond Bryggen and in the medieval city centre than to the larger 20th century buildings in its close proximity.

The risk of fire, excessive numbers of visitors as well as global climate changes with more extreme weather and possibly higher sea levels are some of the potential risks Bryggen faces today.

Authenticity (2013)

The Hanseatic period at Bryggen ended long ago, but the Hanseatic heritage is documented through buildings, archives and artefacts which are well preserved for posterity. There are also series of architectural surveys of the buildings from 1900 onwards.

The preservation of the buildings commenced on a larger scale in the 1960s and had made major progress by 1979, the year of inscription on the World Heritage List. Some buildings at the back were moved in 1965 to create an open area for fire emergencies, but no further changes have been made to the urban structure since. The solutions and methods chosen have been well documented, and limiting the replacement of original materials has been an objective. Bryggen is built of wood, which is subject to rot, insect attack and ageing. Since 2000, there has been an increased focus on maintaining original methods and building materials in the restoration, with careful consideration given to the choice of material, paint, plugs, nails, etc. and the use of original tools as far as possible.

As the activity at Bryggen decreased after 1900, the buildings became derelict. However, from the 1960s the former trading in stockfish and commodities was gradually replaced by small arts and crafts businesses. An increase in the number of visitors has led to the establishment of restaurants and tourist businesses. This has resulted in inevitable changes in the spirit of the place, particularly along the front facades, whereas the atmosphere of the Hanseatic period can still be sensed in the more secluded area further back.

Bryggen’s Outstanding Universal Value (1979 / 2013)

KEY THEMES (source: Draft Management Plan)

Bryggen in medieval Bergen harbour city

Hanseatic Office

Living Bryggen

Sustainable management objectives



Hieronimus Scholeus, 1588 (@ marchus.uib.no)

(@see colophone)

Attributes: 1. Setting

OUTSTANDING UNIVERSAL VALUE (OUV)	THEME	ATTRIBUTES sustaining the OUV	Illustrations	
			historic	present
BRYGGEN IN MEDIEVAL BERGEN HARBOUR CITY				
<p><i>Criterion (iii)</i> ...It is a type of northern fardaco unequalled 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</p> <p>RSOUV2013 Bryggen can be experienced as an entity within a larger</p>	<p>Understanding the setting of Bryggen in medieval Bergen cityscape and seascape</p>	<p>Visual and functional integrity of Bryggen in Bergen historic urban landscape.</p> <p>Urban layout around Vågen harbour</p>		
		<p>Wooden medieval Bergen in the Vågsbunnen and along the slopes above medieval Øvregeaten</p>		
		<p>Continuity of medieval layout of public spaces: (Allmenninger) Dreggsallmenningen, Nikolaikeirkeallmenningen, Finnegårdgaten, Bryggesporden, Torget, Vågsallmenningen</p>		
		<p>Visual and functional continuity of medieval maritime and land communication:</p> <p>Access by sea (Bergenhus, Nordnes, Skuteviken) and by land (Vågsbunnen, Øvregeaten)</p>		
<p>OUTSTANDING UNIVERSAL VALUE (OUV)</p>	<p>Understanding the setting of Bryggen in medieval Bergen cityscape and seascape</p>	<p>Visual and perceptual understanding of the political and socio-economic relation of Hanseatic League with King, Church and the Bergen city</p> <p>Landmarks in the cityscape: King's castle (Bergenhus, The Church: (Mariakirke, diocese seat (Nykirken, Korskirken, The city: 1st city council hall (ruins) and Torget market place</p>		
		<p>Maintained central position of Vågen harbour in Bergen natural and urban landscape</p>		
		<p>Continuity of Vågen quays; Festningskaiaen, Brandbenken, Bryggen, Strandkaiaen, Tollbodkaierne, Munke-bryggen, Høllbergkaiaen</p>		
		<p>Continuity of the trade and maritime activities - living Vågen harbour</p>		
LIVING BRYGGEN				
<p>OUTSTANDING UNIVERSAL VALUE (OUV)</p>	<p>Iconic image for Bergen locally and internationally</p> <p>Bryggen in Bergen way of life "Ber-</p>	<p>Bergen presentation for visitors and in media</p>		
		<p>Use of Bryggen quay; "Every-day-use" of workshops and office spaces (pur-</p>		
		<p>Bryggen quay and waterfront historic layout and design</p>		
<p>OUTSTANDING UNIVERSAL VALUE (OUV)</p>	<p>Cultural layers Archaeological present and potential evidence</p>	<p>Wider context of Bryggen quay: Bergenhus, Festningskaiaen, Brandbenken, Slottgaten, Bryggen, Bryggesporden, Torget and harbour sheds (kur)</p>		
		<p>Bryggen cultural layers under Hanseatic quarters and quay, Dreggsallmenningen, Sandbrøtgateen</p>		
		<p>Underwater archaeology in Vågen</p>		



Bryggen in medieval harbour city:
It is a particular quality that the medieval setting can be still experienced in Bergen!










Hieronimus Scholeus, 1588 (@ marchus.uib.no)

Attributes (1): Setting

Tremendous efforts to sustain both historic buildings and capabilities of craftsmanship.

It is still possible to understand the spatial, social and religious context.







Maintained visual integrity

OUTSTANDING UNIVERSAL VALUE (OUV)	THEME	ATTRIBUTES sustaining the OUV	illustrations historic	present
BRYGGEN HANSEATIC OFFICE				
Criteria (iii) Bryggen bears the traces of the social organization and illustrates the use of space in a quarter of Hanseatic merchants that dates back to 14 th c..	Continuity of Hanseatic building tradition	Hanseatic quarters and Finnegården: Use of traditional building practices; State of conservation of the buildings including exterior and interior materials and design foundations, hydrogeology, geotechnical condition, underwater management		
ICOMOS evaluation 1998 <i>The stone buildings at the upper end of Bryggen actually date in part from the Middle Ages, and thus form a physical link with the rest of the medieval area. In the immediate vicinity, but outside the World Heritage site, are Mariakirken (the former German church), Bergenhus castle, Vågen (the medieval harbour) and the medieval street and plot pattern at the head of the harbour.</i>	Understanding the function of the complete built structure of a Hanseatic Office	Offices and dwellings in the front, warehouses in the midsection and assembly rooms, kitchen facilities, storerooms and gardens in the back towards Øvregaten, Finnegården and Byggesporden		
		Understanding the religious/social context: Mariakirken and Katarinhospitalet		
	Maintained visual, functional and perceptual integrity with harbour, quay and warehouses			

(@see colophone)










Attributes (2): Continuity + Understanding










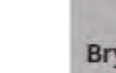
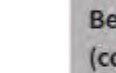

Identity + Character:
 Relation between Bryggen, quay and
 harbour still allows to understand the
 Hanseatic Office

OUTSTANDING UNIVERSAL VALUE (OUV)	THEME	ATTRIBUTES sustaining the OUV	Illustrations	
			historic	present
RSOUV 2013 <i>.. inevitable changes in the spirit of the place, particularly among the front facades, whereas the atmosphere of the Hanseatic period can still be sensed in the more secluded area in the back</i>	Maintained identity and perception of the character of a Hanseatic office	Spirit and feeling of Bryggen function and way of life		
		Sustaining the traditional character of use with multiple ownership and small commercial activities		
		Movable cultural heritage in museums, archival documentation (UNESCO Memory of the World nomination) documentation in literature and illustrations in Norway and internationally		

(@see colophone)

Attributes (3): Living Bryggen

OUTSTANDING UNIVERSAL VALUE (OUV)	THEME	ATTRIBUTES sustaining the OUV	Illustrations	historic	present
BRYGGEN IN MEDIEVAL BERGEN HARBOUR CITY	Understanding the setting of Bryggen in medieval Bergen cityscape and seascape	Visual and functional integrity of Bryggen historic urban landscape Urban layout around Vågen harbour			
RSOUV2013 Bryggen can be experienced as an entirety within a larger	Continuity of medieval layout of public spaces: Allmenninge, Dreggallmenningen, Nikolaikeikallmenningen, Finnegallgaten, Bryggjorden, Torget, Vågallmenningen	Wooden medieval Bryggen in the Vågsholmen and along the slopes above medieval Dreggatten			
	Visual and functional continuity of medieval maritime and land communication: Access by sea (Bergshol, Nordnes, Skutvikvæn) and by land (Vågsholmen, Dreggatten)				

OUTSTANDING UNIVERSAL VALUE (OUV)	THEME	ATTRIBUTES sustaining the OUV	Illustrations	historic	present
BRYGGEN HANSEATIC OFFICE	Continuity of Hanseatic building tradition	Hanseatic quarters and Finnregården: Use of traditional building practice; state of conservation of the buildings including exterior and interior materials and design foundations; hydrogeology; geotechnical condition; underwater management			
ICOMOS evaluation 1988 The stone buildings of the upper end of Bryggen actually date to post from the Middle Ages, and thus form a physical link with the rest of the medieval area. In the immediate vicinity, but outside the World Heritage site, are Hanseaten: the former German church, Bergenshus church, Viggen (the medieval harbour) and the medieval house and ship pattern of the head of the harbour.	Understanding the function of the complex full extension of a Hanseatic Office	Offices and dwellings in the front, warehouses in the midsection and assembly rooms, kitchen facilities, storerooms and gardens in the back towards Dreggatten, Finnregården and Bryggjorden			
	Understanding the religious/social context: Mariakirken and Katarinahospitalet				
	Maintained visual, functional and perceptual integrity with harbour, quay and warehouses				

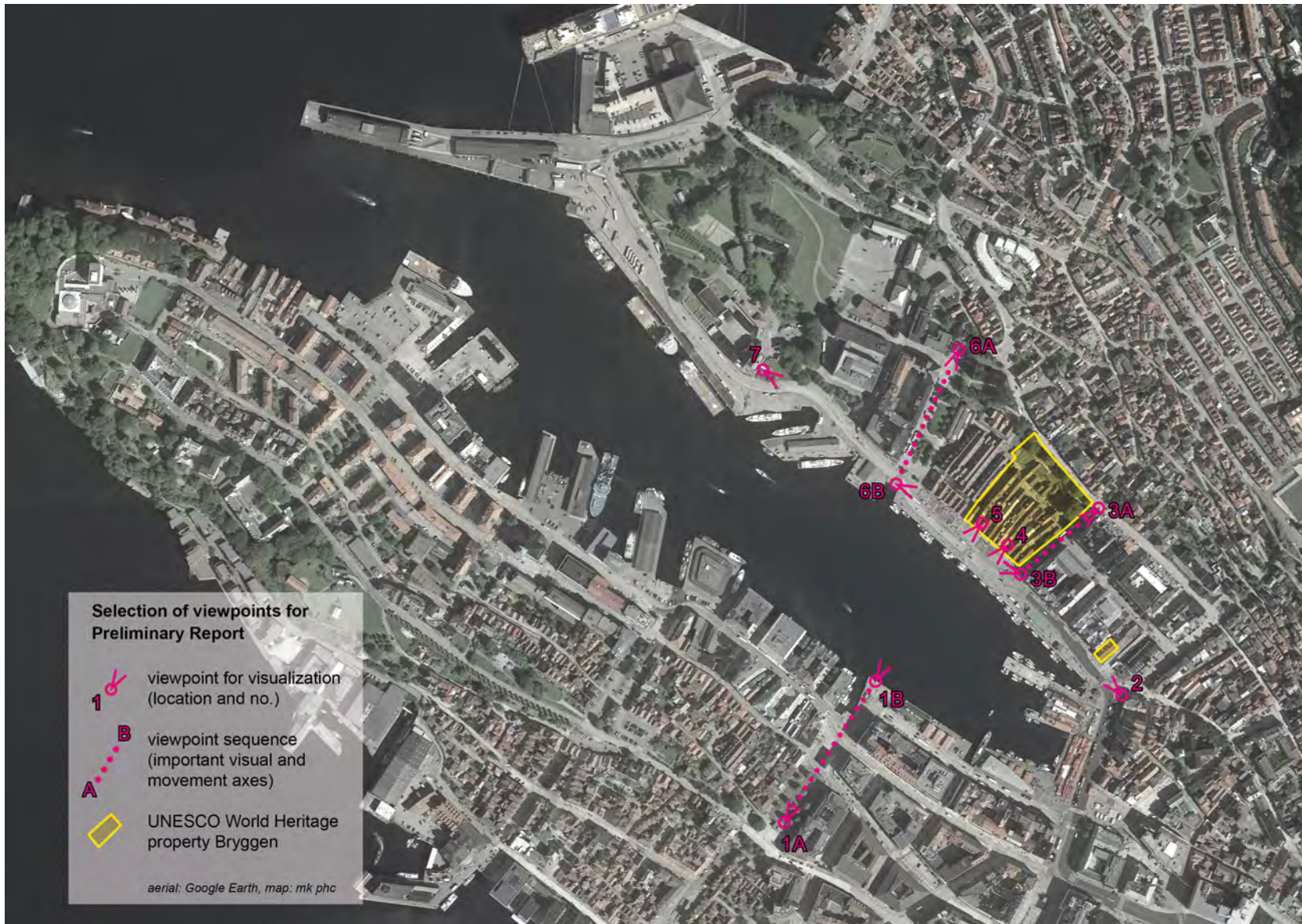
OUTSTANDING UNIVERSAL VALUE (OUV)	THEME	ATTRIBUTES sustaining the OUV	Illustrations	historic	present
RSOUV 2013 ... inevitable changes in the spirit of the place, particularly among the front facades, whereas the atmosphere of the Hanseatic period can still be sensed in the more secluded areas in the back	Maintained identity and perception of the character of a Hanseatic office	Spirit and feeling of Bryggen function and way of life			
		Sustaining the traditional character of use with multiple ownership and small commercial activities			
		Movable cultural heritage in museums, archival documentation (UNESCO Memory of the World nomination) documentation in literature and illustrations in Norway and internationally			

(@see colophone)

- Medieval cityscape + setting
- Medieval urban structure + public spaces
- Harbour + Quays
- Conservation and Continuity
- Understanding Hanseatic Office + Quay

Key OUV ATTRIBUTE	OUV ATTRIBUTES
Bryggen in medieval Bergen harbour city (context and setting of the WHP)	Bergen medieval cityscape and urban layout
	Medieval urban structure with public spaces / allmenningar and access roads
	Medieval Vågen harbour and its quays
Bryggen Hanseatic Office (WHP)	Building conservation and continuity of Hanseatic building practice
	The relation between built structure of the Hanseatic Office and Bryggen quay

Conclusion 1: Five Key Attributes as Basis for Assessment



Conclusion 2: Bryggen and its Setting / Important Views



4

4

Planned Bybanen Project



Bybanen to Åsane, section 1 from Kaigaten – Sandbrogaten. Bybanen shown in red, cycle route in blue and finished part of Bybanen network (@Planning report 201807496/02 / Bybanen, Plan- og bygningsetaten)



- Bergen municipality’s Green Strategy and “Environmental Pledge - Miljøløftet” has the overall goal of sustainable urban development and fossil free municipality. It promotes zero growth in vehicle traffic and decrease of traffic by at least 20 % from 2013 to 2030.
- Bybanen light rail functions as the backbone of the city’s public transport system and opened in 2010. The planned Phase 5 from the city centre to Åsane is now in draft phase.
- This HIA assesses planned Section 1 through the centre and along Bryggen. In the alternative Bryggen is closed to vehicle traffic. Bus lines and goods delivery will operate on Bryggen. In the area of Torget and Bryggen, a main bicycle route between downtown and Åsane will run in parallel to the light rail tracks.

Planned Bybanen Light-Rail-Extension



View from the viewpoint Fløyfjellet: Illustration of the planned section 1 from Kaigaten – Sandbrogaten in red (top), zoomed image sections with photomontages of planned project (©mkphc)

Planned Bybanen Light-Rail-Extension



(@ Asplan Viak AS)



Mot Vågen: Competition area and connected urban spaces. (@NAL 514/2019)

- The Bybanen Light Rail project has the goal to contribute to the improvements in the city centre and for Bryggen by following activities:
 - Follow- up on objectives in planning for Vågen, the quays and Bryggen
 - Reduction of car traffic, and no private cars along Bryggen
 - Maintaining access to the city centre in the event of major traffic incidents
 - Serving the historic centre, also in exceptional situations and at large events
 - Strengthening business
 - Improving conditions for pedestrians and cyclists
 - Regeneration of urban spaces
 - Regulation of tourist buses and tourist traffic
 - Reduced noise, dust and air pollution
 - Creating a flooding and storm wave barrier
- The design concept of Bryggen quay is based on the winning proposal in architectural competition 2019
- The winning project team of “Mot Vågen” by Asplan Viak AS is involved in the continued drafting of the design of the urban spaces.
- The competition focused particularly on public space and public activities and design solutions, overhead connecting masts, design of ground materials and surfaces, street furniture and traffic safety.
- The goals of the architectural competition were to enhance the experience values, the attractiveness and stimulate a multifunctional use of Vågen as well as ensure good communications and traffic security.

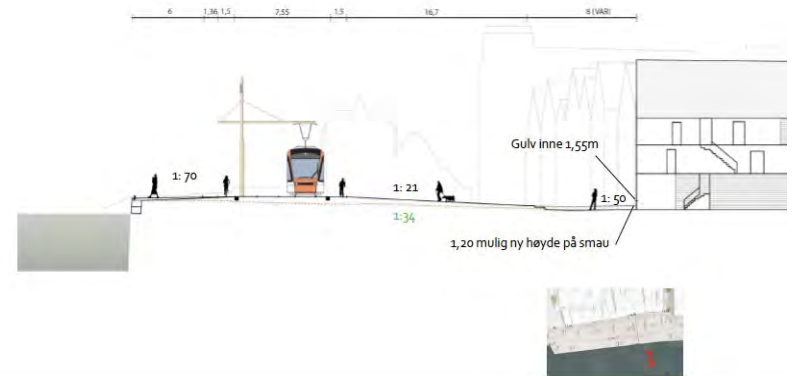
Planned Bybanen Light-Rail-Extension: Main goals



Planned public space
(© Bybanen, Plan- og bygningsetaten)

- Accessibility and comfort for users, especially walking and cycling, is a key theme for development of the urban space. Defining different zones at Bryggen is important, so that it is easily readable which areas are a priority for pedestrians and which areas will be shared with other road users.
- The city floor is established as a grand and comfortable deck. All road users, pedestrians, cyclists and light rail travel on this city floor. Materiality with granite slabs in light Norwegian granite, marks that the urban space is primarily designed for walking. The flat deck is reinforced for driving also used in the light rail track.
- The Light Rail at altitude +1.91, means that the quay walk will have a cross-section at 1:20. To achieve a good side fall, it is recommended that the quay edge be raised. The quay edge can be raised by raising the top stone and the quay rail to a new level as shown in the sections.

Alt 1 (+1,91) med trinn, snitt - Preliminary



Section through Bryggen
quay (© Mot Vågen)

Planned Bybanen Light-Rail-Extension: Design approach



5

Assessment
Visualisations



@ Google Maps Pro /mkphc

Viewpoints and view corridors



panoramic view of existing situation

focal length of individual photo (panorama-stitch): 36mm (35mm equivalent)

photography: Philipp Tebart

Situation: In the view across Vågen towards Bryggen, depicted in historic illustrations, the key elements of the Bergen medieval natural and urban landscape can still be seen; the mountain setting, the harbour and its quays, the urban pattern with waterfront buildings along the quays and the public spaces allowing access to the harbour from streets behind. The stone building in the view is from 1524.

Current state: The sightline towards Bryggen still gives a picture of Bryggen's setting in the medieval Bergen even if new developments are visible both on mountain hill and around the harbour.



1870/80 Knud Knudsen (©marcus.uib.no)



location: 60°23'38.7"N 5°19'08.4"E
aerial photo: Google Earth

1a_Østre Murallmenningen: Situation



photo of existing situation

view corresponds to 53mm focal length (35mm equivalent)

Please note: In the summer of 2020, Torget has been closed to car traffic, as a trial project. Due to the Covid-19 situation and due to this test period this photograph does not show the normal amount of boats and vehicles.

1a_Østre Murallmenningen: Situation (Core Photo)



1a_Østre Murallmenningen: Visualisation



CHARACTER OF IMPACT	BENEFICIAL	ADVERSE
visual / perceptual	-	Disrupts the visual understanding of the Vågen harbour , medieval Bergen urban structure and traditional mobility pattern
functional		irrelevant
immaterial		Degraded experience of the structure and function of Bryggen in the medieval Vågen harbour

Assessment: The planned Bybanen Light-Rail Extension does not obstruct the view of the medieval setting of Bryggen. However, its visibility accentuates the traffic along the quay and disturbs the understanding the historic structure and mobility pattern of the whole Vågen harbour.

Key OUV ATTRIBUTE	OUV ATTRIBUTES	Impact grading + beneficial / - adverse	
		Current state	Planned project
Bryggen in medieval Bergen harbour city (context and setting of the WHP)	Bergen medieval cityscape and urban layout	slight	slight
	Medieval urban structure with public spaces / allmenningar and access roads	slight	moderate
	Medieval Vågen harbour and its quays	slight	moderate
Bryggen Hanseatic Office (WHP)	Building conservation and continuity of Hanseatic building practice	irrelevant	irrelevant
	The relation between built structure of the Hanseatic Office and Bryggen quay	slight	moderate
Total		slight	moderate

1a_Østre Murallmenningen: Assessment



panoramic view of existing situation

focal length of individual photo (panorama-stitch): 35mm (35mm equivalent)

photography: *Philipp Tebart*

Situation: The visually striking view of the Bryggen warehouses from across Vågen harbour is an iconic view of Bergen. Despite the new developments and change of use of the quay the setting of medieval Hanseatic Office maintains its integrity in the seascape and cityscape of Bergen.

Current state: During normal summer seasons, the quay is crowded by Bergen inhabitants, visitors and a large number of cruising ship tourists. The quay has outdoor cafés, pubs and leisure boats moor along the quay.



1580 Joachim Scholeus (@Bergen Byarkiv)



location: 60°23'44.1"N 5°19'16.0"E
aerial photo: *Google Earth*

1b_Strandkaien: Situation



photo of existing situation

view corresponds to 50mm focal length (35mm equivalent)

Please note: In the summer of 2020, Torget has been closed to car traffic, as a trial project. Due to the Covid-19 situation and due to this test period this photograph does not show the normal amount of boats and vehicles.

1b_Strandkaaien: Situation (Core Photo)



photomontage

view corresponds to 50mm focal length (35mm equivalent)

1b_Strandkaien: Visualisation



CHARACTER OF IMPACT	BENEFICIAL	ADVERSE
visual / perceptual	higher visibility for commuters	visual and perceptual barrier between Hanseatic Office the quay and the medieval Vågen harbour
functional	overall access	functional barrier between the harbour the quay and the Hanseatic Office functional barrier between the public spaces/ allmenninger and the harbour
immaterial	increased awareness of Bryggen by commuters	Degraded experience of the context and setting of the Hanseatic office in medieval Bergen harbour

Key OUV ATTRIBUTE	OUV ATTRIBUTES	Impact grading + beneficial / - adverse	
		Current state	Planned project
Bryggen in medieval Bergen harbour city (context and setting of the WHP)	Bergen medieval cityscape and urban layout	moderate	large
	Medieval urban structure with public spaces / allmenningar and access roads	slight	large
	Medieval Vågen harbour and its quays	moderate	large
Bryggen Hanseatic Office (WHP)	Building conservation and continuity of Hanseatic building practice	slight	slight
	The relation between built structure of the Hanseatic Office and Bryggen quay	moderate	large/very large
Total		moderate	large

Assessment: Although the setting of the World Heritage property is partly degraded by housing blocks, buses and leisure boats, it is still possible to enjoy the vista to Bryggen and its setting.

The planned Light-Rail Extension is visually dominant to the quay. While the light rail facilitates an easier access to Bryggen it accentuates the barrier effect between the Hanseatic Office, Bryggen quay and Vågen harbour. However, it is still possible to understand the relation between Bryggen and its setting.

1b_Strandkaaien: Assessment



panoramic view of existing situation

focal length of individual photo (panorama-stitch): 21mm (35mm equivalent)

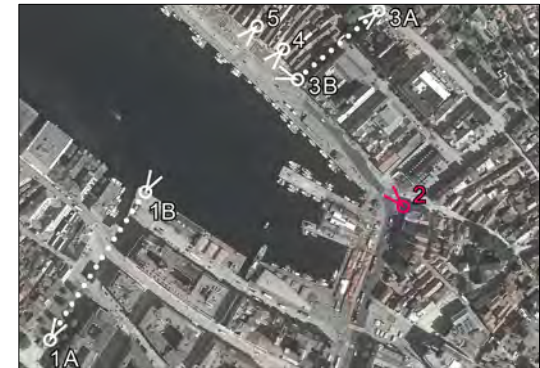
photography: Philipp Tebart

Situation: Although disturbed by ongoing traffic, the present view allows to identify the key themes of the World Heritage property and its setting; Finnegården – Hansa Museum, the Bryggen warehouses and quay, the Vågen harbour and the King's castle in the background. The harbour shed (Kur 11) is a listed building which represents the numerous harbour sheds which were on Bryggen quay.

Current state: The connection of Finnegården to the place is difficult to perceive even apart from the ongoing works. The entrance to Hansa Museum is often crowded by museum visitors as well as other tourists stopping by. Due to the present traffic hub the public space is fragmented by motorised traffic, pedestrian crossings, bus stops and a number of traffic signals.



1895 / 1900 Andreas Svanøe (@ marcus.uib.no)



location: 60°23'43.5"N 5°19'33.8"E
aerial photo: Google Earth

Viewpoint 2_Bryggesporden: Situation



photo of existing situation

view corresponds to 28mm focal length (35mm equivalent)

Please note: In the summer of 2020, Torget has been closed to car traffic, as a trial project. Due to the Covid-19 situation and due to this test period this photograph does not show the normal amount of boats and vehicles.

Viewpoint 2_Bryggesporden: Situation (Core Photograph)



Viewpoint 2_Bryggesporden: Visualisation



CHARACTER OF IMPACT	BENEFICIAL	ADVERSE
visual / perceptual	higher visibility for commuters	visual barrier between World Heritage key attributes and the medieval centre
functional	potential refurbishment of public spaces overall access and visibility for commuters	functional barrier between Hansa Museum, and the quay
immaterial	increased attractivity and visibility of medieval centre	compromised experience of the historic character and function of the Hanseatic office and its quay degraded experience of entering the Bryggen quay

Assessment: The redesign of the traffic area and the potential refurbishment of the adjoining Finnegårdsgaten / Vertlidsallmenningen will ameliorate the public space and the urban quality. However, the understanding of the visual and functional relation of Finnegården with the medieval Bergen, Vågen harbour and Bryggen quay will be further compromised by the high frequency of light rail traffic, related overhead masts and track very close to Finnegården.

Key OUV ATTRIBUTE	OUV ATTRIBUTES	Impact grading + beneficial / - adverse	
		Current state	Planned project
Bryggen in medieval Bergen harbour city (context and setting of the WHP)	Bergen medieval cityscape and urban layout	moderate	slight/moderate
	Medieval urban structure with public spaces / allmenningar and access roads	moderate	moderate / large
	Medieval Vågen harbour and its quays	moderate	large
Bryggen Hanseatic Office (WHP)	Building conservation and continuity of Hanseatic building practice	slight	slight / moderate
	The relation between built structure of the Hanseatic Office and Bryggen quay	large	large/very large
Total		moderate	large

Viewpoint 2_Bryggesporden: Assessment



panoramic view of existing situation

focal length of individual photo (panorama-stitch): 16mm (35mm equivalent)

photography: Philipp Tebart

Situation: Nikolaikirkeallmenningen, adjacent to the World Heritage property, is one of the oldest public spaces in medieval Bergen. The view illustrates the medieval Bryggen urban pattern with a public space between former Nikolaichurch, medieval Øvregaten, city hall (ruins can be visited beneath the street), Hanseatic Office and the quay.

Current state: The street has been rebuilt over time but the lower part along the Hanseatic Office and the position view between Øvregaten and Bryggen quay disrupts the view of the quay and compromises the understanding of the historic importance of Nikolaikirkeallmenningen..



location: 60°23'50.9"N 5°19'33.0"E
aerial photo: Google Earth

1580 detail Scholeus (@Bergen Byarkiv)

Viewpoint 3a_Øvregaten / Nikolaikirkeallmenningen: Situation



Please note: In the summer of 2020, Torget has been closed to car traffic, as a trial project. Due to the Covid-19 situation and due to this test period this photograph does not show the normal amount of boats and vehicles.

Viewpoint 3a_Øvregaten / Nikolaikirkeallmenningen: Situation



photomontage

view corresponds to 21mm focal length (35mm equivalent)

Viewpoint 3a_Øvregaten / Nikolaikirkeallmenningen: Visualisation



CHARACTER OF IMPACT	BENEFICIAL	ADVERSE
visual / perceptual		Visual and perceptual barrier between medieval urban structure and Vågen harbour
functional		functional barrier between the public spaces/ Allmenninger and the harbour
immaterial		Degraded experience of the context and setting of the medieval Bergen urban landscape

Key OUV ATTRIBUTE	OUV ATTRIBUTES	Impact grading + beneficial / - adverse	
		Current state	Planned project
Bryggen in medieval Bergen harbour city (context and setting of the WHP)	Bergen medieval cityscape and urban layout	slight	slight
	Medieval urban structure with public spaces / allmenningar and access roads	moderate	moderate
	Medieval Vågen harbour and its quays	slight	slight
Bryggen Hanseatic Office (WHP)	Building conservation and continuity of Hanseatic building practice	irrelevant	irrelevant
	The relation between built structure of the Hanseatic Office and Bryggen quay	slight	moderate
Total		slight	slight

Assessment: The view along one of the oldest allmenninger gives an image how the key elements of medieval Bryggen, Øvregaten, Bryggen quay and Vågen harbour were linked. Closing the Bryggen public spaces for motorised traffic and buses would be beneficial, but the perception is obstructed by the planned Bybanen Light-Rail extension due to its dominance. Potential increase of traffic on Øvregaten could further degrade this visual experience.

Viewpoint 3a_Øvregaten / Nikolaikirkeallmenningen: Assessment



panoramic view of existing situation

focal length of individual photo (panorama-stitch): 18mm (35mm equivalent)

photography: Philipp Tebart

Situation: The pedestrian view along the Bryggen quay and towards the Vågen harbour encompasses the key attributes of the World Heritage property and illustrates the function and position of the Hanseatic League in Bergen.

Current state: Despite the changes of the Bryggen quay over time, the relation between the Hanseatic Office, the quay and harbour can still be experienced. The character of a harbour quay is compromised by the throughfare traffic and fragmented tourism facilities in high season.



location: 60°23'48.2"N 5°19'26.4"E
aerial photo: Google Earth

1860 /69 Knud Knudsen (© marcus.uib.no)

Viewpoint 3b_Bryggen / Nikolaikirkeallmenningen: Situation



Please note: In the summer of 2020, Torget has been closed to car traffic, as a trial project. Due to the Covid-19 situation and due to this test period this photograph does not show the normal amount of boats and vehicles.

Viewpoint 3b_Bryggen / Nikolaikirkeallmenningen: Situation



photomontage

view corresponds to 22mm focal length (35mm equivalent)

Viewpoint 3b_Bryggen / Nikolaikirkeallmenningen: Visualisation



CHARACTER OF IMPACT	BENEFICIAL	ADVERSE
visual / perceptual	higher visibility	visual and perceptual barrier between the Hanseatic Office, its quay and the Vågen harbour degradation of quay character
functional	improved access for commuters and cyclists	functional barrier between the warehouses and the quay changes in the mobility pattern and use of quay
immaterial	potential increased awareness	compromised experience of understanding the function of a Hanseatic Office with its quay and Vågen harbour

Assessment: The light rail access potentially enhances the visibility and awareness of the World Heritage property. The concept of the planned design with less fragmentation of the public space is considered as beneficial. However, the high frequency light rail traffic with overhead masts increases the already compromised visual and functional relation between the Hanseatic Office, its quay and Vågen harbour. Additionally, the changes in quay levels and surface materials separated by steps will contribute to the degradation of the quay character.

Key OUV ATTRIBUTE	OUV ATTRIBUTES	Impact grading + beneficial / - adverse	
		Current state	Planned project
Bryggen in medieval Bergen harbour city (context and setting of the WHP)	Bergen medieval cityscape and urban layout	moderate	large
	Medieval urban structure with public spaces / allmenningar and access roads	moderate	moderate
	Medieval Vågen harbour and its quays	large	very large
Bryggen Hanseatic Office (WHP)	Building conservation and continuity of Hanseatic building practice	moderate	moderate
	The relation between built structure of the Hanseatic Office and Bryggen quay	large	very large
Total		moderate	large

Viewpoint 3b_Bryggen / Nikolaikirkeallmenningen: Assessment



panoramic view of existing situation



focal length of individual photo (panorama-stitch): 21mm (35mm equivalent)

photography: Philipp Tebart

Situation: The views from inside Bryggen out towards the Bryggen quay and Vågen harbour illustrate the daily life in the trading post. The close visual and functional linkage between the quay, the offices and warehouses encompass the spirit and feeling in a Hanseatic Office.

Current state: Under normal conditions the view towards the quay and Vågen harbour is impaired by existing traffic and street furniture, but the historic atmosphere and views from inside a Hanseatic Office toward the harbour can still be experienced.



location: 60°23'49.4"N 5°19'25.7"E
aerial photo: Google Earth

Bryggen 1918 -39 (@marcus.uib.no)

Viewpoint 4_Inside Bryggen

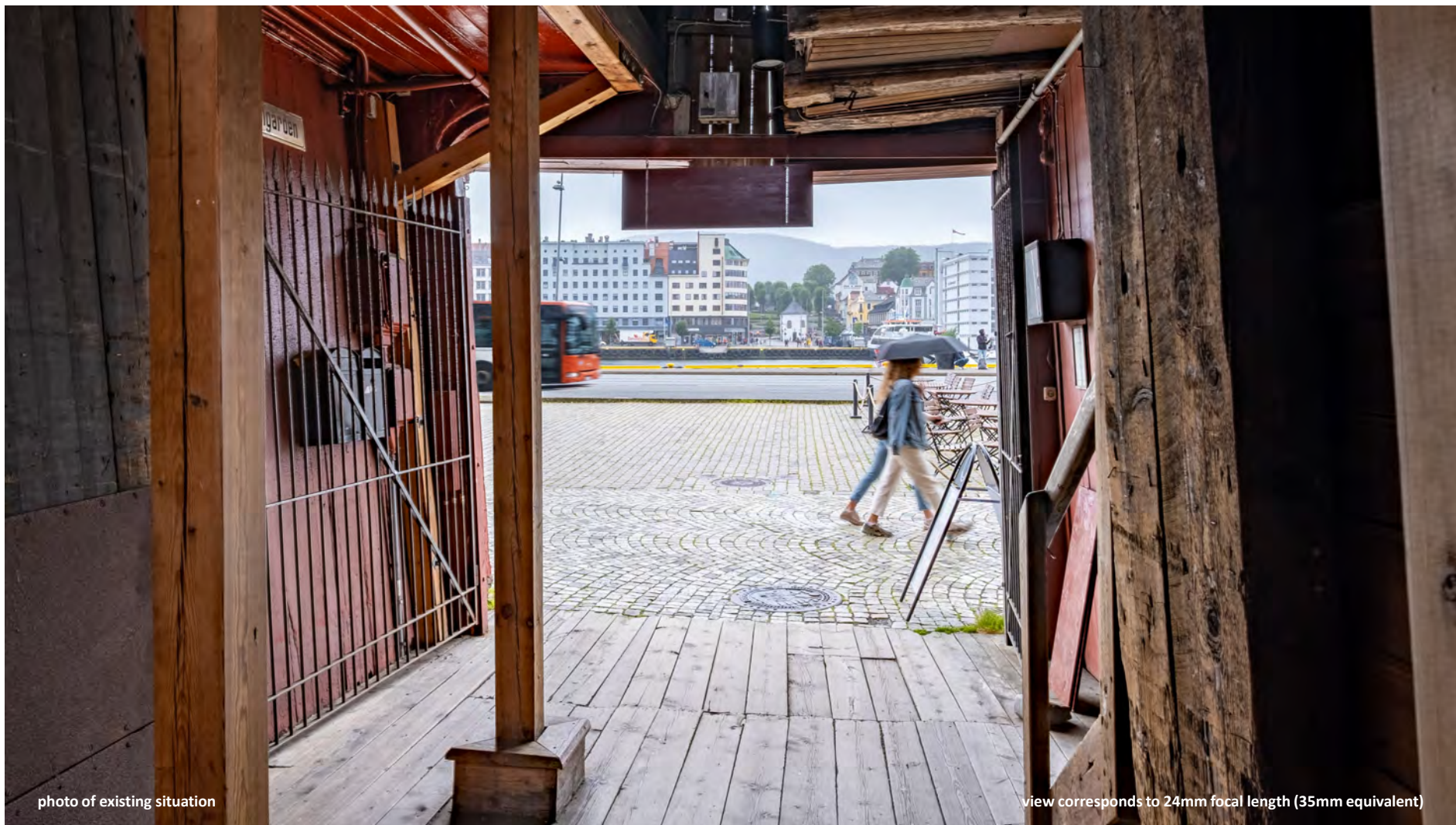
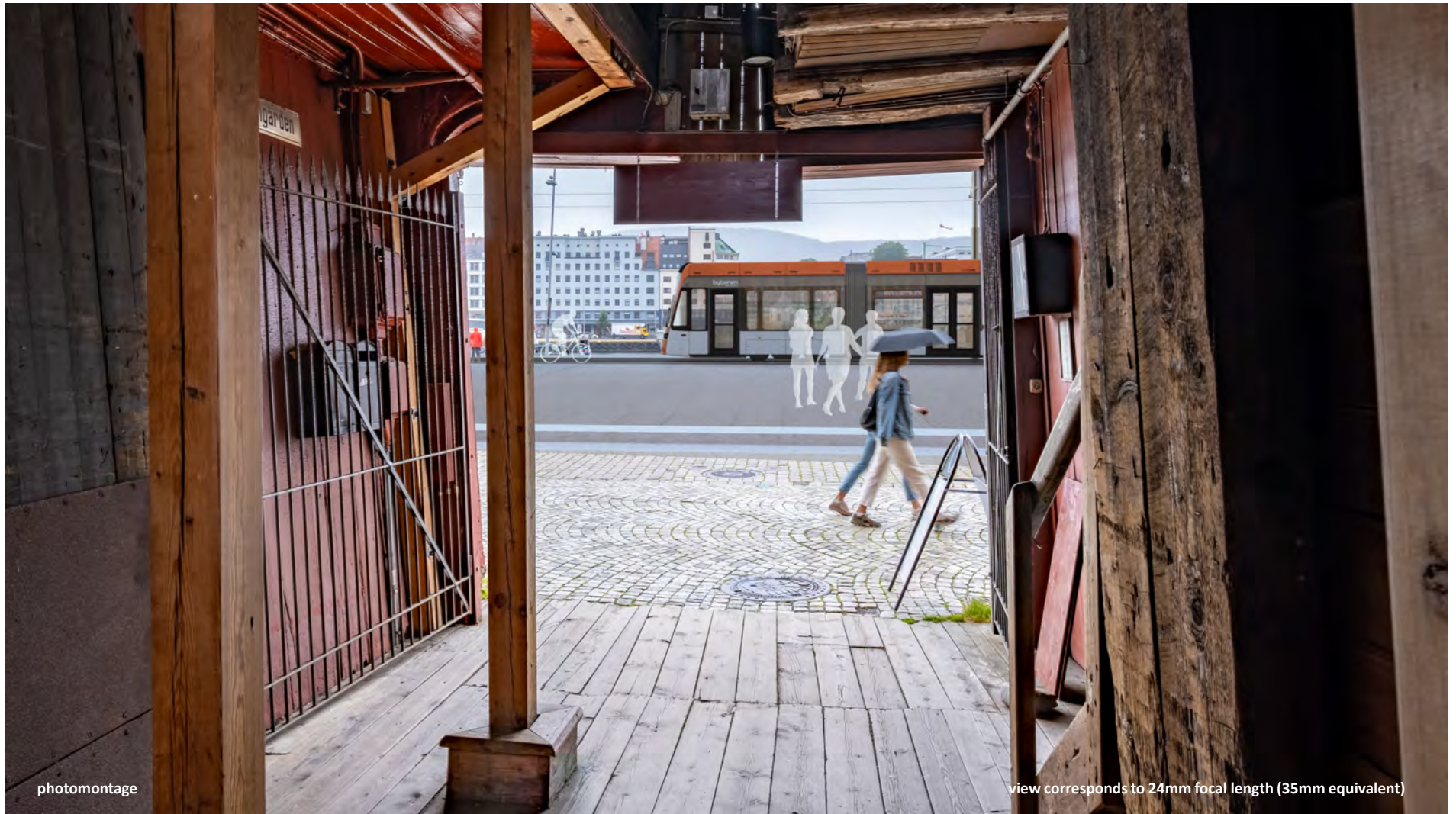


photo of existing situation

view corresponds to 24mm focal length (35mm equivalent)

Please note: In the summer of 2020, Torget has been closed to car traffic, as a trial project. Due to the Covid-19 situation and due to this test period this photograph does not show the normal amount of boats and vehicles.

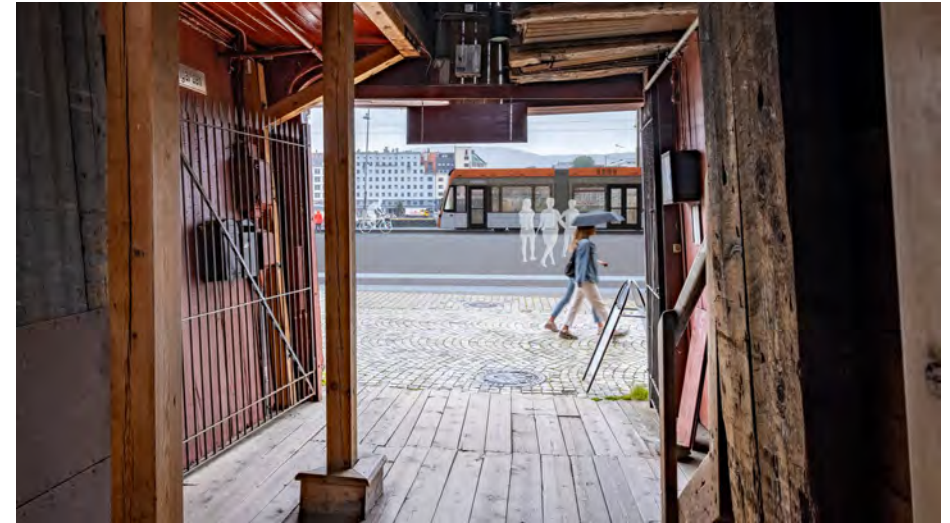
Viewpoint 4_ Inside Bellgården: Situation



photomontage

view corresponds to 24mm focal length (35mm equivalent)

Viewpoint 4_ Inside Bellgården: Visualisation



CHARACTER OF IMPACT	BENEFICIAL	ADVERSE
visual / perceptual	higher visibility	visual barrier between the Hanseatic Office, its quay and the Vågen harbour degradation of the quay character
functional	refurbishment of the quay design	functional barrier between the warehouses and the quay
immaterial	potential increased awareness	compromised experience of the daily life and function of a Hanseatic Office and historic urban and mobility pattern of the Vågen harbour

Key OUV ATTRIBUTE	OUV ATTRIBUTES	Impact grading + beneficial / - adverse	
		Current state	Planned project
Bryggen in medieval Bergen harbour city (context and setting of the WHP)	Bergen medieval cityscape and urban layout	slight	slight
	Medieval urban structure with public spaces / allmenningar and access roads	moderate	moderate
	Medieval Vågen harbour and its quays	moderate	very large
Bryggen Hanseatic Office (WHP)	Building conservation and continuity of Hanseatic building practice	moderate	moderate
	The relation between built structure of the Hanseatic Office and Bryggen quay	large	very large
Total		moderate	large

Assessment: The refurbishment of the quay will improve the overall quality of the urban design.

However, the view towards Vågen harbour is obstructed by the raised track with overhead masts and subsequent changes in quay levels. Besides, the surface materials separated by steps fragment the impression of the quay and increase the visual and functional barrier effect between the built structure of Bryggen and its trading quay.

Viewpoint 4_ Inside Bellgården: Assessment



panoramic view of existing situation

focal length of individual photo (panorama-stitch): 21mm (35mm equivalent)

photography: Philipp Tebart

Situation: The views from inside the Hanseatic Office out towards the Bryggen quay and Vågen harbour illustrate the daily life in the trading post. The close visual and functional linkage between the quay, the offices and warehouses encompass the spirit and feeling in a Hanseatic Office.

Current state: Under normal conditions the view towards the quay and Vågen harbour is impaired by existing traffic and street furniture, but the view from inside the Hanseatic Office toward the harbour can still be fully experienced.



location: 60°23'50.1"N 5°19'23.4"E
aerial photo: Google Earth

Bryggen 1918 -39 (@marcus.uib.no)

Viewpoint 5_Office No 33: Situation



photo of existing situation

view corresponds to 24mm focal length (35mm equivalent)

Please note: In the summer of 2020, Torget has been closed to car traffic, as a trial project. Due to the Covid-19 situation and due to this test period this photograph does not show the normal amount of boats and vehicles.

Viewpoint 5_ Office No 33: Situation (Core Photograph)



Viewpoint 5_ Office No 33: Visualisation



CHARACTER OF IMPACT	BENEFICIAL	ADVERSE
visual / perceptual	higher visibility	visual barrier between the Hanseatic Office, its quay and the Vågen harbour degradation of the quay character
functional	refurbishment of the quay design	functional barrier between the warehouses and the quay
immaterial	potential increased awareness	compromised experience of the daily life and function of a Hanseatic Office and historic urban and mobility pattern of the Vågen harbour

Key OUV ATTRIBUTE	OUV ATTRIBUTES	Impact grading + beneficial / - adverse	
		Current state	Planned project
Bryggen in medieval Bergen harbour city (context and setting of the WHP)	Bergen medieval cityscape and urban layout	slight	slight
	Medieval urban structure with public spaces / allmenningar and access roads	moderate	moderate
	Medieval Vågen harbour and its quays	moderate	very large
Bryggen Hanseatic Office (WHP)	Building conservation and continuity of Hanseatic building practice	moderate	moderate
	The relation between built structure of the Hanseatic Office and Bryggen quay	large	very large
Total		moderate	large

Assessment: The refurbishment of the quay will improve the overall quality of the urban design.

However, the view towards Vågen harbour is obstructed by the raised track with overhead masts, as well as subsequent changes in quay levels. Besides, the surface materials separated by steps fragment the impression of the quay and increase the visual and functional barrier effect between the Hanseatic Office and its trading quay.

Viewpoint 5_ Office No 33: Assessment



panoramic view of existing situation

focal length of individual photo (panorama-stitch): 14mm (35mm equivalent)

photography: Philipp Tebart

Situation: The view towards Vågen harbour encompasses key elements of medieval Bergen. The medieval Øvregaten and Mariakirke from 1180 are one of the oldest medieval structures in Bergen. The Bryggen Museum in the view is built over the archaeological remains of the Bergen's oldest medieval buildings which are now part of the museum's permanent exhibition.

Current state: The medieval urban structure is still readable in the view despite the new buildings and the restructuring of the lower part of Dreggsallmenningen.



Scholeus 1580 (@ Bergen Byarkiv)



location: 60°23'57.0"N 5°19'22.0"E
aerial photo: Google Earth

Viewpoint 6a_Mariakirke / Dreggsallmenningen: Situation



photo of existing situation

view corresponds to 21mm focal length (35mm equivalent)

Please note: In the summer of 2020, Torget has been closed to car traffic, as a trial project. Due to the Covid-19 situation and due to this test period this photograph does not show the normal amount of boats and vehicles.

Viewpoint 6a_Mariakirke/Dreggsallmeningen: Situation (Core Photo)



photomontage

view corresponds to 21mm focal length (35mm equivalent)

Viewpoint 6a_Mariakirke / Dreggsallmeningen: Visualisation



CHARACTER OF IMPACT	BENEFICIAL	ADVERSE
visual / perceptual		Increased visual barrier impact towards Vågen harbour and along Øvregaten
functional	easier access	Increased functional barrier impact
immaterial		Compromised experience of the key elements of the medieval Bergen urban structure and their relation to the Hanseatic Office

Key OUV ATTRIBUTE	OUV ATTRIBUTES	Impact grading + beneficial / - adverse	
		Current state	Planned project
Bryggen in medieval Bergen harbour city (context and setting of the WHP)	Bergen medieval cityscape and urban layout	slight	slight
	Medieval urban structure with public spaces / allmenningar and access roads	slight	moderate
	Medieval Vågen harbour and its quays	slight	moderate
Bryggen Hanseatic Office (WHP)	Building conservation and continuity of Hanseatic building practice	slight	slight
	The relation between built structure of the Hanseatic Office and Bryggen quay	slight	slight
Total		slight	slight

Assessment: The viewpoint still provides a possibility to understand the key medieval features of Bergen and their relation to the Hanseatic Office and the Vågen harbour. The planned Bybanen Light-Rail extension will facilitate access with its stop at Sandbrogaten and closing the Bryggen quay for motorised traffic and buses would be beneficial. However, the planned Light Rail Extension along the Bryggen quay causes a visual and functional barrier effect. A potential increase of traffic in Øvregaten will degrade the experience.

Viewpoint 6a_Mariakirke / Dreggsallmeningen: Assessment



panoramic view of existing situation

focal length of individual photo (panorama-stitch): 21mm (35mm equivalent)

photography: Philipp Tebart

Situation: The view along the Bryggen quay towards the medieval centre of Bergen with Korskirken, Torget, Vågen harbour and the natural setting with mountains illustrates the important position of the Hanseatic Office in Bergen. The view also illustrates the different uses of Bryggen quay today.

Current state: The overall view of Bryggen quay in medieval Bergen is visible. It also shows the different uses with street traffic and areas for outdoor cafés and terraces along the waterfront buildings, quay walk and leisure boats. The public space is fragmented and degraded by the existing street



JFLdreierBryggen1817.jpg
 (@ <https://commons.wikimedia.org/wiki/File:JFLdreierBryggen1817.jpg>)



location: 60°23'51.8"N 5°19'17.3"E
 aerial photo: Google Earth

Viewpoint 6b_Dreggekaien: Situation



photo of existing situation

view corresponds to 21mm focal length (35mm equivalent)

Please note: In the summer of 2020, Torget has been closed to car traffic, as a trial project. Due to the Covid-19 situation and due to this test period this photograph does not show the normal amount of boats and vehicles.

Viewpoint 6b_Dreggekaien: Situation (Core Photo)



Viewpoint 6b_Dreggekaien: Visualisation



CHARACTER OF IMPACT	BENEFICIAL	ADVERSE
visual / perceptual	higher visibility	visual barrier between the Hanseatic Office, its quay and the Vågen harbour degradation of quay character
functional	improved access for commuters and cyclists refurbishment of the quay	functional barrier between the warehouses and the quay changes in the mobility pattern and use of quay
immaterial	potential increased awareness potential increased attractivity	compromised experience of the historic relation between Bryggen warehouses, quay and Vågen harbour

Key OUV ATTRIBUTE	OUV ATTRIBUTES	Impact grading + beneficial / - adverse	
		Current state	Planned project
Bryggen in medieval Bergen harbour city (context and setting of the WHP)	Bergen medieval cityscape and urban layout	moderate	large
	Medieval urban structure with public spaces / allmenningar and access roads	moderate	moderate
	Medieval Vågen harbour and its quays	large	large/very large
Bryggen Hanseatic Office (WHP)	Building conservation and continuity of Hanseatic building practice	moderate	moderate
	The relation between built structure of the Hanseatic Office and Bryggen quay	large	large/very large
Total		moderate	large

Assessment: The view allows to understand the setting of the World Heritage property in the urban landscape. The concept of the planned design with less fragmentation of the public space and without motorised traffic is considered as beneficial.

However, the already fragmented quay character is additionally compromised by the light rail track and its overhead masts. Additionally, the changes in quay levels and surface materials contribute to the barrier effect between the Hanseatic Office and the harbour.

Viewpoint 6b_Dreggekaien: Assessment



panoramic view of existing situation

focal length of individual photo (panorama-stitch): 19mm (35mm equivalent)

photography: Philipp Tebart

Situation: The Rosenkrantz tower was completed in 1560 for both defensive purposes as part of the Bergenhus fortress but also as a demonstration of power between the King and the Hanseatic Office. The panoramic view shows a political cityscape with the position of Hanseatic Office between the King, the Church (Korskirken) and the Bergen medieval centre.

Current state: The medieval cityscape elements and the natural setting of the harbour can be seen in the panoramic view. The transformation of the quay to a thoroughfare street is apparent.



1862/1869 Bradbenken from Rosenkrantz Tower (@ marcus.uib.no)



location: 60°23'56.5"N 5°19'06.4"E
aerial photo: Google Earth

Viewpoint 7_Rosenkrantz Tower: Situation



photo of existing situation

photo corresponds to 21mm focal length (35mm equivalent)

Please note: In the summer of 2020, Torget has been closed to car traffic, as a trial project. Due to the Covid-19 situation and due to this test period this photograph does not show the normal amount of boats and vehicles.

Viewpoint 7_ Rosenkrantz Tower: Situation (Core Photo)



Viewpoint 7_ Rosenkrantz Tower: Visualisation

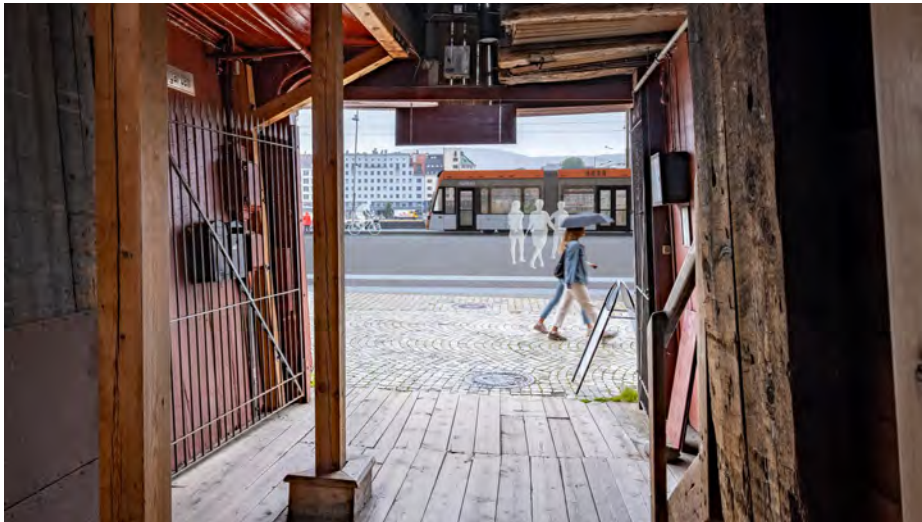
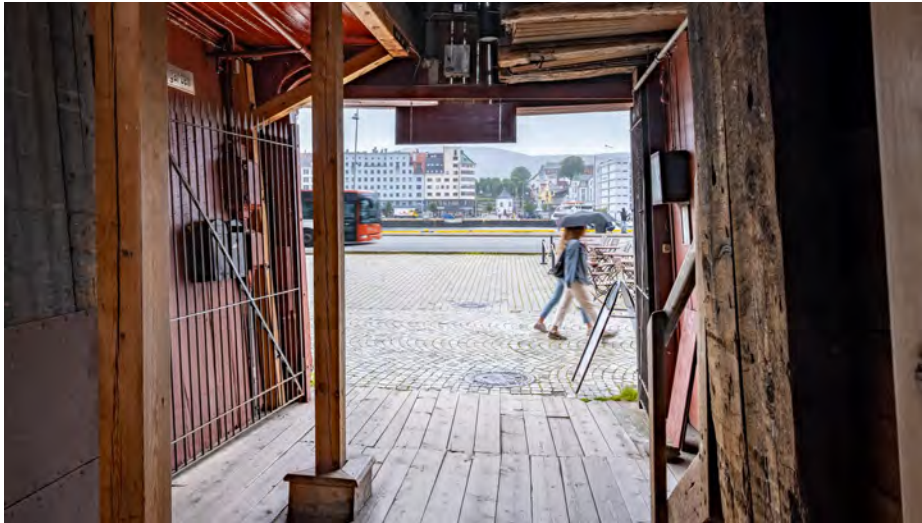


CHARACTER OF IMPACT	BENEFICIAL	ADVERSE
visual / perceptual		visual disturbance of the quay as urban space degradation of quay character
functional	overall access	functional barrier between the harbour and the waterfront
immaterial		Degraded experience of the medieval cityscape and its relation to the Vågen harbour

Key OUV ATTRIBUTE	OUV ATTRIBUTES	Impact grading + beneficial / - adverse	
		Current state	Planned project
Bryggen in medieval Bergen harbour city (context and setting of the WHP)	Bergen medieval cityscape and urban layout	slight	slight
	Medieval urban structure with public spaces / allmenningar and access roads	irrelevant	irrelevant
	Medieval Vågen harbour and its quays	slight	moderate
Bryggen Hanseatic Office (WHP)	Building conservation and continuity of Hanseatic building practice	irrelevant	irrelevant
	The relation between built structure of the Hanseatic Office and Bryggen quay	moderate	large
Total		slight	moderate

Assessment: The present cityscape is still readable. Even though the design concept intends to let appear the quay as a homogenous space the planned Light-Rail Extension and its overhead masts accentuates the road impact of through traffic on Bryggen quay, especially in the crossing to Sandbrogaten.

Viewpoint 7_ Rosenkrantz Tower: Assessment



Visual Impact:

At viewpoints located in greater distance (Strandkaien, upper parts of Allmenninger, Rosenkrantz Tower) the expected adverse impact varies from 'slight' to 'large'.

At viewpoints located close-by to the World Heritage Property the visual Impact to be expected is adverse large. This is particularly the case for viewpoints located inside the World Heritage property (viewpoint 4 and 5), but also significant at viewpoint 3B (Bryggen/Nikolaikirkeallmenningen), and viewpoint 6B (Dreggekaien).

In detail, this adverse impact is caused by the following factors:

- The length of the tram cars which is exceeding the one of buses on other motorised vehicles considerably
- The planned tram track is higher than the one of the existing quay, thus forming a visual barrier
- The masts of the high-voltage transmission line which are an uncommon element at the quay
- The quay which is separated optically in two parts by changes in the materialisation (slender strip of cobblestones in front of Bryggen and granite flooring in the rest of the quay)
- The planned steps in between these two materials are emphasising this separation.

Conclusion: Visual Impact



Analysis: Bryggen Quay – Existing Situation



Analysis: Bryggen Quay – Terraces / Street



Analysis: Bryggen Quay – Planned Light-Rail



Analysis: Bryggen Quay – Planned Light-Rail + Public Space

PRELIMINARY REPORT – Heritage Impact Assessment of the planned Bybanen Light-Rail Extension on the World Heritage Property Bryggen, Bergen – michael kloos planning and heritage consultancy

Functional Impact:

- Functional deficits for the World Heritage property Bryggen might be caused in front of Hansa Museum (trams run very close to the museum)
- The higher visibility of the World Heritage property and the planned refurbishment of the public space without motorised traffic is considered as beneficial. But it is not yet clearly visible whether / how the accessibility of both sides of the World Heritage property will be improved (Bryggen quay and Øvregaten).



Flooding at Bryggen (@ K. Lisitzin)

Direct Impact / Noise:

- It is beneficial that noise level might decrease in the Bryggen quay area due to elimination of motorised traffic (and perhaps buses)
- In case traffic will increase at Øvregaten this will lead to adverse impacts.

Direct Impacts / Vibrations – Sea Water Level – Ground Water Level:

- Vibrations could cause negative impacts, but no investigations about the planned Bybanen Light-Rail Extension during and after construction were shown to the authors of this report.
- Risk preparedness for sea water level rise and flooding was considered to be improved but requires more in-depth studies.
- Groundwater level changes are a potential risk, but no in-depth studies during and after construction of planned Bybanen Light-Rail daylight extension were presented.

Impact on World Heritage Management:

- Impacts on World Heritage management, including risk preparedness, sustainable tourism management at Bryggen and overall community heritage benefits will be assessed in Phase 2

Conclusion: Other Impacts



6

Recommendations

As stated in the introduction of this Preliminary Heritage Impact Assessment report, the main issues to be answered are:

Will the Bybanen Light Rail Extension be compatible with the World Heritage Property of Bryggen, and to what extent the Outstanding Universal Value is threatened by the project?

In general, the ambitious strategy to use Bybanen to develop Bergen into a fossil free municipality according to Bergen's Green Strategy and "Environmental Pledge -Miljøløftet" and promoting zero growth in vehicle traffic and decrease of traffic by at least 20 % from 2013 to 2030 is acknowledged.

Similarly, it is acknowledged that there have been great efforts undertaken to upgrade the public spaces around Vågen area in the course of the development of the planned Bybanen Light-Rail Extension along Bryggen.

The assessment highlights that the Vågen harbour area is a key attribute of the Outstanding Universal Value of the World Heritage Property Bryggen. It is both the medieval setting of the World Heritage property Bryggen and a high potential for Bergen's sustainable urban development.

Consequently, this preliminary Heritage Impact Assessment states that there is a unique chance to build up a Bybanen network which supports both Bergen's Green Strategy goals and the safeguarding of Bergen's World Heritage within its setting of Vågen area.

This PRELIMINARY REPORT leads to the conclusion that the planned daylight-option of the Bybanen Light-Rail Extension along Bryggen generates both beneficial and adverse impacts on the Outstanding Universal Value of the World Heritage property Bryggen.

It is therefore suggested to use the current discussions about Bybanen's impact on the OUV of World Heritage property Bryggen as a starting point to elaborate an integrated strategy of Bryggen's (World) Heritage Management which sustains the Outstanding Universal Value of the World Heritage property.

The following recommendations define MAIN ISSUES to be tackled and suggest next STEPS to be taken in this context:

Recommendation 1: Develop all options to an optimum standard:

Step 1: Further development of the planned Bybanen Light-Rail Extension

Step 2: Development of the alternative tunnel option in parallel

Step 3: Assess and compare both options concerning their impact on the Outstanding Universal Value of World Heritage property Bryggen

Recommendation 2: Develop an integrated Management Plan for the World Heritage property Bryggen:

Step 1: Identify risks and potentials in the entire Vågen area

Step 2: Combine World Heritage management, urban planning and transport planning to an integrated approach

Step 3: Investigate how the planned Bybanen Light-Rail extension can contribute to the sustainable development of the World Heritage property and its setting in the Vågen area

Preliminary Results



Bryggen (@ P. Tebart)

- a) **STEP 1:** *Further development* of the planned Bybanen Light-Rail Extension (daylight-option)
- b) **STEP 2:** *Develop alternative* tunnel-option in parallel
- c) **STEP 3:** *Assess both options* concerning their impact on the Outstanding Universal Value of World Heritage property Bryggen (comparison of impacts).

In detail, the following issues should be considered:

Recommendation 1: Develop all options to an optimum standard!

ISSUES	TASKS
STEP 1: Further development of planned Lite-Rail Extension (daylight option)	
1.1 <i>Reduce</i> visual impact to a minimum extent.	<ul style="list-style-type: none"> - Can the high-voltage transmission line be omitted? - Can the track be lowered so as to minimise the visual barrier of the quay? - Can the design concept be reconsidered with the aim to reinforce the quay character in front of Bryggen with coherent materials and without steps? - Can the buses in front of Bryggen be omitted without increasing their number at Øvregaten?
1.2 <i>Investigate options</i> how the planned Light-Rail-Extension can contribute to overcome the spatial and functional accessibility deficits of the World Heritage property Bryggen:	<ul style="list-style-type: none"> - How can Bybanen enhance the accessibility of Bryggen and the Vågen area from the city centre? - How can the functional impact, e.g. on the entrance area of the Hansa-Museum, be reduced to a minimum? - Which functional possibilities will be caused by the planned stop at Sandbrogaten? - How can Bybanen contribute to a sustainable concept for tourist flow and integrated mobility management (especially due to travellers coming by cruise ships and by bus to Vågen quay and Øvregaten)?
1.3 <i>Improve socio-economic impact</i> to an optimum standard (added value, social and economic benefits for the community):	<ul style="list-style-type: none"> - How can Bybanen contribute to upkeep the balance Bryggen's functional structure? (especially during winter times there are difficulties to sustain shops and restaurants while in summer times the shopping structure tends to be monofunctional due to the high percentage of tourist' shops).
1.4 <i>Assess</i> potential direct impacts:	<ul style="list-style-type: none"> - Investigate potential impact of planned Bybanen Light-Rail extension on archaeological heritage (especially at Sandbrogaten) - Investigate potential impact of Bybanen on World Heritage property due to vibrations. - Investigate potential impact on groundwater-level. - Develop strategy for risk preparedness for sea level rise and flooding.
1.5 <i>Assess</i> cumulative impacts	<ul style="list-style-type: none"> - Assess impacts on the entire World Heritage and goals of the World Heritage Management: - How can negative cumulative impacts, esp. due to the risk of increased visitor numbers and bus traffic, be avoided?
STEP 2: Development of alternative tunnel option (in parallel to step 1)	
2. Consider all impacts	<ul style="list-style-type: none"> - Consider all above-mentioned impacts and the usefulness of Bybanen for Bryggen during development of tunnel alternative!
STEP 3: Assess both options concerning their impact on the Outstanding Universal Value of World Heritage property Bryggen (comparison of impacts).	
3. Assessment	<ul style="list-style-type: none"> - Assess and compare both options concerning their impact on the Bryggen World Heritage Property
▶ EXPECTED RESULT	Summary concerning impacts with regard to planned Bybanen Light-Rail Extension (day-option and tunnel-option) and their compatibility with the Outstanding Universal Value of the World Heritage property Bryggen

Recommendation 1: Develop all options to an optimum standard!

- a) **STEP 1:** *Identify* risks and potentials within Vågen harbour area so as to safeguard and sustain the OUV of the World Heritage Property Bryggen.
 - b) **STEP 2:** *Combine* World Heritage management, urban planning and transport planning to an integrated approach for the entire Vågen harbour area.
 - c) **STEP 3:** *Investigate* how the planned Bybanen Light-Rail Extension can contribute to a sustainable spatial and socio-economic development of the World Heritage property Bryggen and the entire Vågen area.
- This PRELIMINARY REPORT lead to the result that the Vågen harbour area is a key attribute of the Outstanding Universal Value of the World Heritage Property Bryggen. It is exceptional that it is still possible to enjoy Bryggen's entire medieval setting!
 - Vågen harbour area is both the medieval setting of the World Heritage property Bryggen and a high potential for Bergen's sustainable urban development.
 - Operational Guidelines 2019 (§82) state clearly that location and setting are a crucial attribute of World Heritage properties. World Heritage buffer zones should take in account the immediate setting, important views and other areas that are functionally important as a support to the property and its protection (OG §104) of World Heritage properties. Besides, in the 2005 X'ian Declaration the importance of settings of World Heritage properties is emphasised. Both sustainable urban development and transport management is considered to be an essential part of the management of World Heritage properties.
 - The currently planned Bybanen Light-Rail Extension was mainly conceived as a means to connect the city centre with Åsane. However, Bybanen and the adjoining main cycle route should also be considered as an instrument to sustain the Outstanding Universal Value of the World Heritage Property Bryggen and its setting, the entire Vågen harbour area.
 - In detail, the following aspects should be considered:

Recommendation 2: Integrated Management Plan for WHP Bryggen

ISSUES	STEPS
2.1 <i>Identify</i> risks and potentials within Vågen harbour area so as to safeguard and sustain the OUV of the World Heritage Property Bryggen.	<ul style="list-style-type: none"> - Assess all planned projects in the Vågen area, so as to eliminate risks concerning the World Heritage property and its setting - Develop the World Heritage buffer zone and ensure its implementation in development planning
2.2 <i>Combine</i> World Heritage management, urban planning and transport planning to an integrated approach for the entire Vågen harbour area.	<ul style="list-style-type: none"> - Combine World Heritage management, urban planning and transport planning to an integrated approach for the entire Vågen harbour area. - Relate World Heritage Management Plan to urban and traffic development in Vågen area.
2.3 <i>Investigate</i> how the planned Bybanen Light-Rail Extension can contribute to a sustainable spatial and socio-economic development of the World Heritage property Bryggen and the entire Vågen area.	<ul style="list-style-type: none"> - Develop a concept how to use Bybanen for both sustainable development and preservation of Bergen’s cultural and natural heritage. Integrate the planned Bybanen Light-Rail Extension into an Integrated Mobility Management Concept for Vågen area, which should cover the following aspects: - How could objectives of the World Heritage Management Plan be integrated in the Bybanen concept? - Definition of specific demand-oriented measures for all relevant target groups of Bryggen (e.g. residents, domestic/external visitors, employees), - Offer concepts for alternative or complementary “cultural heritage routes”, integrating all available cultural and leisure facilities. - Involvement of traffic generating institutions and stakeholders such as organisers of touristic tours, employers in the Bryggen area
► EXPECTED RESULT	<p>In conclusion, the integrated approach with World Heritage management plan and the existing Master Plan should be used so as to set out key stones and guidelines for a combined strategy for preservation and sustainable spatial urban and traffic development of the Vågen area. This integrated plan should be used for both sustaining the OUV and setting of the World Heritage Property Bryggen and think how the planned Bybanen Light-Rail extension can support this goal.</p>

Recommendation 2: Integrated Management Plan for WHP Bryggen



Hieronimus Scholeus, 1588 (@ marchus.uib.no)



Dreyer, 1830 (@ marchus.uib.no)

(kilde: marchus.uib.no)

Vågen as an entity: Bergen Waterfront
1588,1830...and 2020?

Recommendation 2: Integrated Management Plan for WHP Bryggen

A large, bold white number '7' is positioned on the left side of the image, overlaid on the weathered wooden background. The wood consists of horizontal planks with a rich, textured grain and numerous small dark spots, possibly from insect damage or natural aging. On the right side, a vertical wooden post is visible, featuring a red-painted number '7' and a metal fastener near the bottom.

7

Appendix



UNITED NATIONS EDUCATIONAL, SCIENTIFIC
AND CULTURAL ORGANISATION

CONVENTION CONCERNING THE
PROTECTION OF THE WORLD CULTURAL
AND NATURAL HERITAGE

Adopted by the General Conference at its seventeenth session
Paris, 16 november 1972



English Text

UNESCO-World Heritage properties are protected under the World Heritage Convention ("Convention concerning the Protection of the World Cultural and Natural Heritage")¹. The World Heritage Convention that took effect in 1972 is an international agreement between the states parties and the United Nations. The objective of the World Heritage Convention is to identify, protect and use the most important natural and cultural heritage of man-kind for intercultural mediation. World Heritage properties are inscribed on the World Heritage List to protect them for future generations due to their Outstanding Universal Value. The Outstanding Universal Value is therefore the central point of reference for all activities within the UNESCO World Heritage property.

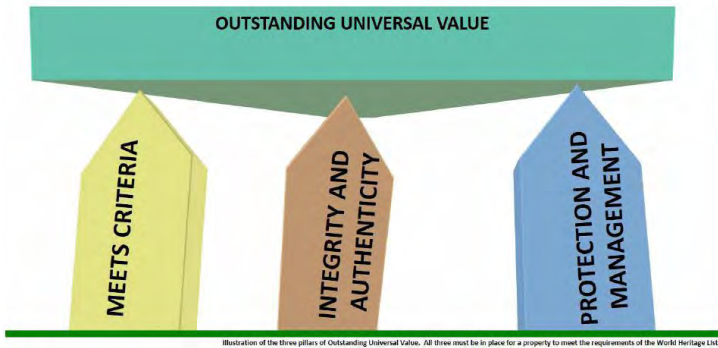
Pursuant to the World Heritage Convention, the State Parties are responsible for the protection and sustainable development of the World Heritage properties. According to Article 4 of the World Heritage Convention, “each State Party recognizes that the duty of ensuring the identification, protection conservation, presentation and transmission to future generations of the cultural and natural heritage referred to in Articles 1 and 2 and situated on its territory, belongs primarily to that State”.

The protection and sustainable development of UNESCO World Heritage properties must therefore be ensured by State Parties that joined the World Heritage Convention. For this purpose, the internationally applicable guidelines must be observed, in particular the various charters on the implementation of the World Heritage Convention and the so-called Operational Guidelines serving to implement the World Heritage Convention.²

¹ UNESCO (1972): Convention Concerning the Protection of the World Cultural Heritage⁶

² UNESCO World Heritage Centre: The Operational Guidelines for the Implementation of the World Heritage Convention, Paris 2017. The Operational Guidelines are updated in regular intervals. This Assessment is based on the Operational Guidelines 2019

Background Information: World Heritage Convention



The three pillars of Outstanding Universal Value (@ IUCN)

³ The Operational Guidelines define the OUV as follows: “Outstanding Universal Value means cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity. As such, the permanent protection of this heritage is of the highest importance to the international community as a whole. The Committee defines the criteria for the inscription of properties on the World Heritage List.” See: UNESCO World Heritage Centre: The Operational Guidelines for the Implementation of the World Heritage Convention, Paris 2019

OUTSTANDING UNIVERSAL VALUE (OUV)

The inscription of World Heritage properties on the World Heritage List depends on their Outstanding Universal Value (OUV). The concept of the Outstanding Universal Value in the World Heritage Convention and its implementation stands for all UNESCO World Heritage properties in all regions of the planet. After inscription on the UNESCO World Heritage List, the Outstanding Universal Value is set in stone and must not be impaired.³ The Outstanding Universal Value is therefore the central point of reference for all activities within the UNESCO World Heritage property.

WORLD HERITAGE CRITERIA

Cultural and natural sites whose Outstanding Universal Value is acknowledged by the World Heritage Committee and its advisory organisations ICOMOS International, IUCN and ICCROM are inscribed on the World Heritage List using specific criteria. These criteria are defined in the internationally applicable guidelines for World Heritage properties, the Operational Guidelines. Six different criteria (criteria (i) – (iv)) exist for cultural World Cultural Heritage Sites. After a State Party to the World Heritage Convention has nominated a site for inscription on the World Heritage List, the UNESCO World Heritage Committee decides whether:

- at least one of these criteria applies, so that the Outstanding Universal Value of a site and therefore its inscription on the UNESCO World Heritage List is justified (Operational Guidelines, paragraph 77),
- any potential World Heritage property also meets the criteria of Integrity and Authenticity,
- any potential World Heritage property has an adequate system for its protection and management (Operational Guidelines, paragraph 78).

These above-mentioned conditional criteria are summarised in compact form for all World Heritage properties in a Statement of Outstanding Universal Value (SoOUV). For any World Heritage properties that were inscribed on the World Heritage List without a SoOUV, a so-called Retrospective Statement of Outstanding Universal Value (RSoOUV) is prepared. The RSoOUV must always be considered in compliance with the information provided in the nomination file, and cannot be applied in isolation. Therefore, the selection criteria are the starting point of this Heritage Impact Assessment, because these criteria must be maintained by all means and must not be impaired.

Background Information: Outstanding Universal Value

Heritage Impact Assessments (HIAs)

Heritage Impact Assessments are required by the UNESCO World Heritage Committee and its advisory organisations IUCN (Natural World Heritage Sites) and ICOMOS (World Cultural Heritage Sites) in order to evaluate and assess transformations in the World Heritage properties and consequences for their Outstanding Universal Value. A major reason for such requirements of Heritage Impact Assessments is that they explicitly take account of the particularities of the system of values of World Heritage properties, in particular the Outstanding Universal Value, and the Selection Criteria, respectively.

In contrast to Strategic Environmental Assessments (SEA) and Environmental Impact Assessments (EIA), Heritage Impact Assessments (HIA) have currently not been planned under EU law. The realisation of Heritage Impact Assessments and the implementation of the resulting recommendations is therefore done on a voluntary basis and usually falls under the responsibility of the individual State Parties.

ICOMOS International established applicable guidelines for the performance of Heritage Impact Assessments in World Cultural Heritage Sites, the so-called *ICOMOS Guidance on Heritage Impact Assessments for Cultural World Heritage Properties 2011*.¹ It is planned to review this Guidance soon.

¹ https://www.icomos.org/world_heritage/HIA_20110201.pdf



Background Information - Heritage Impact Assessments

ABBREVIATIONS

HIA:	Heritage Impact Assessment
ICOMOS:	International Council on Monuments and Sites, Paris
OUV:	Outstanding Universal Value
(R)SoOUV:	(Retrospective)Statement of Outstanding Universal Value
UNESCO:	United Nations Educational, Scientific and Cultural Organization
WHC:	UNESCO-World Heritage Centre, Paris

Abbreviations

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