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*Report delle attività  
di ricerca*

BEYOND  
ALL LIMITS

INTERNATIONAL CONFERENCE  
ON SUSTAINABILITY IN ARCHITECTURE,  
PLANNING, AND DESIGN  
11-12, 13 May\_2022

*edited by  
Claudio Gambardella*

V: Università  
degli Studi  
della Campania  
*Luigi Vanvitelli*

*Dipartimento di Architettura e  
Disegno Industriale*  
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# BEYOND ALL LIMITS

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on Sustainability in Architecture,  
Planning, and Design

edited by Claudio Gambardella

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Università  
degli Studi  
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*Luigi Vanvitelli*

*Dipartimento di Architettura e  
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**RR**

**Research activity report**

# BEYOND ALL LIMITS

Proceedings of International Conference on Sustainability in Architecture, Planning, and Design

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# Compared spatial interpretations in the Edoardo Chiossone Museum of Oriental Art

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## Abstract

*The communication skills of the architecture allow the possibility to regulate the perceptual interactions between the user and the space, contributing to the definition of mental images that are generally associated with the user's visual abilities. Through the study of the explorations that took place inside the Edoardo Chiossone Museum of Oriental Art, we intend to compare the ability of people with visual disabilities and not to understand and mental reconstruct of space: a process that materializes in mental images obtained from visual and substitute perceptions attributable to multisensory theories. Understanding the most incidental aspects of this process through comparison allows us to emphasize the role of multisensoriality: a component capable of enriching exploration for everyone, expanding the concept of inclusiveness to the possibility of perception of architectural qualities by blind people.*

## Keywords

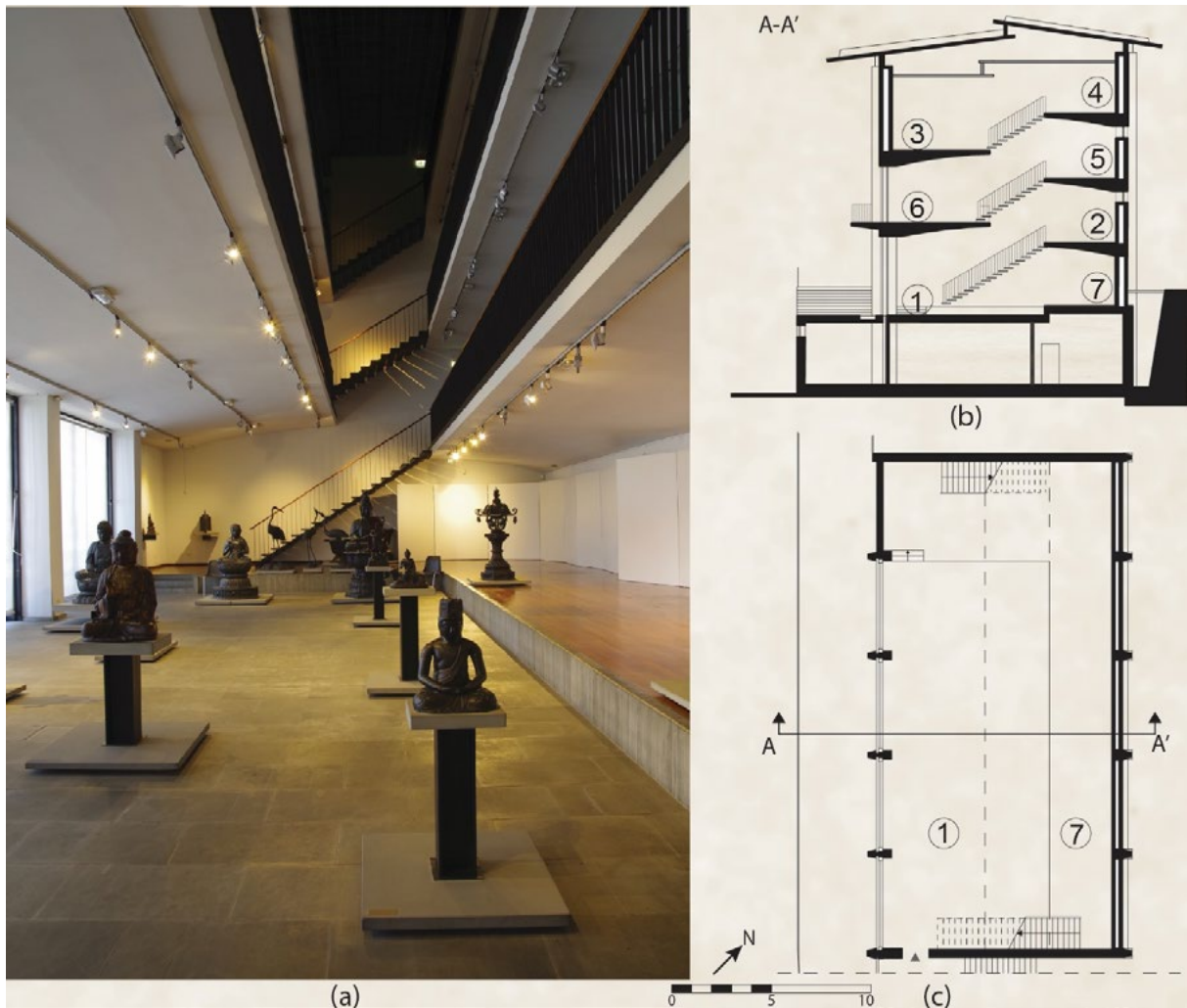
*Inclusivity space, Blind people, Perception, Mental Image, Edoardo Chiossone Museum of Oriental Art.*

## 1. Introduction

The following contribution intends to show the different interpretations of a museum architecture, the Edoardo Chiossone Museum of Oriental Art (Genoa, Italy), by sighted and blind people. The building analyzed, as well as being a reference for Italian museum architecture (Spesso, Porcile 2019), hides a spatial enigma, determined by a path that is not immediately recognizable.

For the development of this theme, it is necessary to understand the perceptual characteristics mediated by vision (Arnheim, 1974; Elkins, Fiorentini, 2020) and at the same time highlight the importance of multisensory perception (Pallasmaa, 2005; Spencer, 2020). This approach enriches the perceptual experience for everyone and plays a fundamental role in the field of visual impairment and inclusiveness. The literature proposes various interaction ways between the built environment and the blind person (Devlieger et al., 2006; Meuser et al., 2019), with the main objective concerning physical accessibility, not contemplating the sensations obtained during the navigation of the architectural space. In the present study, on the other hand, we intend to use the concept of mental image which is able to express the capacity for understanding and pleasure in relating to architecture, and that foresees the influence of multisensoriality (Mallgrave, 2015), which is evident in the case study analysed.

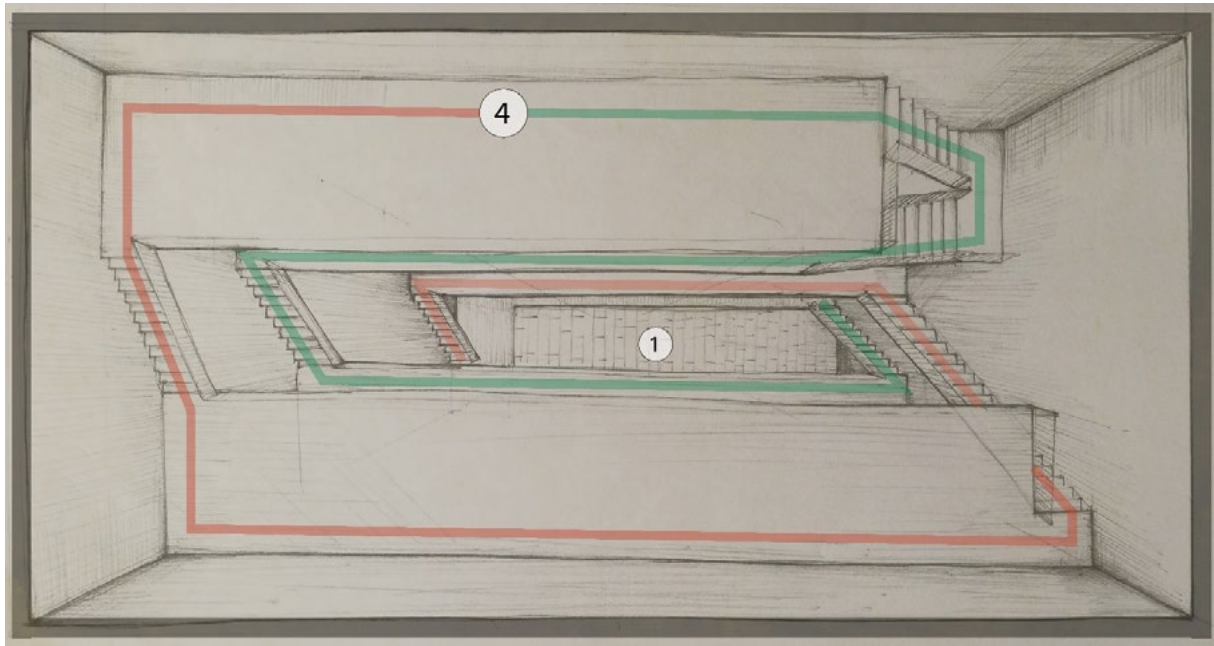
The considerations were developed following research that is being carried out on the building through the use of questionnaires proposed during the exploration and at the end of the path which are aimed at both types of users (people with visual disabilities and not).



**Fig 1.** The Edoardo Chiossone Museum of Oriental Art (Mario Labò. Genoa, Italy, 1948-1971): a) Ground floor photo; b) Section AA'; c) Ground floor plan (by Author)

## 2. The Edoardo Chiossone Museum

The Edoardo Chiossone Museum of Oriental Art (Mario Labò. Genoa, Italy, 1948-1971) fits into the urban park of Villa Di Negro and houses an important collection of Japanese art (Failla, 1996). The interest to this project is also determined by its relevance in the historical context of Italian museum architecture, being the first museum built from scratch after the Second World War (Lanteri Minet, 2021). The building is small in size and has the most interesting place in the exhibition hall; the latter is composed of cantilevered floors that develop along the major sides leaving a central void at full height [Fig. 1]. The apparent formal simplicity of this space hides the complexity of the path: in fact, the connecting stairs between the floors draw a path of ascent and descent that do not coincide, in an arrangement that is difficult to understand from the ground floor and which reveals itself only during the exploration. These compositional aspects, together with the multisensory components present, are particularly suitable for illustrating the objective of this contribution.



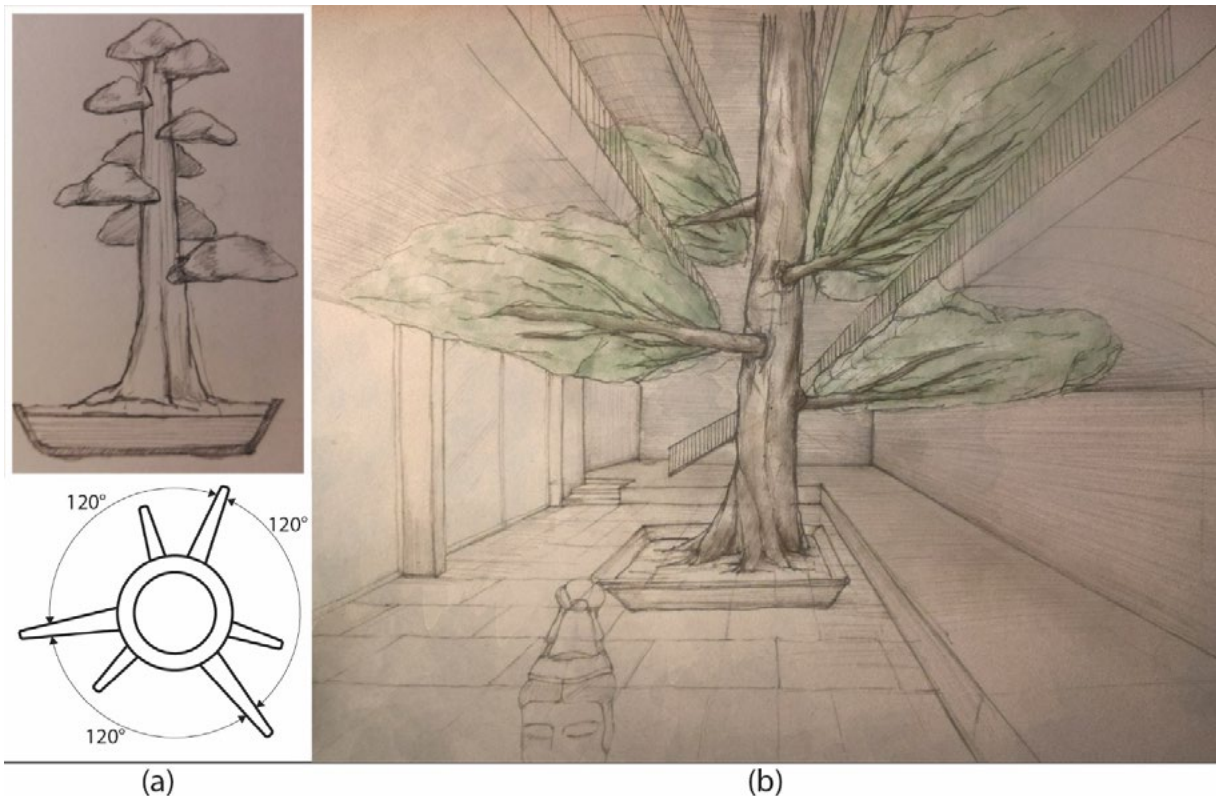
**Fig 2.** The museum itinerary: the ascent in red, the descent in green; a path that can be traced back to the double helix of stairs at St. Patrick's Well (Antonio da Sangallo il Giovane. Orvieto, Italy, 1527-1537) (drawing by the author)

### 3. Visual Suggestion

"Architecture is a constructed mental space": the statement of the Finnish architect Keijo Petäjä, reported by Juhani Pallasmaa (2011, p.17), provides for the conjugation of the experiential components with the multisensory ones. This last aspect is often placed in the background, bringing out only the visual component, because it is considered the most immediate and effective. The binomial of perception-vision is rooted in Western culture (Elkins, Fiorentini, 2020). The characteristics of the Chiossone Museum also make it possible to investigate the visual aspect and its impact for the construction of a mental model, highlighting how dynamic exploration constantly modifies the spatial prefiguration recognizable in its entirety only at the end of the path. Once you pass the access passage to the exhibition hall, the connecting stairs to the upper floors are clearly visible: a vision that is reflected in the visitor's mind with the possibility of reaching the galleries following a sequential order, determined by the alternation from one side to the other according to a vertical zigzag movement. The initial vision triggers an instant spatial recognition system that defines a mental model capable of predicting how space will develop (Casale, 2018, p. 103). This premonitory perception is denied once the first flight of stairs has been passed: in fact, walking through gallery 2, the path is recognized, understanding the non-sequential alternation of vertical connections. The final reconstruction comes unexpected as it is unusual and different from what was initially seen and imagined. The vertical movement along the stairs allows the change of point of view, which is fundamental for understanding (Holl, 2000) and thus offers views which, with the continuation of the journey, allow to identify the distinction between the two paths. This unusual spatial conformation can evoke the image of the St. Patrick's Well in Orvieto (Antonio da Sangallo il Giovane. Orvieto, Italy, 1527-1537). The sixteenth-century double spiral staircase, in the Chiossone Museum, is transformed into a linear path that can be inscribed within a straight parallelepiped, with the two directions of movement that intertwine to meet only at the upper end of the building in correspondence with gallery number 4 [Fig. 2]. The contact point guarantees the continuity of the path and presents itself with two flights of stairs rotated

90° with compared to the others: a different spatial arrangement that makes this crucial passage even more recognizable. This analogy is relevant and effective for unequivocally describing the building, but it is an image that is still closely linked to visuality.





**Fig 3.** Museum-Nature relationship: a) Chokkan erected bonsai structure, upper bonsai front, below Plan; b) Reconstruction of a mental image by person with visual impairment (drawing by the author)

#### 4. Multisensory suggestion

As we have said, the definition of a mental image is not identified only by the visual component but is a process determined by bodily involvement (Holl et al., 1994), as also demonstrated by neuroscience developments that have revealed the functioning of neuronal relationships within the spatial perceptual process (Mallgrave, 2015). Contributing to this process are environmental factors, often attributable to the natural world, and which the architect Peter Zumthor (2006) defines as atmospheres.

In the field of visual impairment, multisensory experience assumes great importance and it is in fact thanks to the collaboration between the senses that the relationship with the environment takes place.

Touch and hearing can be considered among the most effective for architectural perception and their interaction allows us to understand space (Empler, 1997) and to obtain specific dimensional information (Càndito, 2020).

The research carried out aims to understand the most incidental aspects for the process of building a mental image of the museum. The blind person during the exploration phase activates the collaboration of all the senses, recognizing, for example, the dimensional differences between the access volume and that of the exhibition hall, in which is able to distinguish even the large empty full height space; this ability is determined by the sounds of voices or one's footsteps, which propagate and reflect with different intensity depending on the distance from the person.

Dynamic exploration allows us to highlight some determining factors for the mental image and attributable, for example, to the relationship with nature, which is revealed inside the building through the materials. The flooring of the architectural space is mainly composed of wood, which, when stepped on, emits pleasant sounds that can stimulate the imagination of the blind, thus becoming an important reference. This aspect was particularly evident during the exploration and led a visually impaired person subjected to the questionnaire to associate the museum with the structure of a type of bonsai. The well-known Japanese method of processing miniature trees (Lesniewicz, 1988) contemplates, in fact, the "Chokkan Erected" treatment characterized by a main trunk and branches alternating with each other



and arranged parallel to the ground [Fig. 3a] (Ricchiari, 2018). This metaphor can combine the main aspects of the building: the spatial structure with staggered floors and the reference to the collection hosted which is also manifested in the relationship with the neighbouring park.

This metaphorical image was drawn to illustrate in a visual form what is perceived by the person with disabilities. The interpretation proposed through the drawing materializes what is perceived inside the building, placing the tree in the centre of the exhibition hall which, with its ramifications, interacts with the architecture [Fig. 3b]. The mental image can thus find a representation that allows to evoke the synaesthetic component determined by the interpretation in the absence of vision, outlining a more engaging spatial concept.

## 5. Conclusion

The comparison between different kinds of users reveals meeting points and divergent aspects within the perceptual process: differences that show the more incident aspects in the two interpretations. The St. Patrick's well memory is a strictly retinal reference, which represents a well-known and immutable image. This space constitutes a reference to the distributive logic of the museum Chiossone, revealing the importance of vision to define the mental image. Another aspect concerns the interpretation of a person with visual impairment, which reveals a multisensory involvement capable of combining the compositional balance of architectural and natural forms, interpreted in a way capable of identifying all the main components that make this building special, in a deeper and more synaesthetic perception. This text highlighted the ability of people with visual disabilities to understand the space of Museum Chiossone and enjoy its qualities in analogy to a sighted person: this aspect is essential for expanding the inclusiveness of the architecture, also extending it to the perception of space qualities.

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