



**International
Standard**

ISO 5727

**Accessibility and usability of the
built environment — Accessibility
of immovable cultural heritage —
Principles and methodology for
interventions**

*Accessibilité et usage de l'environnement bâti — Accessibilité
du patrimoine culturel immobilier — Principes et méthodologie
pour les interventions*

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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This document was prepared by Technical Committee ISO/TC 59, *Buildings and civil engineering works*, Subcommittee SC 16, *Accessibility and usability of the built environment*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document establishes principles for achieving accessibility and usability of immovable cultural heritage in accordance with a universal design approach^[1] and sets out a methodology for the application of these principles.

The objective of accessibility to immovable cultural heritage is particularly relevant in today's society. Many immovable cultural heritage objects continue to be used in daily life, for example, religious buildings, transportation buildings, buildings for education and administration, social and medical facilities and institutions for museum use, events, sport and leisure and much more. Other cultural objects, whose uses were initially private, are now open to the public, like ancient residential palaces that are now used for administrative or museum purposes. These cultural objects provide examples where accessibility for people with disabilities is now required although it was not implemented originally when the objects were built.

The demand for accessibility of immovable cultural heritage has increased with the public's increasing participatory aspirations and the upward trend for cultural tourism among retired and older persons who more frequently experience different types of restrictions due to the built environment.

Cultural heritage is a significant part of the collective history and cultural identity to which full participation and enjoyment of all people should be ensured. Furthermore, in many cases, cultural heritage is part of citizens' daily life. According to the United Nations Convention on the Rights of Persons with Disabilities,^[1] accessibility contributes to the full and effective participation of all people in immovable cultural heritage. This document not only emphasizes the importance of access but also the use of immovable cultural heritage by persons with the widest range of abilities and characteristics. Through improvement of accessibility of cultural objects and their settings, the appreciation of immovable cultural heritage by society is enhanced, highlighting its significance and visibility. At the same time, appreciation of the immovable cultural heritage leads to more engagement of local communities taking an active role in the conservation of cultural objects, according to the Strategic Objectives of the World Heritage Convention^[2].

Actions for improving accessibility to immovable cultural heritage can foster the achievement of these specific social goals with the conservation of heritage values. The Venice Charter^[3] emphasizes that the conservation of cultural objects is enhanced by its use. Added to this approach, in 2005, the Faro Convention^[4] emphasized the social dimension of heritage and its consideration as a right of all people. By means of accessibility measures the usage as well as cultural and functional potential of cultural objects are improved.

This document has been developed to support the planning of accessibility interventions to cultural heritage in different scenarios. The principles and the methodology presented in this document are at a strategic level. Other technical standards concerning accessibility in building and urban planning contain provisions potentially applicable to the immovable cultural heritage. Requirements and recommendations related to the design and constructional aspects of an accessible built environment are covered by ISO 21542.

Both the principles and the methodology presented are based on international precedents, studies and accessibility interventions to immovable cultural heritage^[5].

Not all scenarios showing functional or cultural obstacles to accessibility can be solved by means of physical changes to cultural objects alone. Accessibility also requires the implementation of other measures such as management, maintenance, or service provision. It is important to note that these measures are not the subject of this document.

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Accessibility and usability of the built environment — Accessibility of immovable cultural heritage — Principles and methodology for interventions

1 Scope

This document establishes principles and a methodology for providing accessibility to immovable cultural heritage through interventions arising from conservation, restoration or specific accessibility needs.

It is applicable to immovable cultural heritage and its setting.

This document is intended to be used by heritage owners and managers (both private or public), curators, accessibility professionals, conservation and restoration professionals, architects, engineers, designers, builders and user representatives.

This document does not specify requirements regarding management, maintenance or service provision.

2 Normative references

There are no normative references in this document

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <http://www.electropedia.org/>

3.1

access concept

outcome of the consolidated analyses to identify the *accessibility* (3.4) conditions and heritage *values* (3.24) of a *cultural object* (3.10), including the general and specific *accessibility objectives* (3.14)

Note 1 to entry: The documentation can have the form of a plan, diagram, report, etc.

3.2

access guide

accessibility guide

publicly available document describing the objective *accessibility* (3.4) characteristics of the *cultural object* (3.14), regarding access and provided services, for visitors with disabilities and/or other specific access requirements

3.3

access study

document that provides a comprehensive analysis of the *accessibility* (3.4) features and barriers present in a *cultural object* (3.14) in order to identify areas where improvements in accessibility are needed to ensure equal access and use

3.4

accessibility

provision of buildings or parts of buildings for people, regardless of their age, size, ability or disability, to be able to gain access to them, into them, to use them and exit from them

Note 1 to entry: Accessibility includes ease of independent approach, entry, evacuation and/or use of a building and its services and facilities, by all of the building's potential *users* (3.22) with an assurance of individual health, safety and welfare during the course of those activities.

[SOURCE: ISO 21542:2021, 3.1]

3.5

accessibility chain

chain of accessibility

access chain

set of elements, accessible individually and in combination with each other, that constitute links in a journey in a specific environment

Note 1 to entry: The accessibility chain reflects the idea that if one link of the chain fails, then, the *accessibility* (3.4) of the system fails as a whole.

3.6

accessibility maintenance

scheduled monitoring protocol that includes inspection tasks, control of risks of deterioration and measures to be taken, if necessary, in order to preserve the achieved *accessibility* (3.4) conditions of a *cultural object* (3.10)

3.7

assistive product

product that optimizes a person's functioning and reduces disability

Note 1 to entry: Assistive products include devices, instruments, equipment, and software.

Note 2 to entry: Assistive products can be specially produced or generally available items.

[SOURCE: ISO 9999:2022, 3.3, modified — The original note 1 to entry has been removed.]

3.8

conservation

measures and actions aimed at safeguarding *cultural heritage* (3.9) while respecting its *significance* (3.20)

[SOURCE: EN 15898:2019, 3.3.1, modified — The notes have been removed.]

3.9

cultural heritage

assets passed down from the past, reflecting society's constantly evolving *values* (3.24), beliefs, knowledge, and traditions, resulting from interactions between people and places over time

Note 1 to entry: A cultural heritage can be tangible or intangible.

Note 2 to entry: The classification as a cultural heritage is often stated by notification based on international conventions as part of a World Heritage Site (UNESCO) or according to different national legal requirements.

3.10

cultural object

immovable cultural object

single manifestation of *immovable cultural heritage* (3.11)

Note 1 to entry: In this document the term "object" is used to address a specific immovable cultural heritage. Other terms like "asset" are used as well.

[SOURCE: EN 15898:2019, 3.1.3; modified — "cultural" has been added to the term "object"; the admitted term has been added; and the definition has been adapted to immovable cultural heritage.]

3.11

immovable cultural heritage

material expression of *cultural heritage* (3.9) that is built

Note 1 to entry: For the purpose of this document, immovable cultural heritage consists of monuments, buildings, groups of buildings and sites.

Note 2 to entry: The material expression of cultural heritage, i.e. tangible cultural heritage, can be immovable or movable. The distinction of tangible cultural heritage with reference to its movability is only approximate since there are, for example, buildings or parts thereof that have been moved to places different to where they had been constructed.

Note 3 to entry: According to the World Heritage Convention,^[2] monuments can be architectural works, works of monumental sculpture and painting, elements or structures of an archaeological nature, inscriptions, cave dwellings and combinations of features. Groups of buildings can be groups of separate or connected buildings. Sites can be works of man or the combined works of nature and man, and areas including archaeological sites and cultural landscapes.

3.12

intervention plan

coordinated set of actions to improve the *accessibility* (3.4) conditions of a cultural object

3.13

methodology

set of means or *procedures* (3.16) used for a specific purpose

[SOURCE: ISO 14050:2020, 3.2.13]

3.14

objective

result to be achieved

Note 1 to entry: An objective can be strategic, tactical, or operational.

[SOURCE: ISO 9000:2015, 3.7.1]

3.15

principle

fundamental basis for decision making or behaviour

[SOURCE: ISO 26000:2010, 2.14]

3.16

procedure

specified way to carry out an activity or a *process* (3.17)

[SOURCE: ISO 14050:2020, 3.3.6]

3.17

process

set of interrelated or interacting activities that use inputs to deliver an intended result

[SOURCE: ISO 9000:2015, 3.4.1]

3.18

reference group

representative group of *users* (3.22) of a *cultural object* (3.10) regarding a specific set of needs, *user experience* (3.23) or knowledge

Note 1 to entry: In this document, reference group refers to *accessibility* (3.4) conditions.

3.19

reversible

characteristic of the outcome of an intervention that can be made undone without damage to the object

3.20

significance

combination of all the *values* (3.24) assigned to an object, ensemble or collection

[SOURCE: EN 15898:2019, 3.1.7]

3.21

strategy

plan to achieve *objectives* (3.14)

Note 1 to entry: A strategy generally includes a coordinated set of activities and the allocation of resources necessary to achieve the objectives.

Note 2 to entry: A strategy can be applied at different levels and functions in or across organizations. An overall strategy can be supported by a set of more detailed lower-level and functional strategies.

Note 3 to entry: A strategy is generally planned but can evolve or emerge over time as a result of continual adaptations and adjustments.

[SOURCE: ISO 56000:2020, 3.3.4]

3.22

user

person who interacts with a system, product or service

[SOURCE: ISO 27500:2016, 2.12]

3.23

user experience

experience that a *user* (3.22) has when interacting with a product, service, or system

Note 1 to entry: It encompasses all aspects of the user's interaction, including their perceptions, emotions, understanding and responses to the product, service or system.

Note 2 to entry: In the context of this document, the user experience refers to the *accessibility* (3.4) conditions of the *cultural object* (3.10).

Note 3 to entry: The user experience can be investigated via, for example, observation, interviews, questionnaires, *reference group* (3.18).

3.24

value

aspect of importance that individuals, communities or a society assign(s) to an object, ensemble or collection in a particular context

Note 1 to entry: Values can be of different types, for example, artistic, symbolic, historical, social, economic, scientific, educational, technological, functional.

Note 2 to entry: The assigned value can change according to circumstance, for example, how the judgement is made, the context and the moment in time. Value should always be indicated by its qualifying type.

[SOURCE: EN 15898:2019, 3.1.6]

4 Principles

4.1 General

In an inclusive society, the recognition, valuing, and understanding of immovable cultural heritage and its significance implies the accessibility measures should be implemented. This is because accessibility to cultural objects contributes to their conservation and importance for the local community and society in general.

Accessible immovable cultural heritage enables all people to access, use and enjoy it effectively, along with its values.

When establishing accessibility to immovable cultural heritage, a balance shall be ensured between the conservation of its values and the achievement of specific social goals.

The principles outlined in [4.2](#) to [4.4](#) shall be applied to improve accessibility conditions of immovable cultural heritage and its surroundings.

4.2 Strategic principles

The following strategic principles shall be considered.

- a) Equal importance shall be given to heritage and accessibility.
- b) Accessibility shall enable access, use and understanding of the cultural object(s) and their setting.
- c) Functional requirements of general accessibility standards for the built environment shall be applied where possible.
- d) A multidisciplinary approach shall be applied for each intervention.
- e) An evaluation on the needs and possibility of participation of different reference groups shall be applied.
- f) Any intervention (e.g. change of use, maintenance, conservation or other enhancement) shall be evaluated to determine potential opportunities to improve accessibility.
- g) Accessibility levels shall be reviewed and improved where required.

4.3 Technical principles

The technical principles that complement the strategic principles are as follows.

- a) Any new architectural element or space added to a cultural object shall adhere to accessibility requirements.
- b) Actions to enhance accessibility shall be proportionate to the scope of the intervention, i.e. the extent of the changes being made.
- c) Interventions on immovable cultural heritage shall not compromise existing safety and accessibility conditions.
- d) Reversible solutions should be chosen as long as they provide equal accessibility and safety compared to non-reversible ones.
- e) Individual interventions should be considered as part of a site wide plan based on the accessibility chain.
- f) In circumstances where full accessibility cannot be achieved through physical changes, alternative access methods should be implemented.

4.4 Operational principles

When deciding to intervene to improve accessibility, the following shall be considered:

- a) all relevant legal obligations, constraints and rights;
- b) type and extent of intervention;
- c) diversity of users;
- d) physical, sensory, cognitive accessibility;
- e) significance of the object;

- f) technical and economic feasibility;
- g) assessment by experts and reference groups.

5 Methodology

5.1 General

Accessibility-related actions to be planned and developed, whether arising from conservation, restoration or specific accessibility needs ([Annex A](#)), shall consider the significance of the immovable cultural heritage and systematically apply an inclusive approach referring to and involving user groups throughout the whole process.

To implement such an approach, the methodology described in this document is shown in [Figure 1](#) and further detailed in [5.2](#) to [5.6](#). It describes different aspects and procedures to be considered when carrying out actions to improve accessibility. Even though the methodology is depicted as a series of clearly and sharply separated steps, it is an iterative process, and different parts may not always be carried out sequentially.

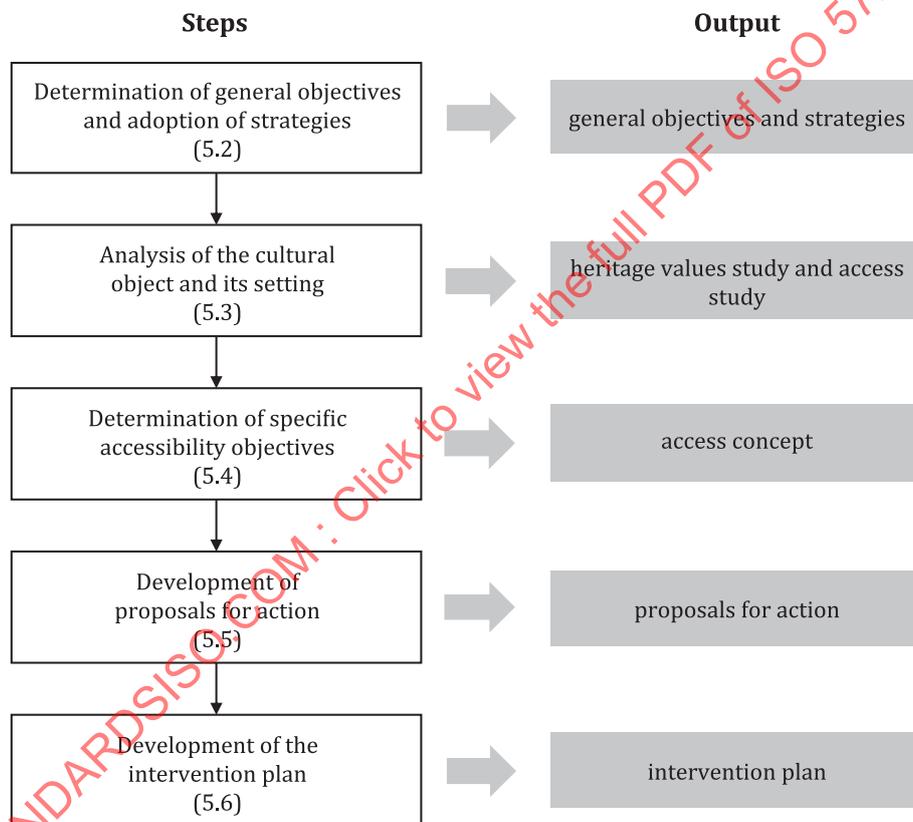


Figure 1 — Steps and outputs of the methodology

5.2 General accessibility objectives

5.2.1 General

Starting from the principles set out in [Clause 4](#) and the goal to provide optimum accessibility to the immovable cultural heritage under the given constraints, general objectives and corresponding strategies shall be defined.

Reference groups consisting of users with physical, sensory or cognitive impairments shall be established.

5.2.2 Determination of general objectives

The determination of the general objectives should be based on the following considerations (see [Annex B](#) for further details) regarding the cultural object and its setting:

- the scope of the accessibility intervention;
- the typology and characteristics;
- the uses and functions;
- potential users and their accessibility needs;
- facilities and service provision;
- information on the accessibility characteristics of the cultural object;
- management, conservation and maintenance.
- cultural and functional accessibility needs of the society (evident and latent) with regard to the cultural object.

Alternative or further categories may be defined depending on the specific intervention.

The categories should not be regarded as being independent; there can be links between them, or general objectives can be assigned to more than one category.

5.2.3 Adoption of strategies

For an intervention, strategies to achieve the general objectives shall be adopted in accordance with the principles set out in [Clause 4](#).

The following aspects should be considered for the determination of the strategies:

- reasons for the intervention, such as legal requirements, change of use or requirements;
- cultural and functional accessibility needs of the society (evident and latent), including user experience;
- conservation requirements applicable to the cultural object (materials, constructive systems, etc.);
- the legal framework for implementing the changes;
- other planned interventions on the cultural object or its setting, which can be relevant to the objective of accessibility;
- available resources to enable improvement of accessibility;
- the project brief (project description) summarizing relevant possible uses, costs, benefits and timing;
- examples of good practices from other cultural objects (see [Annex E](#)).

The analysis of the heritage values and accessibility conditions (see [5.3](#)) can require a revision of the strategies in order to reach the general objectives.

5.3 Analysis of the cultural object and its setting

5.3.1 General

The analysis of the heritage values of the cultural object is essential so that any action to improve its accessibility can be taken in the context of these values and in order to enhance its cultural appreciation and enjoyment.

The analysis of the existing accessibility conditions of a cultural object is the starting point for the definition of the accessibility conditions to be achieved by the means of the intervention (see 5.4, access concept).

The processes of analysing the heritage values as well as the accessibility conditions may be carried out independently but shall always be done in a coordinated manner.

5.3.2 Analysis of the heritage values

An analysis of the heritage values of the cultural object and its setting shall be done.

The analysis shall consist at least of the identification of heritage values, their location and, if possible, the ranking of the heritage values. The analysis of the heritage values shall be done for the entire cultural object as well as for its parts, single elements or associated intangible heritage, as appropriate.

For the purpose of the intervention, the heritage values of different parts or elements of the cultural object shall be ranked relative to other parts, if possible. This allows the degree of exceptionality, integrity, authenticity and representativeness to be evaluated.

[Annex C](#) provides further information on heritage values.

The results of the analysis of the heritage values shall be documented in the heritage values study.

NOTE The document is sometimes called also "statement of significance", "heritage values report" or "heritage values appraisal".

5.3.3 Analysis of accessibility conditions

The procedures of the analysis are derived from the general objectives on accessibility. The steps listed below shall be adapted to the characteristics of the planned intervention.

a) Determination of the bases for the analysis

The bases for the analysis shall include statutory requirements on accessibility, recommendations from technical standards on accessibility of the built environment or landscapes as well as assessment of existing accessibility and usability conditions through consideration of users' experience.

b) Identification and determination of the accessibility chain to carry out the analysis for all its elements

The accessibility chain requires knowledge of the entire cultural object and its details as well as of the user's access requirements. To achieve the accessibility objectives, every element of the accessibility chain must satisfy the required level of accessibility.

c) Definition of the applicable design criteria for the accessibility chain

Considering the bases of the analysis, the applicable design criteria for the accessibility chain and its elements shall be defined.

NOTE Design criteria refer to the specific requirements, standards, or guidelines that are established to guide and evaluate the design and development of a project. Such criteria are typically based on a set of objectives, performance expectations, and constraints that need to be met to achieve the successful realisation of the design.

d) Analysis of the accessibility conditions for each element of the accessibility chain

e) Assessment of the overall accessibility of the cultural object

Applying the design criteria to the existing accessibility conditions allows an evaluation of to what extent the accessibility objectives are already met.

The analysis of the accessibility conditions, i.e. the results of the above-listed steps, shall be documented in the access study.

5.3.4 Consolidation of the results of the analyses

A consolidation of the results obtained in [5.3.2](#) and [5.3.3](#) shall be carried out to identify the critical points of both heritage values and accessibility conditions. This consolidation shall also identify requirements and constraints (conservation, technical, legal, etc.) that will affect the feasibility of action proposals to be prepared (see [5.5](#)).

5.4 Specific accessibility objectives

The definition of the specific objectives shall further detail the general objectives (see [5.2.2](#)) and be based on the findings of the consolidated analyses. Where the definition of specific objectives is not needed, the reasons for this shall be explained.

It is possible that the general objectives must be revised or adapted as a result of the consolidated analyses (see [5.3.4](#)).

Specific objectives should be defined on the following aspects of the intervention:

- nature of the intervention: physical, operational, informative;
- areas of the cultural object, e.g. spaces, rooms, itineraries, building elements;
- level of permanence, i.e. temporary or permanent solutions;
- any known planned future changes or aspirational goals outside the scope of the planned intervention;
- specific user needs due to specific conditions, e.g. acoustics, mobility, manoeuvring, communication; use, location;
- prioritisation of aspects, such as user needs, nature of the intervention, areas of the cultural object;
- maintenance and monitoring of new accessibility conditions and, where applicable, the management of accessibility solutions;
- ease of access to the accessibility information of the cultural object;
- impacts of interventions on existing accessibility during the implementation phase;
- physical constraints affecting the implementation.

The general and specific accessibility objectives together with the result of the analyses (see [5.3.4](#)) shall be documented in the access concept.

5.5 Proposals for action

5.5.1 Drafting of proposals for action

The access concept is implemented through an action or a set of related actions, each action being consistent with the accessibility objectives of the envisaged intervention. To provide for this, proposals for action shall be prepared.

Accessibility objectives can be reached by means of construction interventions (modification of existing elements, installation or provision of new elements and technologies, provision of alternative routes, etc.). Accessibility objectives can also be improved by supplementary means like the use of assistive technologies and products, the modification of the activity or its management, or the use of information and communication technologies (ICT).

Accessibility interventions at comparable cultural objects can serve as references for development of proposals for action. The proven effectiveness of already implemented measures should be considered together with possible innovative approaches and solutions. Innovative solutions may require testing to demonstrate their effectiveness.

5.5.2 Evaluation and selection of proposals for action

The different proposals for action shall be evaluated so that the action or set of actions that best provide the highest potential achievement of the accessibility objectives can be identified.

The evaluation of a proposal for action shall consider:

- an analysis of the potential improvement in accessibility and the maximum degree of independence that can be achieved to ensure access for the different users;
- feedback from stakeholders including reference groups;
- the impact on the heritage values of the cultural object;
- the technical, administrative and financial feasibility;
- future management functionality and accessibility maintenance;
- innovative degree of solution;
- a benefit-cost analysis.

NOTE The social implications of not providing accessibility can be a relevant cost factor but can be difficult to assess. Accessibility improvements, in addition to enabling everyone to participate in social and cultural life, also bring economic benefits that can be derived from new market opportunities and the competitive advantage of a more diversified offering. In addition, accessibility improvements can be beneficial for all users.

In the case of a set of actions, it shall be evaluated whether and how these can be implemented in a coordinated manner and whether adjustments to the proposals for action are needed to provide for efficient implementation.

The prepared proposals for actions, their evaluation and the selected proposals for action shall be documented.

5.6 Intervention plan

Once the proposals for action have been evaluated and selected, the intervention plan can be prepared.

The intervention plan establishes the key elements for the implementation process. By means of the intervention plan, the selected action(s) are further detailed through a set of measures.

The intervention plan shall contain:

- a) accessibility objectives of the envisaged intervention, including:
 - 1) the general and specific accessibility objectives of the access concept;
 - 2) description of the intended outcomes in relation to enhancement of user experience and conservation of historic values;
- b) structured set of implementation measures, including:
 - 1) a description of the proposed measures;
 - 2) the required resources necessary for their completion;
 - 3) the specific areas and elements of the cultural object where the proposed measures will be implemented;
 - 4) the types of intervention;
- c) accessibility chain:
 - 1) description of how the measures are interlinked to create the accessibility chain;

- 2) statement of how the measures will achieve the accessibility objectives;
- d) prioritization and scheduling of measures, including:
- 1) the identification of measures to be prioritized, where necessary;
- NOTE 1 A prioritization of measures can be done on various aspects such as impact on the heritage value, relevance of the objectives for accessibility, ease of realization, cost.
- 2) a timeline for the implementation of each measure, including any dependencies or constraints;
- e) monitoring of the implementation, including:
- 1) a series of milestones and indicators to determine progress and identify any deviations from the plan;
 - 2) The identification of any potential risks, such as accidental harm to the heritage or short-term impacts on accessibility, associated with the implementation;
- f) final verification process, including how post implementation feedback from reference groups, users and experts on heritage values can be obtained and evaluated;
- g) management and maintenance of accessibility conditions¹⁾, including:
- 1) defining tasks to be undertaken;
 - 2) defining protocols for repairs or replacements of defective elements;
 - 3) updating the publicly available accessibility information;
- NOTE 2 Continuous improvement actions can be necessary to maintain accessibility conditions.
- h) supporting report, including:
- 1) the accessibility objectives to be achieved and the process to be followed;
 - 2) the rationale behind the proposed accessibility intervention and how it relates to the values of the cultural object;
 - 3) a description of the user participation process and how feedback was incorporated;
 - 4) information to be provided to the public, e.g. in an access guide (see [Annex D](#)).

1) ISO 21542:2021, Annex F identifies a series of elements that can be considered in the maintenance of accessibility to the object. Furthermore, applicable legal regulations establish the obligation to carry out a suitable maintenance.

Annex A (informative)

Accessibility needs

A.1 General

Knowledge on the accessibility needs of the potential users of a cultural object and its settings allows for a definition of the accessibility objectives and related strategies to achieve these.

NOTE ISO/IEC Guide 71 suggests a process for the definition of specific requirements and recommendations based on the accessibility objectives, needs, and strategies.

The following should be considered regarding accessibility needs.

- Accessibility needs can be influenced by factors such as abilities, age, gender, health, training, culture.
- Accessibility needs can vary throughout a person's life, e.g. some limitations and restrictions on human abilities can result from getting older.
- Some impairments in isolation may have limited severity, but when combined with two or more, their cumulative effect can significantly amplify the impact.
- Individual accessibility needs can vary according to the context and circumstances of the environment.
- In most cases, solving the accessibility needs of some persons benefits others; however, in some instances there can be accessibility needs with conflicting requirements so that the different options should be harmonized.
- Accessibility needs are diverse, with some less visible; but all kinds of accessibility needs should be addressed equally.
- Often there is no single match between accessibility needs and the design requirements or specifications to meet those needs.
- Accessibility needs can be addressed in various ways; these alternatives should be identified.

[A.2](#) to [A.4](#) present potential needs stemming from physical access to and use of the immovable cultural heritage and its setting and needs arising from the perception and understanding of the inherent meaning of the cultural object and its contents. The lists are not exhaustive.

Accessibility needs have been classified based on human abilities which, if partially or totally impaired, result in the need. Under certain circumstances, the needs assessment is accompanied by examples of the corresponding requirements or design recommendations.

A.2 Accessibility needs in relation to physical and organizational abilities

Needs in relation to physical and organizational abilities can result from environments where the user must wander, handle things and/or apply force, to achieve a purpose or aim.

- Approach and reach

Where user engagement with objects in the environment is encouraged, accessible circulation space shall be located adjacent to any element. Reach ranges, viewing ranges and spatial requirements vary from users to user. Therefore, the positioning of objects and points of interaction and information should be considered.

— Handling

Actions usually involve the use of the upper limbs (lifting, grasping, releasing, turning, etc.), relating to limitations of fine motor skills and dexterity. To reduce problems, for example, the shape, size, weight, and finish of certain elements such as handles, push-button panels, handrails, fire extinguishers, doors, etc. should be considered

— Movement

As well as the lower limbs, body control, etc., the use of assistive products, such as walkers, wheelchairs, should be considered. Among other requirements, the dimensions of the spaces are relevant, as well as the means used to bridge existing gaps (stairs, ramps, lifts, etc.).

— Physical control and balance

The related accessibility needs are addressed through actions such as sitting, transferring from one element to another; they involve the nervous system and the limbs. For example, the provision of adequate furniture and supporting grab bars can be very helpful.

— Occasional application of force

Certain actions require the application of force, which can be challenging in some situations, for example, to open doors.

— Rest

Continuous or intense effort can sometimes cause fatigue and result in the user needing to rest. Seats and ischiatic supports, etc. can be necessary during extended journeys or long waits.

— Allergies, phobias, and hypersensitivity

These needs, related to a lack or deficit of tolerance to exposure to physical elements and chemical substances, should be addressed by possible architectural resources (use of parasols, anti-allergenic carpets, etc.), and by management measures.

— Hygiene needs

The provision of accessible toilet rooms, equipped with the necessary resources considering different scenarios (transfer hoist, stretchers, waste containers, etc.) are essential to meet physiological and personal hygiene needs comfortably and with respect for privacy.

A.3 Accessibility needs in relation to sensory abilities

These needs arise in environments where the relationship with the user involves restrictions to one or more of the senses, mainly sight and hearing.

— Location

These needs are for making it possible to locate the cultural object, for example, by using information in accessible formats on transport and the routes to reach the destination.

— Perception and understanding of the environment

These needs are for enabling perception and understanding of the cultural object and its setting. It is useful to provide scale reproductions, tactile plans, or descriptive audio tours for people with vision impairments and other measures based on the principle of multiple sense.

— Movement

These needs are for taking the user's chosen route through the cultural object and its environment, in an autonomous and safe way, for example, with signage and labelling in accessible formats, information about the routes and warning about risks and obstacles.

— Information and communication

Access to information about a cultural object can be conditioned by the user's abilities and impairments. Depending on the context, these needs can be met by providing information in alternative formats - visual, auditory, and tactile-based on the principle of multiple sense.

— Acoustics

These needs are for making it easier to hear audio information, for example, via surface finishes or architectural elements that prevent or reduce noise or disruptive reverberations, or by providing facilities or equipment that improve the transmission and reception of messages.

— Lighting of spaces and major elements

Appropriate lighting adapted to the visual task, environmental lighting (daytime) and expected visual acuity of users is necessary to prevent problems such as overstimulation, glare or darkness.

— Tactile perception of major elements of the cultural object

It facilitates the identification and knowledge of these elements for people with vision impairments.

A.4 Accessibility needs in relation to cognitive abilities

Accessibility needs in relation to cognitive abilities should be considered to ensure that as many users as possible can find their way around, understand and use the environments, and access the communication and information available.

— Location

These needs are for facilitating the understanding of the information provided on the location of the immovable cultural heritage, as well as on the routes and means of transport to reach the destination. It is advisable, for example, to use easy-to-read formats and maps with the relevant information.

— Information and communication

These needs are for facilitating the understanding of the information provided on the use and functions of the cultural object. For example, by making documentation available in easy-to-read formats or other resources for preparing and making a visit.

— Orientation

These needs are for helping visitors to maintain constant awareness of their location, as well as the means to be used to follow the routes and reach the destinations. Continuing with the example of a visit to an cultural object, among other measures, it is helpful for the signage on the directories and routes to be underpinned by graphical symbols, chromatic, and numerical codes, etc. If there is a map of the visit to the cultural object, it should use the same codes as on the building's signage, indicating the starting point for the visit, etc.

— Understanding the cultural object's heritage content

These needs are for facilitating access to the inherent meaning of cultural objects, both as a whole and to individual aspects. It is advisable to adapt the information in response to the users' various abilities, e.g. the explanations given during the visit, in the brochures, panels, audio-guides, etc.

This document focuses on those needs that can be solved by interventions on the immovable cultural heritage. However, certain measures relating to the management of the activities or uses of the cultural object can also meet the accessibility needs in a complementary way, such as the following examples concerning cognitive abilities.

- Anticipating unforeseen changes can be necessary for some people, due to difficulties in adapting to events and how they unfold. It can thus be advisable to provide a general idea of the activity before and during the visit.

- To facilitate location, orientation, and understanding of the cultural object and its contents, as well as the progression of the planned activities, it is advisable to have enough time to process the information provided.

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Annex B (informative)

Considerations for the determination of general accessibility objectives

This annex provides further explanations on the different areas around which general objectives (see [5.2.2](#)) can be grouped:

- Objectives related to the planned scope of the accessibility intervention

The general objectives should consider the motivation and the expected impact of the planned intervention.

- Objectives related to the typology and the characteristics of the cultural object and its settings

The general objectives should consider the characteristics of the cultural object, its surroundings, its location and its transformation over time. Furthermore, to provide accessibility to the cultural object and its significance, the general objectives should be oriented towards strengthening the cultural object's character. For example, military architecture has its own specific character, as does religious architecture or industrial heritage.

- Objectives related to the object's various uses and functions

The various uses and functions of a cultural object should be considered with regard to access and evacuation. In the case of exhibition spaces, accessibility should be provided to the works on display and to their content, in different formats including languages.

The objectives should consider issues such as permanent and temporary uses, as well as current and future functions for the cultural object.

- Objectives related to the potential users

These are the objectives related to the accessibility needs of the potential users of the cultural object and its setting, see [Annex A](#) on accessibility needs.

- Objectives related to facilities, service provision and related information

These are the objectives intended to achieve accessibility in the provision of the service or functional use and visits to the object. The related objectives include the functions of reception, information, communication and attention, using resources such as subtitling, sign language interpreters, guides, audio guides, induction loops. Other types of services can be on offer, such as providing visitors with support products, lightweight folding seats, information brochures in large print, easy reading, Braille, guided tours, etc.

- Objectives linked to information on the accessibility characteristics of the cultural object

These objectives are related to the functional use of the object and how and by what means to provide these to users and visitors of the cultural object. The objectives should consider issues of temporary uses for which only limited access is provided.

See [Annex D](#) on access guide.

- Objectives related to management, conservation and accessibility maintenance

These objectives are aimed at adequate management of accessibility as part of the object's overall management. Thus, as an example, accessibility maintenance protocols are of the utmost importance. They are essential for amenities such as elevators and other mechanical lifting devices, such as vertical

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platform lifts, platform stair lifts or other similar devices, as applicable. Similarly, attention should be paid to the proper functioning of hearing enhancement systems.

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Annex C (informative)

Heritage values

C.1 General

Heritage values are the qualities that society attaches to objects handed down from the past. Cultural objects carry in themselves one or more of these values of different types, which should be considered in order to preserve them when enhancing accessibility to immovable cultural heritage.

The study of the values carried and portrayed by the cultural object for an accessibility project is fundamental to first recognize and analyse its full cultural significance, whether global, partial or occasional.

The cultural objects, as part of a heritage, should be transmitted to future generations with the heritage values they portray and that make them stand out from other objects.

Before making changes, adaptations or additions in order to improve how a cultural object can be used or accessed, it is necessary to first identify these values and understand their cultural significance.

In order to facilitate accessibility measures and ensure compatibility with the cultural significance of the structure or object, relevant data and information should be collected as part of a multidisciplinary study.

Its study and analysis with reference to the site management policies is a necessary step in any project in order to select those actions or solutions that can safeguard, protect, disseminate and transmit the cultural object's significance. All actions which maintain the object's value without reducing or distorting it should be compatible.

C.2 Aspects and criteria of heritage values

A table of these values for the analysis of monuments was proposed at the start of the 20th century^[6]. These studies were characterized by a tendency to rescue despised periods of art history from oblivion, distinguishing only three values: monumental, commemorative in relation to the cult of monuments (antiquity, historical and intentional) and those of contemporaneity (the instrumental and the artistic).

The Venice Charter^[3] and the European Charter for Architectural Heritage^[7] represented a step forward in the worldwide application of normative principles in the theory and practice of architectural restoration. Both already included the concept of value, but internationally, value-based cultural significance crystallized in the Burra Charter^[8] which established the importance of cultural, aesthetic, historical, scientific, social and spiritual value, for past, present and future generations.

The Krakow Charter^[9] was established during the 2000 International Conference on Conservation and Restoration of Built Heritage. This charter recognizes that present-day Europe is characterized by a diversity of fundamental values related to immovable and movable objects and intellectual heritage. Each value holds different meanings and can lead to conflicts of interest. Therefore, there is a need to protect these values and to consider the collective memory of the past of each community.

In order to guarantee the preservation of the heritage values of immovable cultural heritage as a whole or to those parts thereof that may have a specific meaning, it is necessary today to cover a wider range of heritage values than just those identified at the beginning of the 20th century.^[10] They can be summarized by the following list of values.

a) Historical-documentary

This covers the history of a cultural object, of the society that built it and of those who enjoyed and transformed it in later times. It includes any modifications that have taken place over time as well as

the events that have taken place at the site, the traces of which can be read partially or fully from the preserved remains. The information it provides is often complemented by other preserved documents that help to interpret, explain and understand better the cultural object. It is a cumulative variable that begins with the design of the building and continues until the moment it disappears or is reduced to archaeological remains that are totally or partially buried. From the remains it may still be possible to gather information about a cultural object that no longer exists.

b) Functional

Throughout their lives, buildings are adapted for new uses, leaving traces in their preserved remains. At present and before undertaking a restoration or rehabilitation, it is necessary to study whether the new use is compatible since the adaptation process could jeopardize the essence of the original construction. At the same time, use and function are a fundamental part of conservation. A building's restoration and new use are only possible once you have understood how it works.

c) Structure

Structural value reflects the technology of the time and the society that constructed the cultural object to be safe and stable. It is necessary to understand the structural system of the cultural object to ensure that a restoration is consistent with it. Only by understanding this can an intervention be carried out without altering structural characteristics, and thus ensuring that new structural elements do not interfere with the existing ones.

d) Constructional

Constructional value and structural value are related but have their own characteristics. Different construction systems can lead to similar structural systems. They are often the result of the adaptation of local customs to more widespread systems. It is a local variable, usually dependent on the availability of materials in the region, which makes it more geographically changeable than structural value, but more permanent over time. Furthermore, knowledge of construction techniques allows us to understand or sense the original aspect of a certain element from partial evidence.

e) Typology

This value is defined in accordance with the traditions and uses of the society that developed it. Despite having the same use and function, it has temporal and geographical variations. Any intervention must allow the reading and recovery of the typological scheme that configures the building, i.e. should respond to a spatial or layout scheme of the elements that configure it and to certain characteristics of lighting, visual relationships, etc. The local traditions and uses associated with the building modify the types and create temporal and geographical typological differences resulting from the specific conditions of a certain population or historical moment and therefore their study contributes to a better understanding of them.

f) Form

Form is one of the essential aspects of architecture; it affects volume and appearance, as much as composition and the generation of space or emptiness. In addition to this value, there is also decoration, the importance of which is sometimes forgotten. Ornamentation qualifies architecture in every period and a building would be misread if completely stripped of its ornamentation. Its conservation and memory, evidenced in some way, is essential in any restoration process and is fundamental for the correct interpretation of the architecture. It often provides the clearest and most obvious valuable information about the society that created the cultural object and usually links and relates to the function, thus contributing to the understanding of the latter.

g) Symbolism

Symbolic value is attributed by society, which embraces the cultural object by relating it with a relevant historical moment, custom or tradition. It is a subjective-collective variable that is acquired over time. Depending on the social group that generates it, it can mutate with the succession of generations or disappear when the memory of the community is lost, leaving it to the planner to strengthen this

value. A poor intervention can destroy the cultural object's symbolism, therefore, this value should be understood and strengthened.

h) Aesthetic value or of subjective perception

This value is derived from formal value but has a broader meaning as refers to the values of the image as perceived. It corresponds to the overall perception of the building, sometimes affected by mutilations that have taken place over the years and which disfigure its image, making it incomprehensible. For this reason, restoration processes should involve maintaining or recovering the fundamental elements that make the architecture recognizable and interpreting it in such a way that the public can understand the building despite its shortcomings.

In addition to these values inherent to the building, architecture has two other values associated with its setting that affect the relationship between the object and its surrounding environment.

i) Landscape

All buildings interrelate with a set of elements within their surrounding environment based on a number of criteria, including the relationship with other elements considered urban or rural. This value is fragile, partially dependent on living elements, and therefore is subject to multiple transformations. Preserving it requires protection perimeters and environmental preservation policies, which protect the landscape elements and the relationship between them and with the building, in order to guarantee the overall balance and to ensure that the interventions and activities carried out do not harm it.

j) Overall or system (systemic) value

This value corresponds to the building as an element of the larger system of which it is part, for example as a defence installation or part of the transport system, and without which it is partially or entirely meaningless. Preserving system value implies protecting all its elements and enhancing as many of its elements as possible without destroying those where intervention is not possible.

C.3 Identifying heritage values

The cultural object should be conceived as the sum of different elements or components that do or do not portray associated heritage values that give meaning to the object.

It is not only the deep knowledge of the cultural object and its functioning that is essential for the adequate recognition of its values and, consequently, its conservation. It is also necessary to know examples from the same category, period and area in order to determine the hierarchy, its values according to its notoriety or uniqueness with respect to other equivalent constructions.

By conceptually subdividing the building into parts that have the associated recognized values, and by ranking them in a weighted way, based on their degree of significance in relation to other similar contemporary elements that have been preserved to this day, the team in charge of improving accessibility can apply objective criteria for designing, distinguishing and selecting the most suitable solution.

Annex D (informative)

Publicly available accessibility information — Access guide

Information on accessibility of the cultural object should be provided in the form of a publicly available access guide for the user.

The access guide should provide information about the accessibility conditions and characteristics of the cultural object. It describes the level of accessibility provided, as related to all users' specific access requirements, and it is based on a detailed accessibility assessment of all the elements of the venue, building or site.

The access guide can be used to:

- inform visitors with specific access requirements about the accessibility conditions prior to their visit, enabling them to make an informed decision about their possibilities to visit, use and enjoy the cultural object and about any possible access barriers they can encounter;
- support staff in customer-facing roles to provide accessibility information to visitors in a consistent manner;
- inform and support tourist guides when planning to offer their guiding services;
- include accessibility information in marketing and promotion of the cultural object.

Accessibility information provided should:

- be clear, concise and easy to understand;
- be up-to-date, objective and reliable;
- include images, photographs, maps, floor plans and mobility plans;
- use graphics, symbols and colours;

NOTE ISO 7001 specifies registered public information symbols and ISO 7010 specifies safety colours and safety signs.

- be available in alternative formats based on the principle of multiple senses (e.g. in text, audio, Braille and other formats);
- be available in languages other than the local language;
- indicate where to obtain further information, where available;
- provide information on contact person/s for specific enquiries, such as assistive technologies and products.

The access guide should include other relevant information on accessibility for visitors such as:

- information on opening hours, as well as rules of behaviour and policies;
- links and information related to transportation;
- information on safe evacuation in case of emergencies;
- information on available assistive technology, equipment, assistance or services on site.

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Access guides provided in digital or printed formats should comply with Level AA of the Web Content Accessibility Guidelines (WCAG) as specified in ISO/IEC 40500 and ISO/IEC 30071-1; this includes HTML pages, files formats like pdf, docx, audio or videos, games, maps, applications.

NOTE 1 Further guidance is available from: <https://nda.ie/publications/accessibility-toolkit>.

NOTE 2 Specific requirements apply for information provided using or through written communication, video communication, digital communication (see ISO 21902).

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Annex E (informative)

Examples of accessibility methodology in practice

E.1 General

Examples can be useful to support an understanding of the steps to be taken when intervening in a cultural object where the goal is to improve accessibility conditions so that all people can access and enjoy immovable cultural heritage.

The examples described in this annex were carried out before the development and publication of this standard, although the methods that were applied have key points in common with the methodology of the standard.

This annex presents ten examples of accessibility interventions. In each example the processes used to determine the intervention as well as the results are briefly described. The processes which have driven the intervention, as well as the quality of the outcome, are important. In some examples, for simplicity, only a single or a few interventions have been described although all sites have included multiple interventions of various types. The examples outline the accessibility assessment made to identify any physical, sensory, or cognitive barriers, as well the matters considered, steps taken, and actions required to fulfil the goal.

To facilitate an understanding of these key points the information has been organized according to the sub-clauses of [Clause 5](#) as follows:

- general accessibility objectives ([5.2](#));
- analysis of heritage values ([5.3.2](#));
- analysis of accessibility conditions ([5.3.3](#));
- specific accessibility objectives ([5.4](#));
- proposals for action ([5.5](#));
- intervention plan ([5.6](#)).

The examples have been selected based on the following criteria:

- the significance of the cultural object;
- the accessibility challenge;
- the process in determining the intervention.

E.2 St. Paul's Cathedral, North Transept Project, London, United Kingdom

St Paul's Cathedral, designed by Sir Christopher Wren, is of international significance. The Cathedral welcomes over a million people each year for worship, prayer, sightseeing, concerts, and special events. The current Cathedral was completed in the early 18th century. This site has been a place of Christian worship for 1 400 years. The continued use of the Cathedral as a place of worship and place for celebration of nationally significant events, anchors its place as an icon of London and the UK. [Table E.1](#) explains the methodology steps. See [Figure E.1](#).

Table E.1 — St. Paul’s Cathedral — Application of the methodology

Methodology step	Explanation
General accessibility objectives	The Cathedral is committed to the general objective of providing a dignified and equitable experience for all those attending worship, visiting for sightseeing, or attending large scale events, regardless of access needs.
Analysis of heritage values	St Paul’s is Grade I listed and surrounded by other listed buildings, all set within a wider conservation area. The Cathedral is recognised the world-over as a masterpiece of architecture, both as a whole building and for individual elements and details. The Cathedral has a full conservation management plan in place, with individual projects and interventions required to carefully justify the need for change whilst assessing and mitigating potential heritage impact. An analysis of the North Transept revealed the steps were not the original stone but a later replacement by F C Penrose, circa 1875.
Analysis of accessibility conditions	Accessibility improvements at the cathedral have been underway for many years. Following a specialist review in the early 2000’s a programme of improvements, including work to provide a step free route into the building via an entrance in the South Churchyard, was initiated. This entrance leads directly to a small lift providing access to the Crypt and the main church floor, resulting in the Cathedral having step free access to most areas via lift by 2010. However, the lift did not provide sufficient capacity for Annual Remembrance services and larger events which can easily attract around 50 wheelchair users.
Specific accessibility objectives	The specific objective of the North Transept project was to create a truly equal entrance with ramps leading directly to the main church floor to ensure there was sufficient capacity for larger events.
Proposals for action	The North Transept of the Cathedral was selected as the most appropriate entrance to provide ramped access because it had the smallest change in level to overcome. Following extensive design studies by successive architects, a design comprising a pair of sinusoidal ramps and steps was selected to be developed with the intention of building over the original semi-circular steps so as not to remove the existing fabric. The curved nature of the ramps echoed the shape of the portico above. A timber mock up of the concept was built and used daily for several years to review its impact in use and allow end users and stakeholders to provide feedback about the design.
Intervention plan	The provision of two ramps maintained symmetry and allowed for the ramps to operate as a one way system should they need to. While designed to be a permanent entrance, the design could be reversed if needed, leaving the fabric intact. The project placed great emphasis on delivering high levels of compliance with national best practice standards for accessibility and heritage conservation, with specialist conservation architects and access consultants working side by side to secure both objectives.



a) Stepped North Transept before the works from ground level b) Completed ramps and steps from ground level



c) Completed ramps and steps from above

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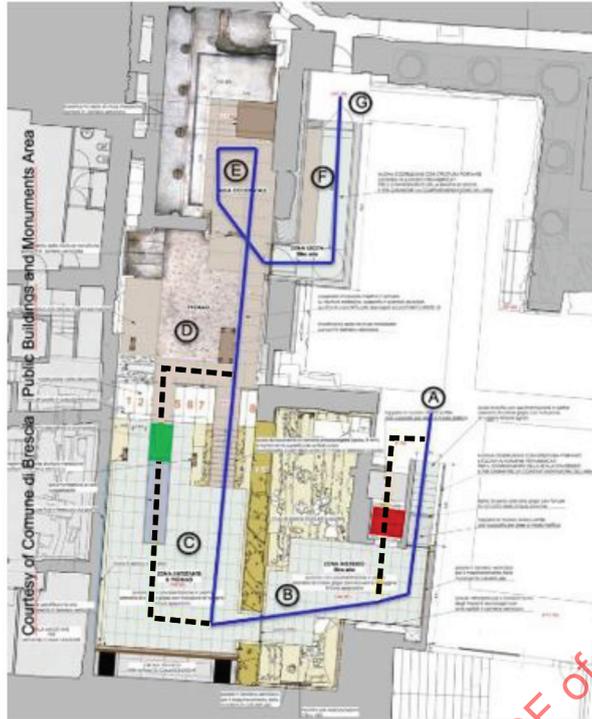
Figure E.1 — St. Paul's Cathedral views

E.3 The archaeological area and complex of San Salvatore, Santa Giulia, Brescia, Italy

Brescia is, with Bergamo, the Italian city of culture 2023. The archaeological site and museum of Santa Giulia, located in the historic centre of the city of Brescia on the slopes of the Castle, cover approximately 14 000 m² with a multi-layered palimpsest that traces the history of the city from the pre-Roman to the Napoleonic era. Remarkable testimonies such as the deposit of the great roman bronzes, to which the Vittoria Alata (Winged Victory) belongs, are visitable at the Capitolium. Since 2011 the whole area has become a UNESCO heritage site. [Table E.2](#) explains the methodology steps. See [Figures E.2](#) to [E.5](#).

Table E.2 — Santa Giulia, Brescia — Application of the methodology

Methodology step	Explanation
General accessibility objectives	The general objective was to create an equal and enjoyable visit itinerary for everyone to both the archaeological area and the museum of Santa Giulia. This was to be achieved as part of a systematic process of interventions over a period of years.
Analysis of heritage values	<p>The area is characterized by a heterogeneous heritage:</p> <ul style="list-style-type: none"> — The Roman Sanctuary of the Republican Era — The Roman Capitolium Temple — The Roman Theatre — Two Roman Domus — The Church of San Salvatore from the Carolingian and Longobard eras — The Romanesque church of Santa Maria in Solario — The Nuns Choir. <p>The musealisation of the area dates to the early 1800s with the excavations that brought to light the Capitolium of the imperial age (72 AD).</p>
Analysis of accessibility conditions	In 1990 there was no access for people with mobility impairments between the different levels of the heritage site. There was also no provision for people with sensory or cognitive impairments to facilitate their understanding and enjoyment of the cultural experience.
Specific accessibility objective	Among the first specific objectives was the connection between the archaeological area and the Museum of Santa Giulia, which is located at a different level, to facilitate access for people with disabilities, especially those with mobility impairments. As well as physical accessibility it was an objective to ensure both cognitive and perceptive accessibility in order to make it possible for different audiences to enjoy the existing cultural heritage.
Proposals for action	Between 1990 and 2005 works, including the provision of ramps, were completed and specific guided tours were introduced. In 2005 several actions were proposed including archaeological excavations of the ruins of the Sanctuary and the installation of a new lift to guarantee accessibility from the archaeological area to the pronaos of the Capitolium.
Intervention plan	The main lift was located so that it could be extended downwards in the future, to reach the level of the Sanctuary after its musealisation. A new platform lift was also added, to connect the different levels inside the Sanctuary. Interventions had to respect the characteristics of the area (volumes and materials) and had to meet the approval of the local Superintendents of Archaeology and Monuments as well as the Directors of the Museum. By 2020 visits in sign language, copies of 'tactile' works with explanations in Braille and models of the main environments that characterize the area plus activities dedicated to children and the elderly, were made available close to the Museum of Santa Giulia. A "UNESCO corridor" to connect the archaeological area to the Museum of Santa Giulia has also been planned, for completion by 2023. This has created awareness that accessibility and usability are activities in progress.



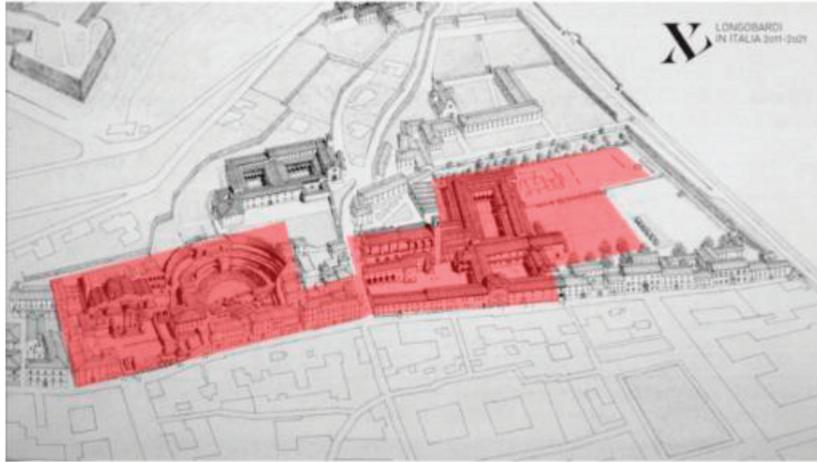
Key

- A entrance
- B filter room
- C lower room
- D pronaos
- E cell
- F filter room
- G exit
- normal path
- - - accessible path
- new lift
- new vertical lifting platform

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NOTE <https://www.bresciamusei.com/en/activity-category/for-everyone/>
<https://www.bresciamusei.com/en/activity-category/for-everyone/children-and-families/>

Figure E.2 — Access to the Sanctuary



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Figure E.3 — The Brescia Roman archaeological area, with the Capitolium and the Sanctuary on the left side



SOURCE Alberto Arengi. Reproduced with the permission of the authors.

Figure E.4 — The Capitol as reached by the accessible route



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Figure E.5 — The new vertical lifting platform connecting two levels of the Sanctuary

E.4 Akershus Castle, Oslo, Norway

Akershus Castle, located above the seaward approach to Oslo, is one of Norway's most important historical monuments and has been in use for more than 700 years. It is also an important tourist destination, receiving about 55 000 visitors a year and a place of representation for the Government, hosting government dinners and state visits. [Table E.3](#) explains the methodology steps. See [Figures E.6](#) to [E.9](#).

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Table E.3 — Akershus Castle — Application of the methodology

Methodology steps	Explanation
General accessibility objectives	The general objective was to improve accessibility for all visitors, based on Universal Design as far as possible, enabling them to enter and move within the castle without the need of assistance, ensuring equality and dignity.
Analyses of heritage value	<p>Akershus Castle houses the Norwegian royal family's burial chamber, and it is of great symbolic value, listed with the highest grade of protection. The Equality and Anti-Discrimination Act and the Act concerning cultural heritage were very important. Good accessibility solutions that enable more people to experience cultural monuments and environments were regarded as adding extra value to the cultural monuments. A value-based conservation method was followed, aiming to compile and weight different criteria through wide participation, to achieve objective choices to the greatest extent possible.</p> <p>A dispensation was required by The Directorate for Cultural Heritage for all interventions and supervision by an archaeologist for the groundwork. Two specific criteria were applied: the extent of irreversible interventions and the extent of visual changes. It was a high priority to avoid interventions in masonry and structures from the Middle Ages, as far as possible.</p>
Analyses of accessibility conditions	The main entrance was only accessible via a stone staircase and the interior spaces are spread over several floors, without step-free access, restricting access for persons with mobility impairments.
Specific accessibility objectives	<p>Considering the limitations of such an historical environment and the Act concerning preservation of the cultural heritage, the project team chose "Improved Accessibility" as the approach to be taken, since full universal design could not be achieved. Distinguishing between the concepts of accessibility and universal design helped to clarify expectations at the beginning of the project. However, throughout the process, the ambition was that all the solutions chosen should be as close to universal design as possible.</p> <p>Following this approach, the aim was to ensure that all guests should be able to use the same entrance and main building areas in an equal manner and without assistance, since the governmental ceremonies should reflect core values of democracy. This entailed providing step-free access at the entrance and between the floors of the building of the Castle and the church, as well as improving navigation and information for people with visual impairments.</p> <p>To achieve the best possible solutions, a wide range of stakeholders were invited to participate in the feasibility study, including cultural heritage organisations, public authorities, and disability organisations. The latter played a particularly important role for safeguarding the quality of the measures where legislated requirements or guidelines could not be achieved.</p>
Proposals for action	The feasibility study produced 28 different measures, of which five major works were implemented. Making the main entrances of the Castle and the church accessible were the major proposed works. For the main entrance of the Castle, it was proposed to erect a new tower containing a lift, in the courtyard, at the footprint of the first medieval tower at Akershus. For the church entrance, the spatial limitations in the existing castle and the heritage values prevented the possibility of installing a lift. The proposal was to integrate a platform lift in the stairway.
Intervention plan	The new lift at the main entrance of the Castle was installed in a new tower, in the courtyard with a new staircase on one side only, with a horizontal landing connecting to the lift. The original symmetrical (double) limestone staircase in the courtyard had to be dismantled entirely. After proper documentation and study of this heritage element. As this was a major change from a heritage perspective, the lift should be functional, easily visible, and as prominent as the main entrance, yet blending with the historical environment. This is achieved by using original materials - limestone, bricks, and iron, but with a contemporary interpretation. At the church, the internal church entrance hall was expanded, and a platform lift was integrated in the stairs. The platform lift is faced with the same marble as the staircase, making it almost invisible, when not in use. When it is in use the stair is not blocked for others, so the entrance complies fully with the aim to accomplish an entrance route with equality and dignity for all users.



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Figure E.6 — Akershus Castle and Fortifications



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a) View before interventions



SOURCE Standards Norway. Reproduced with the permission of the authors.

b) View of the new tower with a lift in place

Figure E.7 — The courtyard and main entrance



a) Raised platform and stairs



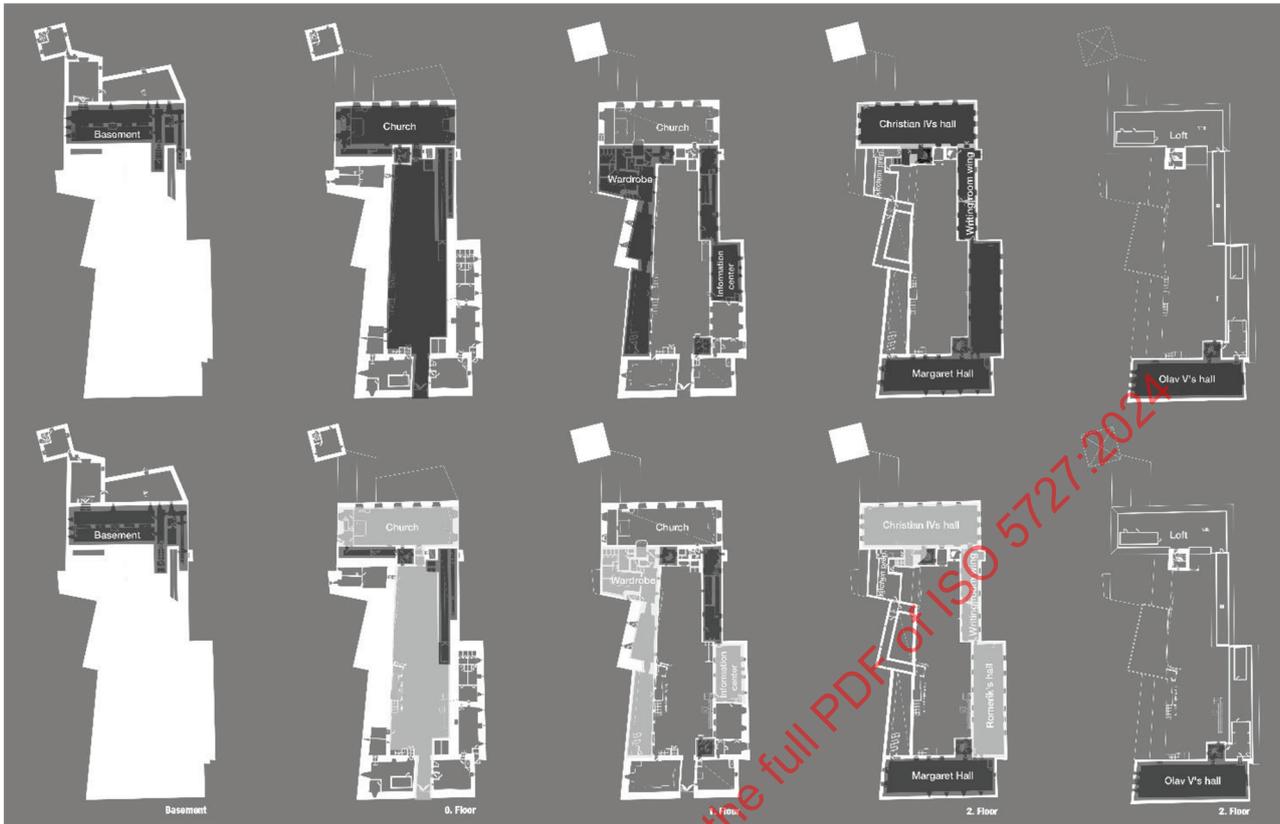
b) Lowered platform

SOURCE Norwegian Defence States Agency. Reproduced with the permission of the authors.

NOTE See Reference [10].

Figure E.8 — Lifting platform integrated in stairway in church entrance hall

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Key



public areas featuring limited accessibility



public areas featuring improved accessibility

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NOTE 1 Floor plans of areas that were inaccessible for wheelchair users before intervention measures, shown with dark grey hatches. Areas that became wheelchair accessible after measures, shown with grey hatches.

NOTE 2 See Reference [11].

Figure E.9 — Akershus Castle floor plan before and after the intervention

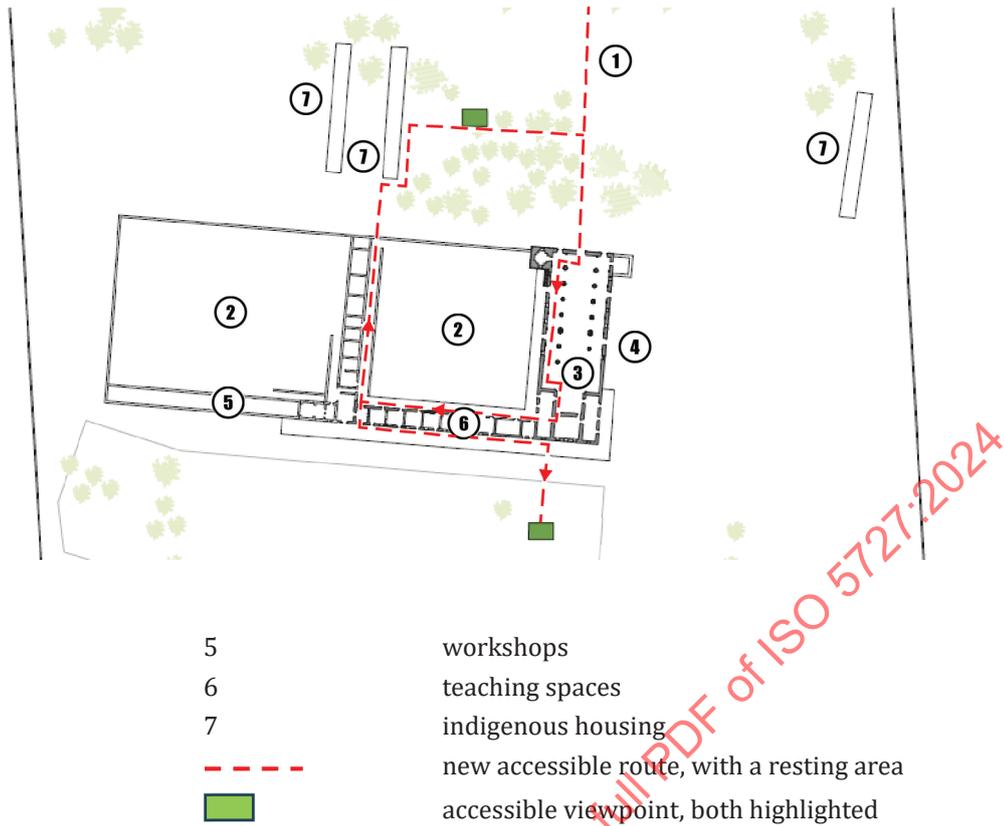
E.5 Jesús de Tavarangué Jesuit Mission, Itapúa Department, Paraguay

Jesús de Tavarangué, was part of a group of thirty missionary towns founded between the 17th and 18th centuries by the Catholic religious order of the Society of Jesus among the indigenous Guarani and related peoples, with the purpose of their evangelization. Founded in 1685, it was declared a World Heritage site by UNESCO in 1993. [Table E.4](#) explains the methodology steps. See [Figures E.10](#) to [E.12](#).

Table E.4 — Jesús de Tavarangué Jesuit Mission — Application of the methodology

Methodology step	Explanation
General accessibility objectives	The general objective was to promote the sustainable and inclusive development of the region through tourism accessible for people of all ages and abilities.
Analysis of heritage values	The Mission stands as a noteworthy example of Jesuit urban planning, albeit left incomplete because of their expulsion in 1768. It comprised a church, residential structures, an educational institution, and encompassed several urban amenities such as an orchard and cemetery. The architectural heritage of the Mission integrates indigenous elements while exhibiting a blend of Baroque, Romanesque, Moorish, and classical influences.
Analyses of accessibility conditions	The topography of the Jesuit Mission site at Jesús de Tavarangué was mostly flat and not difficult to access. Still, its 16-hectare area posed challenges for individuals with limited mobility, older individuals, and families with young children. The analyses of the site's accessibility conditions were based on Spanish Building Code and Paraguayan Accessibility Law.
Specific accessibility objectives	The specific accessibility objective was to create an accessible route through the Jesús de Tavarangué mission complex, so that an unbroken accessibility chain for tours would be guaranteed for all visitors.
Action proposals	Visitors can take a tour accompanied by a volunteer guide along a sign-posted accessible route covering the key areas of the missionary complex, from arrival and parking to the accessible route through the Mission complex, services, and the museum's collection. The tour is also offered to people with motor impairments using assistive chairs, supported by a volunteer. Rest areas are conveniently situated. An accessible viewpoint offers a visual connection to the other Paraguayan mission, Santísima Trinidad, and of the surrounding landscape. Accessible restroom facilities are available in an interpretation centre, where historical and complementary information is available, as well as a tactile Braille-equipped model.
Intervention plan	A Master Plan for Accessible Tourism at the Guaraní Jesuit Missions of Paraguay, including Santísima Trinidad del Paraná and Jesús de Tavarangué, was created within cooperation agreements between the National Secretariat of Tourism of Paraguay (SENATUR), the Spanish Agency for International Development Cooperation (AECID) and the ACS Foundation of Spain. The Master Plan adheres to criteria of maximum respect for heritage values, reversibility of interventions, ease of maintenance, avoidance of historical inaccuracies, universal accessibility, safety, and compliance with current regulations.

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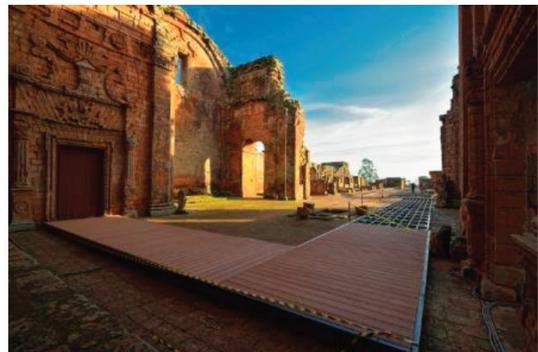


SOURCE Carlos de Rojas Torralba. Reproduced with the permission of the authors.

Figure E.10 — Detail of the landscape plan of the Mission Complex



a) Before the intervention



b) During the intervention works

SOURCE Carlos de Rojas Torralba. Reproduced with the permission of the authors.

Figure E.11 — Cloister walk



a) Before the intervention



b) During the intervention works

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Figure E.12 — Nave, aisle and apse of the church

E.6 Kenban, Assignment office for geisha, situated in Shiba, Minato City, Tokyo

Kenban was originally built to serve as an assignment office for geisha in 1936. It is a rare surviving timber structure built before World War 2. Since most timber buildings are disappearing in Japan, it serves as a witness to Japan's past and it has become a small museum of traditional culture following restoration. [Table E.5](#) explains the methodology steps. See [Figures E.13](#) and [E.14](#).

Table E.5 — Kenban — Application of the methodology

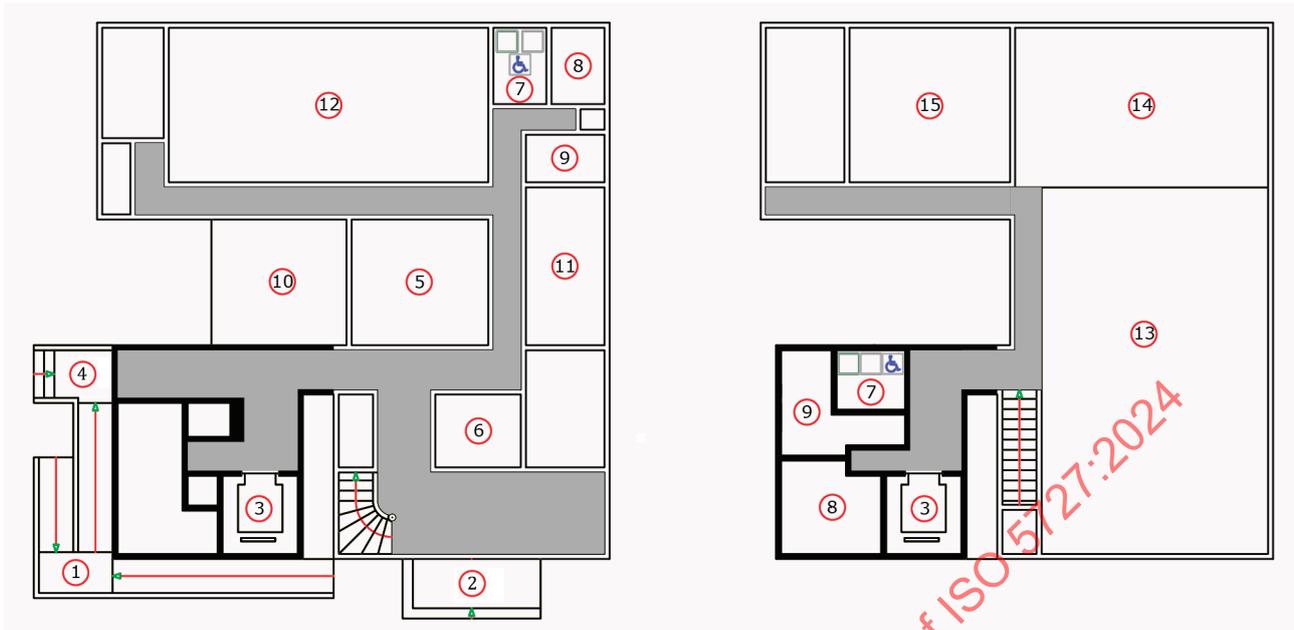
Methodology step	Explanation
General accessibility objectives	The general objective was to create a way to ensure equal access for all visitors to the building, which has been converted to a place for learning about history and cultural activities and includes a space for performances on the upper floor.
Analyses of heritage values	After the war, the building served several purposes, but the structure remained basically intact. The façade and interior design were to be kept as something of the original. It is not listed as an important cultural heritage, but it was deemed essential to keep the past into the future, and cultural traditions of the past are displayed.
Analyses of accessibility conditions	Accessibility improvements were essential since it is a simple two-storied timber structure building, with a single staircase with winders to access the upper floor. There were also two steps at the original entry, as well as another two steps up to the functional area where visitors are expected to take off their shoes.
Specific accessibility objective	A lift was considered necessary to access the upper floor where a performance hall is situated, and to overcome the various level differences along the route. The narrow entry area did not allow for ramps or slopes to be installed.
Proposals for action	Two options were investigated. The first was to install a lift inside the building. This first choice was difficult due to limited floor space. The second was to have the lift outside, in a new annex, where a small plot of land was available which could accommodate it.
Intervention plan	Since the building is a traditional timber structure the design of the annex needed to be in harmony with the original building. A new ramped access route was created adjacent to the main stepped entry, which leads to a new level entrance to the annex where the lift was installed. Inside the original building, structural reinforcement was also introduced for safety reasons, but without disturbance to cultural values. The most desirable solution was to have the same access route for everybody, but this was not possible, therefore a separate route for wheeled entry was introduced.



- a) Stepped entrance to Kenban with ramped access to new annex on left b) New annex and alternative accessible route and entrance at the side route around annex

Figure E.13 — Kenban images

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Key

1 accessible route	5 information corner	9 men WC	13 exchange room
2 accessible entrance	6 reception	10 deck terrace	14 stage
3 accessible lift	7 accessible WC	11 tea room	15 waiting room
4 existing entrance (main entrance)	8 women WC	12 exhibition room	— circulation space
			— new building

NOTE 1 See <https://minato-denbun.jp/facilities/>.

NOTE 2 The new annex is to the left with an alternative ramped and stepped entry leading to a lift which serves both floors of the original building. The original entry remains in use. The annex also houses new toilet facilities on the upper floor.

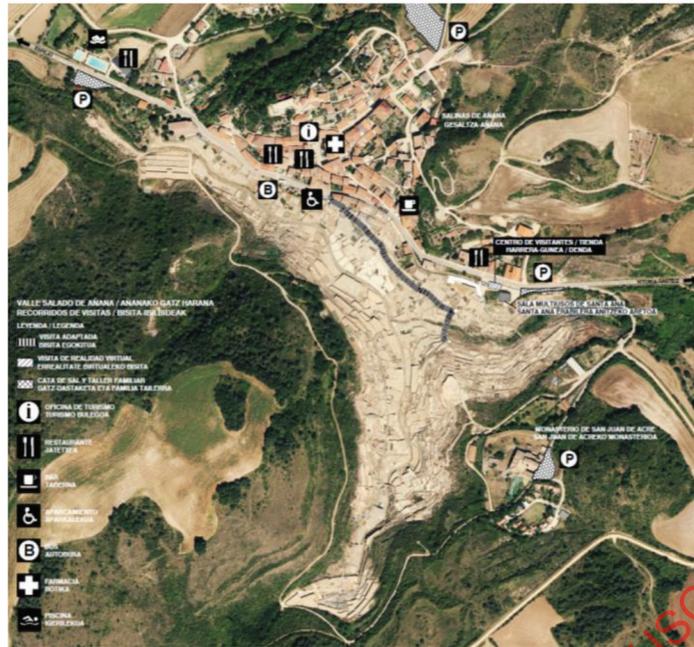
Figure E.14 — Ground and first floor layouts

E.7 Cultural Landscape of Valle Salado de Añana (Salt Valley), Spain

The Valle Salado de Añana, located in Álava, spans an area of 13,5 hectares. For over 7 000 years, this area has been dedicated to salt production, employing ancient work practices that rely on natural saltwater springs. Presently, salt continues to be produced using traditional, sustainable techniques that respect the centuries-old craftsmanship and expertise of salt producers. [Table E.6](#) explains the methodology steps. See [Figures E.15](#) to [E.18](#).

Table E.6 — Valle Salado de Añana — Application of the methodology

Methodology step	Explanation
General accessibility objectives	The general accessibility objective was to create cultural and tourist initiatives to act as drivers for social, economic, and tourist development in the region. The project encompasses a set of specific measures and actions to enhance universal accessibility for people of all ages and abilities.
Analysis of heritage values	The built and cultural heritage of Valle Salado includes tangible elements like salt architecture, water systems, habitat, and biodiversity, along with intangible aspects such as resilience and applied sustainability principles. This includes the salt-making industrial heritage systems of the landscape which are managed and maintained by the populace, who keep up the practices of previous generations. The skills and knowledge of the populace, inherited from previous generations, enable economies of salt-making to continue sustainably in this landscape.
Analyses of accessibility conditions	Valle Salado features varied topography with terraced areas and high summer temperatures, potentially posing challenges for certain visitor groups. Legal requirements were analysed initially, and suitable locations for universal access interventions were identified within the valley landscape. Information was gathered from people with disabilities regarding the existing accessibility conditions during their visits to the Valle.
Specific accessibility objectives	The specific intent of the project was to increase the area of the Valle that was accessible to visitors. The specific objectives aimed to enhance accessibility for visits to Valle Salado through a diversity of approaches and different levels to address various issues. Potential solutions including guided assistance, supported visits, sensory experiences, and the possibility of virtual reality experiences were identified.
Action proposals	<ul style="list-style-type: none"> — Enhancing accessibility for routes and pathways, counters, fountains, and restrooms. — Offering information in alternative formats for people with reduced vision and hearing, including measures such as virtual reality experiences and a tactile-equipped model of the features of the salt-making landscape — Conducting guided tours led by trained personnel with experience in accessibility. — Conducting guided tours with the aid of a volunteer team and assistive technologies — Allocating parking spaces for people with reduced mobility.
Intervention plan	<p>The Master Plan for the Recovery of the Salt Valley of Salinas de Añana was developed by the Valle Salado de Añana Foundation and the Architectural Historical Heritage Service in collaboration with a multidisciplinary team comprising architects, surveyors, archaeologists, salt workers, carpenters, and masons. The following interventions were implemented:</p> <ul style="list-style-type: none"> — Creation of an accessible route, improvements to the surface finishes, elimination of obstacles, increasing the width of the route, and creation of stopping points, and accessible parking spaces at the beginning of the visit. — Creation of a specially designed trail for people with visual impairments, including a tactile model representing the built elements of the Valle Salado, and tailored haptic experiences. — Provision of a sensory salt-tasting experience designed for all visitors, allowing the evaluation of different salt types through touch and sensory exploration. — Provision of assisted tours along the original route for people with disabilities, with the support of a volunteer team using assistive products. — Creation of a virtual reality experience dedicated to explaining the characteristics of the Valley, the variety of the landscapes and of the eras, as well as learn about its history.



SOURCE: Fundación Valle de Salado de Añana. Reproduced with the permission of the authors.

NOTE 1 The 200 m length accessible route undertaken as part of the intervention plan highlighted.

NOTE 2 See <http://www.ernestproject.eu/coalap/pages-ernest/home.jsf>

<https://www.erih.net/i-want-to-go-there/site/anana-salt-valley>

<http://www.europeanheritageawards.eu/winners/salt-valley-anana/>

<https://www.fao.org/giahs/giahsaroundtheworld/designated-sites/europe-and-central-asia/the-agricultural-system-of-valle-salado-de-anana/es/>

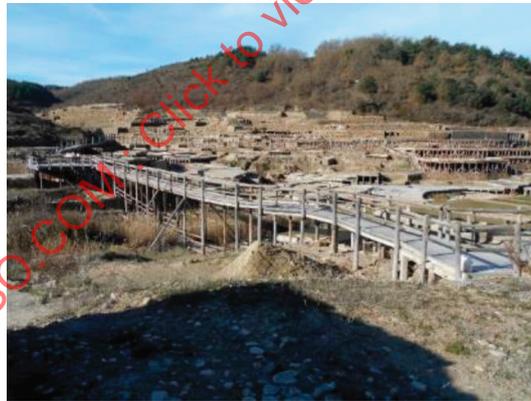
Figure E.15 — Landscape view of Valle Salado and the visitors' routes



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NOTE Loop route enabled for more diverse visits by a wider population with the help of a volunteer team and assistive products.

Figure E.16 — Aerial photograph illustrating the pre-existing visitor route



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Figure E.17 — New 200 m length accessible route



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Figure E.18 — Visitors on the green route assisted by the volunteer support team and the assistive products

E.8 State Library Victoria, internal staircases, Melbourne, Victoria, Australia

The State Library Victoria (Australia) buildings, dating from 1856 to the 1990s, take up an entire city block of 23 interconnected buildings, with the entire site listed on the Victorian Heritage Register. It is the third most visited library in the world with more than two million people visiting the site each year. Improving accessibility to and within the site was a major focus of the recent re-development.

Improved accessibility features throughout the building included upgrading the building structure, furniture, fittings and signage. Building works included upgrading of the existing main staircases between the main entry and first level. [Table E.7](#) explains the methodology steps. See [Figures E.19](#) to [E.22](#).