nvsble
Inclusive and innovative learning tool for Visually Impaired and Blind People

GUIDELINES TO MAKE ARCHITECTURE AND VISUAL ARTS ACCESSIBLE TO VIB (VISUALLY IMPAIRED AND BLIND PEOPLE)

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Summary

Chapter 1. Introduction

The following **Guidelines to make Architecture and Visual Arts accessible to people with visual disabilities** aim to provide guidance to teachers, educators and museum technicians on inclusive methodologies, and to offer aids and tools to promote a quality education, true museum accessibility and a better cultural and social participation of visually impaired and blind people.

This paragraph is meant to collect some fundamental concepts which stand as the foundation for the guidelines, starting with the recollection of the most important international references which are meant to highlight how important it is for everyone, and especially for people with disabilities, to have access to Art, Culture and Education.

Secondly, it is meant to highlight the importance of Art, artistic education and their fruition through some international documents which have been created by organizations with worldwide relevance such as WHO and the United Nations.

In conclusion, there is a list of the principles of **Universal Design for Learning**, since they have been points of reference for the realization of the guidelines.

The Right of All to Art, Culture and Education

The right of all to art and culture is set off by international legislation.

The **Universal Declaration of Human Rights** of 1948 stated in Article 22: "Everyone, as a member of society […] is entitled to realisation of the economic, social and cultural rights indispensable for his dignity and the free development of his personality."

Article 27 states: "Everyone has the right to freely participate in the cultural life of the community, to enjoy the arts and to share scientific advances and its benefits."

In the **Convention on the Rights of the Child** approved by the United Nations in 1989 articles 28 and 29 are the ones to determine the right to education and article 31 recognizes the right to participate in cultural life: "States Parties shall respect and promote the right of the child to participate fully in cultural and artistic life and shall encourage the provision of appropriate and equal

opportunities for cultural, artistic, recreational and leisure activity".

In the **Convention on the Rights of People with Disabilities** of 2006, the right to Education is set off in article 24 while on the 30th the Right to participate in cultural life, recreation, leisure and sport.

The **3030 Agenda for Sustainable Development (from UNESCO)** defines 14 fundamental goals among which we find the Right and the support to healthy living and well-being, to a quality education, to build sustainable cities, to promote good working conditions and economic growth. All goals are also related to arts and culture as means to increase the cultural capital of society and potentially contribute to promoting resilience, equity, health and well-being during the course of life.

In this respect, UNESCO developed 22 thematical indicators – which can be found at this link https://whc.unesco.org/en/culture2030indicators/ - regarding the capacity of culture to contribute to 17 of the goals of the 3030 Agenda.

Particularly, considering goal number 4 "Ensure inclusive and equitable quality education", the following indicators are highlighted:

- Cultural experience
- Cultural and artistic education
- Cultural training

Regarding goal number 10, "Reduce inequities", the indicators are:

- Culture for social cohesion
- Artistic freedom
- Access to culture
- Participative processes

At this point, it is important to go back to the concept of **accessibility**, already defined in Article 9 of the UN Convention on the Rights of People with Disabilities. It is time for accessibility to become a cultural value, to be seen as an opportunity for every person to improve their life and use all the resources given by nature to gain the fullest and most significant experience of reality.

This is true for every aspect of life and for every field, but for what concerns us,

we speak about the museum sector and cultural spaces. An idea of accessibility based on multisensoriality and inclusion is key in rethinking a usually outdated concept of museology, and to promote a renovation of the ways of knowing and enjoying cultural heritage.

Art, artistic education, health

In 2019 the WHO presented the **Health Evidence Synthesis Report on the Role of Arts in the Improvement of Health** and Well-being. In the introduction of this report, the WHO defines Health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity", rooting the concept of health in society and culture. Art and Art education play a crucial part in the cultural field. Five artistic categories are defined. We want to specify that the second point, with the definition of "visual arts" for us, is meant to be enjoyed through touch and the other senses:

1. performing arts (music, dance, theatre, singing and film)
2. visual arts, design and craft (crafts, design, painting, photography, sculpture and textiles)
3. literature (writing, reading)
4. culture (museums, galleries, art exhibitions, concerts, theatre, community events, cultural festivals and fairs)
5. online, digital and electronic arts (animations, filmmaking and computer graphics)

In the paragraph "Linking the arts with health", the arts are considered as complex and multimodal interventions because they combine multiple different components all known to be health-promoting.

Art activities can involve aesthetic engagement, an effort of imagination, sensory activation, evocation of emotions and cognitive stimulation and, depending on its nature, an art activity can involve social interaction as well.

In particular,

- the aesthetic and emotional components of art activities can be opportunities

for emotional expression and emotion and stress regulation;

- cognitive stimulation while engaging in art activities can be an opportunity to learn and develop new competences and contributes to a lower risk of developing dementia and mental illnesses such as depression;
- social interaction during the participation in art activities can reduce the sense of solitude and the lack of social support and subsequently reduce the cognitive, functional and motorial decline, as well as mental illnesses.

Art Education and UNESCO

The importance of art And Art education has been highlighted by UNESCO in two important documents: the **Road Map for Arts Education** (2006) and the **Seoul Agenda** (2010).

The **Road Map for Arts Education** explores the role of artistic education in satisfying the need for creativity and cultural awareness in the 21st century and emphasizes the importance of strategies to introduce or promote art education in the learning environment.

This document is designed to promote a common understanding of the relevance of Art Education and its essential role in improving the quality of education.

The goals of Art Education are:

1. To support the Human Right to education and cultural participation;
2. To develop personal skills;
3. To improve the quality of education;
4. To encourage the expression of cultural diversity.

The **Seoul Agenda** was drawn up at the second UNESCO World Conference for Art Education held in 2010. Here are three of the main goals:

1. Goal 1: To ensure that Art Education is accessible as a fundamental and durable component of the qualitative renewal of education;
2. Goal 2: To ensure high quality for the activities and the Art Education programs;
3. Goal 3: To apply principles and practices of art education in contributing to a

solution for social and cultural challenges of the contemporary world.

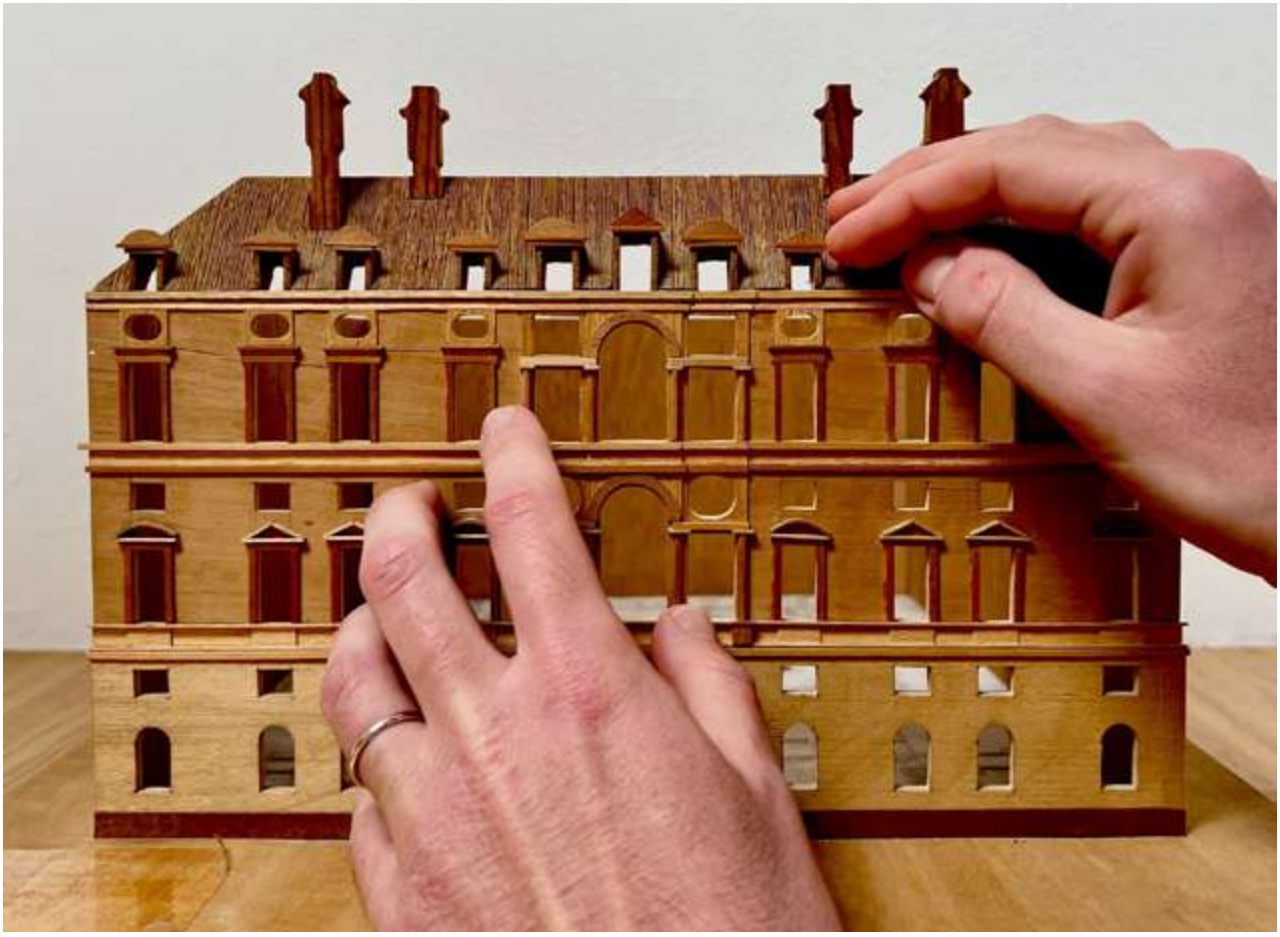
Universal Design for Learning

UDL is an international learning model promoting a way of learning which is inclusive and barrier free, giving all students equal opportunities for success.

The UDL model is based on three principles:

1. Multiple means of representation (to offer students various ways of obtaining information and knowledge);
2. Multiple means of expression (to give students alternatives to show what they know);
3. Multiple means of engagement (to draw from the students' interests, to stimulate appropriately and to motivate them to learn).

Chapter 2. Knowing without sight



- Touch and the vicarious senses
- Touch and sight
- The education of touch
- Tactile exploration and tactile image formation
- The aesthetic of touch
- Touch, an enrichment of the aesthetic experience for everyone

The sense of touch and the vicarious senses

Touch can recognize shape, dimension and what an object is. It can do so by proceeding in sequence and slowly, on small portions of the space, through a multisensory reception which goes from the thermal sensation to the quality and consistency of the surface. As the eye, the hand can stop on a detail instead of another, following its own preference. The tactile perceptions are integrated, creating collective mental images that are richer and multifaceted.

The tactile exploration, while having a reduced perception of the space "at hand" or "at arm's length", differently from sight, cannot give an immediately comprehensive idea of what is been examined. It is a process that needs time and focus because touch has a slower and limited capacity to discriminate.

This could make it impossible to perceive the smaller and more refined details, such as lines and points too close to each other; but touch is able to recognize better and more interesting details that are not necessarily caught by the eye, such as weight, temperature or hardness of an object.

Touch alone is not enough to understand reality. It is necessary to integrate all perceptions obtained through the other vicarious senses: hearing, smell and taste.

The sense of space, the distance from an object and their movement are perceivable not exclusively through sight: to evaluate the distance and the position of objects that are far away, for example, hearing is the most functional sense as it offers directional and orientation criteria to a blind person.

Smell and taste are fundamental as well, especially when they are associated with other senses, to give a complete understanding of flowers, fruits or aromatics.

There are also other perceptive sensitivities: the thermal sense, the anemestic sense (the perception of air movements), the kinesthetic sense (the perception of one's own limbs and their movement).

Touch is a sensory mode which consists of two separate but interdependent subsystems. The first one is a sensory one, deputed to the perception of tactile, thermal, nociceptive (the perception of pain) and kinesthetic (perception through movement).

The second type is instead motion manipulatory. The connection between the two

subsystems is shown by the fact that the peculiarities perceived by the hands are linked to specific techniques, the so-called **exploratory procedures (EP)**.

There are eight different Exploratory procedures:

1. Lateral motion: which consists of rubbing the fingers against a homogenous area of an object's surface to perceive the texture
2. Pressure: the hand pushes a part of the object to verify the consistency and the hardness
3. Static contact: a technique used when the object is on a support while the hand touches it to verify the temperature
4. Unsupported holding: consists of holding and elevating an object to weigh it with the hand, the wrist and the arm
5. Enclosure: we "hug" the object to perceive the global shape and the volume
6. Contour following: it's a dynamic technique through which the hand is constantly in contact with the object to evaluate with as much precision as possible the volume and the shape;
7. Part motion test: one hand tries to move one part of the object, while the other one keeps the object still
8. Function testing: the hands follow specific movements to challenge some specific functions that the object might have. They shake it to produce sounds, they get inside it to verify if it has a hole, they tighten it at the extremities to move it like a pincer.

(Klatztky Roberta L., Lederman Susan J., 1993, Spatial and nonspatial avenues to object recognition by the human haptic system, in N. Eilan, R. McCarthy)

Touch and sight

The main differences between these two sensorial modes are, at first, the different width of the perceptive field. Touch and sight are, in fact, both sequential senses. But while sight produces fast and automatic sequences, touch needs slower steps. The eyes have a "panoramic view". Of course, that is not possible for the hands. For this reason, sight is useful for two-dimensional perception.

To enjoy drawings and writing, a wider, less stereoplastic perception is better than a limited but tridimensional one. (Mazzeo Marco, 2003, Tatto e Linguaggio).

As opposed to sight, touch has an extended field of intervention which can hug an object in its entirety, fluidly and rapidly.

If one already had an experience, one object can be immediately recognized, otherwise, it can be recognized by analogy, using one's own mnemonic "heritage".

If a person has no memory of it, they can still be able to describe it through words.

The most significant difference between sight and touch is the difference in "character": sight has a synthetic one while touch an analytic one. When we see an object, we have right away a perception of its entirety and we understand the shape.

Cognitive psychologists argue that even this "instant view" is a result of a mental construction, but the impression we have is the following: we see an object with a single effort and after this first step, we proceed to discover the details through an analysis.

Normally, we see things even without wanting to, it's an involuntary action.
It's only when we stop to look more attentively, we can organize, compare and evaluate subjectively and objectively what we are seeing, as if our eye stops on the object and "it touches it", to understand shape and consistency.

All of this happens even if there is a distance between the person looking and the objects.

Touch can only proceed analytically: it can only perceive the portion of surface the person is touching beneath their fingers, to reach the surrounding areas the person is going to need to move their hand around.

Compared to sight, touch is "poorer" and less able to distinguish certain differences. But still, as it has already been said, touch is able to recognize some characteristics which might be left unnoticed by sight, or at least noticed with less certainty, such as temperature and consistency of an object. In fact, it is not unusual to not be satisfied with just looking at some objects, but we feel the need to add touching as well, to complete our need to discover.

The education of touch

To get to know the world, for a child as much as for an adult, is a multisensory experience. Among all the senses, touch is the most used, because it completes the visual and hearing knowledge, since it can give useful information about all the surroundings. Touch is often neglected and considered not important. Children are often kept away from tactile exploration by the adults, as they have been conditioned by an education which limits the tactile side, and it is sight and hearing oriented. How many times are children told: "don't touch"? On the other hand, no one would ever dream of saying to a child: "don't look" or "don't listen", as if touch does not matter as much as the other senses, as if it would be possible to put it aside. Instead, the best option would be to preserve everyone's "global sensoriality", to guarantee a more complete and direct knowledge of different phenomena.

(Munari Bruno, 1985, I laboratori tattili).

In 1976 Bruno Munari designed the Tactile Message for a blind little girl. The Message, with its many surprises, draws inspiration from the idea already used in the Tactile Table, an art piece made to be experienced through touch, fundamental for a blind person, but very important for normally sighted people as well. It is crucial to take care of educating children's senses, especially if they are visually impaired or blind and to make them familiar with integrating the different senses and also with analysis and verbalization of the different sensations they get from hearing and touching, but also from smelling and tasting.

To make an analysis means that, for example, the proper thing to do is to teach children the fundamental tastes and smells in an analytical manner so that they learn to recognize them even in more complex combinations, with particular attention to the right naming. Each sensation, and each thing in general, needs to be called by their name. Verbalization contributes to better anchoring the learned notions in the memory, and it also contributes to an enriched vocabulary. A richer vocabulary means a broader chance to communicate one's thoughts and to receive more precise information. It is indeed an extraordinary vessel of knowledge and communication and, in other terms, a road to social and human growth.

If we consider a blind adult or child, we need to keep in mind that touch needs to be educated as well and it is wrong to assume that for a blind person, the use of touch is a mandatory and spontaneous attitude.

One learns to touch as it happens with looking. Blind people need to be taught how to explore through touching using both hands and, possibly, all their fingers as it is necessary with Braille reading. Exercise betters the capacity to discriminate and interpret the signs.

It is necessary to teach how to recognize different materials (wood, chalk, metal etc.) and the different types of fabrics (wool, cotton, silk, etc.). This is valid also for the details of a surface (smooth, spongy, etc) which have to be recognized.

Of course, as we already mentioned, each operation and sensation have to be accurately verbalized so the subject is always capable of describing with a certain degree of precision everything he does and perceives.

Tactile exploration and the formation of the tactile image

The psychology of perception has studied all the aspects of the different sensory modalities (VAKO) and we now know the differences between sight and touch. The tactile exploration is complex. The blind person starts by doing a fast and general examination, to have a first basic representation of the object; after this first phase, he proceeds by analyzing the single parts, stopping on the different details. In this phase the person is doing something very challenging at a mental level: they have to keep in their mind the structure of that initial picture that originated from the first inquiry, and then they have to add to it, little by little, one new detail after the other as they appear during the exploration so to make the first image richer and more detailed. Memory-abstraction-memory: this is the magic circle which is able to complete the image, initially born in pieces beneath the fingers, built through the hassle of the mind and then fixed in the brain.

“To see” with the hands is surely more difficult, as it engages a series of faculties in a high-level mental process, which is much more abstract precisely because it isn’t as immediate as the visual one. Then, when the formation of an image happens through touching, a series of steps are required. To follow these

steps correctly, one needs a specific education. First, it is necessary to create a comprehensive scheme of the object through a fast and "general" examination. This part becomes particularly important when we consider objects of a certain size and, in general, objects that are impossible to reach or to contain in one hand.

Right after, starts the detailed exploration, for which it is fundamental to have a good memory of that first basic representation. The more detailed exploration, in fact, does not just make a precise analysis of a specific portion of the surface, but it also needs to be able to put the perceived detail in the bigger picture.

The aesthetic of touch

When a normally sighted person observes an image, what they are looking at is the object itself. For a blind person instead, the tactile image is a mental image which is the result of the tactile exploration. This kind of exploration happens step by step, adding perception to perception. Afterwards, the person stops to contemplate a shape which is not possible to perceive directly while the observation is happening, but it is impressed in memory where it truly becomes the object of observation. The harmony of a shape that has been "looked at" can produce a hedonistic pleasure; the pleasure inspired by the harmony of a tactile shape instead, can only be aesthetical.

Touching, an enrichment of the aesthetic experience for everyone

The possibility to touch, when allowed, both in Museums and in cultural institutions, is not only for visually impaired people. It can become a new approach to the fruition of art, a comprehensive approach which lets everyone consider the object in a plurality of ways that strengthen each other and get integrated into the aesthetic evaluation.

The ability to touch makes people rediscover the tactile relationship with things, which is by nature the most genuine approach and it is almost completely forgotten. The distance from touch comes from a kind of education which demonizes this sense as something improper. Every child knows: you love with your eyes and with your hands. This is true for artworks as well: it is beautiful

to look at it and to touch it as well. And if we are being honest, everyone tries to do so, in every museum around the world: if one can escape the eyes of the controller. To offer the tactile experience to everyone means to let everyone enjoy art in an immersive way and to have an all-round knowledge of art.

Chapter 3. Teaching visual arts to people with visual disabilities: methods and tools

Archaeolgy

The study of archaeology is the scientific way to learn about ancient populations through the traces of monuments and artistic artefacts that were left in the past; it is very useful for understanding human history. A blind or visually impaired student can encounter archaeology in different situations: inside a museum, in a class in school or directly at an archaeological site.

In a museum or even a classroom, the first step is to choose a series of objects to be touched following scientific criteria: pieces which can be useful in a path which is historically and aesthetically reliable. Not all the archaeological remnants, even when they are originals, can be the best things to comprehend history. It is crucial to select them carefully and it's also important to give different tools to the blind person to help them guess correctly. Before investigating a small fragment is better to seek the help of supports which can be: relief drawings or full reproductions which are going to represent or complete the missing part.

This will help the student's perception of the whole shape of the object and therefore to distinguish better the functionality and the finality of the fragment. Another important piece of information is the kind of material which composes the fragment; each material has been used differently over the centuries, it has been modified and to touch the original will elicit a strong emotion in the student/visitor, but it will also add to the knowledge of how mankind has developed and has modified his customs and his way of living over the centuries.

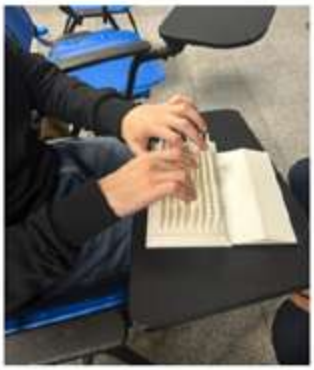
First and foremost, copies need to be well made regarding their shape and the choice of the material; it cannot be compared to the original piece, but it can be enjoyed, and it can evoke emotions, for this reason, it has an incomparable didactic value.

If a person is inside an archaeological site, the blind visitor will be able to rely on different types of information: they can at first get to know the area and the surroundings through tactile maps and then, if tactile paths are available, they will be able to walk inside the excavation to understand the distances and the structure.

The original remnants, when touchable, are going to be fundamental and of better comprehension if they are left in the original site, contributing to a complete exploration of the space. It is important to avoid undervaluing the efficacy of being able to touch utensils employed in the excavations by the operators working on the site such as brushes, trowels, pickaxe and shovels; these items will have a significant didactic value because they are a symbol of the concreteness of the staff's job.

It is interesting both if this happens inside, such as in the museum or school, or if it happens outside in the archaeological site. The main thing is to make the students experiment and verify that they have actually understood what they have touched. With the help of soil, boxes, appropriate tools and remnants it can be useful to recreate the process of research and exploration.

In conclusion, the basic need in a tactile exploration of an archaeological object is a description from the guide. A narration which gives historical context, the era and guidance for the hands through the exploration explaining where they are moving around the surface.

Architecture

A visually impaired person can have an approach to the study of architecture in two different contexts: in front of a monument, or as students during a lesson in a class. Whatever the case, it is important to state right away which type of building is going to be analysed, its original function as well as the actual one and to offer an idea of the urban or rural context in which it is located and to describe it.

It would be useful to have a model available as well, even in the case that a person is in front of an actual building. It should represent the architecture and be a tool for the person, giving a general idea of the place, letting them touch parts that are not reachable in any case. When this model is missing, other tools can be of help, such as relief drawings representing the maps and the façade of the building.

During the guided tour of an architectural complex, it is important at first to give general information about the dimensions, the shape and the layout of the building to then get into the specific details. While describing, avoid the assumption that people have a comprehensive knowledge (if not at all) of technical terminology, so these terms should be explained, with the added possibility for students to touch the object that one is referring to, or unless that is not possible, to have access to a relief drawing.

The drawings can be useful to clarify some of the terms regarding the plans of buildings, but their use requires that the student already has a clear concept of view from above.

In addition, while speaking of a comprehensive shape, it is possible to refer to plain and solid geometry, if it is something the student is familiar with (for example: the church's nave is rectangular, the classroom is cylindrical) or to everyday objects, to make a more efficient description of different objects.

During the real-life exploration of a monument, it is best to start with the understanding of the physical aspect of the piece/building. The student needs to be guided around the external and internal perimeter, giving a description of it and specifying the building materials and the colors, so that the student can be

aware of the shape and the dimension. After this exploration of the perimeter with beginning and arrival at a fixed point, it will be possible to focus on a deeper exploration of the internal spaces.

Every time there is a significant move around the space, it is necessary to help the person with orientation and to tell them where they are, what is in front of them, behind, on the sides and remembering to describe the different spaces.

The form and the dimension of the spaces people are going to cross need to be explained, adding a description of the ceiling or the pavements, clarifying if there are columns, windows, staircases, or other elements, how many of them and how far they are from one another. Finally, the focus can be on some significant details, making people touch an inscription, a base or a specific piece of furniture. While one is presenting and describing the façade it is important to give a clear structure to the description, proceeding from bottom to top or from left to right, depending on the type of architecture and it is best to always start from the general aspects.

Even in this phase, though, it is useful to have a relief representing the structure, so that the student or visitor can touch the things that he cannot touch in real life.

In conclusion, we can stop on details, making them available for the student to touch in case they are reachable. The decoration of a set of stairs, a balcony, a pulpit, the manufacturing of the stonework can be an important source of information.

Moreover, the other senses can contribute to the exploration of a building: the echo/rumble of sounds helps understanding the dimensions of spaces and the noises present inside can give an idea of the function of the place, of how much it is used, of how crowded it is. Once the description and exploration of the building have taken place, we can get deeper into the historical artistic details connected to the client, the historical misadventures and the possible symbolic meanings of certain elements.

In the case of being in a classroom and needing to describe to a blind student the context, there are some good practices: the advice is to focus first on the general aspects and then go over the details, do not assume that the student knows the

terminology and the first thing is to discover the building and then refer to the historical and artistic details. In this second case, though, of utmost importance is the use of models and relief drawings.There are two types of models that can be used: the volumetric and the detailed. The volumetric model replicates, in a simplified way, the main volumes which compose the building, it doesn't have many details, but it offers right away an idea of the structure and the volumetric ratio between each part of the architecture.

The detailed model, as the name says already, is a richer representation, often even bigger in size, and for this reason, it is more difficult to explore. Particularly useful are the "in section" models or the ones that can be opened, because it is possible to touch the inside, but the characteristics need to be rendered explicitly and to have their functions explained, otherwise they can cause confusion. If both models are available. The best course of action is to present the volumetric one first and then proceed to the detailed one: once the person understands the general shapes it will be easier for them to analyze details without getting lost.

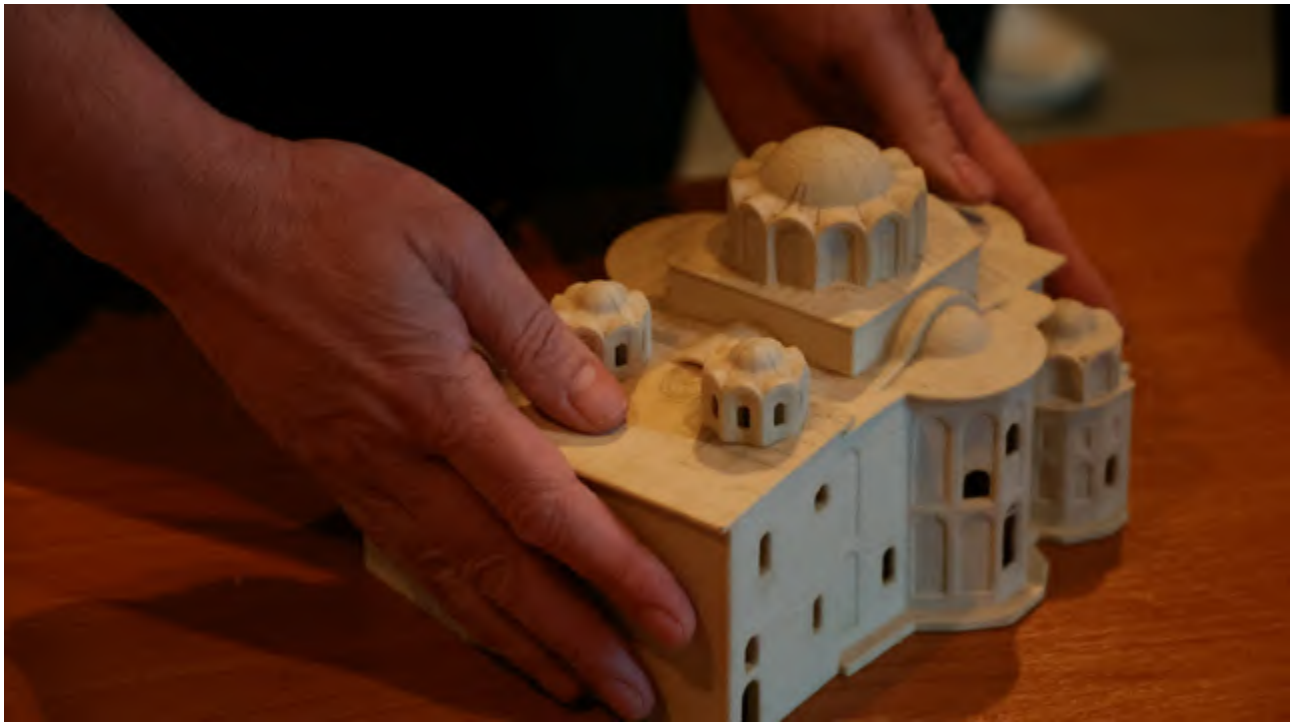
The tactile exploration of the model still needs to be accompanied by a description. It is important to state the scale so that the student can have an idea of the real size of the building. It can be helpful to make comparisons with human figures or other objects and spaces of which the dimensions are already known. The model exploration should happen in the same order that would be followed in front of the actual building; so one can start from the outside to then get inside. If possible, it would be ideal to follow the natural path of a person inside the building, and the description should follow the hand's movement.

In this case, relief drawings and models made with thermoform can be useful (especially if we're missing tridimensional models) to reproduce plans and façades. These tools are important to give awareness of shapes that would not be directly perceivable in everyday life. The graphic translation of a tridimensional object requires a series of abstractive steps, so it will be more difficult for the student to recognize the object and recreate it in his mind with a certain degree of precision. Specifically because of this, it is necessary for the tactile exploration to be accompanied by a description and, whenever possible, to be accompanied by a verification that everything has been correctly understood.

Another option which is often used is to be in the classroom without having access to aids. In this case, the recommendations previously stated are valid, but it is necessary to keep in mind that the comprehension of the chosen architecture will be mediated only by a description (either oral or written) which is going to be more specific and organized.

The first part can be dedicated to the physical aspect of the architecture, following a clear order: the complex, the plan, the outside, the façade, the inside, a detail; then it is time to add a second part on the historical-artistic context, making style and symbolic meanings explicit and adding anecdotes that can be interesting for the student.

In any case, at the end of the lesson, it would be important to make sure that the student has gained a comprehensive knowledge of the building that they explored, either through a model or "live". One of the best methods to achieve this is to ask him to represent the form of the building using clay, plasticine, or other moldable materials. Another method consists of giving shaped pieces to the student, either in cardboard, paper, wood or other materials, at least 1 mm thick, with which he can try to rebuild the space he explored through the technique of the multi-material collage.



Design

Etymologically, when we are speaking of design we are speaking of planning, in the sense of objects born to solve issues and give solutions to human needs.

Thanks to big visions and small achievements, a simple object becomes a design object, perfectly designed and crafted by architects or engineers who become designers. This change follows specific construction rules, significant and innovative materials are used and other than the mere functionality, a lot of thought is put in the research of an aesthetic value. The object becomes beautiful and functional at the same time.

Every year, following the evolution of society and of rising needs, new objects are made. With time, they become part of everyday life. They are not sacred, instead, they take their place in the home, becoming familiar things; they become meaningful, they are born to be touched and used.

The visually impaired student becomes aware of design directly through the object. The first important step: choose products that can be significant from a tactile perspective because of their shape, their material and their functionality; the tactile characteristics of the object are very important and have to always be considered.

The exploration starts with a first introduction about the history of the "industry", letting the students know the reason which brought the designer to that specific creation; it is mandatory to be aware of the social and cultural context that elicited the creation of that specific product, why it is so important and how it became meaningful in people's lives.

This first informational phase will give the student an initial general knowledge of the object and its history, preparing him for the tactile exploration. The exploration is going to be divided into steps: first a rough analysis to have an idea of the shape. The hands slowly discover the appearance and then move around the perimeter meeting the different shapes.

The research on details happens in the second phase, when the student moves

from the whole structure and puts focus on the details which make the object unique. Following the purpose of the product, we are going to discover how and why the designer chose to add certain tools specifically in that part and how every single detail is positioned with a specific practical aim.

Each detail needs to be perceived and understood during the exploration so that the user will be able to sense the importance of the object and its creation. After being aware of the perimeter and having explored the lines, the shapes, the curves and the angles, knowing that the object is tridimensional, the focus shifts to the material. The choice of material is not a trivial one when we speak about design, because it can contribute to the object becoming iconic or, in case of a wrong choice, can decrease its value. Nothing is left to chance.

Materials need to be discovered, researched, experimented with and documented. During the tactile experience, one meets and perceives the material's temperature and hardness. They can be of different kinds, for example: innovative plastics, fused metals, carved metal and processed glass and they can be used singularly or combined. After gaining an understanding of the shape, the details and the material, one proceeds, shifting the focus toward the functionality; the object is turned on and tried. Not only through the hands, but if necessary and if it is possible, through the whole body in relation to the object activating the founding mechanisms or simply using the product, to understand the actual need the object is responding to.

Another important element is the sound made by the design objects. Considering the uniqueness of the objects, their sounds can be quite useful to blind students. Each object emits a different sound or noise which characterizes it, its story, composition or its production, and this lets the user know the object also through the sound it makes while being used and handled.

In conclusion, after learning all the principles the student will be able to fully admire the aesthetic value of the object as well. The beauty rising from its history, its era and its structure will make it possible to express their taste and the sensations felt while handling the object. These sensations, subjective ones, can be influenced by different functional and structural values, but this doesn't take

from the object's peculiarity.

We can deem ourselves satisfied with the tactile reading when the visually impaired or blind student catches all the structural information and has learned all its functions.

Inclusive projects

Inclusive projects are paths targeted to the approach to art, in which visually impaired and normally sighted students can participate together. The projects can foresee a collaboration between the school/University and the museum, and they should be articulated in a series of meetings to distribute throughout the school year; it is best to avoid these moments as spontaneous and should be made a part of conscious planning.

The goals to pursue are multiple:

- For students to be in contact with art
- To raise awareness among peers about the needs of visually impaired young people
- To reflect upon the different perceptions between the realities of sight and touch
- To educate towards listening and exchanging between sighted and blind people

In general, in designing inclusive paths, it is important to consider the peculiarities of the participants, visually impaired or normally sighted alike. Usually, the easiest thing is to design accessible paths already suitable for people with a visual disability, instead of striving to modify and adapt a part just for normally sighted people for a blind person.

One example is the project "A tu per tu con l'opera" (Face to face with the artwork), created by the Omero Museum in collaboration with classes with many blind students.

The path is composed of a series of meetings distributed throughout the school

year, both in the museum and in class. The meetings can have different themes which are going to be agreed upon based on the needs of the student with visual disability. Upon agreement between the teachers and the museum educators, one artwork of the museum is chosen for it to be analyzed with the eyes and with the hands discovering history and meaning.

When choosing the artwork to analyze, the criteria to consider are the age of the students, their interests and their school programs, but also the tactile features. To make the project accessible it is mandatory that the student with a visual disability is able to experience first-hand the artwork, possibly touching the original piece. It is best to go for a sculpture rather than a painting, involving the museum or the institution that has the object in this decision.

After that, the students will try to replicate the piece to have a deeper understanding of the artist and their work.

At the end of the project, the students will dedicate the last meetings to reinterpreting the art piece, trying the change the shape, the narration and the meaning in their own way and realizing a personal interpretation.

To ensure that these phases are accessible it will be necessary to use materials that can be handled by a blind student, using clay or similar moldable materials, such as plasticine or paper, textiles and other materials with different textures to create collages with different materials. All this said, it is important to note that a blind person needs more time, both in the exploration phase and in the workshops.

Another type of inclusive project is the “sensory totem” to help visually impaired people to discover monuments. Originally designed for 6 to 13 year old children, it can be adapted to older students. The composition for the students is a tactile book which describes the chosen architecture through relief images, multi-materic collages and text in black and Braille.

The work can be integrated with a model in clay or in another material, which shows the basic elements of the structure and with audio guides describing the architecture.

Ideally, these aids will remain near the monument, available for visitors, located on a table or a bookstand to position inside the architecture itself, to facilitate the reading and exploration for visually impaired and blind people. This path can be interesting for classes with blind students as well, so they will be able to make sure that the images and the texts created by their classmates are accessible.

It is fundamental to have materials with contrasting textures, at least 1 mm thick and that they are positioned on a neutral background.

These projects have been designed for an Italian audience, where students with visual disabilities go to school with normally sighted children; but they can still be adapted to other situations, involving families and groups of friends.

Sculpture

To explore a sculpture through touch is one of the most important and formative experiences for a blind student; touch needs to be trained and being an analytic sense, it focuses on very small parts of a surface. It is important to note that the student might not have a comprehensive artistic education and therefore not have a direct knowledge of the topic, so when the person is exploring the sculpture there might be a lack of training and experience.

The first thing to do is to offer informational data on the artwork: title, author, date, size and material; the next phase is to give information on the subject of the artwork, if it is an abstract piece or a representational one, if the statue belongs to a sculpted group, of a high-relief or a low relief.

If we consider a single statue, it is best to describe the body first and how it is positioned, then conclude with the face and the details. Still, what really matters is that the shaping of the tactile image happens in phases.

First of all, there is a fast and rough exploration of the whole piece, to create a comprehensive scheme of the sculpture; the discovery of the details happens at a later time because they take a lot more attention and memory, and the sense of

touch, if it is well-educate, can really catch very subtle differences.

The creation of this image is an operation that implies a huge effort of the intellect, a good capacity for abstraction and a good memory. It happens one piece at a time.

Each fingertip creates a relationship with the limited portion of the sculpture they are in contact with, but being an analytical sense, it helps the student catch the details. Moving slowly, the hands will multiply and widen the explored surface managing to build a full sculpture, to the point of reaching a complete knowledge/ awareness. The process starts with a synthetic image, proceeding then with the exploration adding details, and subsequently giving more definition to the sculpture.

Compared to a fully rounded sculpture, a person encounters more difficulties with a bidimensional figure, either in high-relief or low relief; that happens because being on a flat surface, it is difficult to comprehend the surface and to complete the tridimensionality of the shape one is touching.

Also, it is quite different to touch an abstract piece or a representative one; the differences are rooted in the fact that, when a blind person touches a figurative subject it could be easier for them to recognize the features, for example making comparisons with their own body.

In any case, having a guide or the help of audio descriptions is essential. The guide will have to follow the movement of the hands and accompany with the narration. During the narrative part, the rhythm should be fast, the tone of voice should be catchy and the notions have to be accurate and interesting. This way, the attention will be captured and the different sensations are going to be supported as much as the information learned through the hands. Another fundamental to understanding the sculpture is the knowledge of the symbolism typical to the different historical periods or the artistic styles.

The contact of the hand with the sculpture can generate a wide variety of sensory nuances: the temperature, the solidity, the weight, the texture are only perceivable through the sense of touch. Touching the sculpture with both hands,

moving along the contour, catching the details and understanding the shape and the features can either make pleasant or unpleasant the contact. So, for the blind person it is even more important to be the recipient of emotions to create their own emotions.

Painting

Painting is much harder to explore for a blind person because it is a purely intellectual matter. The colours, lights and shadow tricks representing the essence of painting can hardly be communicated to a blind person, but it is possible to try to pass down the content of a painting and its historical-artistic and symbolic meanings.

There are also a series of tools helping at least with the basic shapes of a painting.

Among them are:

- Translations made with the perspectival bas relief: in this case, the painting is reproduced tridimensional through a bas relief,
- Relief drawings made with different techniques: the ones that are cheaper and easier to carry than the low relief, but they are less efficient and much more difficult to explore in autonomy, since they almost always require the help of a person who can guide the hands in the interpretation of the drawing.

In both cases, it is implied that the reproductions are not identical to the original painting, instead, they are translations in which there are modifications and a synthesis of the original piece. While the hands are exploring the relief drawing or the low relief, it is important to add a description of what the user is touching and not just the description of the painting.

To start, state the author, the title and the size of the reproduction (and of the original painting as well), if the orientation is vertical or horizontal, give indications on the subject and specify if the artwork is representative or conceptual.

After the person has touched the perimeter of the piece, to give an idea of the area in which the hand is going to move, one can proceed to try to understand

the shape of the main subjects and of the main lines structuring the image, then proceed to the minutiae. In this second phase, it is possible to invite the student to progress following sections (from bottom to top, from right to left, etc.)

The description, as previously stated, should keep up with the hands of the person who is touching, respecting their timing and contributing to the understanding of the artwork.

The language should be specific and essential, avoiding metaphors and vague terms, especially when they don't add useful information for the comprehension of the painting.

The colours should be stated because they could be familiar to a visually impaired person or to someone who lost their vision later in life. They can be useful to someone who has been blind since birth because they could provide them with additional information for their conversations with normally sighted people.

The use of synaesthesia, attempting to "describe" a colour, can be misleading because it is based on personal impressions. After the shapes, the person who is touching the piece will be able to interpret the theme or the protagonist of the piece and it will be time to analyze the potential historical-artistic and symbolic meanings.

A problem which might arise is relative to the concepts of perspective, point of view, optical distortions in general and how these things are represented in a painting. It can be difficult for a student who is blind from birth to understand why the more distant objects are smaller. In that case, the exploration of paintings should be anticipated by a didactic work aiming to teach some concepts that are not intuitive for a blind person.

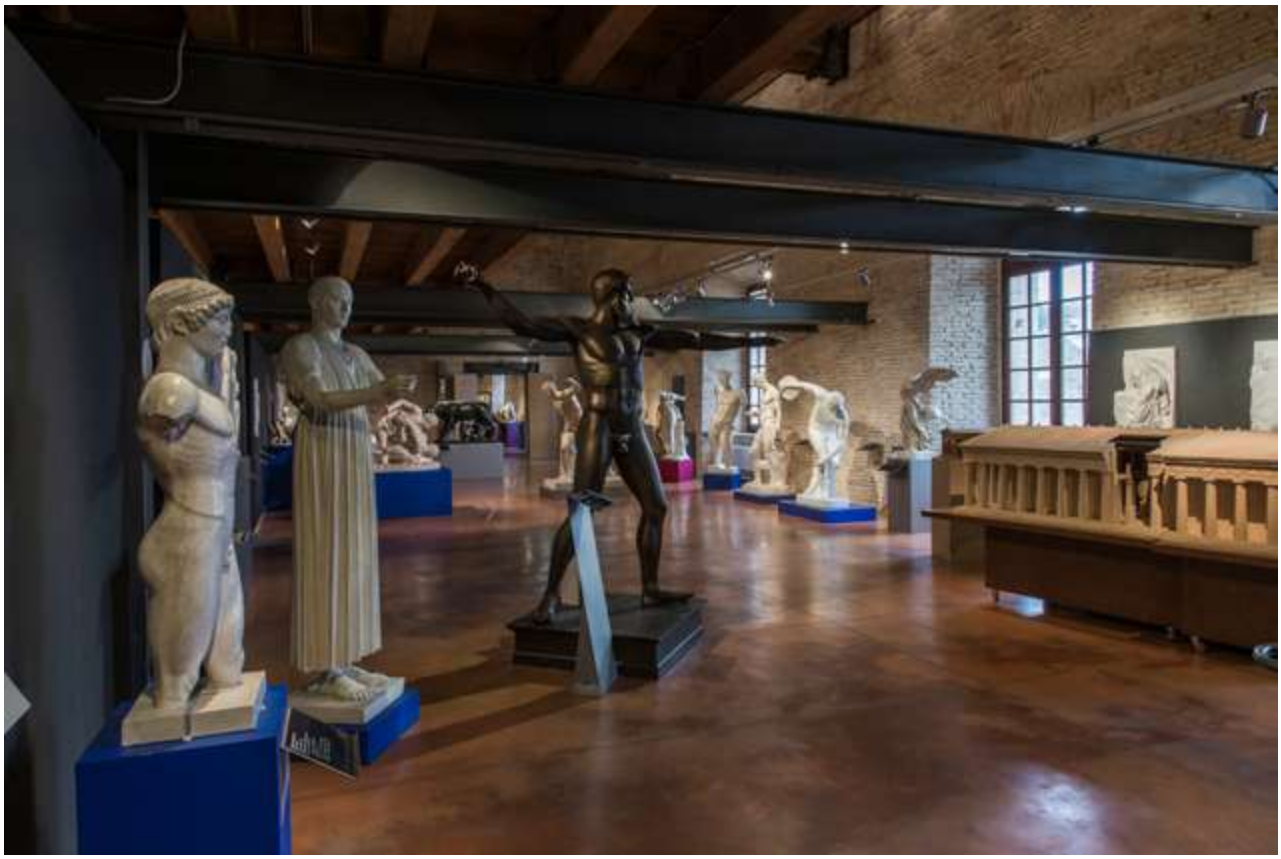
These precautions remain valid even with a description of a painting in which there are no aids of a relief drawing or a low relief. If that is the case, the verbal description should be even more accurate, essential and well-organized, avoiding a useless informational overload. The word needs to be able to compete with the images in terms of precision, distinctness, and sharpness. It is not enough to write well, it is necessary that the words correspond to the description.

If the painting considered represents a human figure it can be useful, both for the comprehension and the verification of the learning ability, to invite the student to assume the same position of the person portrayed, as with sculpture.

If in the work there are more characters, it is possible to ask more people to participate and In case of younger participants there is the possibility of inserting some of the objects present in the scene; this mode of representation will help both the blind students and the normally sighted ones to understand better the settlement of the painting and the characters' positions.

Another way to verify that they have learned, which costs more in terms of time and energy, but applicable to conceptual works as well, is to have a reproduction of the subject using a rubber or clay base, creating a low relief.

Chapter 4. The accessible museum: a fundamental condition



Introduction

This chapter confronts the theme of accessibility in the museum and cultural field following the Italian Ministry of Culture drafted in 2008 and updated in 2018, after a series of other measures. Guidelines to create a Plan for the Elimination of the Architectural barriers (aka P.E.B.A.) in museums, monumental buildings, archaeological areas and parks.

In 2017 the Direzione Musei of the Italian Ministry of Culture created a Work Group to provide measures to overcome the cultural, cognitive and psychosensory barriers present in the places of culture overseen by the Ministry. (Executive decree n. 582 of the 27th of June 2017). The work group came out with guidelines which were published on the 6th of July 2018.

With the term “architectural barriers” we do not only refer to the physical obstacles preventing people from easy mobility and the use of tools. We are referring to perceptive obstacles related to the lack of precautions and useful signals for orientation, recognising the places, and understanding cultural activities and contents.

The guidelines are divided into the following attachments:

- **Attachment 1** – Plan for the Elimination of Architectural Barriers: a strategic plan regarding accessibility in museums, monumental buildings, archaeological areas and parks
- **Attachment 2** – Fruition and accessibility: juridical profiles and implementation tools
- **Attachment 3** – Glossary

Attachment 1 - Plan for the Elimination of the Architectural barriers (aka P.E.B.A.) in museums, monumental buildings, archaeological areas and parks

The guidelines are a cross tool of juncture between different management plans, for example, security, fire prevention system, staff formation, financial documents, as well as the annual scheduling of activities and the planning for the retrieval and the restoration of the heritage.

It is an interdisciplinary and relational approach to expanding the culture of accessibility and of inclusive designing. The aim is to optimize accessibility and grow the visitors’ satisfaction in terms of welcoming, fruition of spaces and activities. The plan, organised into objectives, actions and projects, draws inspiration from the seven principles of Universal Design.

The following is an overview of the guidelines:

- **Accessibility from the outside**

Website: respect the national and international rules regarding accessibility, be a cultural space coherent with the mission, ensure the maximum level of fruition, offer information and knowledge, encourage the participation to contents.

Contacts: guarantee an information point to which the user can rely on either in person or online to get all the information they need about the museum or the institution (with a number dedicated to accessibility with trained staff)

Reachability: guarantee that the museum is easily reachable by collaborating with local institutions to provide updated signals, sidewalks, reserved parking spots etcetera

Access: ensure easy access to the museum with clear indication of the entrance and with all the information visible on the outside.

- **Information and welcoming**

Entrance: make the entrance a welcoming and comfortable space in which it is also easy to orient rapidly (make wheelchairs available, a diaper changing station, audiovisual information, etcetera.)

Tickets/Information point: make clear where to buy tickets, how to enquire and receive information on the cultural institution and related cultural services.

Reception services: guarantee welcoming services to different kinds of public. Communicate the accessibility offer (Alzheimer groups, guides in ISL, tours for blind people, give access to dogs, etc)

Wardrobe: make the wardrobe service available to every visitor with full autonomy (For example: lockers with highly readable indications and Braille translations)

Orientation: make sure the visitor is aware of where he is at all times. In case of emergency, make sure it is possible to leave rapidly and that everyone can proceed safely (tactile maps, wayfinding, accessible signals, etc.)

Cafeterias/Bookshops: ensure full accessibility to the spaces and the tools available to the general public, comfortable and easy fruition of spaces and of furniture (tables at different heights, tables and refreshment counters with a space reachable with a wheelchair, etc)

Aids to overcome specific disabilities (permanent or temporary): furnish ideal

solutions to improve the levels of accessibility of the museum.

Staff: ensure quality services for the visitors guaranteeing an adequate welcome to people with special needs (recognizable and formed).

- **Horizontal and vertical distribution**

Overcoming the elevation differences: guarantee secure access to all the museum's floors through staircases, ramps, elevating platforms, elevators.

Horizontal distribution: Allow the full use of the spaces through horizontal connections, eliminate obstacles along the path and foresee sessions for hypothetical fatigue.

- **Museum experience**

Museum paths: Allow the full fruition of spaces and museum contests in an inclusive way, foresee a schedule with trade associations, evaluate the tactile explorations from people with a visual disability and promote the welcoming of the public.

Exhibition devices: ensure the full fruition of museum objects, avoid fluctuations and falling of the exhibited objects, evaluate the objects' visuals and collocate the communicative equipment correctly.

Multimedia stations: Ensure a wide fruition of the digital content. Guarantee the full accessibility to stations, foresee subtitles and audio descriptions.

Outside museum spaces: Allow quality and secure fruition of the exhibition paths. Ensure the paths are not too long, accessible and secure in addition to ramps with adequate slopes.

Communication: Define a communication strategy which is coherent with the cultural institution's mission. Have a visual design approach which takes into account environments, texts, and images. Provide understandable text to all kinds of public, multilingual brochures, Braille panels and improve the information through the website. Consider social networks as a tool to reach and get into a relationship with new audiences and realize different promotion activities.

- **Safety**

Exhibition paths: Make the museum's places and activities safe, guarantee that the spaces are clean, signal possible slopes and install audio devices to signal the end of stairs or ramps.

Emergency: Ensure a fast response to emergency for a rapid securing of people and cultural heritage. Adopt a Plan of Safety and Emergency and form the staff to execute the necessary procedures in case of an emergency.

- **Managing procedures**

Maintenance: ensure the correct functioning of devices to widen the accessibility to museum's spaces and contents.

Monitoring: define a mechanism which can verify the levels of accessibility over a certain amount of time such as the collaboration with professional associations and the completion of an appreciation test from visitors.

Following the guideline each Italian cultural instituition creates and publishes their own PEBA following a three-year schedule, where it defines a scale of priorities in relation to the economic and human availability.

Attachment 2 – Fruition and accessibility: juridical profiles and implementation tools

The attachment contains regulatory measures and acts related to disability and cultural heritage, adopted on an international, European and Italian level through six different points of view:

- Person with a disability
- Accessibility
- Universal design
- Formation and continuing education

- Monitoring
- Involvement and consultation

Attachment 3 - Glossary

The Glossary means to uniform and clarify the key concepts of accessibility and full fruition of cultural heritage.

Some museums' experiences (Work in progress)

- Contemporary Art Museum in Thessaloniki
- State Tactile Omero Museum
- Typhlological Museum in Madrid
- Anteros Museum in Bologna

Chapter 5. Inclusive and awareness-raising artistic events: Biennale Arteinsieme

Social integration and inclusion of people with disabilities in the fields of education and the arts and cultural heritage need to be shared issues among every political and social stakeholder. Younger people can play a fundamental role in laying the groundwork for an open, inclusive society which is aware of everybody's needs.

Promoting awareness by running campaigns and actions for knowledge of this theme is of the utmost importance. The Omero Museum, since 2003, has established the "Biennale Arteinsieme – culture and cultures without barriers", which happens every two years and is an important national event which can be extended on a European level with a version specifically designed for a European audience.

The year 2003 was the European Year for people with disabilities, and the Biennale was created as a collective exhibit of artists and students of the then State Art Institute of Ancona, wanting to promote social inclusion through the numerous possibilities offered by art.

From 2011 onwards, "Arteinsieme" is sponsored by the Omero Museum on a national scale and it is targeted to museums, places of culture and the education field, with schools from kindergarten to Art Schools and Academies of Fine Arts.

The event has included distinguished artists as poster people: in 2011 the sculptor Walter Valentini, in 2013 the artist Michelangelo Pistoletto, in 2015 the sculptor Giuliano Vangi, in 2017 the Master Mimmo Paladino and in 2019 the sculptor Rabarama, in 2021 Cracking Art.

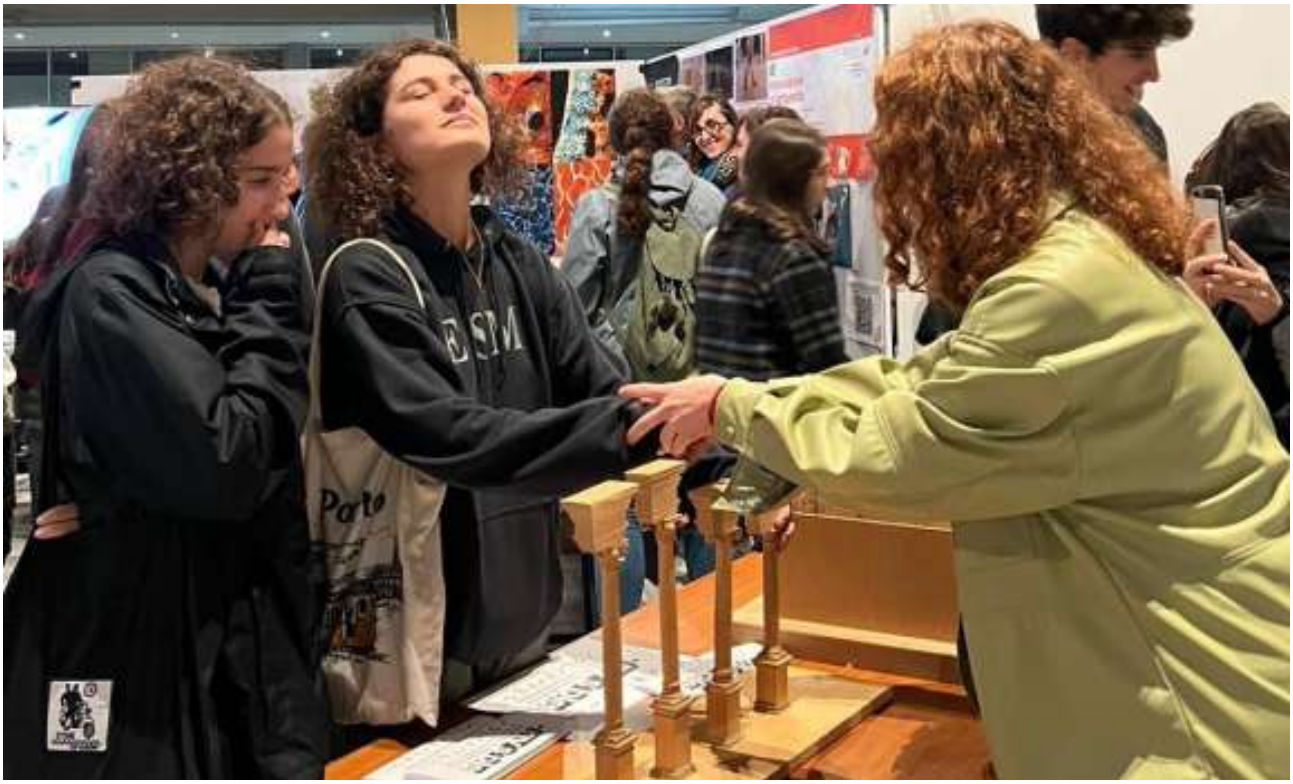
In schools, the students are called to participate in contests which require the crafting of works and multisensory artistic products available also through touch, inspired by the philosophy of the poster artist. The works of the students selected are then displayed along with the artworks of the poster artist who, together with the Museum's President, proclaims the winner of the competition: a unique experience.

The museums and the places of culture are invited to create accessible and inclusive activities to promote the widest possible participation of a diverse audience: both people with disabilities and people from different cultures.

A true call to arms of which the Omero Museum is a promoter, offering its technical support and promoting each museum's activity with national coverage to the associations and on its online channels.

The Biennale promotes themes such as the valorization of artistic heritage, accessibility to art and cultural heritage, the enrichment of the aesthetic experience through a multisensory approach to art, the respect and awareness of diversity and different cultures, spreading the Omero Museum's message on an international level and promoting the opening of places of culture to everyone. This idea is based on the conviction that art has a strong social power to be something that brings people together.

Arteinsieme supported by the State Tactile Omer Museum – TACTUS Centro per le Arti Contemporanee, la Multisensorialità e l'Interculturalità, in collaboration with the Ministry of Culture, the Ministry of Education and the Mannucci Art Institute from Ancona.



Chapter 6. About In-VisIBLe project

Accessibility is the core of one of the areas of action of the European Disability Strategy 2020-2030 and culture is one of the most crucial contexts in which accessibility is declined, because of its centrality in the growth of both the individual and the society. Nevertheless, the level of education of persons with disabilities continues to be largely lower than the one of persons without disabilities. Despite the effort carried out so far, it is still necessary to adopt positive actions to promote access and guarantee that Higher Education contents are adapted and accessible to the largest possible number of people with special needs.

In-VisIBLe (Innovative and Inclusive learning tool for Visually Impaired and Blind people) is a EU funded project (Call 2021 Round 1 KA2 – KA220-HED Cooperation partnerships in higher education, project 2021-1-IT02-KA220-HED-000031139) which aims at addressing this pressing and growing need for inclusion of people with special needs, specifically by improving their access to Higher Education contents by using and implementing innovative tools for communication and fruition of cultural contents.

As suggested by its name, In-VisIBLe is focused on visual disability: a real access to culture for visually impaired and blind people (henceforth "VIB") is an important issue and, when it comes to Higher Education, inclusion is especially challenging for VIB in those fields of knowledge that apparently exclude them without remedy, the so-called "visual" arts. Among the disciplines related to visual arts, the project is focused on History of Architecture, because it is a cross- sectorial discipline which is present in almost all the bachelor/master degrees in this field.

The main objective of In-VisIBLe is to equip HE courses in History of Architecture with advanced technological solutions, interactive pedagogical methods and innovative didactic tools, that make them accessible also to students with visual disabilities.

Another important goal of the project is to promote the collaboration between HEIs and a broader cross-section of society on the issue of inclusion of VIB people.

The mixed composition of the partnership ensures that the project results benefit from different fields of expertise (Architecture, Virtual reality and 3D Modelling, ICTs, Educational Sciences, Inclusive Education): the consortium includes 3 Higher Education Institutions, Alma Mater Studiorum University of Bologna UNIBO (Italy), Yedetepe University YU (Istanbul, Turkey), Akademia Humanistyczno-Ekonomiczna w Łodzi AHE (Lodz, Poland), 1 international research institution, Information Technologies Institute of Centre for Research and Technology Hellas CERTH (Thessaloniki, Greece), 1 public entity for the blind, Center for Education and Rehabilitation for the Blind CERB (Athens and Thessaloniki, Greece) and 1 renowned museum for blind people, Museo Omero MO (Ancona, Italy).

In-VisIBLe project is expected give to all the persons directly or indirectly connected with it the opportunity to foster inclusion in education, promote accessibility to culture and improve HE teaching and learning quality and innovation. In doing so, cultural accessibility can fulfill its role and become one of the most strategic and effective tools for creating a truly inclusive society.

https://site.unibo.it/invisible-eplus/en

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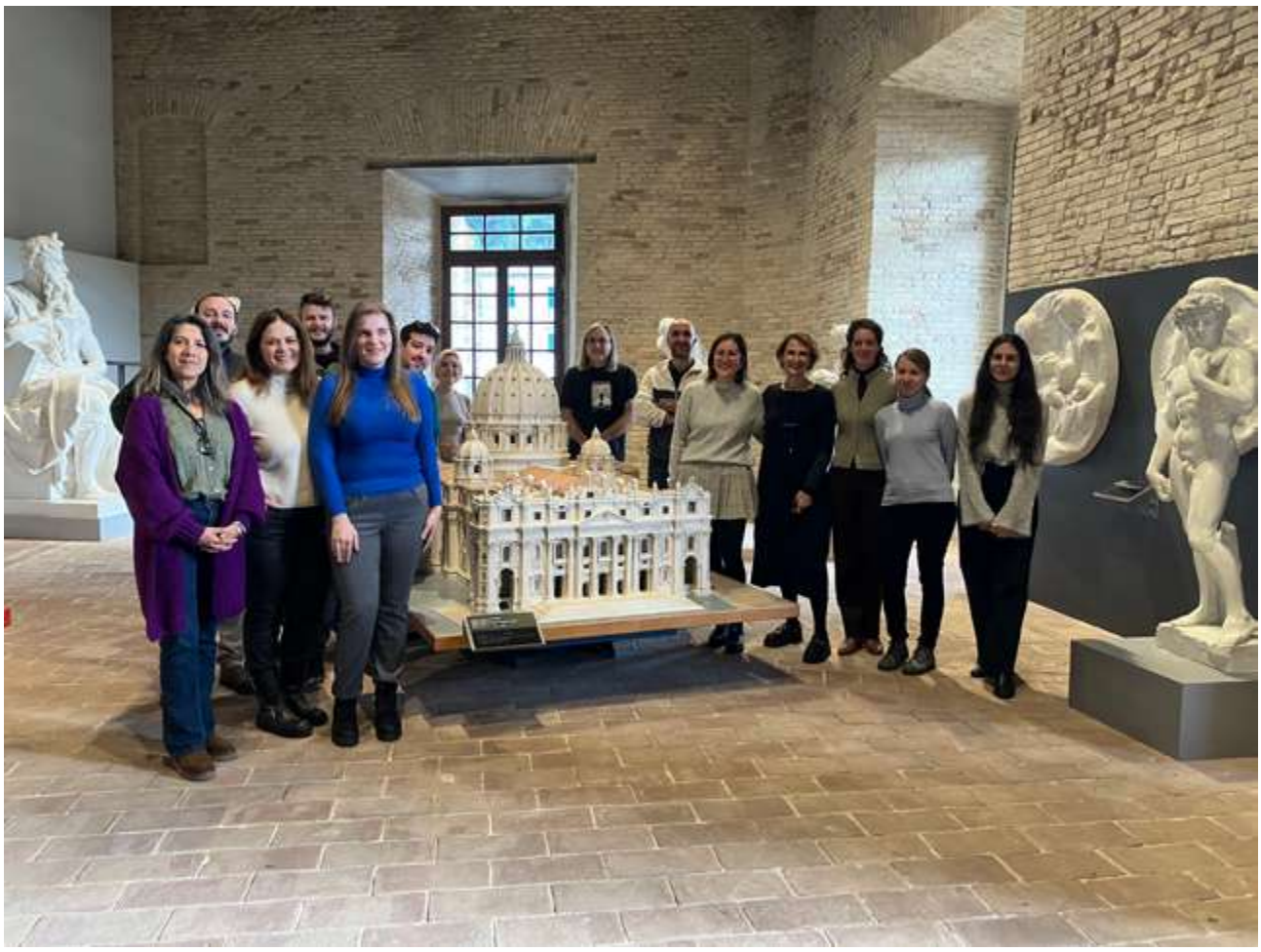

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