



INTERNATIONAL CONFERENCE WORLD HERITAGE-PLANNING AND MANAGEMENT

24 October 2024, Dubrovnik

Heritage Impact Assessments

Understanding heritage values and proposed changes



unesco

Chair

Prof. Dr.-Ing. Michael Kloos

Preservation and Sustainable Development of Historic Urban and Cultural Landscapes

UNESCO Chair on Historic Urban Landscapes and Heritage Impact Assessments

RheinMain University of Applied Sciences

Wiesbaden / Germany



1

Introduction

OUV, Management & Impact Assessments



RheinMain University
of Applied Sciences

Education: UNESCO Chair for Historic Urban Landscapes and Heritage Impact Assessments is integrated into the Study Courses Architectural Heritage Conservation and Sustainable Heritage Conservation (B.Sc. / M.Sc.). Both are interdisciplinary study courses at the interface between architecture, urbanism, monument conservation, construction history, building preservation and cultural sciences, stressing the need for integrated strategies for conservation and sustainable development of cultural heritage.

Research: The UNESCO Chair supports the conservation and sustainable development of Cultural and Historic Urban Landscapes inscribed on the UNESCO World Heritage List, particularly focusing on properties facing high pressure for change.



Our Background



UNESCO Chair on Historic Urban Landscapes +
Heritage Impact Assessments
hs-rm.de/unesco-lehrstuhl



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michael kloos planning and
heritage consultancy

mkphc was launched in 2016 as a spin-off of the UNESCO Chair in World Cultural and Urban Landscapes, RWTH Aachen University.

Mission is to contribute to the conservation and sustainable development of cultural heritage in line with urban and regional development through goal-oriented and solution-oriented planning and consulting.

Focus is on consultancy in large-scale historic urban and cultural landscapes which are subjected to substantial pressure to change.



Our Background



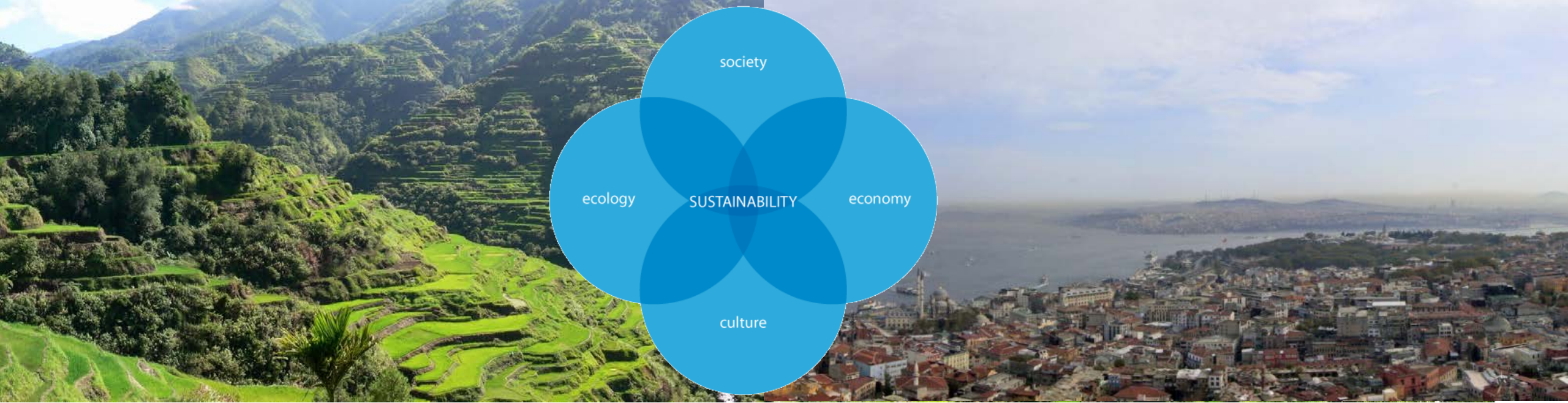
- Cultural heritage characterises the identity of cities.
- Cultural heritage is an important means to make urban agglomerations inclusive, secure, resilient and sustainable.
- In order to provide goal- and solution-oriented proposals, the UNESCO Chair bundles expertise on planning, management and project evaluation in UNESCO World Heritage sites. It develops strategies for conflict prevention and mediation with a focus on application-oriented research, teaching, and knowledge transfer.

The Research Focus of the UNESCO Chair regarding SDGs



1. 1992: Introduction of **Cultural Landscapes** as a new concept of World Heritage properties.
2. 1994: Start **Global Strategy**.
3. 2011: Recommendation on the **Historic Urban Landscape**: Recommendation embraces **vernacular architecture / intangible heritage**.
4. **Focus on 'living sites'**.
5. **Heritage Management under participation of social communities** (Management & Governance).

Paradigm Shift (since approx. 1994)



UN Sustainable Development Goals: Integration of Culture in all UN-Programmes since 2015:

» **Culture** is an **essential component of human development**, that it represents a **source of identity, innovation and creativity** for the individual and the community and that it is an **important factor of social inclusion** and **poverty eradication**, providing for **sustainable growth** and **ownership of development processes**.«



Cultural Heritage = component of sustainable development?



Mass Tourism? Functional and Structural Impacts?



Service Infrastructure? Visual Impacts?



Buildings and Development...



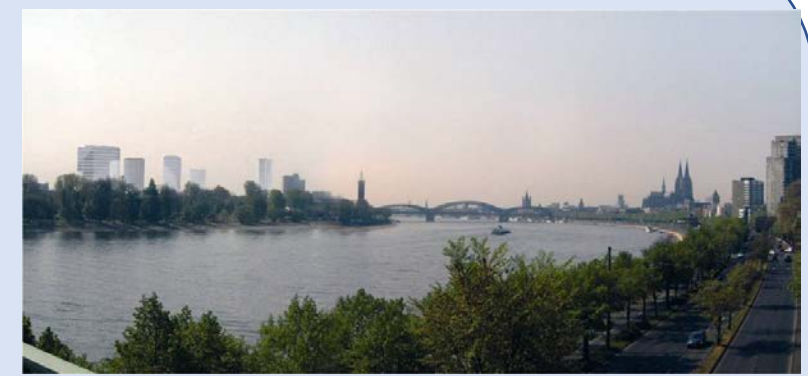
Buildings and Development: Visual Impacts?



Traffic Infrastructure? Functional, Structural Impacts?

(Dresden Elbe Valley: Withdrawn from WH List 2009!)

Management Issues: Financing, Coordination, Dissemination...



Buildings and Development (11)

Transportation Infrastructure (15)



Service Infrastructure (12)

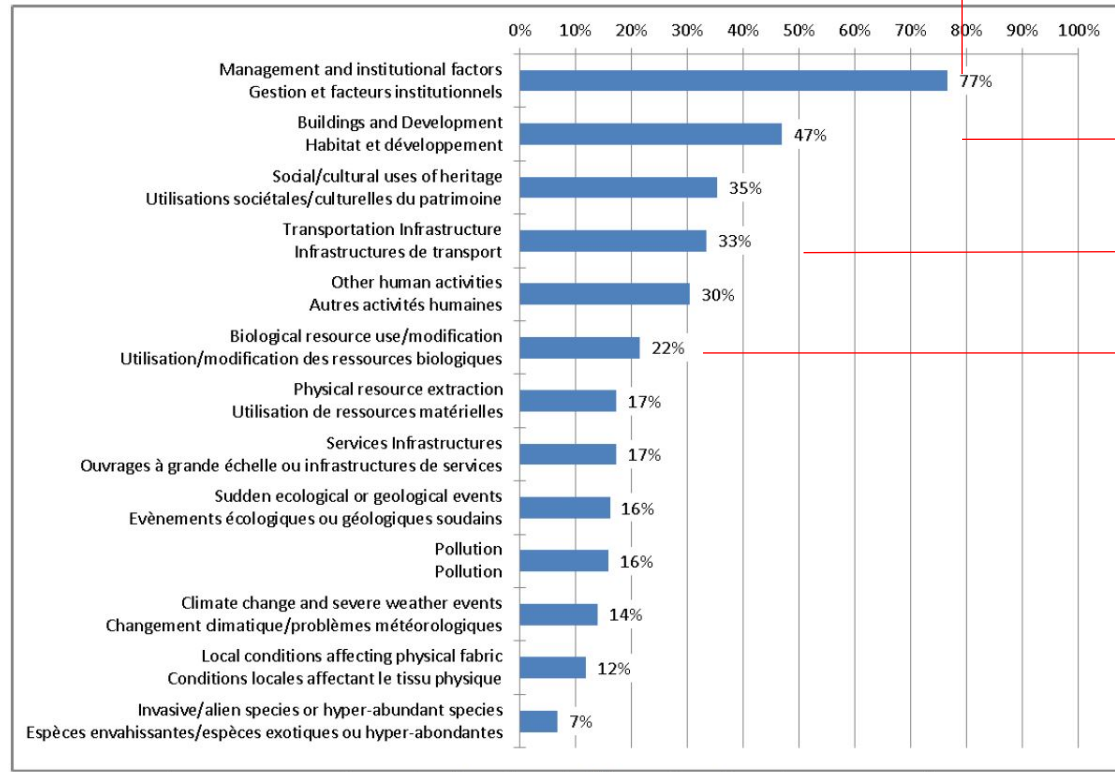
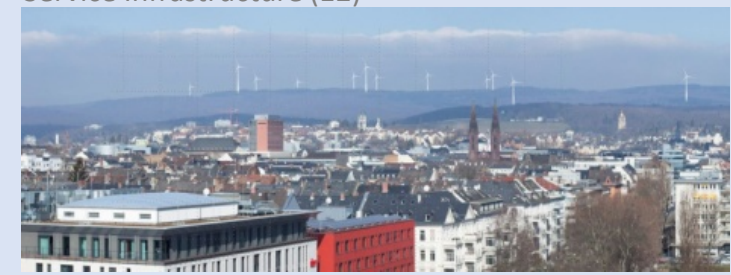
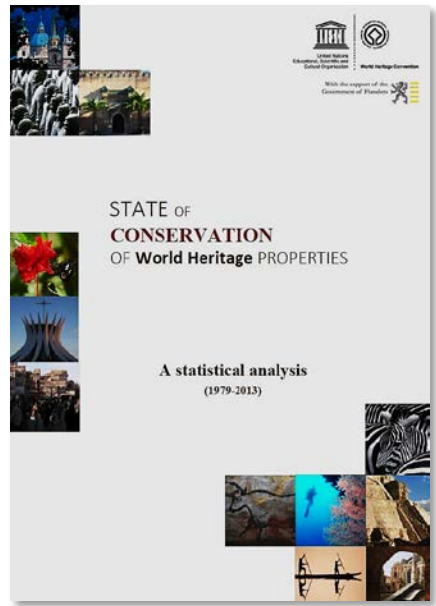


Chart 10: Percentage of properties affected by each of the 13 primary factors between 1979 and 2013



Impact Factors / HIAs

Civic Engagement Tools

Should involve a broad cross-section of stakeholders, and empower them to identify values of urban areas...



(a) Civic engagement tools

should involve a diverse cross-section of stakeholders, and empower them to identify key values in their urban areas, develop visions that reflect their diversity, set goals, and agree on actions to safeguard their heritage and promote sustainable development. These tools, which constitute an integral part of urban governance dynamics, should facilitate intercultural dialogue by learning from communities about their histories, traditions, values, needs and aspirations, and by facilitating mediation and negotiation between groups with conflicting interests.



(b) Knowledge and planning tools

should help protect the integrity and authenticity of the attributes of urban heritage. They should also allow for the recognition of cultural significance and diversity, and provide for the monitoring and management of change to improve the quality of life and of urban space. These tools would include documentation and mapping of cultural and natural characteristics. Heritage, social and environmental impact assessments should be used to support and facilitate decision-making processes within a framework of sustainable development.

Knowledge and Planning Tools

Protection of integrity and authenticity of the attributes of urban heritage.

Regulatory Systems

Should reflect local conditions, and may include legislative and regulatory measures aimed at the conservation and management of the tangible and intangible attributes of urban heritage.



(c) Regulatory systems

should reflect local conditions, and may include legislative and regulatory measures aimed at the conservation and management of the tangible and intangible attributes of the urban heritage, including their social, environmental and cultural values. Traditional and customary systems should be recognized and reinforced as necessary.



(d) Financial tools

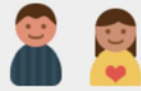
should be aimed at building capacities and supporting innovative income-generating development, rooted in tradition. In addition to government and global funds from international agencies, financial tools should be effectively employed to foster private investment at the local level. Micro-credit and other flexible financing to support local enterprise, as well as a variety of models of partnerships, are also central to making the historic urban landscape approach financially sustainable.

Financial Tools

Should be aimed at building capacities and supporting innovative income-generating development, rooted in tradition.

HUL - Instruments

Civic Engagement Tools
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Heritage Impact Assessment as a tool to guide change and transformations

HUL – Instruments and the Role of HIA

Impact Assessment

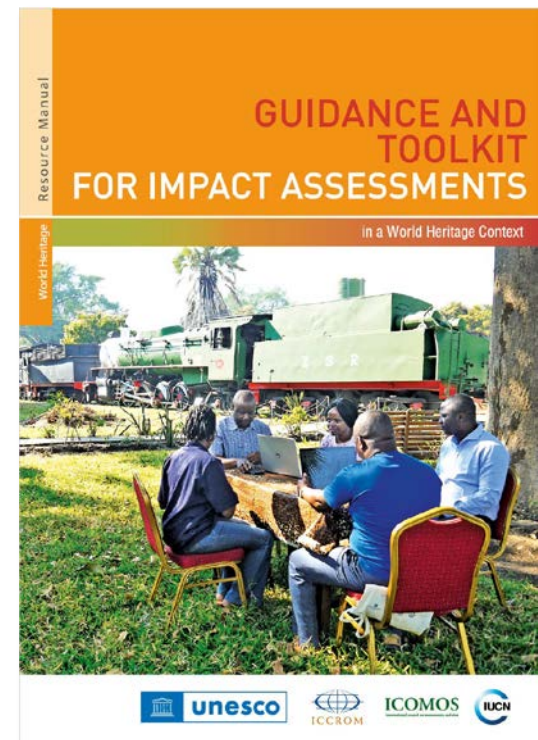
“A process of **identifying**, predicting, **evaluating** and communicating the probable effects of a current or proposed development policy or action on the cultural life, institutions and resources of communities, then **integrating** the findings and conclusions into the planning and decision-making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

Def. International Association of Impact Assessment (IAIA)



Heritage Impact Assessment (© Michael Kloos)

Heritage Impact Assessments in UNESCO World Heritage Context (since 2011)



Impact Assessment

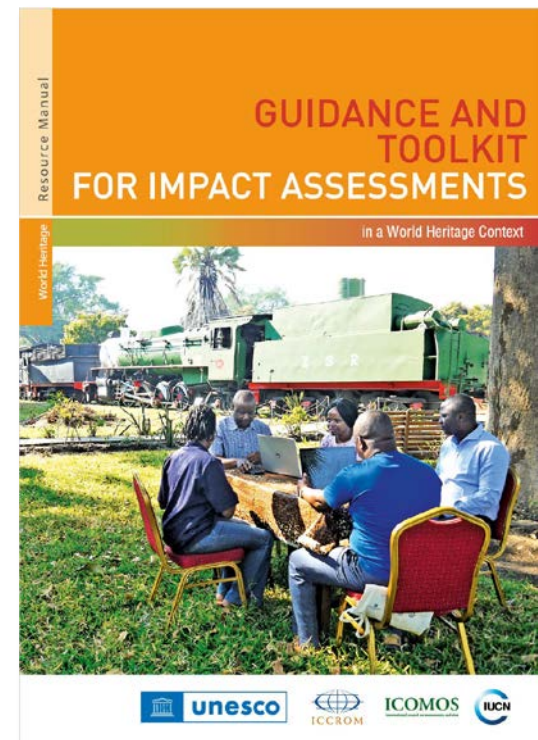
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Heritage Impact Assessment (© Michael Kloos)

Heritage Impact Assessments in UNESCO World Heritage Context (since 2011)



VALUES



WHY is the place important?

WHY are certain attributes considered to be heritage?

ATTRIBUTES



WHAT is valued (tangible or intangible)?

WHAT things need to be protected and conserved to maintain the place's values?

STEP 1: Identify Attributes and Values

TANGIBLE ATTRIBUTES

ASSET

- Building element
- Building
- Urban element
- Natural element

AREA

- Ensemble
- Context or setting
- Area

LANDSCAPE

- The result of layering
- Urban landscape / everything

INTANGIBLE ATTRIBUTES

ASSET RELATED

- Concept or artistic trend
- Relations to context (location)
- Character

SOCIETAL

- Use / Function
- Knowledge, traditions, practices
- Relations to meaning (association)
- Community / people (s)

PROCESS

- Management Process
- Development or evolution

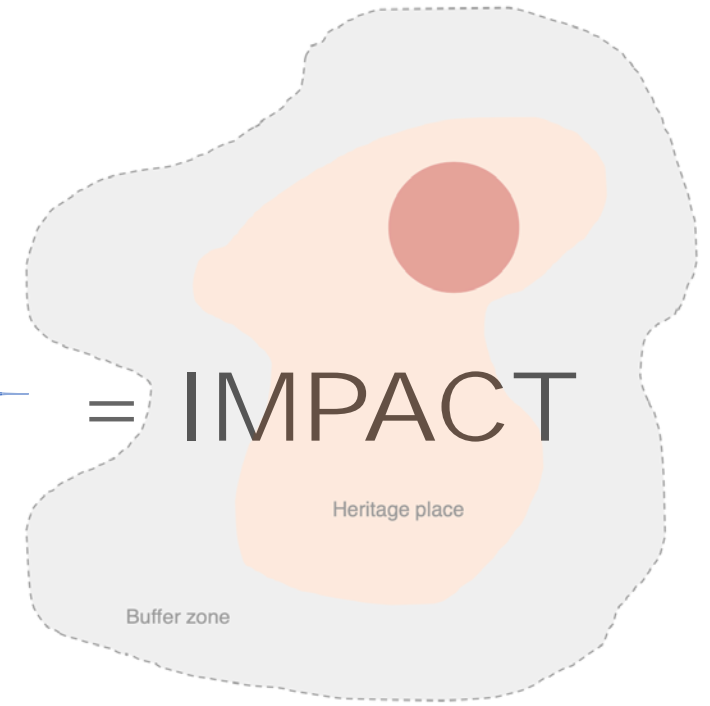
STEP 2: Map Attributes

ATTRIBUTES
VALUES

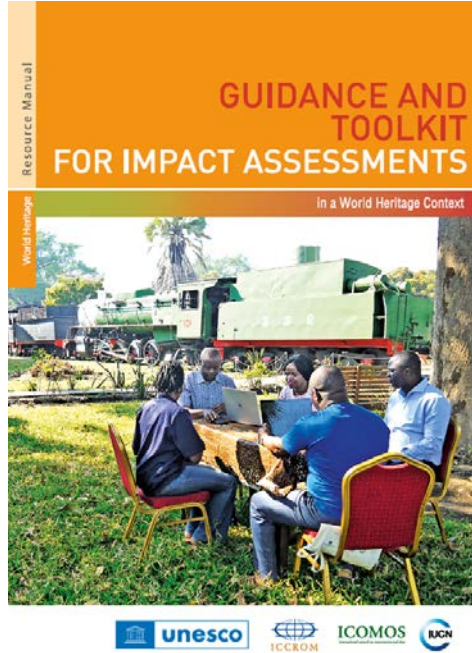


+

ACTION



STEP 3: Assess Impact: Structural Impacts, Functional impacts? Visual Impacts? Intangible (e.g. social)?



ELEMENT OF PROPOSED ACTION	ATTRIBUTE	DESCRIPTION OF POTENTIAL IMPACT	FREQUENCY OF ACTION	DURATION OF ACTION	REVERSIBILITY OF ACTION	REVERSIBILITY OF CHANGE TO THE ATTRIBUTE	LONGEVITY OF CHANGE TO THE ATTRIBUTE	DEGREE OF CHANGE TO THE ATTRIBUTE	QUALITY OF CHANGE TO THE ATTRIBUTE	EVALUATION OF IMPACT
			Once / intermittent / continuous	Short-term / long-term	Reversible / irreversible	Reversible / irreversible	Temporary / permanent change	None / negligible / some / large change	Positive / negative change	Neutral / minor / moderate / major impact (negative and positive)
										Major negative impact
										Moderate negative impact
										Minor negative impact
										Neutral
										Minor positive impact
										Moderate positive impact
										Major positive impact

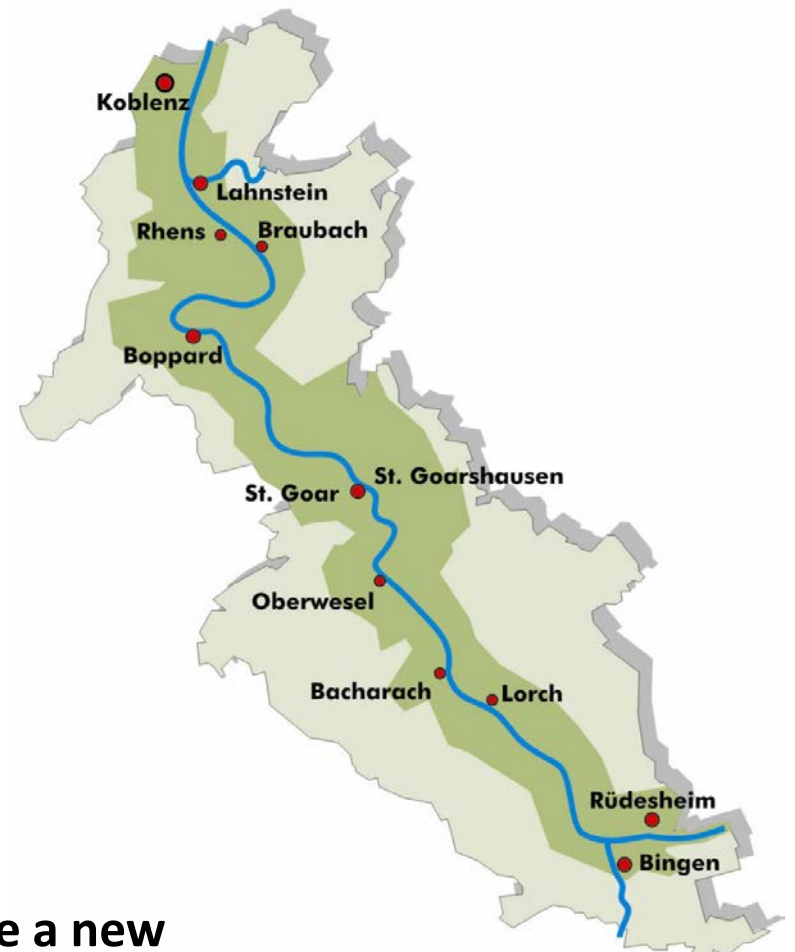
Assessment / Grading of impacts on (WH) Values



2

Case Study Upper Middle Rhine Valley

Cultural Landscape Compatibility Study



- 1977: First attempts
- 29 Juni 2002: Inscription
- Criteria: (ii) (iv) (v)
- ‚Continuing Landscape‘
- Length: ca. 67 km
- 2 Federal States
- Existing Management Plan dates from 2001
- **UNESCO invited 2017 to compile a new Management Plan.**

World Heritage Property 'Upper Middle Rhine Valley'



Pressure due to development?



Pressure due to socio-economical changes?

WHY is the place important?

World Heritage Values (SOUV)



Concept of the CLCS: 3 Components

WHY is the place important?

World Heritage Values (SOUV)



Attributes
Which Attributes convey OUV?

WHAT is valued (tangible or intangible)?

WHAT things need to be protected and conserved to maintain the place's values?

Concept of the CLCS: 3 Components

WHY is the place important?

World Heritage Values (SOUV)



WHAT is valued (tangible or intangible)?
WHAT things need to be protected and conserved to maintain the place's values?

Attributes

Which Attributes convey OUV?

Fields of action:
How to preserve OUV and to guarantee sustainable development?



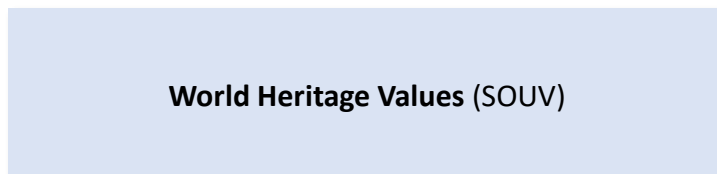
Management Plan



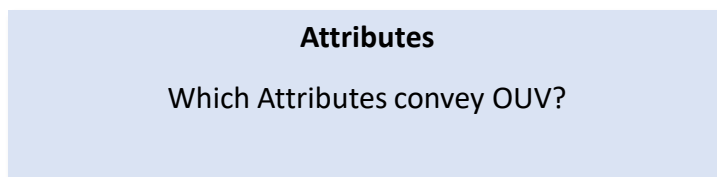
Cultural Landscape Compatibility Study (CLCS)

Systematic assessment:
Guidance and monitoring of present and future developments

WHY is the place important?



WHAT is valued (tangible or intangible)?
WHAT things need to be protected and conserved to maintain the place's values?



Which fields of action are necessary to **preserve OUV and to guarantee sustainable development?**

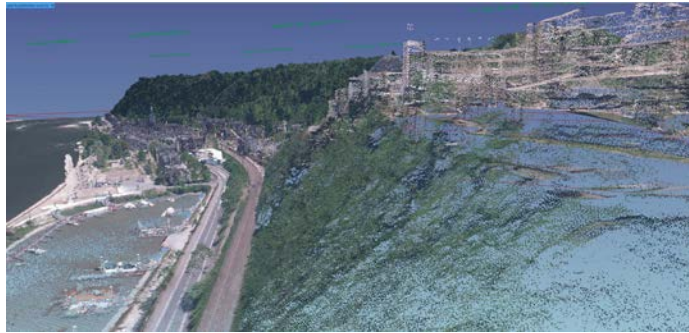


Systematic assessment, guidance and monitoring of present and future developments



1) OPERATIONALISATION OF OUV:

Identification of attributes conveying the OUV as a basis for Management Plan and HIA



2) 3D MODEL:

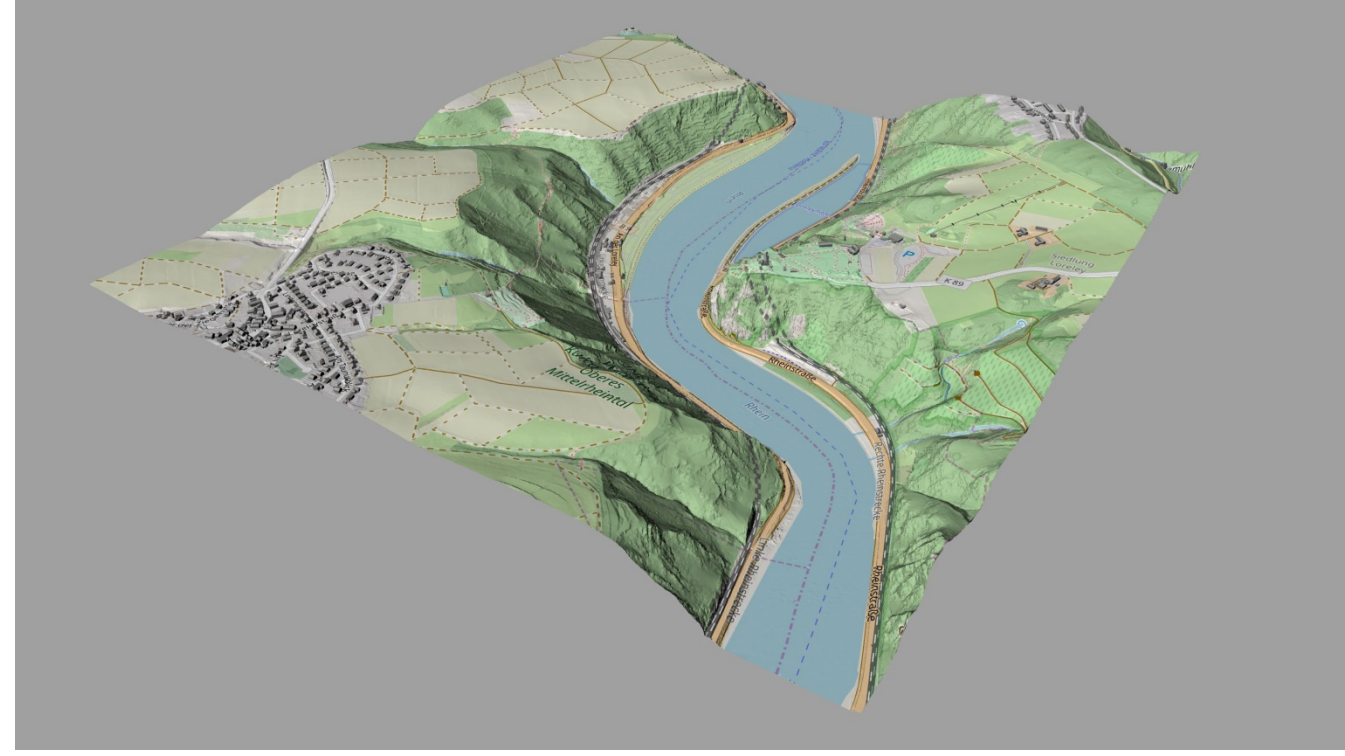
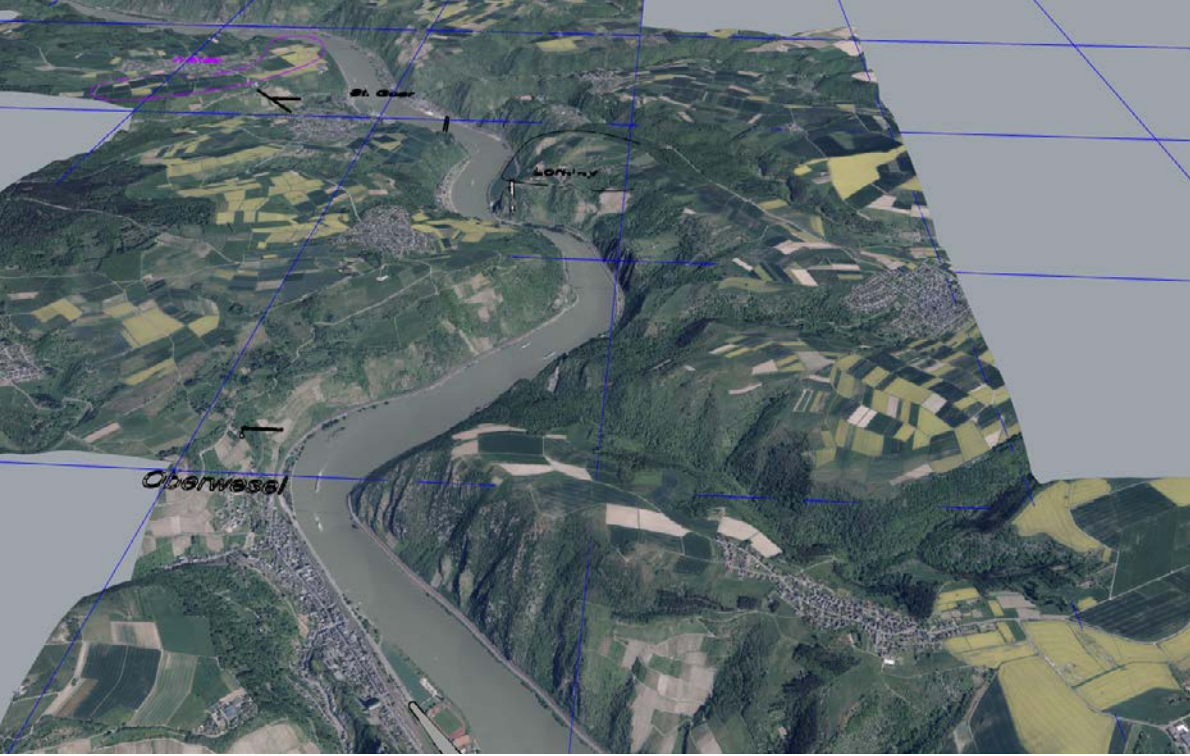
Forms a **basis for evaluation** and integrates different levels of information



3) MONITORING ADVISORY COUNCIL:

An **independent body** advises on the **development of the CLCS** and **gives recommendations** on how to proceed in the context of planning procedures

Concept of the CLCS: 3 Components



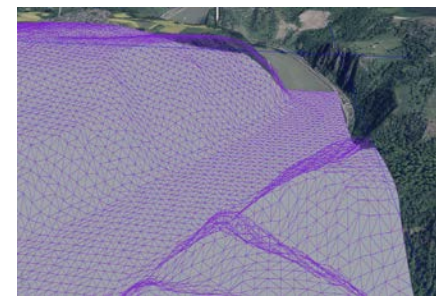
**CLCS basic data
(expert related)**

Model can be borrowed by architects and planners.

The 3D model can be stored on the server of the Upper Middle Rhine Valley World Heritage Association.

- 3D vector model

- Attribute Mapping





- Criterion (ii):** As one of the most important **transport routes** in Europe, the Middle Rhine Valley has for two millennia facilitated the **exchange of culture** between the Mediterranean region and the north
- Criterion (iv):** The Middle Rhine Valley is an outstanding organic cultural landscape, the present-day character of which is determined both by its **geomorphological and geological setting** and by the human interventions, such as **settlements, transport infrastructure, and land use**, that it has undergone over two thousand years.
- Criteria (v):** The Middle Rhine Valley is an outstanding example of an evolving traditional way of life and means of communication in a narrow river valley. **The terracing of its steep slopes in particular has shaped the landscape in many ways for more than two millennia.** However, this form of land use is under threat from the socio-economic pressures of the present day.

Statement of Outstanding Universal Value



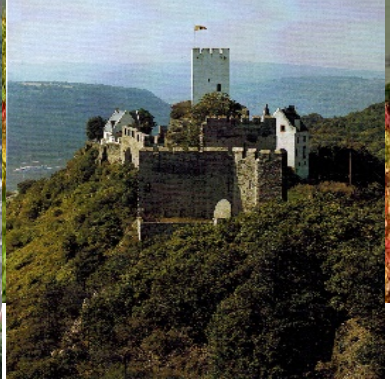
Attributes and Values: Identification of Attributes with experts, planning levels, stakeholders of local community



Geology & Geomorphology (canyon)



Transport, settlements, vineyards



Elements in the cultural landscape (castles, monuments)



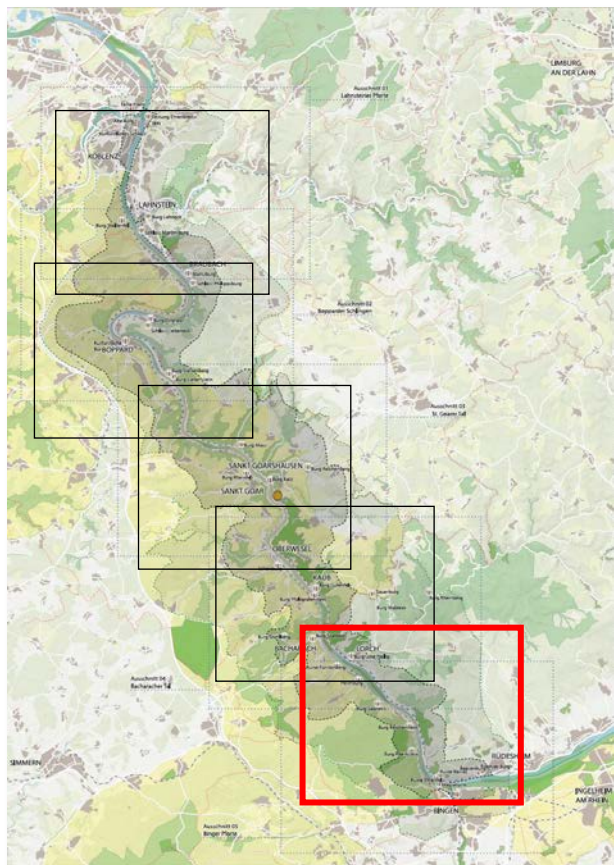
Views and viewpoints



Cultural Exchange and Communication



Attributes and Values: Key Attributes



KA 1 – Geology and geomorphology:
valleys

KA 2 – Land use:
settlements,
transport infrastructure,
vineyards

KA 3 – Elements in the cultural landscape:
castles,
monuments

KA 4 – Views and viewpoints:
perceived qualities

KA 5 – Cultural exchange and communication

World Heritage Area

Buffer zone

Classic viewpoints

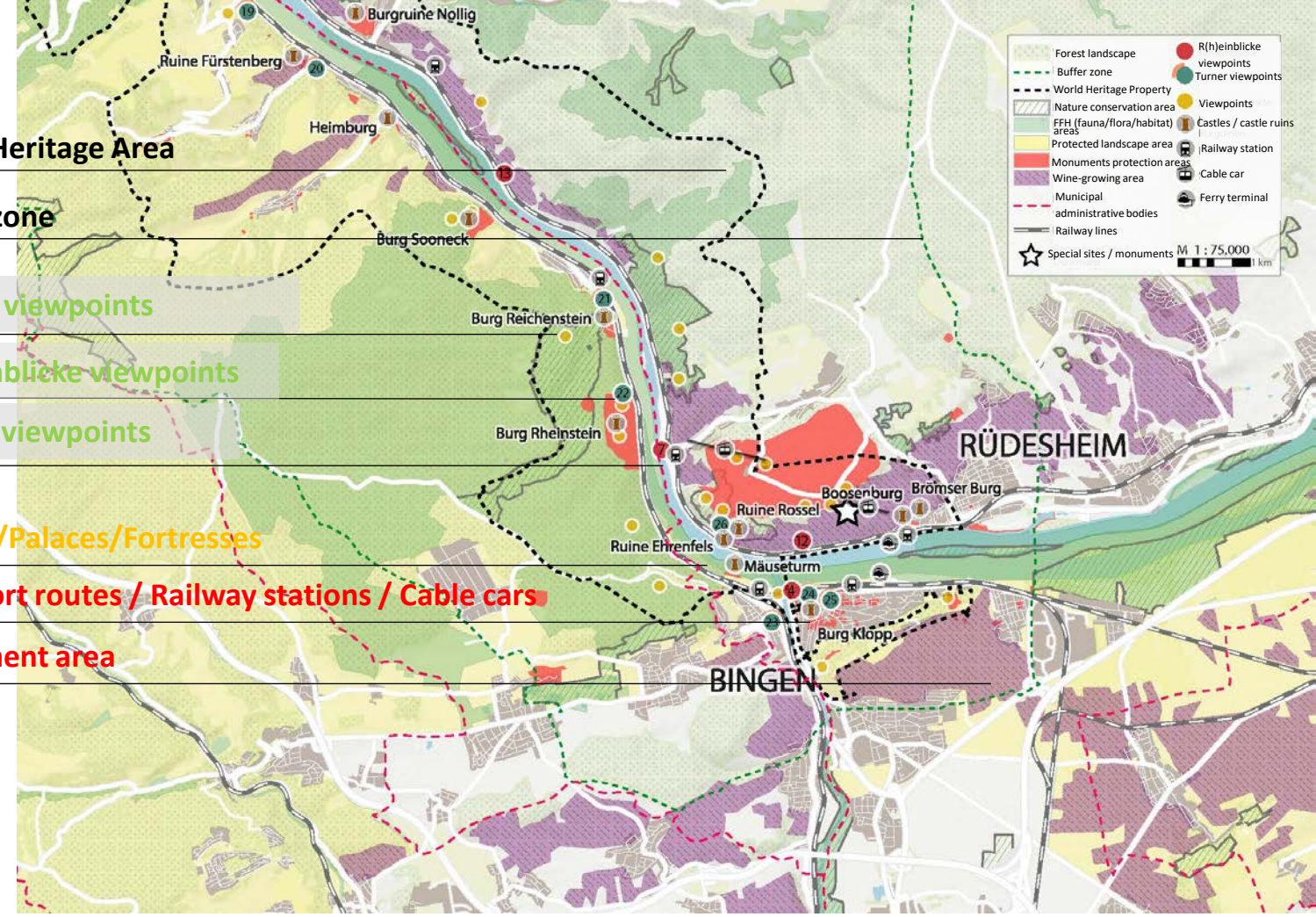
R(h)einblicke viewpoints

Turner viewpoints

Castles/Palaces/Fortresses

Transport routes / Railway stations / Cable cars

Settlement area



Attributes and Values. Cartographic Attribute Mapping: Section 5 (Bingen Gate), Upper Middle Rhein Valley



KA 1 – Geology and geomorphology:
valleys

KA 2 – Land use: settlements, transport
infrastructure, vineyards

**KA 3 – Elements in the cultural
landscape:** castles, (natural)
landmarks

KA 4 – Views and viewpoints:
perceived qualities

**KA 5 – Cultural exchange and
communication**

Attributes and Values: Photographic Attribute Mapping: Section 5 (Bingen Gate), Upper Middle Rhine Valley



Test project: Modification of Transport Infrastructure



Option B: Underpass



Option C: Overpass



Option D: Small Roundabout Above



Option E: Small Roundabout Below

Test Run 1: Rüdeshelm Railway Crossing



Relevant Viewpoints



KA 4 Elisenhöhe

Viewpoint 3_Ferry Terminal: Situation

KA 4 Elisenhöhe

No.	Relevant attributes for visual assessment	Present impairments	Future impairments	
1	Spatially effective layers 1-3	Rhine/banks (water, Werthe, floodplains, riparian areas)	Slight (-1)	High/very high (-3)
2		Low terraces (traffic + infrastructure, settlement structures)	Slight (-1)	Very high (-4)
3		Middle terraces (large -area vineyard landscape)	Moderate/high (-2)	Very high (-4)
4	Elements in the cultural landscape (castles, ruins, monuments)	Irrelevant	Irrelevant	
TOTAL		Slight (-1.3)	Very high (-3.6)	



Grading refers to:
Impact on Attributes

Viewpoint 3_Ferry Terminal: Option D

KA 4 Elisenhöhe

No.	Relevant attributes for visual assessment		Present impairments	Future impairments
1	Spatially effective layers 1-3	Rhine/banks (water, Werthe, floodplains, riparian areas)	Slight (-1)	Slight (-1)
2		Low terraces (traffic + infrastructure, settlement structures)	Slight (-1)	Moderate/high (-2)
3		Middle terraces (large -area vineyard landscape)	Moderate/high (-2)	Moderate/high (-2)
4	Elements in the cultural landscape (castles, ruins, monuments)		Irrelevant	Irrelevant
TOTAL			Slight (-1.3)	Moderate/high (-1.6)



Viewpoint 3_Ferry Terminal: Option E



No.	Relevant Attributes for Visual Assessment		Existing Negative Impacts	Future Negative Impacts
1	Levels of spatial relevance 1-3	The Rhine and its banks (water, islands, floodplains, shore areas)	slight (-1)	slight (-1)
2		Low terraces (transport and infrastructure, patterns of settlement)	slight (-1)	slight (-1)
3		Middle terraces (large-scale vineyard landscape)	moderate/strong (-2)	moderate/strong (-2)
4	Elements in the cultural landscape (castles, palaces, ruins, monuments)		neutral	neutral
TOTAL			slight (-1)	slight (-1)

Attribute / Evaluation (Var. B)



No.	Relevant Attributes for Visual Assessment		Existing Negative Impacts	Future Negative Impacts
1	Levels of spatial relevance 1-3	The Rhine and its banks (water, islands, floodplains, shore areas)	slight (-1)	strong / major (-3)
2		Low terraces (transport and infrastructure, patterns of settlement)	slight (-1)	major (-4)
3		Middle terraces (large-scale vineyard landscape)	moderate/strong (-2)	major (-4)
4	Elements in the cultural landscape (castles, palaces, ruins, monuments)		neutral	neutral
TOTAL			slight (-1)	strong / major (-2,8)

Attribute / Evaluation (Var. D)



Variant B: Underpass



Variant C: Overpass



Variant D: Roundabout above



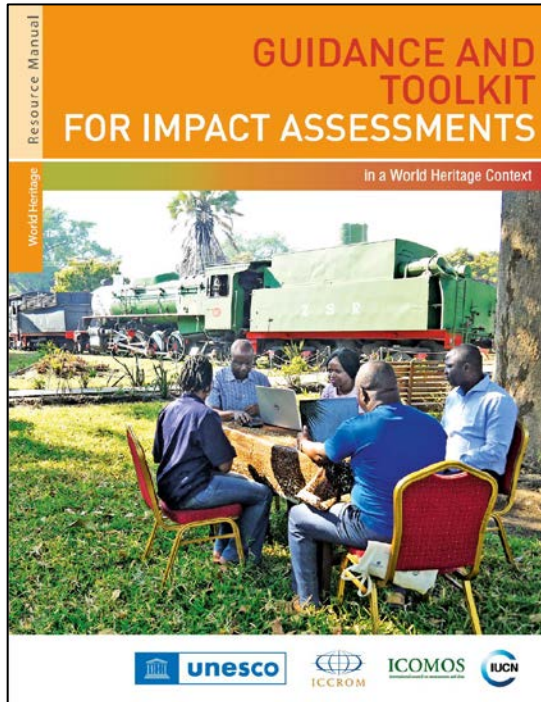
Variant E: Roundabout below

Test Result for Rüdeshheim Railway Crossing



3 Conclusions

Heritage Impact Assessments need to be



Guidance & Toolkit for Impact Assessments (2022)

<https://whc.unesco.org/en/guidance-toolkit-impact-assessments/>



Guidance for Wind Energy in a World Heritage Context (2023)

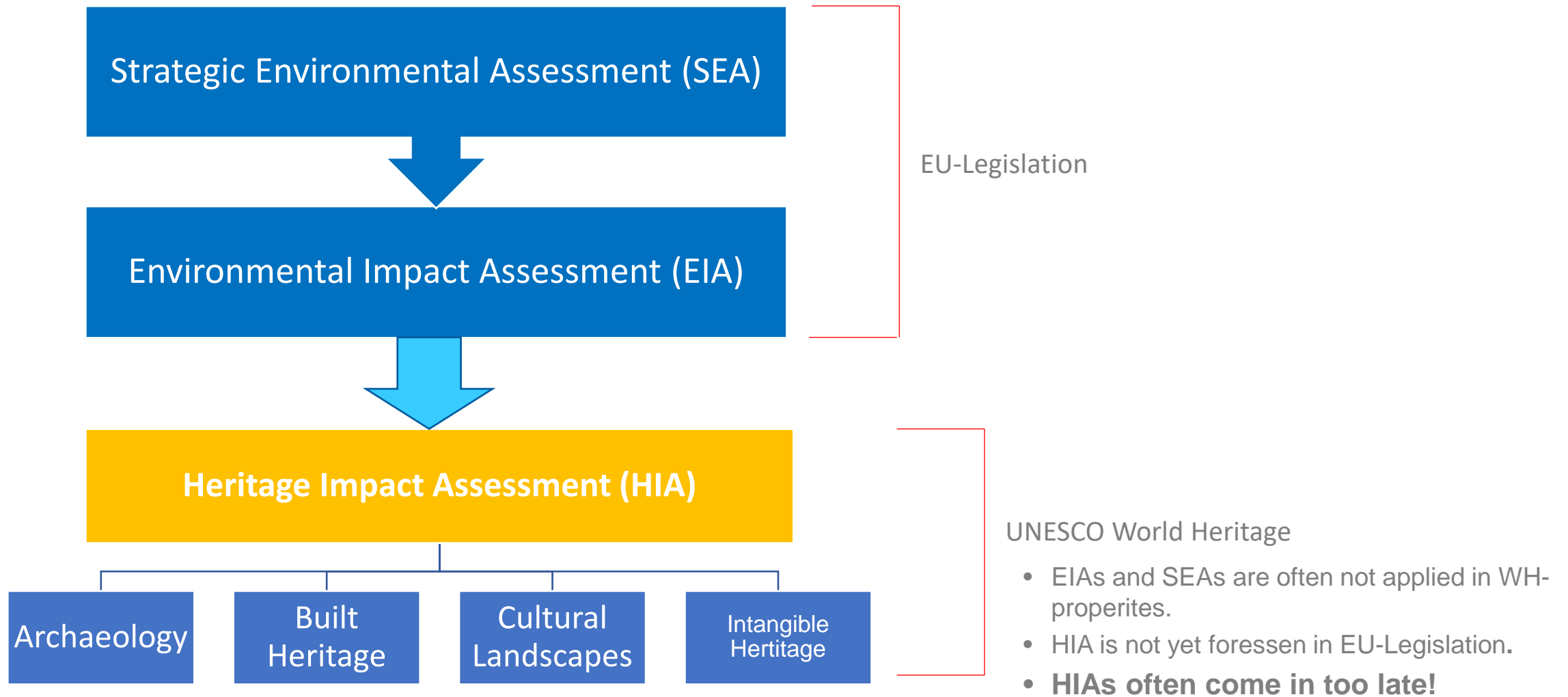
<https://whc.unesco.org/en/wind-energy>

...guided by a clear methodology: Starting Point is knowledge about Values & Attributes



Fig. 7. Various necessary components to enhance effectiveness of HIAs (B. Ashrafi).

....process related: HIA results have to be fed back into planning processes

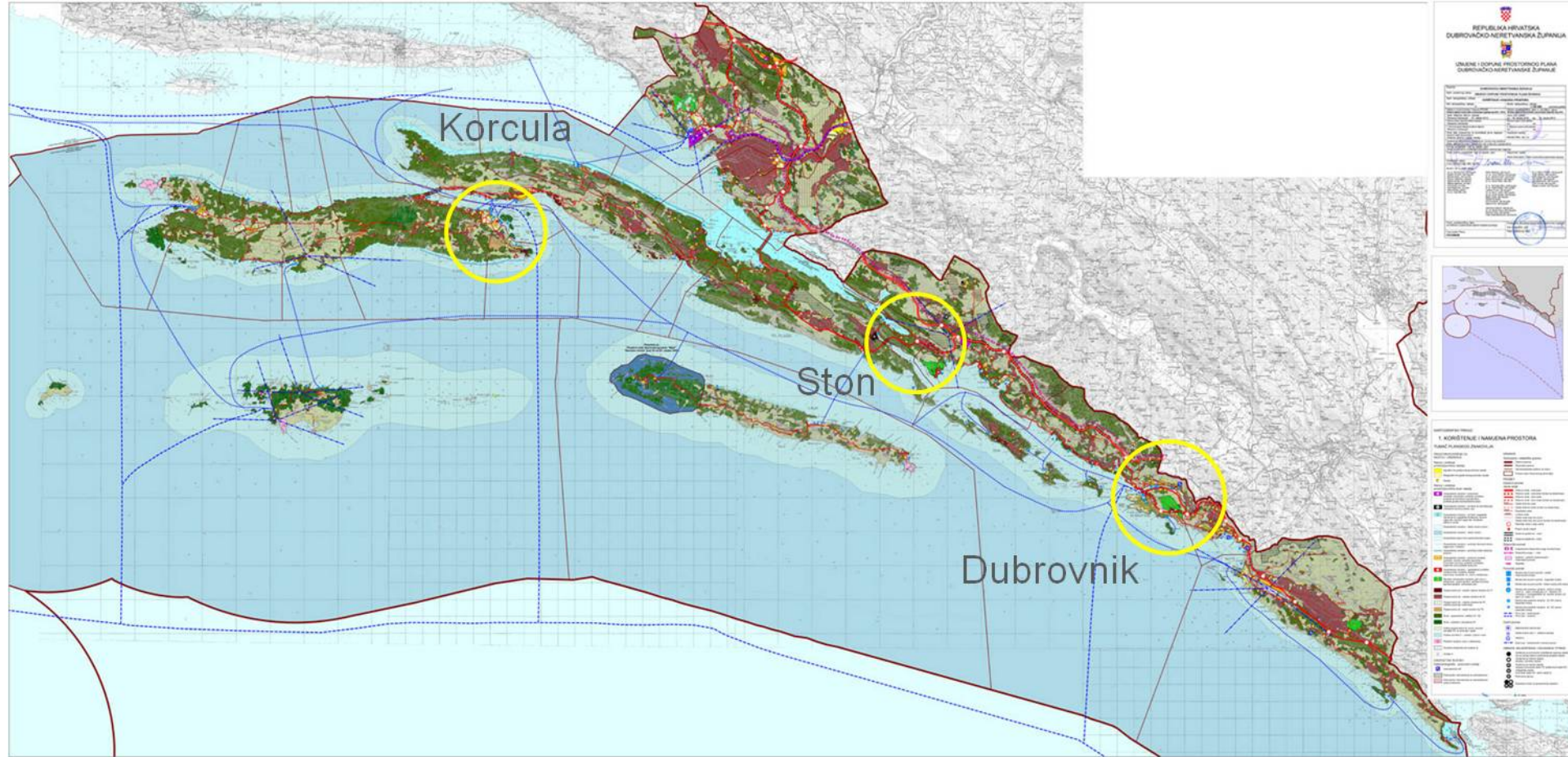


...integrated into a legislative framework...

katri lisitzin arhitekt SAR / MSA
michael kloos planning and
heritage consultancy

HERITAGE IMPACT ASSESSMENT

of the "Master Plan for the development of Functional Region
South Dalmatia" with Strategic Environmental Assessment



The World Heritage property 'Old City of Dubrovnik' and the two potential World Heritage sites 'Fortified City of Korčula / Venetian Works of Defence between 15th and 17th centuries' and 'Historical Town Planning Ensemble of Ston and Mali Ston, Connecting Walls, The Mali Ston Bay Nature Reserve, Ston Polje and the Saltpans

Twinning SEAs, EIAs and HIAs might be useful.



4 Task for Today

Preparation of Heritage Impact Assessment



Study Areas – Ston & Dubrovnik



1

STEP 1

Identification of Values and Attributes

VALUES



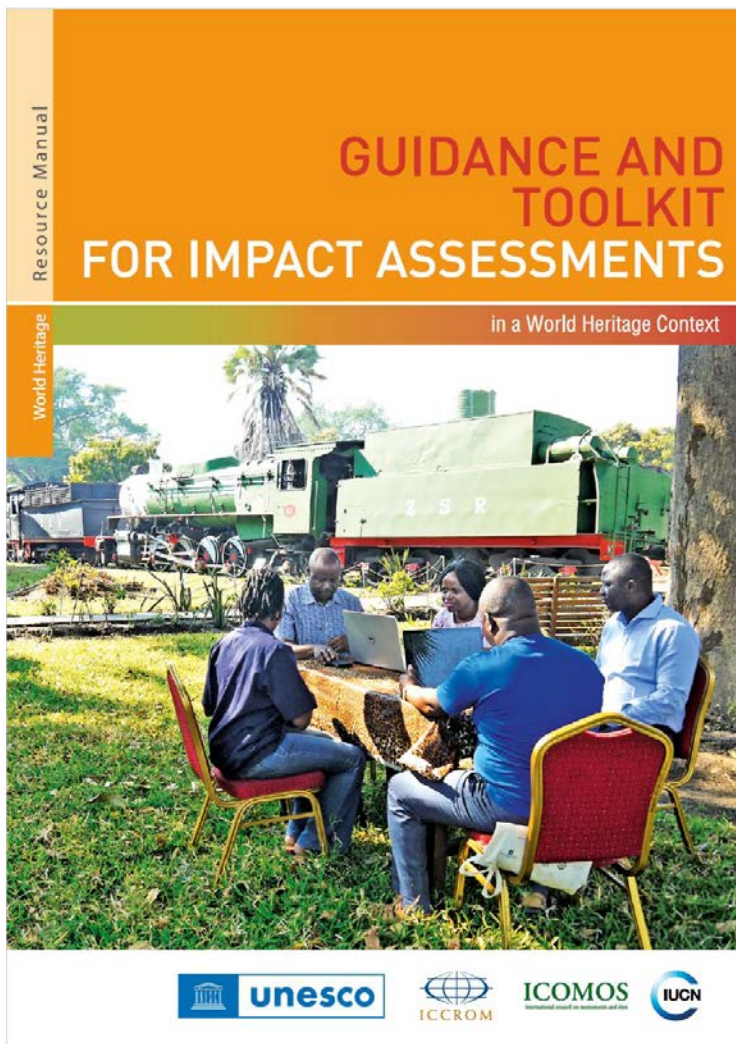
WHY is the place important?
WHY are certain attributes considered to be heritage?

ATTRIBUTES



WHAT is valued (tangible or intangible)?
WHAT things need to be protected and conserved to maintain the place's values?

STEP 1a: Identification of Attributes and Values



Values & Attributes: Guidance & Toolkit for Impact Assessments. See: p. 12-15, S. 56 & 63 and p. 68-71

VALUES



WHY is the place important?

ATTRIBUTE(S)



WHAT things need to be protected and conserved to maintain the place's values?

WHY & WHAT?

“In the context of heritage conservation, **values** are the **qualities for which a heritage place is considered important** to be protected for present and future generations. Values are **determined by a range of social and cultural factors**. What is valued by one section of society may not be valued by another, or may be valued for different reasons, or one generation may value it but it may not be valued by the next generation. Heritage places normally have a **range of values: aesthetic, architectural, biological, ecological, historic, geological, social, spiritual, etc.** These values are **embodied in and conveyed by the attributes of the heritage place.**”

UNESCO, ICOMOS, ICCROM and IUCN (2022): Guidance and Toolkit for Impact Assessments in a World Heritage Context 2022, S. 63

VALUES: WHY is a place important?

“**Attributes** are the elements of a heritage place which convey its heritage/conservation values and enable an understanding of those values. They can be physical qualities, material fabric and other tangible features, but can also be intangible aspects such as processes, social arrangements or cultural practices, as well as associations and relationships which are reflected in physical elements of the property.”

UNESCO, ICOMOS, ICCROM and IUCN (2022): Guidance and Toolkit for Impact Assessments in a World Heritage Context 2022, S. 56

ATTRIBUTES: WHICH things must be protected to retain the value(s) of a place? HOW can we see and disseminate those values?

- **Nominations:** („Preliminary Assessments“) and Nomination Dossiers
- **Protection and Management:** e.g. Management Plans
- **Monitoring:** e.g. Periodic Reporting, Reactive Monitoring, etc.
- **Impact Assessments:** Limits of Change of proposed project are to be grades with regard to identified attributes

Attributes as a baseline for...

VALUES



WHY is the place important?

ATTRIBUTE(S)



WHAT things need to be protected and conserved to maintain the place's values?

**MANAGEMENT
OBJECTIVES**



HOW to maintain the place's values and conserve its attributes?

Attribute as a baseline for Management Objectives

Box A1.1 Extract from the Statement of Outstanding Universal Value for a fictitious site of the Blue Sea Marine National Park and the Old Town of Heritopolis, with examples of values (*red, in italics*) and attributes (underlined)

The property is located *in an ecologically and globally outstanding region*, the Blue Sea. The property covers 400,000 ha with a buffer zone of 600,000 ha comprising both marine and terrestrial areas. It is *part of a larger transition area between northern and southern biogeographic zones* and its *marine systems have developed unique and different ecosystems and species*, including endangered ecological communities. The largely *undisturbed habitats* include rare examples of tropical coral reef systems and unique soft coral species. The property and its surrounding area also include seagrass beds and mangrove habitats. These habitats are *home to populations of seabirds, marine mammals, fish, corals, sharks, manta rays and marine turtles*, and the site *provides important feeding grounds* for the last remaining healthy population of endangered orange dugong. The Blue Sea Marine National Park is *an important larvae source area and hosts spawning sites* for commercial fish species.

The property *contains impressive natural phenomena and areas of great natural beauty* and is *relatively undisturbed*. It *contains an array of habitat types*, such as extensive coral reef complexes, mangroves, seagrasses and intertidal and mudflat areas which all enable the survival (*breeding, feeding and resting*) of endangered orange dugong, sharks, manta rays, dolphins and migratory birds. The different biophysiological reef zones, each *providing typical coral reef assemblages*, support a wealth of *marine life and breathtaking underwater vistas*.

Located on the Blue Sea coast, the historic port town of Heritopolis has *played a role throughout history as a place of interchange between historic cultures over time*. While much of the *architecture reflects the city's golden age of wealth as a trading port in the 18th century*, the buildings respect the much older urban layout that dates back to the 6th century. The *18th-century urban plan placed equal emphasis on the built fabric as on public green spaces* within the city centre. In addition, within the urban fabric are a range of significant monuments from each stage of the city's history: the Mausoleum of Eugenius, the Basilica of St Helena and the Great Mosque with its madrasa and baths, are *all important architectural masterpieces of different periods*. The eclectic mix of vernacular and monumental architecture *reflects the diverse communities who have lived in the city for one and a half millennia and who continue to follow traditional practices today*. For centuries merchants, travellers and pilgrims have come to Heritopolis thanks to its bustling port which is connected to a widespread shipping network. Many of these visitors became residents over time, bringing their traditions and religious beliefs, which are reflected in the ongoing festivals and traditions that are still carried out in particular neighbourhoods and associated with specific monuments, as well as *connected with spiritual beliefs connected to the natural world*. The *city continues its historic port function* and is a significant node in surrounding trade routes.

Analys of SOUV: Values (*red, italic*) / Attributes (underlined)

TANGIBLE ATTRIBUTES

ASSET

- Building element
- Building
- Urban element
- Natural element

AREA

- Ensemble
- Context or setting
- Area

LANDSCAPE

- The result of layering
- Urban landscape / everything

INTANGIBLE ATTRIBUTES

ASSET RELATED

- Concept or artistic trend
- Relations to context (location)
- Character

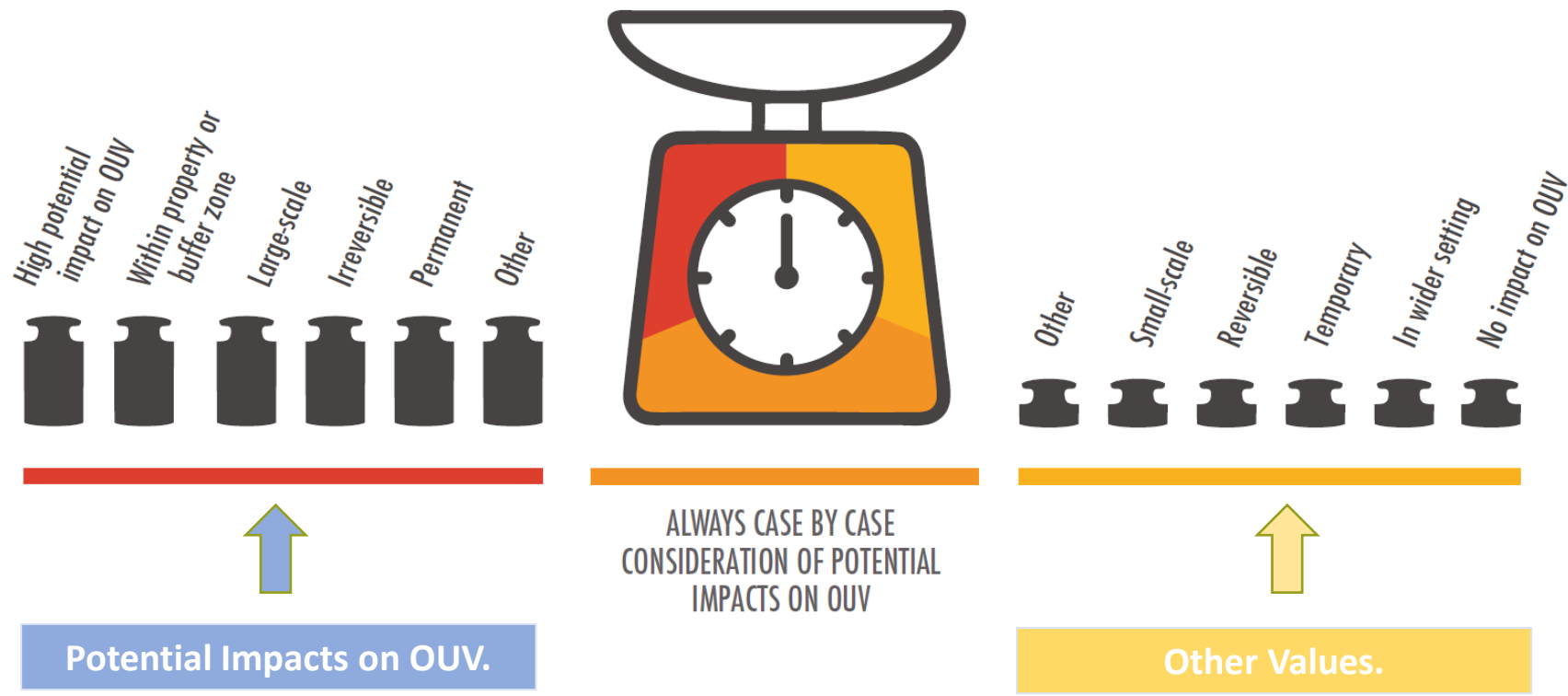
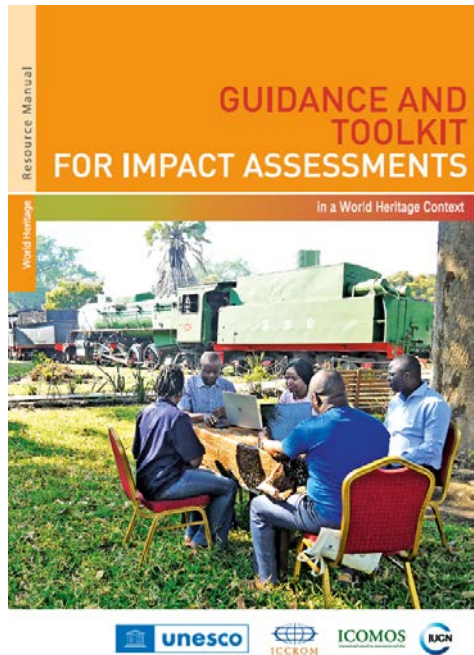
SOCIETAL

- Use / Function
- Knowledge, traditions, practices
- Relations to meaning (association)
- Community / people (s)

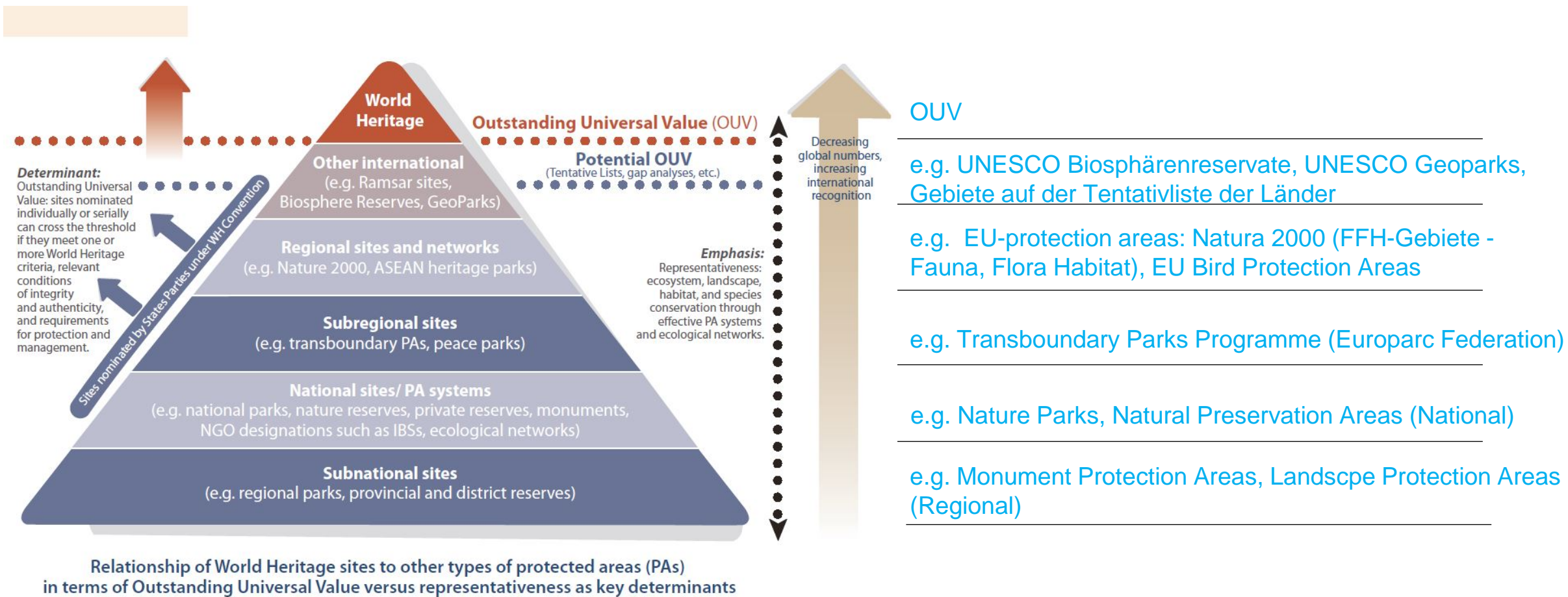
PROCESS

- Management Process
- Development or evolution

STEP 1b: Map Attributes / Build groups of Attributes
NOTE: Attributes refer only to WH property!



STEP 1c: Check also other (OUV-supporting) Values CHECK buffer zone and wider setting



Source: Adapted from Magin and Chape (2004).

OUV (WH-Values) / Other Values



2

STEP 2

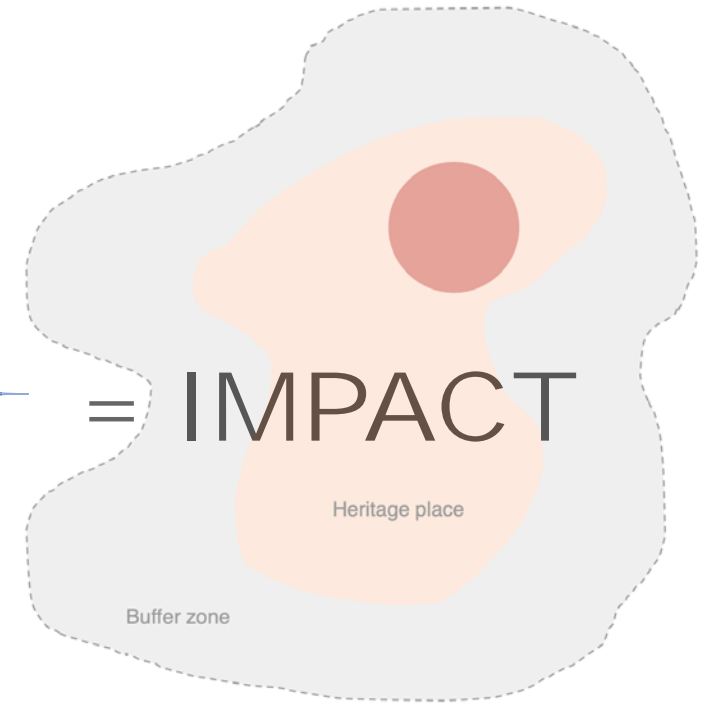
Impact Assessment

ATTRIBUTES
VALUES



+

ACTION



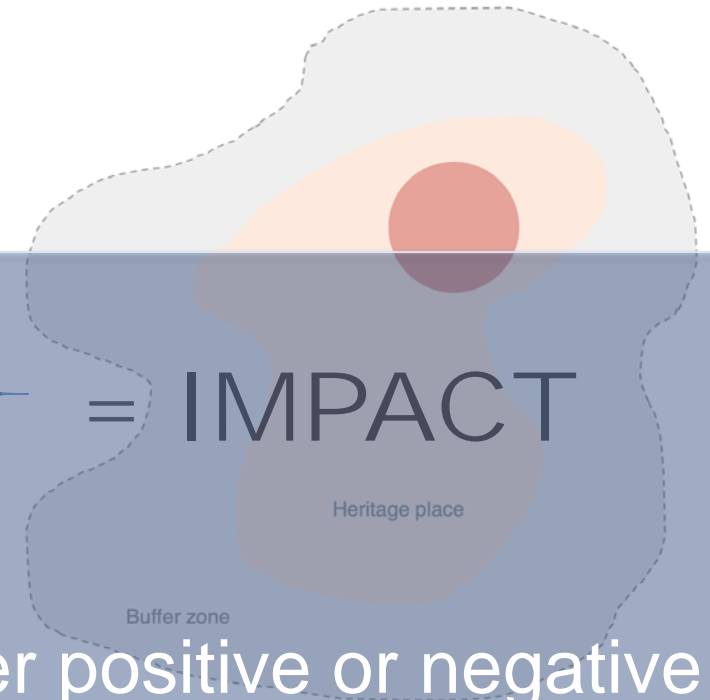
STEP 2: Assess potential Impacts: Structural Impacts, Functional impacts? Visual Impacts? Don't forget intangible (e.g. social) values?

ATTRIBUTES VALUES



Functional Impacts? Public spaces
Structural Impacts? Buildings, Archaeology
Visual Impacts? Keyviews, sightlines

Please grade impacts: **large**, **moderate**, **light**, either positive or negative



Types of Impact: Structural Impacts, Functional impacts? Visual Impacts? Intangible (e.g. social)?

Your task: Concentrate on visual impacts and identify viewpoints of cultural and historic relevance...



HIA: New tram at WH property Bryggen / Bergen, Norway?



Issue

Day Alternative

Tunnel Option

Functional Impact
Visual Impact

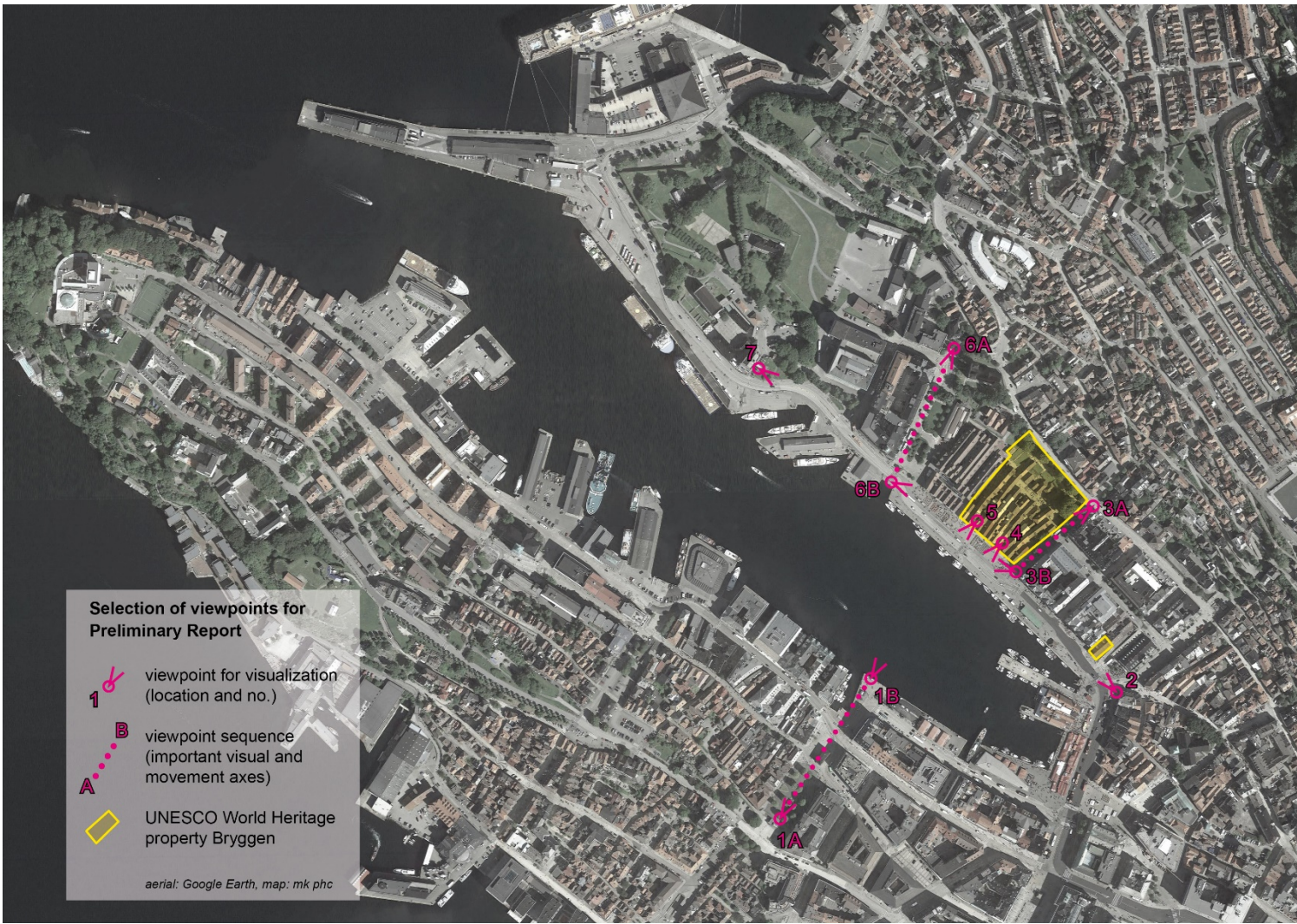
<p>Buses at Øvregatan Cycle lane on Bryggen Quay Planned stops at Torget / Sandbrogaten Planned light-rail-track at Finnegården/Hanseatic Museum</p>	<p>Buses on Bryggen Quay Cycle lane on Bryggen Quay Planned stop with entrances at Mariakirken / Øvregatan Planned bus-track at Finnegården/Hanseatic Museum</p>
<p>Transformation of Bryggen Quay</p>	<p>Transformation of Bryggen Quay</p>

Impact Assessment

Structural Impact

<p>Planned tunnel and foundations of light-rail track at Sandbrogaten (Archaeology/Groundwater) Planned relocation of infrastructure and construction of pile wall on Bryggen Quay Construction works at Bryggesporden - Sandbrogaten</p>	<p>Planned tunnel Heggebakken - Øvregaten (Archaeology / Groundwater) Planned Entrances Mariakirken / Øvregaten (Built heritage) Construction works at Øvregaten</p>
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Risk Assessment



Selection of viewpoints for Preliminary Report

- viewpoint for visualization (location and no.)
- viewpoint sequence (important visual and movement axes)
- UNESCO World Heritage property Bryggen

aerial: Google Earth, map: mk phc



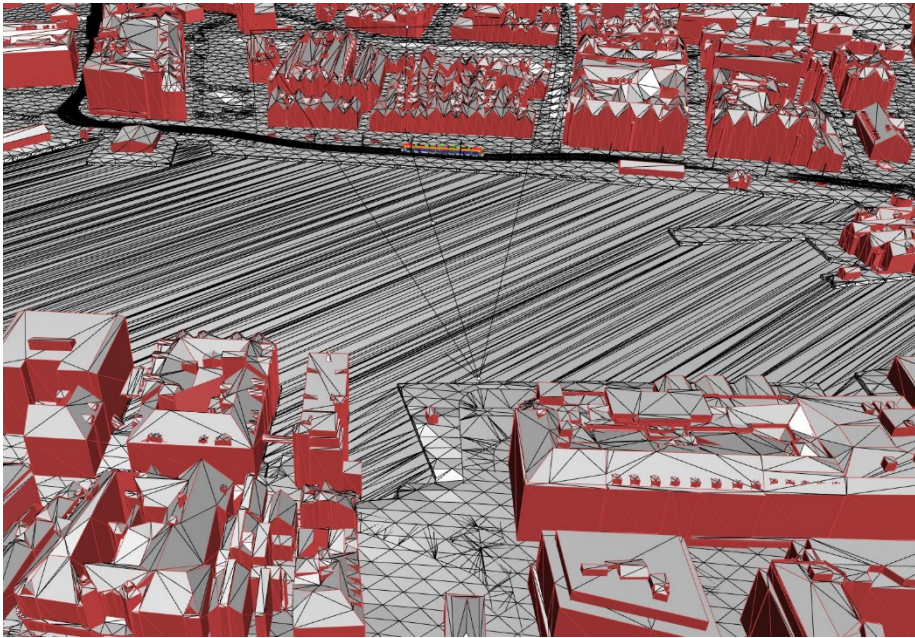
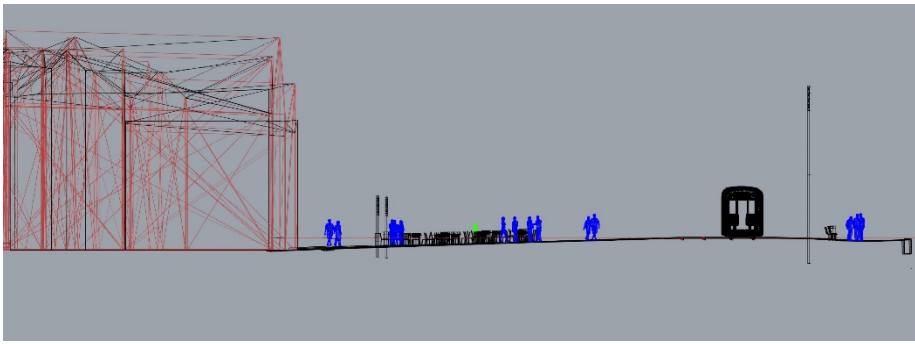
Scholeus-sticket, det eldste Bergensprospektet ble tegnet av Hieronimus Scholeus 1588

(kilde: marcus.uib.no)

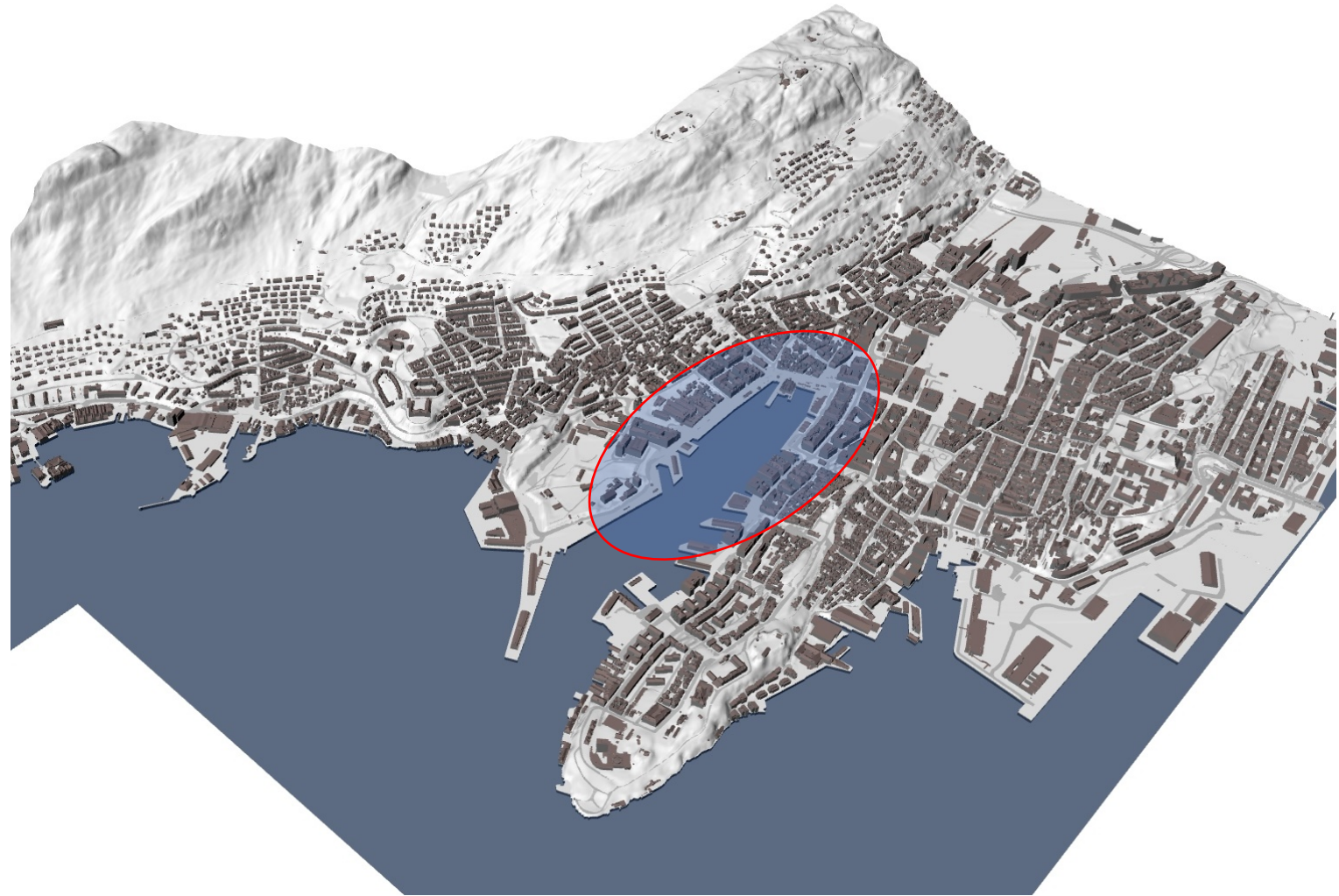


cultural-historical analysis / OUV / Attributes

- desk study and/or site visit examines relevant view points and sight connections
- sources can be: interviews, studies, managementplans and or own research



3D data of planned objects/design proposal
(ideally embedded in environment)

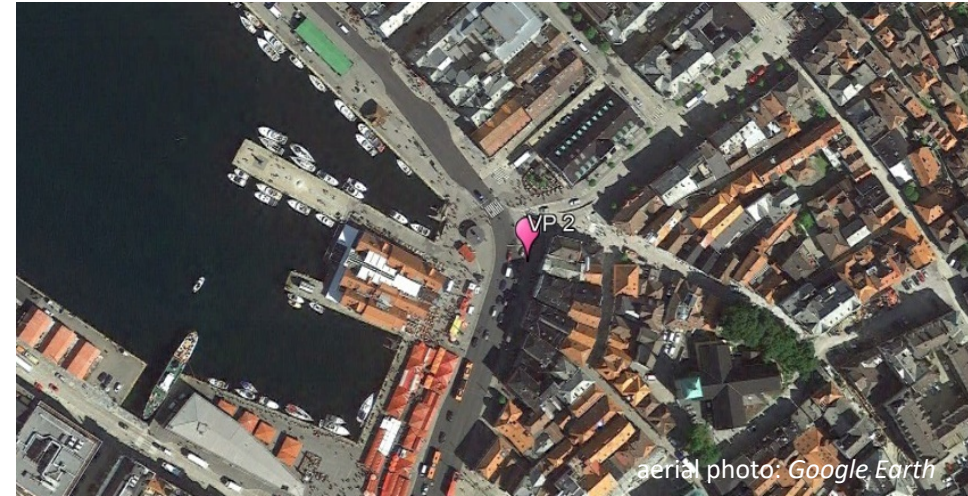


3D data of environment & investigation area
(ideally including areas with relevant viewpoints)

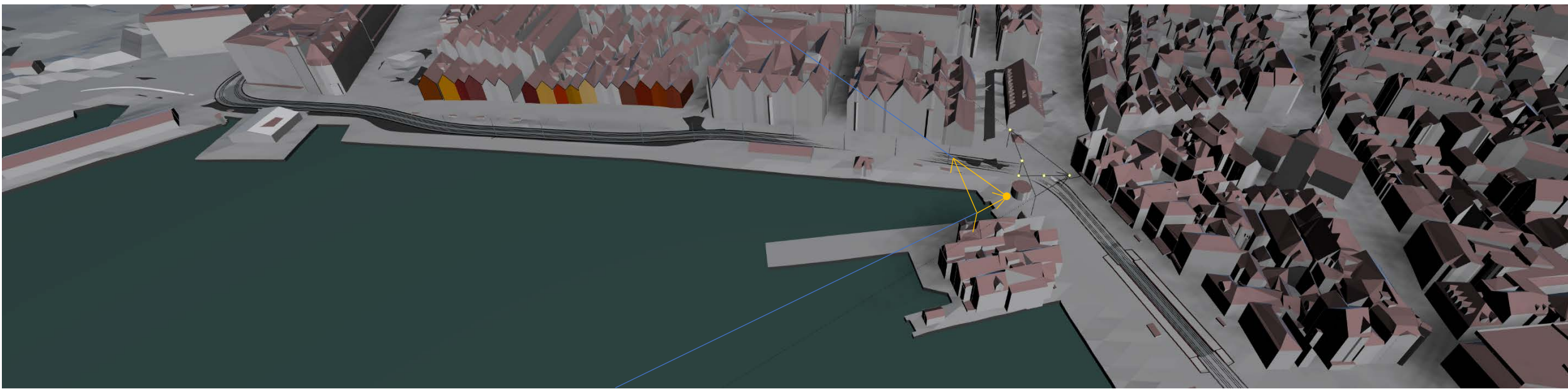
step 1: collection and preparation of (3D) data for visualizations



- georeferenced (panoramic) photos
→ panoramas are useful for showing wider location context
- accurate alignment of camera position
- documentation of position, direction, height
- accuracy up to 1cm (with gnss correction data)
- stitching of single photos up to 360° panorama
- consideration of 'normal' focal length (43-50mm)



aerial photo: Google Earth



Alignment of virtual camera with 3d model and photo

photomontage (overlay with rendering and retouche)

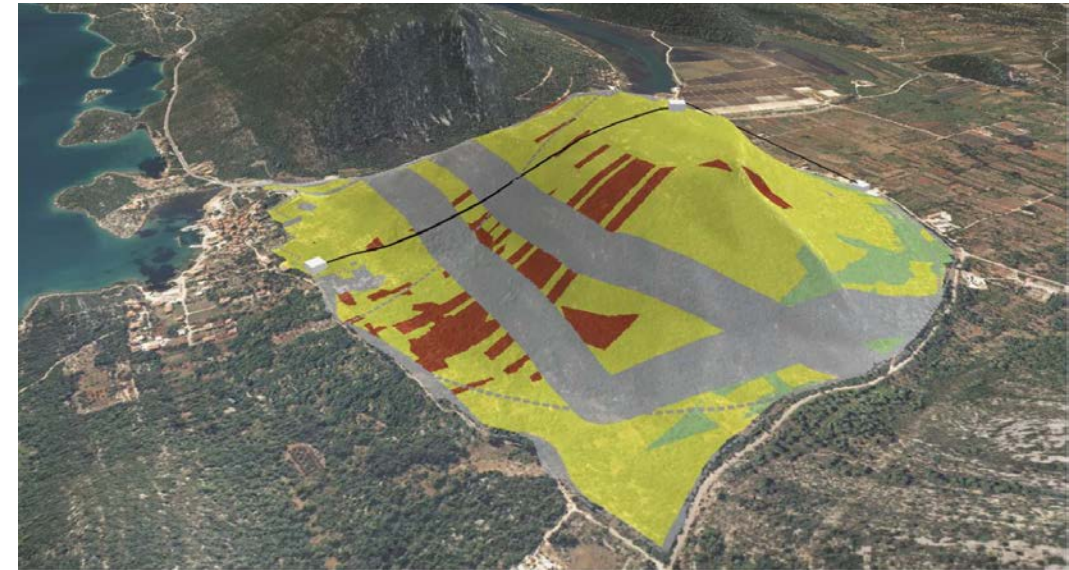
step 4: alignment of computer model with photo in 3d software



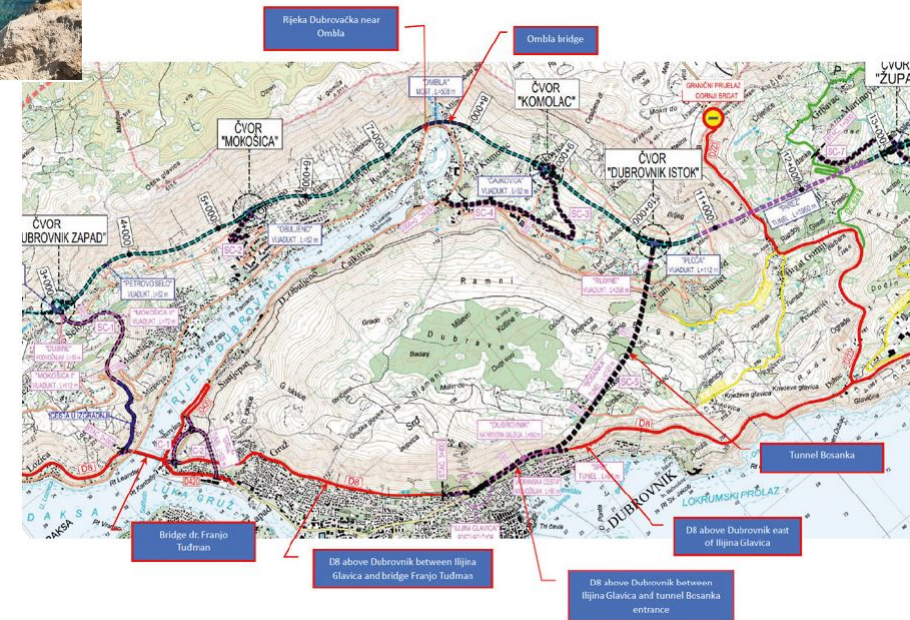
example – photo of initial situation



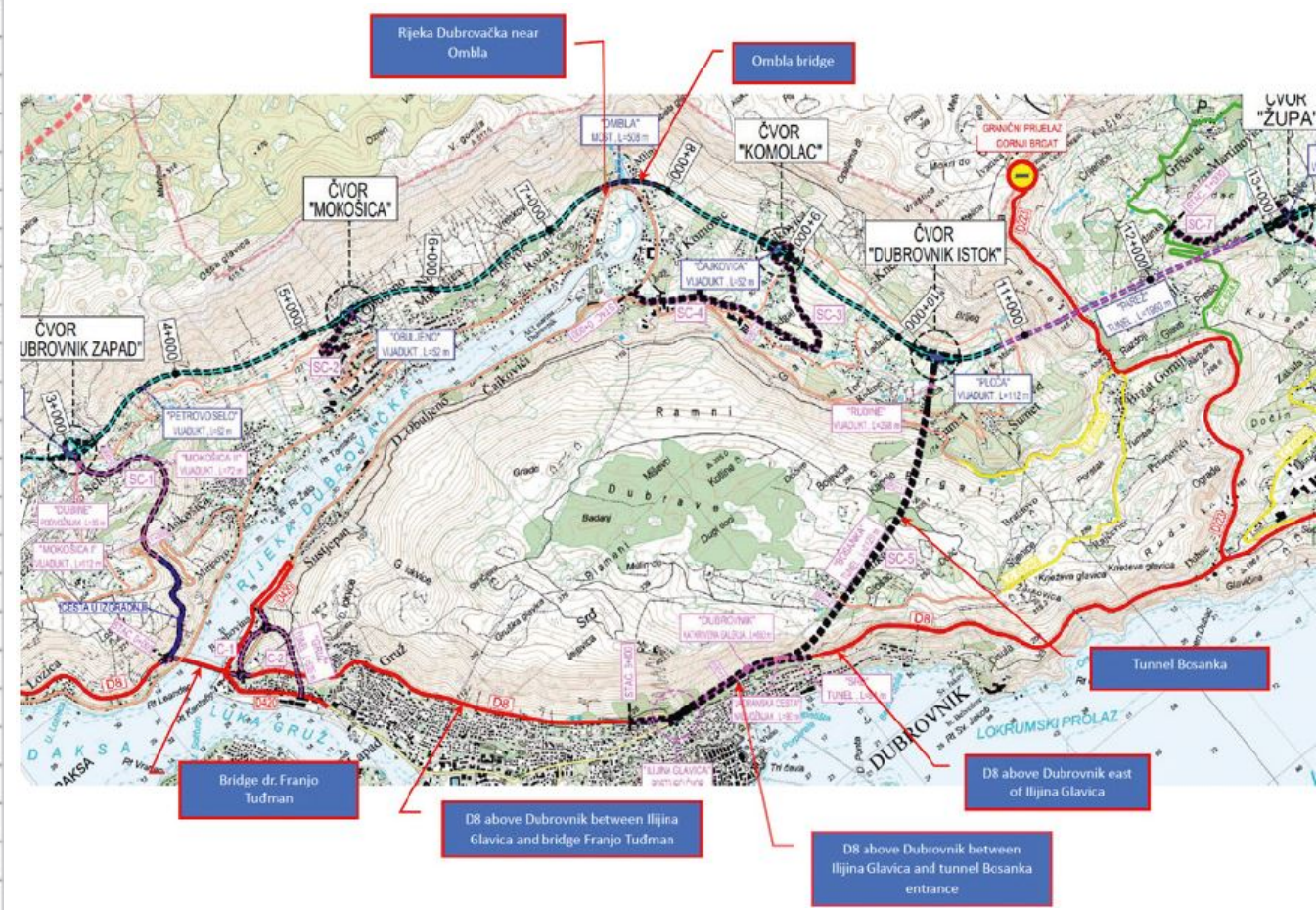
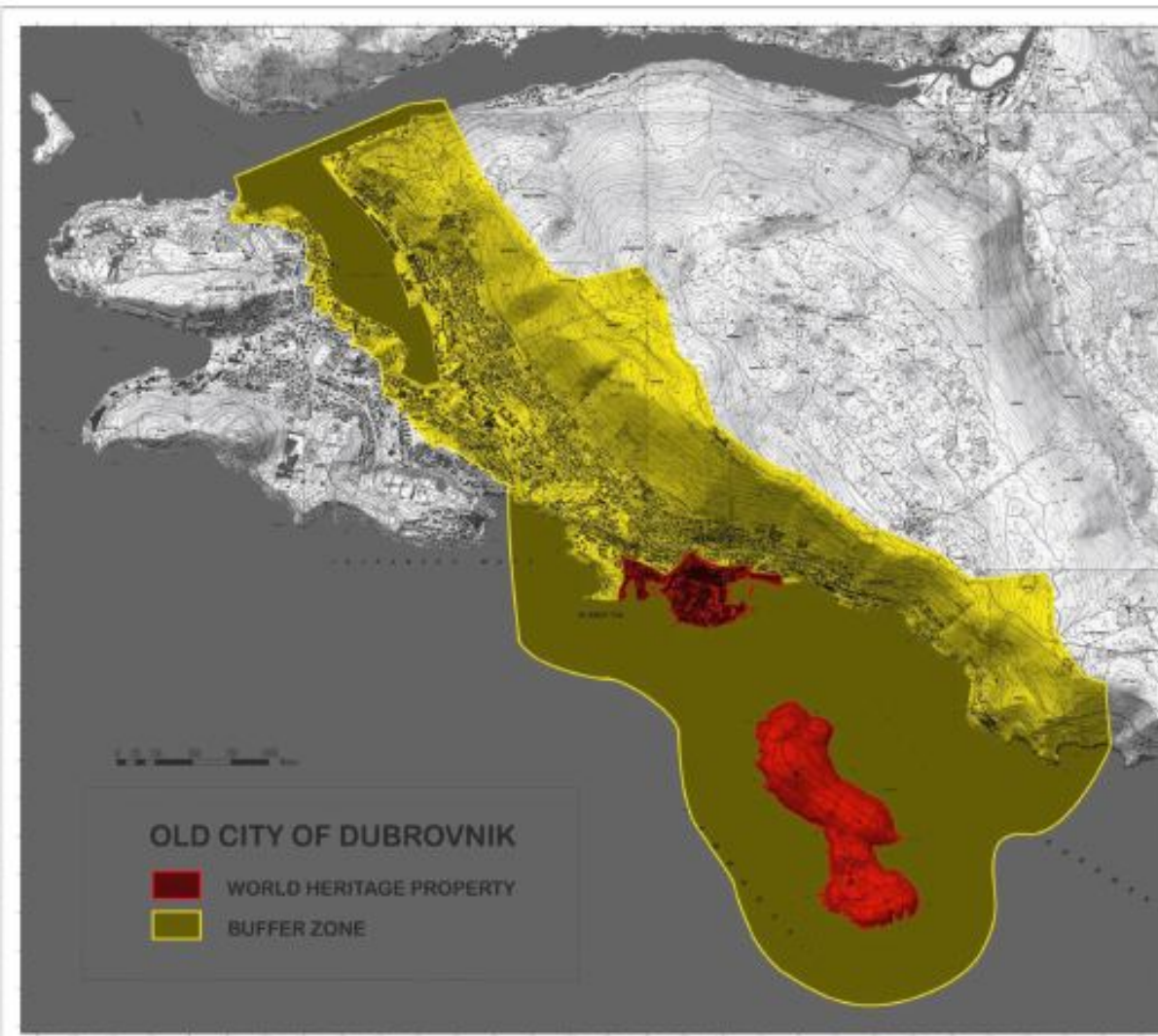
example – photomontage of planned situation



Group 1: Ropeway Ston: Impacts on Attributes?



Group 2: Planned Expressway Duprovnik – Airport (Cilipi) Road

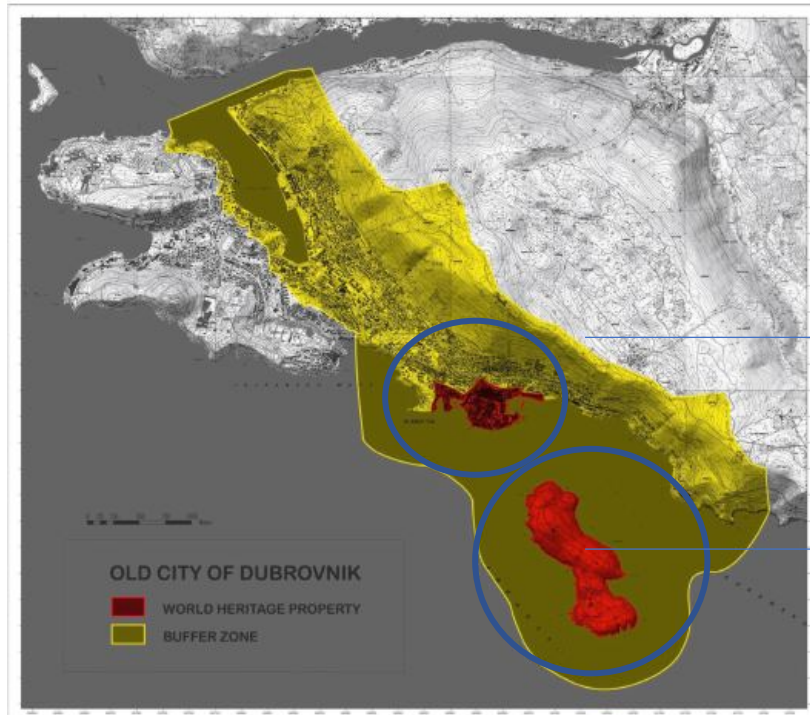


Both Groups 2: Please identify relevant viewpoints and sightlines. Group them into categories



date: 08.04.2023 | location: 42.640781°, 18.106446° (latitude/ longitude) | view angle panorama approx. 160° (horizontal) | The proposed road section is marked with a dotted line.

Foto: Philipp Tebart



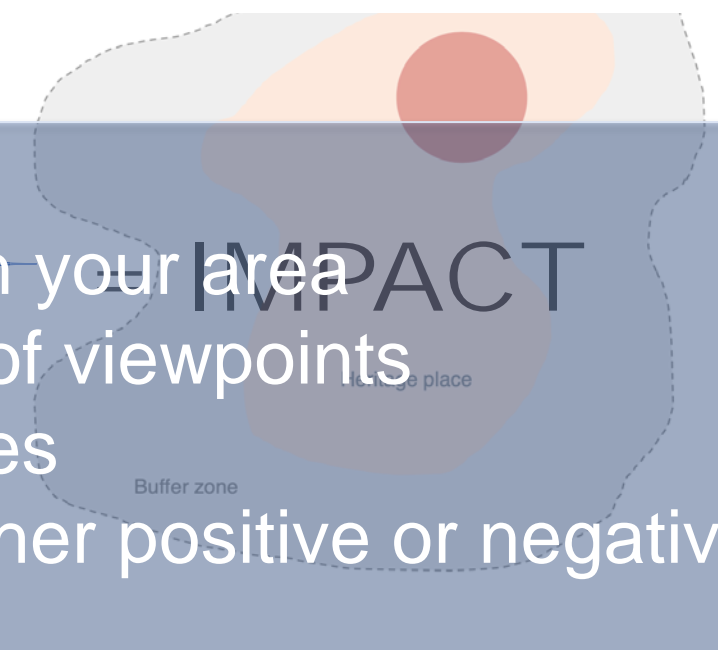
Group 1: Viewpoints of cultural and historical relevance in Dubrovnik

Group 1: Viewpoints of cultural and historical relevance on Lokrum

ATTRIBUTES VALUES



Please refer to important values and attributes in your area
Please refer to cultural and historical relevance of viewpoints
Please identify important impacts on the attributes
Please grade impacts: **large**, **moderate**, **light**, either positive or negative

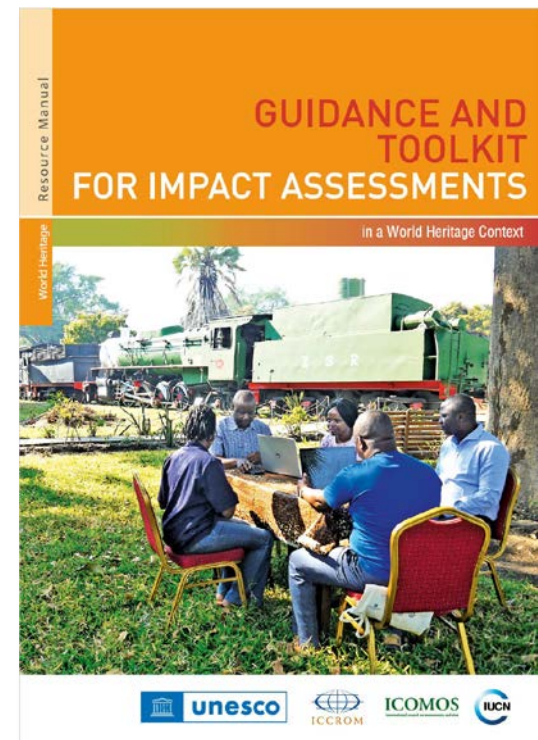


Types of Impact: Structural Impacts, Functional impacts? Visual Impacts? Intangible (e.g. social)?



3 STEP 3

Feed back into planning process: Recommendations & Mitigation



Impact Assessment

“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.”

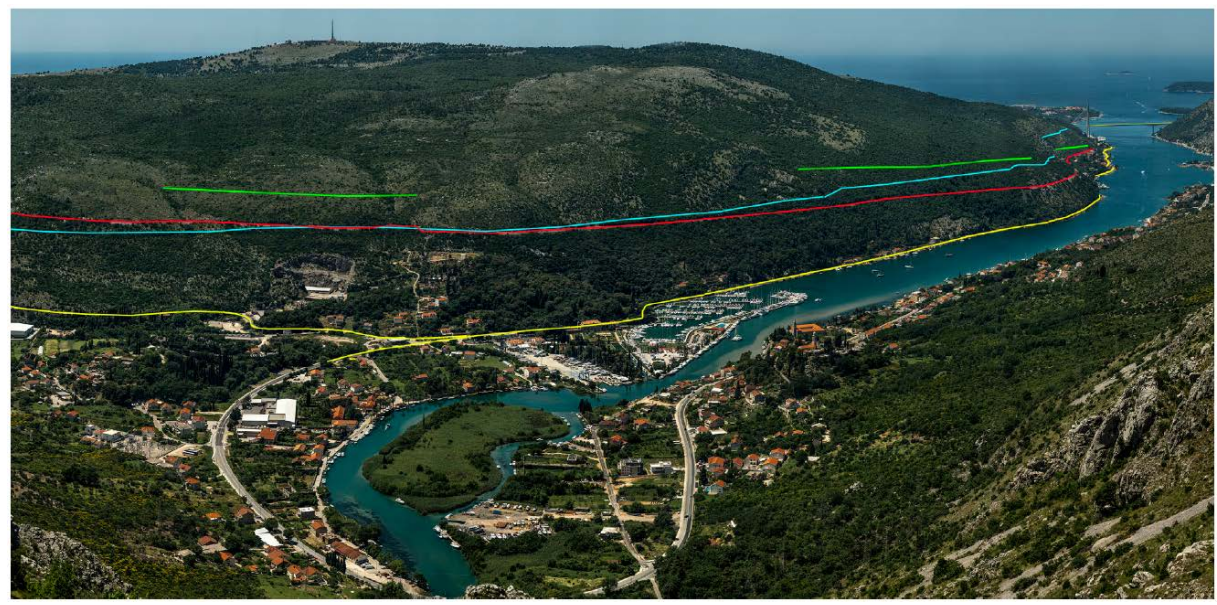
Def. International Association of Impact Assessment (IAIA)



Heritage Impact Assessment (© Michael Kloos)

Heritage Impact Assessments in UNESCO World Heritage Context (since 2011)

HERLAND BP 2023 HERITAGE IMPACT ASSESSMENT ACTIVITY 12 Oct 2024	
1	<p>SCREENING</p> <ul style="list-style-type: none"> Is an impact assessment needed? Where is the property OUV and/or other heritage conservation values? What are the property attributes? Is the proposed action compatible with the OUV of a World Heritage property? Could the proposed action have an impact on OUV, regardless of its location?
2	<p>SCORING</p> <ul style="list-style-type: none"> What are the impacts, geog. physical area and time period, should the impact assessment cover? What should be the terms of reference for the impact assessment? Where is the information needed, and is it available? If not, is a valid assessment feasible based on existing information sources?
3	<p>BASILINE</p> <ul style="list-style-type: none"> What are the current conditions? How would the proposed action change in the future in the absence of the proposed action? What are the current conditions of the World Heritage property and the attributes that support its OUV and other heritage conservation values? How is the property managed? What was the property's state of conservation at the time of inscription?
4	<p>PROPOSED ACTION & ALTERNATIVES</p> <ul style="list-style-type: none"> What is being proposed? How would it be implemented? Is there enough information to assess the proposed action? What are reasonable alternatives to the proposed action that would avoid or reduce any negative impacts and still achieve the objectives of the proposed action?
5	<p>IDENTIFYING AND PREDICTING IMPACTS</p> <ul style="list-style-type: none"> What environmental, social and other related impacts would result from the proposed action and any alternative? What changes to OUV and other heritage/conservation values would occur as a result of the impacts proposed action, both positive and negative?
6	<p>EVALUATING IMPACTS</p> <ul style="list-style-type: none"> How significant are the impacts of the proposed action and any alternatives? How significant are the impacts to the OUV and other heritage/conservation values, given the international importance of World Heritage?
7	<p>MITIGATION & ENHANCEMENT</p> <ul style="list-style-type: none"> What are reasonable alternatives to the proposed action that would or reduce any negative impacts and achieve the objectives of the proposed action? What mitigation measures are necessary to avoid or minimize any predicted negative impacts? What are the possible impacts? Can they be enhanced? Can negative impacts on the OUV and other heritage/conservation values be avoided? If negative impacts cannot be fully avoided, how can they be minimized to a level that they are no longer of concern? How significant are the residual/total mitigation impacts?
8	<p>REPORTING</p> <ul style="list-style-type: none"> How should the process and conclusions of the impact assessment be communicated?
9	<p>REVIEWING THE REPORT</p> <ul style="list-style-type: none"> Does the report meet its terms of reference? Is it fit for purpose for decision-making?
10	<p>DECISION MAKING</p> <ul style="list-style-type: none"> Is the proposed action the best possible given identified alternatives? Should the proposed action be given approval? If so, under what terms or conditions (mitigation measures)?
11	<p>FOLLOW UP</p> <ul style="list-style-type: none"> How should the mitigation measures be implemented? What should be done to monitor and manage the proposed action and its by-effects?



Assessment, Recommendations and Mitigation Measures (e.g. Alternatives)

Preservation and sustainable development of Historic Urban Landscapes and (pro-active) Heritage Impact

Assessments require knowledge about

- values and attributes
- urban and regional planning processes
- relevant stakeholders in order to feedback your knowhow into planning processes