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Installing and playing sculptures: to draw interactions with the natural environment

Alice Palmieri
Architect, PhD, and researcher at Department of Architecture and Industrial Design – University of Campania 'Luigi Vanvitelli'. Research focuses on cultural heritage enhancement and communication, emphasizing visual perception and fruition. The study of interpretative processes explores the visual dimension and storytelling strategies to improve the broad concept of heritage accessibility.

Rosina Iaderosa
Architect, former multi-year research fellow, and currently a PhD student in the Industrial Doctorate Program in Technologies for Resilient Living Environments – DADI (University of Campania 'Luigi Vanvitelli') SSD CEAR-10/A. The primary focus of research, including multidisciplinary approaches, is the study and enhancement of natural and/or human-made living environments through the use of ICT.

Architecture and design, from a planning point of view, are not limited to designing spaces, but are responsible for influencing our behaviour and our interaction with the surrounding environment. In natural areas, such as the 'Cratere degli Astroni' Nature Reserve, the setting up of space and the design of the dynamics of fruition must be done with extreme discretion, in order to preserve the ecosystem and, at the same time, promote conscious ecological education.
It is from this reflection that the "Natwork" project was born, an initiative that aims to enhance 'poetsharing' activities within the reserve. Through writing and sharing texts, visitors, especially young people, are invited to experience forest therapy, thanks to a deep immersion in nature that stimulates connection with the environment and the growth of ecological awareness.
The project takes the form of two installations, consisting of circular and overlapping elements, made of local materials in harmony with the natural context. The choice of a deep, contrasting hue is intended to stimulate the imagination and interaction with the space.
Natwork is inspired by 'playing sculptures' and forest therapy practices, offering a playful-educational experience that combines play, nature and personal growth. The aim is to foster experiential learning, stimulate educational play and socialisation, all in a context that promotes respect for the environment and psycho-physical wellness. The Natwork project represents an innovative example of how architecture and design can be used to promote connection with nature, environmental education and individual and collective wellbeing.

Keywords:
installing; interaction; forest therapy; circle; edutainment

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INTRODUCTION

Design thinking represents a cognitive process that engages the logical, artistic, and scientific spheres, with the goal of crafting a space of interaction in the context of architecture and design. This process also considers, and perhaps today more than ever, the relational and perceptual dimensions.
Starting from this premise, the intended outcome is the identification of forms, structures, or objects capable of shaping spaces dedicated to collective living, in conditions that can be described as pleasant and conducive to well-being (Cameron et al., 2013). This entails not only envisioning and anticipating the configuration of spaces, but more importantly, foreseeing the behaviours that will emerge within them. Indeed, dynamics of movement, observation, or simply "being" are influenced by the spatial arrangement, which suggests possible modes of interaction with the environment. As Riccardo Falcinelli aptly explains, "interacting with the world is never a neutral act; rather, it is primarily an emotional one. Things are not merely observable or touchable; they are either threats or opportunities" (Falcinelli, 2011, p. 121). Thus, with the aim of making the conception of each new space an opportunity, it becomes essential to recognize that the design process has humanity as its interlocutor and its goal is the improvement of living conditions and quality of life.
In its initial definition, industrial design aimed to produce mass-manufactured products, with a focus on technical issues, which at the time were still largely unexplored and in an experimental phase. Once the technical dimension became more established, designers shifted their attention to the semantic and cultural aspects of products, concentrating on the user and the modes of interaction rather than on the object itself. "This user-centred focus, understood in an evolutionary sense, is expressed in design through various approaches, ranging from user-centred design to design for all, from co-design to design for interaction. Indeed, in each of these approaches, one can identify a common denominator: the recognition that design increasingly requires expertise in the physical, psychological, and social domains, thus emphasizing the human factor" (Babiloni et al., 2021, p.2). The focus on the "human factor" compels us to imagine not only the form of the product, but also its use and the resulting interactions between humans, objects, and the environment.
In the case of green areas, urban parks and, even more so, nature reserves, the act of building and arranging spaces must be carried out with great restraint, with the utmost care to preserve the heritage - both tangible and intangible - that Nature represents. Nowadays, among the responsibilities that contemporary design culture must fully embrace is the education of the public towards environmental respect and appropriate ways of enjoying natural spaces. This involves a deep interpretation of the meaning and value of this shared resource, with which we must establish a continuous relationship. Redefining natural spaces as areas dedicated to psycho-physical well-being, where one can learn to live with respect and appreciate beauty, implies a renewal of the value system that underpins Contemporary society.
This brief reflection on beauty specifically refers to the directives of the New European Bauhaus (NEB), a project born with numerous and ambitious objectives, including rethinking contemporary lifestyles and identifying possible strategies for living the future in an inclusive and sustainable way, while addressing the significant challenges of our time. The NEB promotes eco-friendly building solutions to transform the environment and lifestyles within the context of the green transition, seeking solutions that are not only sustainable but also inclusive and "beautiful," in full respect of the diversity of places, traditions and cultures across Europe by integrating design, culture, art, science and technology [1].
According to this viewpoint, representational methods take shape as aesthetic practices that help construct imaginaries, define potentialities and outline conditions for the use of spaces that are compatible with the biodiversity surrounding us. Therefore, in design the role of drawing is understood as a cognitive tool for analysis, enjoyment, and the dissemination of both tangible and intangible values. These objectives are translated, within the "Natwork" [2] project, which is the subject of this contribution, into the opportunity to outline interpretative strategies and experimental horizons of perceptual pleasure, in line with contemporary practices of Forest Therapy in the 'Cratere degli Astroni' Nature Reserve (Fig. 1).

STATE OF THE ART – FOREST THERAPY PRACTICES

In recent decades, there has been a renewed interest and growing curiosity toward the natural environment, a trend that has significantly intensified in more recent times. This shift likely occurred in response to the rapid pace of urbanization and industrialization, which has led to a near-total disconnection between humans and their primordial environment, resulting in widespread feelings of physical and mental discomfort and dissatisfaction with the context in which they spend the majority of their lives. Consequently, a desire has emerged to reclaim primordial spaces, places often perceived as threatened and in need of protection. Furthermore, awareness has grown regarding the health benefits associated with being in contact with nature, evolving from intuitive and individual practices to formalized codes and normative guidelines. Numerous international studies have now documented a direct relationship between forest exposure and improvements in human health. As a result, practices promoting direct contact with nature - whether in wild forests or urban parks with substantial green spaces - are gaining momentum.
The origin of this interest can be traced back to the practice of Shinrin-Yoku, which began in Japan in 1982. The term was coined by Akiyama Tomohide, the then-Minister of Agriculture, Forestry, and Fisheries. Literally translated as "forest bathing" (Bradley, 2018; Lavrijsen, 2018; Felber, 2020), Shinrin-Yoku is a practice of immersing oneself in nature that aimed, on one hand, to help the Japanese population cope with the rising levels

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of urban stress, and on the other, to highlight and protect the country's vast forest heritage. In the early 1990s, the first experiments were conducted to assess the impact of forest bathing on human health, and in 2004, a nationwide systematic study was launched. The health benefits of contact with nature were measured, demonstrated, and reproduced through chemical analyses, as well as supported by medical evaluations. In 2003, Yoshifumi Miyazaki introduced the term forest therapy to scientifically describe Shinrin-Yoku, stating that "what began as an intuition-based therapy has now become evidence-based and can be regarded as a form of preventive medicine" (Yoshifumi, 2018).

Forest Therapy has become a fundamental part of Japanese medicine and is rapidly spreading across the rest of the world as demonstrated by the United Nations in 2020 and the 2022 Forest Strategy, which included forest therapy among the socio-cultural ecosystem services for well-being and therapeutic treatments. In Italy, since 2022, efforts have been underway to include forest therapy in the National Health Service's rehabilitation and prevention programs for mental and physical health, through a memorandum of understanding between public research institutions, universities, and associations (Tugnoli, 2021).

Considering these developments, more people are seeking nature-based health and wellness practices (Barbera, 2017; Coccia, 2018; Vacchiano, 2019; Powers, 2019). These practices are characterized by their accessibility to the majority of the population, as they do not rely on physical exertion but rather on the mindful presence of individuals within their environment, promoting a balance between mind and body. The aim is also to enhance awareness of the five senses, leading to a broader understanding of humans and their relationship with the surrounding world. In today's "world of images," we often rely lazily on sight alone, neglecting the stimulation of our other senses. However, an experience in nature should serve as a way to establish a physical, olfactory, and auditory connection with the environment. Surrendering to the sensory suggestions of the place through mindfulness and sensory perception allows the comforting sensations from these experiences to be decoded and translated into benefits.

Fig. 1 - Image of the Cratere degli Astroni Nature Reserve, conveying the sensation of a protected place enclosed within the crater (ph. Alice Palmieri, 2023).

This protocol can be challenging to implement for urban populations, who often live with little to no contact with nature and sometimes appear almost fearful of the prospect of immersing themselves "wildly" in the natural world.

For this reason, with a strong emphasis on scientific evidence and interdisciplinary approaches, multidisciplinary research projects are promoting Forest Therapy practices aimed at raising awareness among younger audiences. There is also consideration of the need for effective communication, including through human-designed objects, to raise awareness and engage a large number of people. In fact, since these practices are developed in environments close to human habitation, they can be viewed as "everyday practices" that exist on the boundary between the urban and the natural. Moreover, beyond being used as activities to promote psycho-physical benefits - and therefore seen as "self-centered" activities focused solely on individual well-being - Forest

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Therapy practices are also employed to combat another plague of contemporary daily life: social exclusion. This condition is likely exacerbated by humanity's inability to develop and share thoughts and perceptions independently, a challenge that seems to manifest at any age. In short, these are nature-based interventions that take into account the specific needs of individuals as well as the natural and social environments in which they live.

THE DESIGN PROJECT FOR THE ASTRONI OASIS

The primary objective of the Natwork project is to address the need of the "Cratere degli Astroni" Nature Reserve, managed by WWF Italy, to promote poetsharing activities within the Oasis. These practices are based on the idea of sharing thoughts through writing and can be conducted in both indoor living environments as well as outdoor settings. Participants may reflect on a freely chosen theme or a dedicated topic. Furthermore, others can engage with the written thoughts by either reading them aloud or placing the sheets on designated supports structured for the specific poetsharing session.
Specifically, the area of interest identified is a clearing at the center of the crater, where one of the few trees present has taken on the characteristic of the "tree of poems," to which the written compositions are affixed upon completion (Fig. 2). Although the project is accessible to individuals of all ages, it particularly targets a youthful audience, as sharing—which is the most significant skill encouraged during these activities—is not typically an innate ability and must be learned. This learning is even more effective when it occurs during childhood. Indeed, this phase of human development represents one of the most egocentric stages (Piaget, 1967) and requires approaches that prevent children from closing themselves off to the sharing of their spaces and thoughts. Consequently, the Natwork project is situated within processes that can be described as edutainment, or "educational play," emphasizing the intention to stimulate experiential learning as a form of social improvement and a means of reconnecting with nature. The objective is to define the dynamics for experiencing the place directly and to raise awareness—through interaction with the Natwork installation—about the respect and care for the natural environment.
Therefore, in order to carry out this practice of Forest Therapy, it was necessary to prepare an element from which to obtain the materials required to complete the activity, from writing to hanging the poem on the tree.
The final Natwork project consists of two autonomous structures, centered around the "tree of poems." Both structures are composed of three platforms stacked one on top of the other, each formed by the assembly of wooden planks. This formal composition generates three levels of support and footfall at varying heights and dimensions; from bottom to top, each platform is smaller than the one below it. Furthermore, each level is separated from the one beneath it by wooden posts, which also bear the responsibility of supporting the weight of the subsequent level. Some of the interstitial spaces between the various

Fig. 2 - Image of the project area, where the trees thin out, offering greater visibility to the so-called 'tree of poems' (ph. authors, 2023).

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posts house wooden drawers containing all the necessary materials for writing the "poems."
The base platform does not rest directly on the ground but is supported by a load-bearing structure made of rectangular wooden planks arranged in an orthogonal grid.
Each platform is the result of a critical design process involving overlaps, tangents, and intersections of circles with varying diameters. This compositional choice is deliberate and rich in pedagogical significance, as it lacks any prescribed direction or orientation. Further insights into the generating form of the circle will be addressed in the subsequent paragraph of this contribution.
The fluid lines move to define a structure with an organic appearance, harmoniously integrated with the surrounding nature (Fig. 3-4). Significant attention has been given to this aspect, particularly in the choice of materials used in its construction. The requirements stipulated the use of a completely natural material that is readily available and requires minimal energy for processing. Furthermore, great care was taken to exclude the use of metal alloys or artificial materials for the potential connection of the individual pieces comprising the whole.
Therefore, it was decided to utilize wood sourced from the controlled logging of trees within the Oasis, emphasizing attention not only to the life cycle of the existing trees but also to the creation of a coherent installation that fully respects the context for which it was conceived. This decision necessitated the mandatory use of planks with a maximum length of 24 cm, thus requiring the elements to be joined together through natural joints (Fig. 5). Specifically, it was conceived to employ: comb joints for the load-bearing structure; dovetail joints for the platform boards; and cross joints for the vertical posts.
The final choice made, of no minor importance, pertains to the colour of the structure. It was decided to conceal the wood rather than leave it exposed, painting it with a product entirely derived from plant sources and renewable materials, which has achieved complete CO2 neutrality in its production. The designated colour is violet

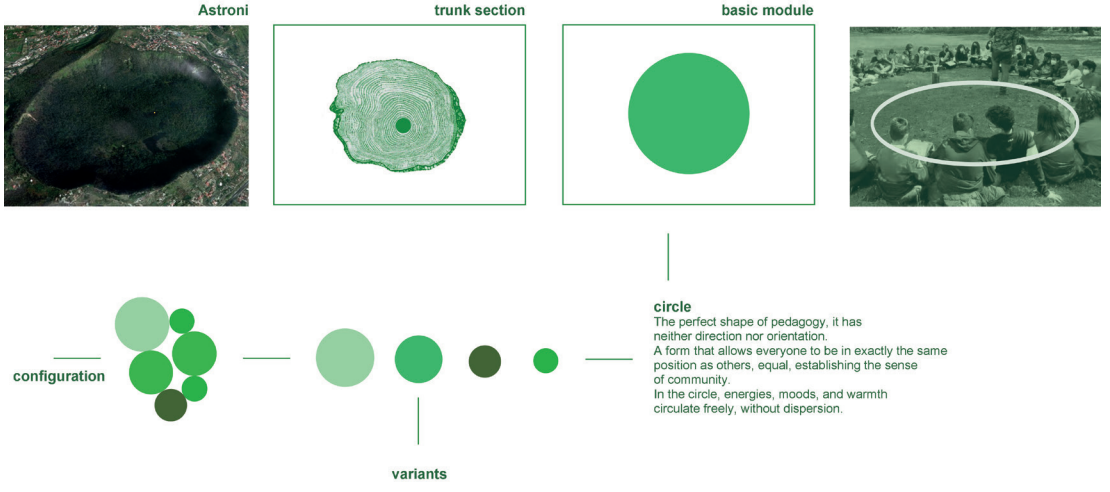

Fig. 3 - Representation of the concept's evolution: from site to natural element to form. The circle, symbolizing sharing, community, and equality, takes on multiple declinations and expressive variations through the combination of different elements.

for several reasons. Firstly, it was desired to use a colour that stands in stark and intentional contrast to the existing chromatic landscape to draw the attention of visitors to the Oasis and stimulate curiosity about the project. Secondly, according to pedagogical manuals, violet is the colour with which children identify in a regulating and socializing context. It serves as the intermediate hue between red, which evokes emotions and vitality, and blue, which conveys calmness and encourages expression beyond mere physicality. Therefore, in playful educational contexts, children navigate between the need to communicate solely through body language and the effort to calm themselves and express through other channels, fully identifying with the colour violet (O'Connor, 2011; Maule et al., 2023). Moreover, it is a colour that evokes ambition and self-confidence. Consequently, it can also be employed to stimulate sensitivity and imagination (Fig. 6).

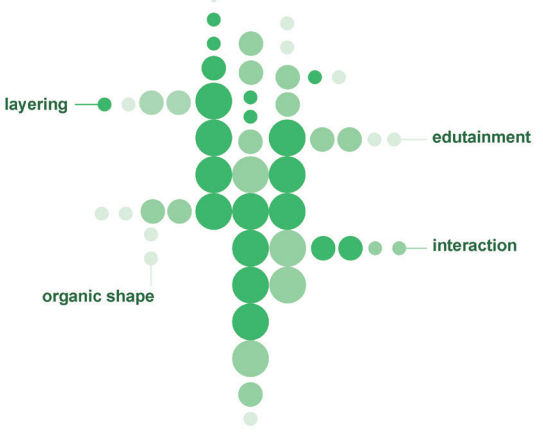

Fig. 4 - Concept of Natwork project, based on playing and interactive dimension that uses circle forms. They intersect and overlap themselves by creating an organic configuration in continuity with the environment of Astroni Oasis.

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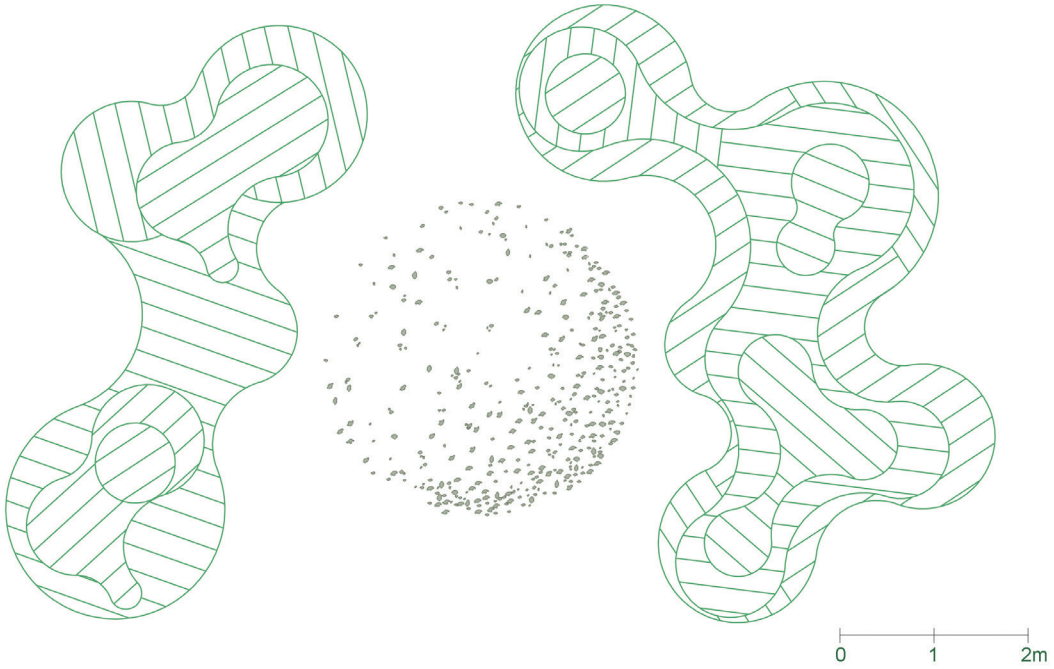

Fig. 5 - Schematic drawing of the layout of the recovery planks provided by the Cratere degli Astroni Nature Reserve.

FROM THE CONCEPT OF EXPERIENCE TO PLAYING SCULPTURES

Based on the reflections proposed, it is possible to recognize the approach of the Natwork project from a "user-centered" perspective, which is the design strategy that shifts the focus from the product's function to the user's actions, particularly based on the principles of ergonomics, the interdisciplinary science that deals with the interaction between human beings and the environment in which they operate.
In light of these aspects, the evolution of design strategies over the years has become an expression of a changing mindset that has led to the evaluation of increasingly specific and contextually appropriate conditions. As early as the 1970s, American psychologist James Jerome Gibson introduced the term "affordance" (Gibson, 2014) to refer to the set of actions that an object invites one to perform on itself. This term introduces, for the first time, emotional, cognitive and psychological factors into design, creating the embryonic conditions for what is now known as neurodesign, an approach in which the aim is to create objects that, in addition to meeting functional requirements, leverage notions related to the visual, physical and emotional spheres, thereby enhancing the overall experience and usability.
The term "experience" is not easy to define. One of the first to write extensively on the subject was John Dewey, who published the book Art as Experience in New York in 1934. This work became a significant point of reference in the discussions of the time, exploring the relationship between the individual and the work of art. Simplifying his thought, Dewey asserts that a necessary factor for experience is understanding. He writes, "One can enjoy flowers without knowing the interactions between soil, air, moisture, and seeds of which they are the result. But flowers cannot be understood without considering these interactions" (Dewey, 2012, p. 39). Thus, the author identifies a fundamental role within experience for understanding, which he defines as "aesthetic," and which must originate from the soil, air, and light through which aesthetically admirable things are born. Therefore, it is not enough to seek well-being and pleasantness, as mentioned earlier; other factors are required to live an experience, including understanding and the memory of past emotions, with the aim of restoring the continuity of aesthetic experience with the normal processes of living.
Usability, on the other hand, is defined as "the degree to which a product can be used by particular users to achieve specific goals effectively, efficiently, and satisfactorily in a specified context of use" (definition derived from the UNI ISO 9241-210 standard of 2010) [3]. It thus represents the functional component that determines the interaction between a system and the user, in relation to precise objectives and contexts of use (from which the experience will then take shape).
These considerations allow us to interpret more thoughtfully that category of installations, usually urban, known as "playing sculptures," which fall within the approach of urban art and aim to subvert the traditional approach to art based on "look but do not touch" (Milne & Pojani, 2022). Imagining interactive forms of public art means grounding creative thought in the relationship that the user will have with the object, considering what activities will be performed and what physical and conceptual perspectives will take shape through these installations.
Particularly interesting conditions arise when the project recipients are children, allowing ample room for the dimension of play and physicality,

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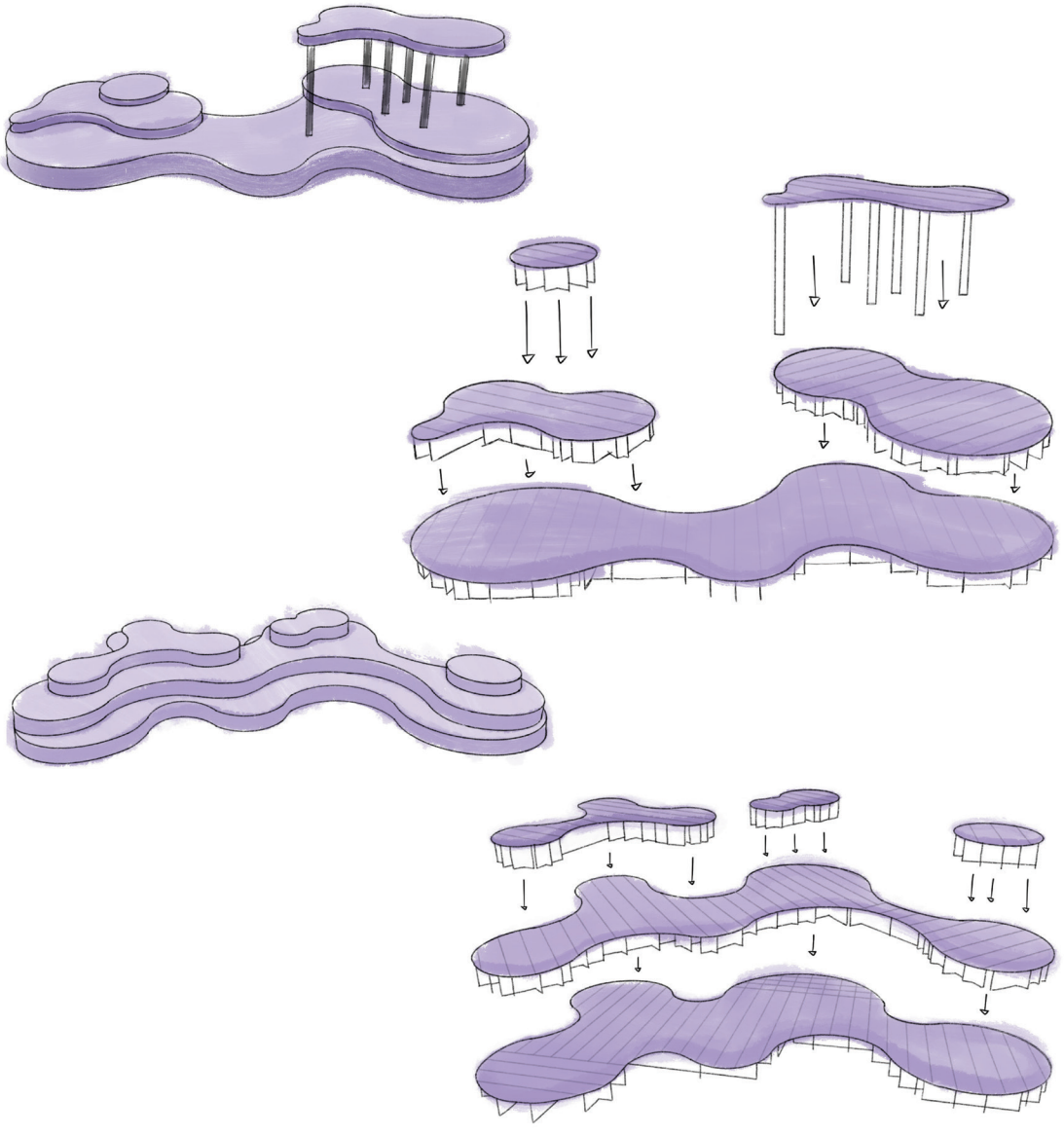

which is dominant and free from external constraints during childhood. The first installations and playgrounds for children emerged in the post-World War II era, reflecting a social resurgence in defence of human rights and children's well-being. At that time, some of the greatest artists, architects, and landscape designers developed new concepts of playgrounds, offering more complex interaction opportunities that would nurture children's personalities in a creative and collaborative atmosphere, encouraging social interaction within the urban and natural fabric, and exploring children's imagination through playful-sculptural objects (Alegre, 2018).
It is noteworthy to mention the work of Egon Møller-Nielsen, a Danish-Swedish architect and sculptor known for his abstract sculptures dedicated to children as spaces for play. His amorphous works, inspired by concave-convex geometries, are excellent examples of how children's imagination can be stimulated through the exploration of abstract forms, while simultaneously bringing art into public spaces by designing playgrounds based on landscape modeling, without conventional equipment, and offering various exploratory possibilities (Druker, 2019). Møller-Nielsen's approach thus moves along a dual line of inquiry: on one side, the pedagogical aspects related to the proper stimulation of children's perception; on the other hand, the search for form, which wants to be natural, artistic, plastic and mysterious, that escapes an immediate understanding and invites you to experience it directly, physically and multi-sensory (Fig. 7).

NATWORK PROJECT: GEOMETRIES AND SPATIAL CONFIGURATIONS

Based on these considerations, which help to clarify the objective of creating an installation for children aimed at fostering a deep relationship with the natural environment through an active expe-

Fig. 6 - Sketches illustrating the composition of the different levels of one of the two structures drawing the final layout.

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Fig. 7 - Egon Møller-Nielsen next to one of his best-known playing sculptures displayed in a public park in Sweden, 1949.

rience within the practices of forest therapy, the Natwork project emerges.
In the design concept, the notions of experience and usability intertwine with perceptual research, manifesting themselves in the form, dimensions, and proportions of the object. This outcome is the result of a creative process grounded in geometry and the practices of spatial utilization.
Keeping the target audience in mind, specifically a youthful demographic, and aligning with the approach proposed by playing sculptures, Natwork aims to give shape to a "non-directional" installation that conveys the value of sharing, stimulates imagination, and does not favour a singular perspective of the surrounding space, but rather opens up to the landscape from multiple viewpoints (Fig. 8).
The project aspires to offer playful educational ex-

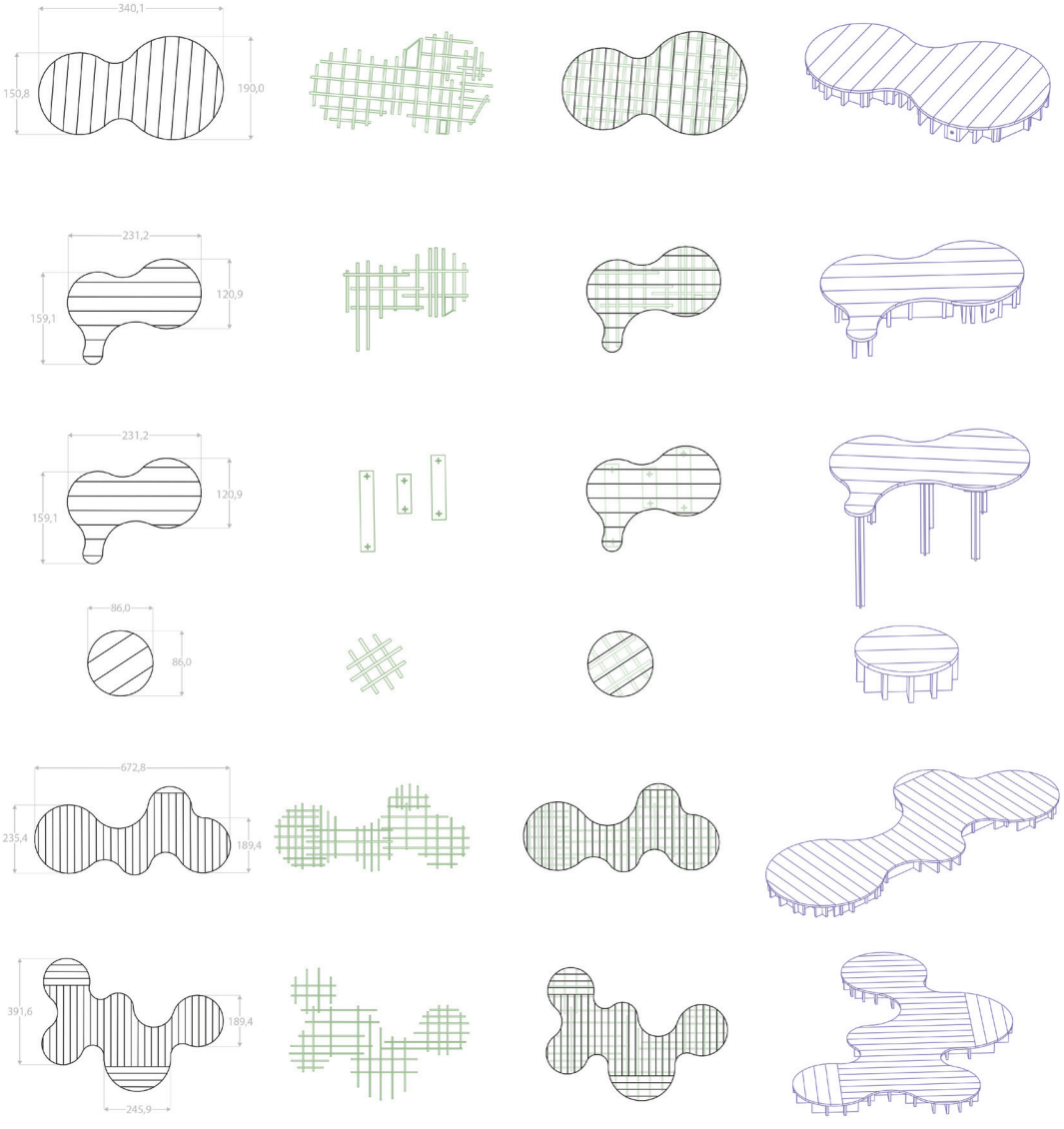

Fig. 8 - Plans of the different levels, including supporting frames, and axonometry of volumes

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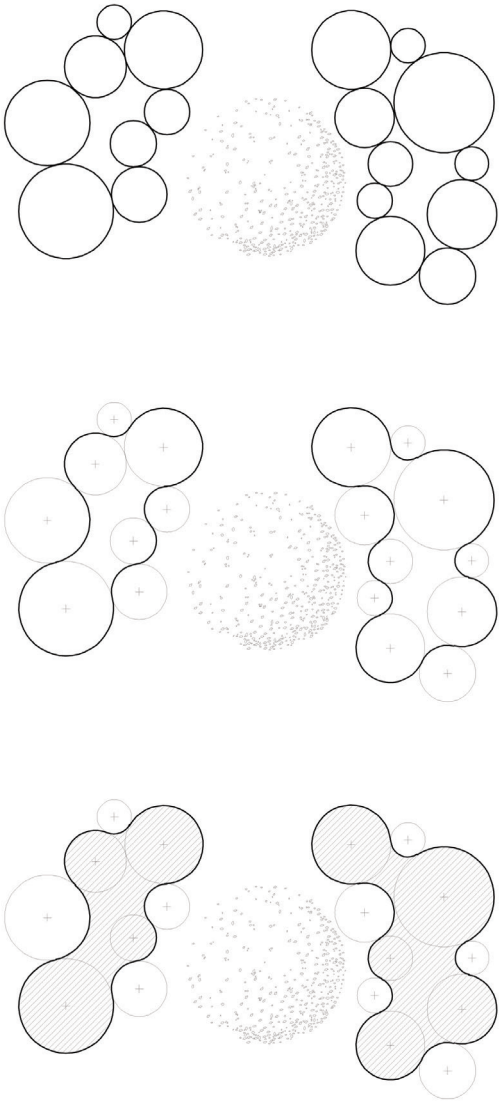

Fig. 9 - Sketches illustrating the composition of the different levels of one of the two structures drawing the final layout.

periences that stimulate creativity and encourage participation in writing workshops. These workshops are designed to promote understanding of ecological awareness themes, such as environmental protection and respect for nature. The installation serves as an opportunity for the dynamic exploration of the surrounding space, dedicating time to reflect on the significance of the host location and empowering the young participants in the initiative to become active protagonists in a shared reflective experience.
Reconciling these objectives with an appropriate spatial configuration necessitated reflection on the practices of utilizing communal space, assessing the geometries that, throughout history, have most effectively met these needs.
The response that most precisely satisfied not only the stipulated requirements but also the construction of an imaginary drawing from the material and immaterial significance of geometry was the circle.
The circle, along with the square and triangle, represents one of the fundamental two-dimensional shapes and is imbued with symbolic implications. For Paul Klee, it embodies the entirety, the whole (Klee, 1959), a figure that best expresses those tensions emanating from the centre, the culminating point, radiating along the circumference. The dynamic perimeter, in turn, generates a centripetal movement (from the outside to the inside) towards the generating centre (Francavilla, 2017).
In nature, the circle manifests in various forms; for instance, when a stone is thrown into still water or in the growth of trees, which exhibit concentric, circular rings that are visible in the cross-section of the trunk. Similarly, in human life, the first thing a child draws resembles a circle; when observing something, people often arrange themselves in a circle, which explains the origins of arenas, circles, and amphitheatres (Munari, 1964).
The circular arrangement is symbolically indicative of equality among elements. Indeed, according to a Breton tradition, the knights of King Arthur gathered around a round table to symbolize their equity in duty. Sitting in a circle means looking at each other, engaging in dialogue, and sharing. Arranging oneself in a circle signifies the dissolution of hierarchies, where all points are equal and belong to a single continuous form (Fig. 9).
In the Natwork project, the two proposed structures arise from the aggregation of multiple tangent circles, defining several continuous and sinuous surfaces arranged at different heights, allowing for a vertical and progressive exploration. The relationship between the circles facilitates various configurations: some can be described as "introspective," where children can gather in small groups and observe each other while composing their texts; others are oriented towards the landscape, where young users can admire the reserve, experiencing different elevations and seeking inspiration for their compositions or simply enjoying the tranquillity of the unspoiled environment that hosts them.

CONCLUSIONS

Although specifically designed to be integrated within the natural context of the clearing in the Cratere degli Astroni Nature Reserve, the Natwork project serves as a pilot case study for practices of Forest Therapy conveyed through artificial vectors that stimulate the desire to connect with nature and reflect on its value. The modularity of the structures and the dimensional flexibility of the individual components make it possible to reproduce the project in other similar contexts, whether they are natural or semi-urbanized.
In this regard, it is pertinent to reflect on the importance of continuous engagement. First and foremost, the strength of the Natwork project, inspired by playing sculptures, lies in its ability to elaborate on the practices of Forest Therapy by interpreting them through the dimension of participatory play, aimed at ecological education and self-awareness within the world we inhabit. This takes shape in a shared structure that allows children to interact dynamically while remaining mindful of the natural context that welcomes them. In this way, the project facilitates the definition of a playful educational experience with

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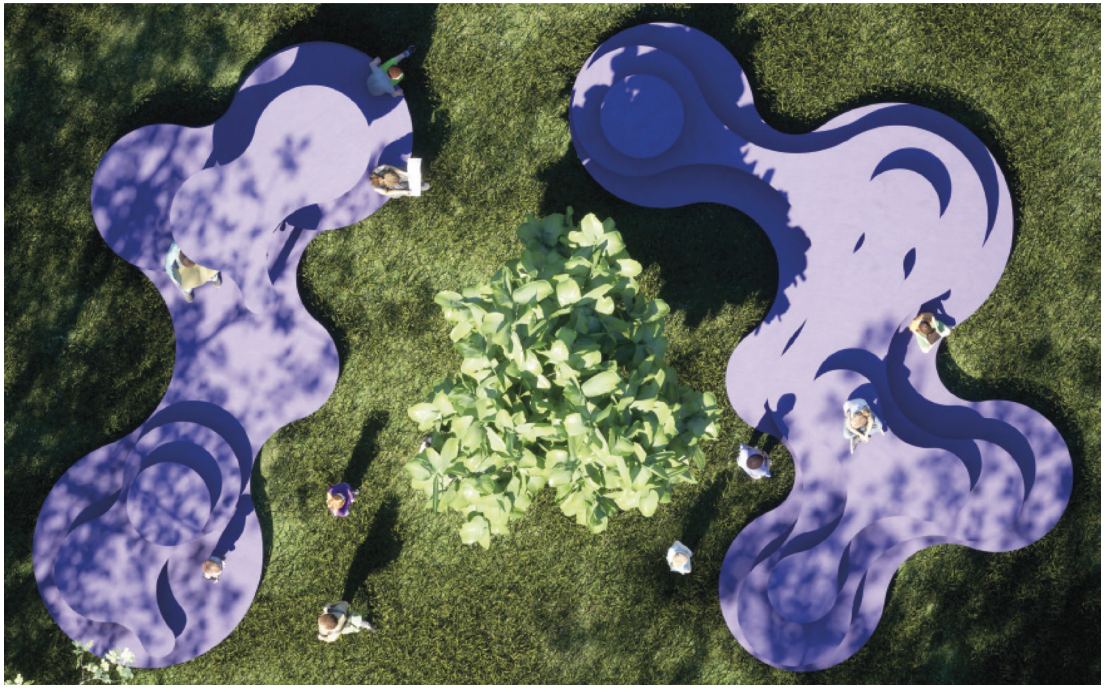

Fig. 10 - Zenit view of the render – composition of circle forms defines two organic structures developed on three levels defining a harvest environment but without limitations by inviting the users to the free and dynamic interaction.
Fig. 11-12 - Render view representative of the dynamics of interaction and observation of the surrounding natural space.

positive effects on emotional, psychological, and neurological spheres, making young users active protagonists in moments of sharing and promoting, through play, social, intellectual, emotional, and physical development, as well as enhancing awareness and education regarding ecological culture. Consequently, it can be stated that the Natwork project is a genuine vehicle for communication and awareness-raising.
An essential aspect of the communicative experience in a child's growth is that it represents the watershed, both socially and cognitively, from which the development of one's identity is strengthened, enabling a departure from the so-called phase of egocentrism to focus attention not only on oneself but also on the surrounding environment. Therefore, it is a practice that needs to be incorporated into daily life to increase the anticipated beneficial outcomes and, consequently, should not remain confined solely to entirely natural contexts like WWF Oases but should be promoted in various playful educational settings, such as urban playgrounds and green areas close to schools.

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NOTE

[1] Cfr. “New European Bauhaus Investment Guidelines” https://new-european-bauhaus.europa.eu/system/files/2024-07/NEB%20Investment%20Guidelines.pdf

[2] “Natwork” is a project born within the master course in “Design for innovation” of University of Campania “Luigi Vanvitelli”, The teaching of ‘Advanced Scenarios of Representation’ taught by Professors: Ornella Zerlenga, Alice Palmieri. Tutor: Rosina Iaderosa. The proposal has been very positively evaluated by the Cratere degli Astroni Nature Reserve, and the actual implementation of the installation is currently under consideration (based on an idea by: Maria Delli Paoli, Francesca Maria Di Lillo, Giuseppe Panico, Claudia Ruggero).

[3] UNI EN ISO 9241-210:2010 Standard. Ergonomics of human-system interaction – Part 210: Human-centered design processes for interactive systems.

[4] The authors jointly contributed to the drafting of the entire paper; Alice Palmieri is the author of the introduction and of the sections “From the Concept of Experience to Playing Sculptures” and “Natwork Project: Geometries and Spatial Configurations”; while Rosina Iaderosa wrote the sections “State of the Art – Forest Therapy Practices”, “The Design Project for the Astroni Oasis” and conclusions.

REFERENCES

Alegre, A. (2018). Modern Children‘s Spaces. In: 2nd RMB Conference Reuse of Modernist Buildings – Design Tools for Sustainable Transformations (pp. 327-335). Coimbra: Editorial do Departamento de Arquitectura Faculdade de Ciencias e Tecnologia da Universidade de Coimbra.

Babiloni, F., Di Lucchio, L., Montanari, M., Paoletti, A., & Perrotta, D. (2021). Introduzione al neurodesign. L’applicazione delle neuroscienze agli studi di design. Roma: Sapienza Università Editrice.

Barbera, G. (2017). Abbracciare gli alberi. Milano: Il Saggiatore.

Bradley, M.C. (2018). The Joy of Forest Bathing: Reconnect with Wild Places & Rejuvenate Your Life. New York: Rock Point.

Cameron, M., Crane, N., Ings, R., & Taylor, K. (2013). Promoting well-being through creativity: how arts and public health can learn from each other. Perspectives in Public Health, 133(1), 52-59. doi:10.1177/1757913912466951
Coccia, E. (2018). La vita delle piante. Bologna: Il Mulino.

Dewey, J. (2012). Arte come esperienza. Palermo: Aesthetica Edizioni.

Druker, E. (2019). Play Sculptures and Picturebooks: Utopian Visions of Modern Existence. Barnboken, 42, 1-22. https://doi.org/10.14811/clr.v42i0.433

Falcinelli, R. (2011). Guardare, pensare, progettare. Neuroscienze per il design. Roma: Stampa Alternativa & Graffiti.

Felber, U. (2020). Il bagno nella foresta. Vicenza: Il punto d’Incontro.

Francavilla, C. (2017). Vision & visual design. Corso di grammatica visiva per artisti e graphic designer. Milano: Hoepli.

Gibson, J.J. (2014). The ecological approach to visual perception. New York: Psychology Press.
Klee, P. (1959). Teoria della Forma e della Figurazione. Milano: Feltrinelli.

Lavrijsen, A. (2018). Shinrin - Yoku Ritrovare il benessere con l’arte giapponese del bagno nella foresta. Milano: Giunti.

Maule, J., Skelton, A.E., & Franklin, A. (2023). The Development of Color Perception and Cognition. Annual Review of Psychology, 74, 87-111. https://doi.org/10.1146/annurev-psych-032720-040512

Milne, C., & Pojani, D. (2022). Public art in cities: what makes it engaging and interactive?. Journal of Urban Design, 28(3), 296–315. https://doi.org/10.1080/13574809.2022.2121272

Munari, B. (1964). Il cerchio. La scoperta del cerchio. Mantova: Corraini.

O’Connor, Z. (2011). Colour psychology and colour therapy: Caveat emptor. Color Research & Application, 36(3), 229-234.

Piaget, J. (1967). Lo sviluppo mentale del bambino e altri studi di psicologia. Torino: Einaudi.

Powers, R. (2019). Il sussurro del mondo. Milano: La nave di Teseo.

Tugnoli, M. (2021). Manuale pratico di terapia forestale. Mulazzo: Tarka edizioni.

Vacchiano, G. (2019). La resilienza del bosco. Milano: Mondadori.

Yoshifumi, M. (2018). Shinrin-yoku. La teoria giapponese del bagno nella foresta per ritrovare il proprio equilibrio. Milano: Gribaudo.

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