

Research Article

Eco-Public Installation Through Landscape Architecture for Sustainability in the Urban Space

Ghada Bouzguenda* 

Higher Institute of Art and Crafts, University of Sfax, Sfax, Tunisia

Abstract

Sustainable art in landscape architecture encompasses activities like installing works of art that are durable, functional, decorative, iconographic, interpretative, integrated, ephemeral, or temporary. Projects of sustainable installation in landscape architecture have highlighted the contributions of public arts in social, cultural, and economic aspects. Studying the environmental impacts of public art in cities is still lacking. The purpose of this article is to highlight the contribution of eco-art in urban space to the development of sustainable cities, through the exam of a selection of sustainable installation from the word. Therefore, peer-reviewed articles and online resources were used to analyze sustainability, awareness, and environmental values associated with eco-public art and sustainable installations in order to inspire other directions, such as a dialogue between art and the public, landscape architecture, and environmental sustainability through public art. Despite landscape architecture studies are often focused on sustainability; however, there is little research on how to create durable installations through the synergy between art, design, and architecture. Based on the analysis of selected projects using a combination between art, design, and architecture concepts, to create an eco-installation in the urban space, it was highlighted that, during the early phases of promoting the green city concept, Eco-Public Art promotes visual support, tools, and the form of knowledge. All the analyzed sustainable projects were developed to demonstrate the best approach to public art because of their attitude and behavior toward the major issues.

Keywords

Installation, Public Space, Landscape Architecture, Sustainability

1. Introduction

Over the years, there has been increasing concern about environmental issues related to global warming caused by rapid urbanization, lack of green spaces and climate change. These problems have led to many efforts by governments and authorities to overcome the consequence, such as the organization of two big events on the word: Green City Conference¹

¹From 23 until 26 September 2024, over the course of four days, more than 3000 experts from around the world will share their passion and knowledge about the

livable green city with a future here. The Future Green City World Congress is an initiative of Royal Association Stadswerk the Netherlands and Royal Dutch society for garden designers and landscapers (VHG) In Utrecht, they bring together the worlds of green and civil engineering, in cooperation with World Urban Parks (WUP) and the International Federation of Municipal Engineering (IFME). The congress connects construction, greenery, infra and water. By showing different solutions and by connecting networks in these domains, we are building a city with a future together. As organizers, Stadswerk, VHG and the City of Utrecht warmly welcome you to the Beatrix Theatre in Utrecht. For four days, this is the place to hear the best speakers and see the most inspiring examples of green transfor-

*Corresponding author: ghada.bouzguenda.art@gmail.com (Ghada Bouzguenda)

Received: 30 May 2024; **Accepted:** 17 June 2024; **Published:** 29 June 2024



Copyright: © The Author(s), 2024. Published by Science Publishing Group. This is an **Open Access** article, distributed under the terms of the Creative Commons Attribution 4.0 License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

and International Conference on Sustainable Development «Go Green»². These two huge assembly of experts will address environmental challenges to create a road map for a healthy planet, green city, and sustainable society.

The notion of a sustainable and green city is not a recent innovation in the built environment; it has garnered widespread support from a diverse group of stakeholders, including civilizations, authorities, developers, professional designers, planners, entrepreneurs, universities, and the public. The concept of green cities, emphasizing sustainable practices, is rapidly gaining traction as a global movement. Leading cities like Seattle, New York, San Francisco, Vancouver, Frankfurt, and Singapore are at the forefront of green city initiatives, developing and implementing sustainability strategies to achieve their environmental goals.

Concerns about environmental problems have often made headlines around the world. As a result, while some government measures exist, stronger action is needed to incentivize professional associations and developers to embrace proactive sustainability practices. This includes promoting environmental and social responsibility through robust regulations and incentives. Particularly, several urban projects are developed with the collaboration of landscapers, architects, urban planners, designers and artists to achieve these goals. However, despite these efforts, the engaged public in such path still limited. These directives are intended to provide direction for professional practice such as building contractors, planners, or architects. Public awareness and commitment to sustainability efforts could be further strengthened. This gap can be addressed by improving public understanding of environmental issues and the benefits of sustainable practices and making them less environmentally aware. There's a significant opportunity to unlock even greater public support for sustainability initiatives. By fostering a deeper understanding of environmental challenges and the advantages of sustainable practices, it is possible to empower citizens to become active participants in creating a greener future. Through several societal projects, contemporary artistic contributions in the open space were participated to these efforts with what is called Public Art which is gaining wider recognition as a creative tool within public spaces, fostering engagement and inspiration among users through architecture and landscape design.

Through this article, some interrogations about "how can sustainable installations stimulate dialogue between the public, art, the environment, and architecture" will be discussed.

mations of cities from all over the world. And above all: here you can engage in conversation with peers from all parts of the world. <https://fgc2024.com/>
 2 The Global Association of Master's in Development Practice Programs (MDP), in collaboration with the Sustainable Development Solutions Network (SDSN), will hold the 12th Annual International Conference on Sustainable Development (ICSD) on 19-20 September, 2024. The conference will be hybrid, with the parallel sessions taking place fully remotely on 19 September and the high-level segment on September 20 (virtual and in-person). If you would like to present at the conference, you must submit an abstract as directed below. The conference is also open to observers (i.e. non-presenters). Simply register on the conference website to join us. Registration will open in July 2024.
<https://www.unsdnsn.org/call-for-abstracts-2024-international-conference-on-sustainable-development>

Based on a deep analysis of landscape architectural art projects in public spaces with environmental aspects or approaches, a response on "how ecological art in public spaces can contribute to a sustainable city" will be highlighted.

2. Environmental Sustainability

Sustainability and the environment are the two keywords that make up the term environmental sustainability. The public, business owners, academic institutions, and certain segments of the general public frequently discuss these two terms, particularly "sustainability". Environmental sustainability, according to Morelli [1], is the process of preserving behaviors and components that improve the physical environment's quality for coming generations. According to Mebratu [2], it is a condition of resilience, balance, and interdependence that permits modern societies to meet their needs without going over the capacity of the ecosystem in which they live. We go on to say that we continue to restore the services required to meet these needs through the decisions we make. Additionally, in order to meet the needs of future generations, efforts to reduce biodiversity in urban planning and development must also lessen adverse environmental effects. The role of artist, designer, and architect does not escape the commitment and responsibility of other actors interested in this human theme.

3. Art in Public Space

Since 25 years, public art has been known as sculptural installation in public spaces. Some researchers refer to public art as "memorial sculpture". In the current practices, it has become incredible and encompasses a variety of activities ranging from sustainable, permanent, functional, symbolic, interactive, interpretive, integrated, ephemeral, or ephemeral artworks. Therefore, Public art is more than just a decorative element; it is an integral part of urban renewal. Through physical enhancement, environmental sustainability and economic development, public art contributes to a city's overall health and well-being. With continued investment and collaboration, public art can reach its full potential. The concept of "installation as public art" appears in writings about the relationships between people and the positioning of artists' works in public spaces to create visually stimulating environments.

4. Eco-Public Art: Sustainable Installation as an Example

Eco-art, short for ecological art, also known as green art, flourishes in public space. This artistic movement blends environmental themes with the accessibility of public art [3]. It is defined as a combination of technical and scientific processes to avoid/restore damaged ecosystems. Moreover, eco-art is based on the concept of relationships and is not

only aimed at physical and biological methods as well as the cultural, political and historical aspects of the community [4]. It is closely linked to the principle of stewardship, which revitalizes the ecosystems in which we live and contributes to their regeneration and long-term vitality. Furthermore, promoting ecological art as a public approach can create new sustainable connections. Ecological public art integrates art concepts and ecological approaches as an element of consciousness-raising to improve the relationship between nature and humans through visual art and experience. The challenges of protecting and restoring ecosystems within urban environments are distinct from those in natural areas. Urban ecosystems face distinct challenges to restoration compared to natural areas. By integrating ecological art principles, landscape architecture can offer creative solutions to overcome these urban environmental hurdles, with a focus on [5]:

- 1) Materials that can be recycled, reused, and reduced.
- 2) Product life cycle considerations.
- 3) Recycled post-consumer materials.
- 4) Environmentally friendly: is non-toxic.
- 5) Energy efficient.
- 6) Use of sustainable materials.

"Sustainable installation", which is considered as an example of Eco-art, is a multi-faceted element designed to integrate seamlessly into its surroundings. It can elevate architectural design, attract visitors, cultivate a sense of community, and encourage public engagement, but its core mission lies in achieving environmental goals [6]. Based on these concepts, Sustainable installations, which are installed permanently or temporarily in a public space or location such as landscaping, are not just environmentally friendly works of art; they are considered as artistic expressions that embrace the richness and variety of a place and creativity. They can be any format and are not limited to a specific visual impact, space it occupies, and the elements used in its construction, colors, or shapes. It is a process that involves professional artists, creative and popular craftsmen, or citizens to create artwork in a place. It is a work of art that is entirely dedicated to the challenges and situations of the environment. By integrating art and public space, sustainable installations can contribute to urban development [7]. They not only enhance a city's image, but also foster public engagement and promote social sustainability.

5. Landscape Architecture and Sustainability

Landscape architecture is a design discipline that goes beyond aesthetics. This includes land planning, management and planning, and the design of public spaces, monuments, and buildings. Landscape architects consider social, ecological, and geological factors to create spaces that are not only beautiful but also ecologically healthy and socially viable.

From bustling cityscapes to serene parks, the invisible hand of landscape architects shapes the world around us. Their expertise extends far beyond aesthetics, encompassing urban planning, storm-water management, park design, and more. They craft functional and ergonomic spaces that integrate seamlessly with the environment. The challenges of modern life, from dense urban environments to the need for natural recreation, are met in part by the ingenuity of landscape architects. Their skills go beyond beautification, encompassing urban planning, storm-water management, and park design. They are the invisible shapers of our world, creating functional and aesthetically pleasing spaces that coexist harmoniously with the environment. Therefore, landscape architecture is a crossroads for creative minds. It attracts individuals with diverse backgrounds in art, science, design, and history to collaborate on shaping our green spaces. From parks and gardens to farms and forests, these areas provide a multitude of benefits, supporting everything from clean air and water (regulating services) to recreation and cultural experiences (cultural services). From sprawling farms and forests to urban green spaces, landscapes provide important services. They sustain us by providing food and water, stimulate us through parks, gardens, and recreational areas, and nourish our health by offering opportunities for exercise and play [8].

With our actual conditions, the world has entered a new urban era in which humans have a major impact on the earth's ecosystem and cities have a major impact on the environment. To achieve these goals, we need green systems that promote sustainability, foster a vibrant environment, and build resilience [9]. The key to sustainable development is finding an equilibrium between various aspects such as environmental, financial, societal, and traditional factors. This balance is crucial to guarantee that the welfare of future generations is not jeopardized by the scarcity of resources. As consequence, achieving Sustainable development requires comprehensively identifying interrelated human-environment system variables, investigating relationships socioeconomic and environmental dynamics, and exploring spatial-temporal patterns in complex landscapes [10].

6. Public Sustainable Installation Projects: Case Studies

While the integration of sustainable installations in landscape architecture and ecological art in public spaces is a growing trend; it remains a relatively new approach. Most public art programs prioritize projects that enhance a city's image, create vibrant public spaces, and improve aesthetics [11]. Given the limited number of ecological art projects, this overview highlights interactive public art projects from various countries that showcase the potential for environmental education and urban renewal.

6.1. Example n °1: LAGI: Land Art Generator, a Us-based Organization

The Land Art Generator Initiative LAGI³ strives to foster involvement from the public by combining renewable energy sources, urban planning, spatial design, and public art, [figure 1](#). Their main objective is to promote environmental justice. Through design competitions, direct commissions, artistic solar murals, and collaborative design projects for all ages, they create contextually and culturally relevant decentralized cleanups developed through collaboration with local residents, [figure 2](#). They offer energy design solutions. All creative options for interior design can also be solutions for climate change. LAGI's goal is to accelerate the transition to a post-carbon economy by offering a renewable energy infrastructure model that enhances, inspires, and educates public spaces while providing energy. Powering thousands of homes around the world. In fact, in 2016, By using the ocean's tides to generate power, the United States successfully launched an innovative desalination initiative. The project uses tidal turbines to generate clean energy, which is then used to power an impressive array of Fresnel lens distillation columns. These distillation columns are located on the breakwater and have the ability to produce an astounding 220 million liters of clean drinking water per year, all powered by the sun's energy.

In another case from Denmark, polycrystalline solar cells were attached to a duck sculpture that not only floated on the water but was also able to supply 40 to 50 households with electricity. All this with a standard solar panel on a simple frame. Robert Ferry, co-founder of LAGI, has stated that the function of power plants has undergone a significant transformation in the last century, resulting in a notable deficiency in the aesthetic aspect of the power industry. He has reported that in the early 20th century, there was no high-voltage electricity grid, so small generators were installed directly in city centers. He believed that they were often built in beautiful Art Deco buildings that blended well with the rest of the street. However, he reported that when we were able to increase tensions, we decommissioned places because they were contaminating, and then there's the power plants we're considering today. » Ferries are a convenient but useful way to move today's vast amounts of coal, nuclear, gas, and even renewable energy into barren buildings on the outskirts of cities.



Figure 1. Energy Duck, LAGI Land Art Generator Initiative, London, UK, 2014.

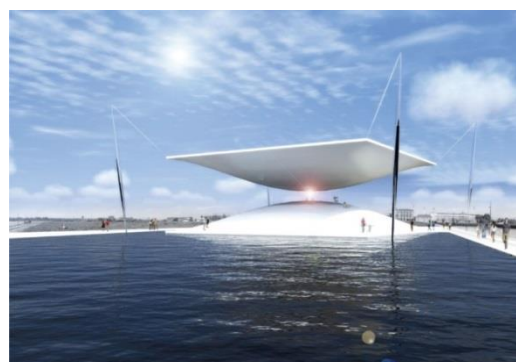


Figure 2. Solar Hourglass, 1st Place Winner LAGI, London, UK, 2014.

To further accelerate the transition to a clean energy economy and society, LAGI aimed to bring solar, wind and other renewable energy into public spaces. The inventors believed that renewable energy can be beautiful, and if it's built to look good, it's more likely to capture the world's imagination. The LAGI competition aims to not only inspire professionals, students, engineers, and artists to create aesthetically pleasing and advanced structures, but also to address the growing need for sustainable technologies in the future.

LAGI 2018 extends a cordial invitation to artists, architects, designers, landscape architects, scientists, engineers, and other individuals to submit proposals for large-scale, site-specific public art installations that generate clean energy at specific locations in Melbourne. Applications will be accepted from around the world and will be free of charge.

6.2. Example n °2: Festival I Light Singapore Marina Bay, by (URA) the Urban Redevelopment Authority, Singapore

Held annually in Singapore's Marina Bay, the "I Light Singapore" festival showcases sustainable light art installations, [figure 3](#). Organized and presented by the Urban Redevelopment Authority (URA), the festival has emerged as a significant platform for artistic expression and environmental

³ Land Art Generator Initiative (LAGI), Founded by Elizabeth Monoian and Robert Ferry, the organization provides a platform for scientists and engineers to collaborate with artists, architects and other creatives on public art projects that build sustainable energy infrastructure.

Dedicated to developing alternative energy solutions through sustainable design and public art Every two years since 2010, LAGI has organized an international competition that encourages artists to design public art that generates renewable energy. Venues for these competitions include Abu Dhabi (United Arab Emirates), Copenhagen (Denmark), New York City and Santa Monica (California). The Land Art Generator Initiative also led the effort to create the world's first solar mural artwork. <https://landartgenerator.org/>

awareness within the urban context⁴. The "I Light Singapore" in the name refers to the innovative content of the festival, the clever use of light, and global creative participants. In 2019, the festival was renamed 'I Light Singapore' to celebrate Singapore's 200th anniversary. I Light Marina Cove, the yearly feasible light craftsmanship celebration, returns for its fifth version from 3 to 26 Walk. This year, three celebration centers make a happy climate for a tangible and intuitive involvement. Guests can appreciate 20 dazzling craftsmanship by neighborhood and worldwide craftsmen around the Marina Narrows waterfront, [figure 4](#). The last celebration shows a more prominent assortment of community-centric exercises that gives the open openings to take part in, and contribute to community causes. It highlights three particular celebration center points: Art-Zoo for creative play, The Fantastical World of eco. for sustainability-themed exercises, and GastroBeats for nourishment and music. These three center points are at The Projection @ Marina Cove, The Drift @ Marina Inlet, and the Bayfront Occasion Space.



Figure 3. 20 sustainable light art installations illuminating the Marina Bay waterfront in a colorful showcase, Urban Redevelopment Authority (URA), Singapore, 2017.



Figure 4. I light marina bay, festival, all sustainable installation using wooden pallets and bamboo, sustainable light, Singapore, 2017.

4 (URA) The Urban Redevelopment Authority is the national urban planning authority of Singapore, and a statutory board under the Ministry of National Development of the Government of Singapore, organize art festival in the name i Light marina bay.

The primary of the celebration center points to the Fantastical World of eco was composed by The RICE Company Restricted. In line with the topic of maintainability, this center included students and community teachers in the development of furniture at the center utilizing 300 wooden beds.

The Fantastical World of eco. advanced feasible living in Singapore with highlights such as a reusing and upcycling commercial center, an active vitality play area, and an urban cultivating grandstand. Propelled by lessons taken from marine and plant life, this celebration center at The Projection took put over two ends of the week from 3 to 12 Walk. It displayed topical exercises extending from immersive theater exhibitions to live music, workshops, and expressions and created reasonable. At The Drift @ Marina Bay, families can visit Art-Zoo, an inflatable play area within the setting of an inventive zoological plant and at last, Gastrobeats at the Bayfront Occasion Space offers a bounty of nourishment choices and live music exhibitions for guests.

For the last version, the celebration was seen five light craftsmanship establishments outlined by understudies from the National College of Singapore, Nanyang Polytechnic, Singapore College of Innovation and Plan, LASALLE College of the Expressions, and Pools College of Higher Instruction — the most elevated support level from neighborhood instructive teach to date. Understudies from LASALLE College of the Expressions — which is taking part for the first time — is presenting Migrating Locality, a craftsmanship work within the shape of an arrangement of interlocking structures. Made of wood and bamboo, the uncovered crude and common materials differentiate against the encompassing cleaned urban environment, compared to Singapore's cityscape.

6.3. Example n °3: The Florida Eco-Art Project Seeks to Blend Aesthetics and Environment

The project consists of a water filtration project along a 575-foot length of South Florida's Intracoastal Waterway, which is part of a growing trend of combining art and environmental restoration, [figure 5](#). To address water quality concerns in the Lake Worth Lagoon, Palm Beach County implemented a project valued at \$149,000. The lagoon's health had previously been compromised by development practices that mirrored those common throughout Florida, involving the placement of riprap (loose stone) in front of seawalls. These practices had disrupted natural water flow and degraded the marine habitat. The current project aims to restore a portion of this critical ecosystem.

Artist, Singer, secured a \$40,000 grant from the National Endowment for the Arts for his project, "Living His Shoreline." This innovative proposal merged artistic vision with ecological restoration by incorporating the expertise of marine biologists and engineers. The centerpiece of the project was a crescent-shaped planter crafted from porous concrete, designed to provide habitat for mangrove trees. Notably, the

exposed root system of mangroves functions as a natural nursery for fish. Furthermore, the planter incorporated long shelves on either side, strategically attached to a lagoon dam to facilitate the growth of oyster beds during periods of optimal water levels.



Figure 5. "Living Shoreline" project in Lake Worth, Florida, 2015.

In addition to the ongoing collaborations with designated EcoArt Hubs and the development of a community worker and artisan training program, EcoArt South Florida is excited to announce three new program initiatives [12]:

- 1) The integration of Open EcoArt into the design of sustainable urban environments is an emerging area of exploration, particularly for projects targeting LEED or similar green building certifications. This collaborative effort is being spearheaded by EcoArt South Florida in conjunction with the South Florida Chapter of the US Green Building Committee.
- 2) Collaboration of EcoArt with a specialized middle school focused on STEM education to design and implement what will be the first-ever, all-encompassing outdoor classroom in South Florida.
- 3) Finally, EcoArt South Florida is at the forefront of a collaborative endeavor to pioneer a novel urban streetscape paradigm. This pilot project departs from the prevailing monoculture approach by incorporating a meticulously curated selection of native Florida canopy trees and understory vegetation. This strategic selection aims to foster the reintroduction and flourishing of pol-

linator and avian populations within the urban environment.

EcoArt South Florida understands that widespread adoption in this region hinges on engaging key stakeholders. This includes elected officials, government professionals, and experts in construction, funding, and urban planning. To achieve this, they are dedicating the next few years to actively promoting EcoArt integration into city and county green spaces, mirroring the successful implementation in Boynton Shoreline. Florida has the potential to become a pioneering force in EcoArt. EcoArt South Florida is dedicated to making this a reality. While engagement of art and culture with environmental issues remains underutilized, even nationwide, Florida has a unique opportunity to lead the way. As those of us in the field understand, EcoArt possesses a powerful ability to inspire, educate, and foster public participation in tackling the critical challenges of climate change. Throughout human history, artistic and craft traditions have served as cornerstones of cultural identity. While the ideal time to integrate craftsmanship into ecological restoration may have been decades ago, the need remains ever-present. Florida, and indeed the planet, demands immediate action. We must now leverage the power of creative makers and their ingenuity, combined with scientific advancements, to address the environmental challenges we face.

6.4. Example n °4: Studio KCA

The team at STUDIO KCA⁵, under the leadership of Jason Klimoski and Lesley Chang, combines expertise in architecture, engineering, artistic practice, and design to create a range of innovative projects. Their portfolio features a variety of works including sustainable lighting installations, building extensions for open spaces, sculptures, and complete structures, which have been executed in locations spanning New York, Vermont, Nevada, Wisconsin, Brazil, Taiwan, and Papua New Guinea, [figure 5](#).

The idea is to examine how the design of objects and spaces can be influenced by the interdependent relationship between the environment and territory. The project was concentrated on utilizing these factors to develop solutions that are both suitable for the intended purpose and responsive to the specific natural features of the location, [figure 6](#). The work was established with each extension intrigued by how materials can be created or used to investigate a subject, shape a story, make meaning, and give a curious course of action that reverberates with clients and their places.

STUDIO KCA has been awarded planning grants that include four American Organized of Planners Grants (National Little Venture Grant, AIA California Committee Plan Honor Grant, AIA New York Plan Justify Grant, and AIA Brooklyn + Rulers Plan Justify Grant). Victor's AIA New York City of Dreams Structure has been widely acknowledged. It has received a SARA New York Chapter Plan Grant, two Chicago

⁵ <http://www.studiokca.com/index.php>

Athenaeum American Design Grants, three Interior Design Magazine Best of Year Awards, been a finalist in two Architectural A+ Awards, and received an Honorable Mention in The Architect's Newspaper Best of Young Modelers Award. The company's accomplishments have been widely acknowledged, appearing in well-known publications such as Wired, Fast Company, and The Wall Street Journal, among others. Their work has also been featured on CNN, The Climate Channel, and Discovery Channel. Furthermore, they have gained recognition in specialized fields like Landscape Architecture and Design Handbook. The firm's reputation is indisputable and their contributions are well-regarded. The company boasts a broad collection of various installations and open structures, such as "Head within the Clouds," "A Comet Lands in Brooklyn (Rosetta)," "NASA Circle Structure," "Drop," "High Rise (the Bruges Whale)," "Night and Day." These artworks have been showcased extensively at renowned venues, including Governors Island and Brooklyn Bridge Park in New York City, the Center for Engineering in Modern Art, the AIA National Convention, the World Science Festival, The Exploratorium, The Courageous Ocean, the Discovery & Space Center, The Huntington Library, Art Collections, and Botanical Gardens, Jan Van Eyck Square in Bruges, Belgium, and the Maneuver Club in São Paulo, Brazil.



Figure 6. *Night and Day, Sustainable installation, Solar Power off the grid daylight at Dusk midnight, KCA project, New York, 2018.*

6.5. Discussion About the Highlighted Projects

Table 1 shows a comparison of the four eco-art projects. The most important key aspects and criteria are clarified to compare and further analyze and focus on the comparison between public art projects and eco-public art projects for creating sustainable green cities and public spaces. Based on this comparison, there are similarities between the environmental and stockholder's contributions to art programs and installations. Most of the facilities are said to have initially addressed reached people by raising public awareness of environmental issues and implementing educational measures. However, each project has its own message to convey. Through the analysis of these projects, it is concluded that effective installation art, which incorporates straightforward messaging, is the key factor in engaging audiences and achieving successful projects. Additionally, choosing sustainable materials plays a crucial role in promoting environmental consciousness. By using recycled and eco-friendly materials, it was possible to establish a mutually beneficial connection between artistic expression and environmental accountability. Moreover, the active participation of community members is crucial throughout the process of public art, encompassing its conception, selection, and implementation, and staging in the work may no longer be attributable to the purpose of a project and the mission, as well as public appreciation [13]. As a result, public art has the potential to create better dialogue and integrate the public's impact on art, as it can only educate and improve to promote a sustainable environment.

Table 1. *Comparative study between the different projects.*

Project	LAND ART GENERATOR (LAGI)	I light Singapore Marina Bay (URA)	Eco-Art of Florida	Studio KCA
Categories	Sustainable Art	Eco-public Art	Eco-public Art	Environmental Art
Time	Permanent	Temporary (2 weeks)	Permanent	Temporary (2 months)
Location	Landscape Architecture	Public space	Landscape Architecture	Public space and park

Project	LAND ART GENERATOR (LAGI)	I light Singapore Marina Bay (URA)	Eco-Art of Florida	Studio KCA
Proposed-Function Aims	Climate needs of local communities	Revitalizing Local Heritage for Sustainable Tourism Development	Cultivate public understanding of environmental challenges and sustainable practices	Establish an environment that facilitates the utilization of harvested materials, encouraging individuals to critically examine their relationship with the environment.
Materials	Photovoltaic panels hydraulic turbines	Wood and bamboo-Intelligent use of sustainable lighting	Mangrove trees	Recycling materials: plastic Crafted materials
Form of Art	Art installation- Sculpture	3D installation	3D installation	Sculpture
Approach	Education and Awareness Simple message Eye-catching sculpture Sustainable material	Short & Simple message Storyline Informative, Unique & attractive Sustainable material Indirect education	Sustainable Materials Management Recycle material Sustainable design Direct education	An environmentally conscious material Enhanced public ecological literacy Community mobilization Stakeholder engagement
Public's Feedback	Positive criticism Pulls in both foreign and neighborhood visitors alike Message effortlessly caught on	Increases public participation Enhanced Societal Recognition of Environmental Challenges	Attractive environmental art increases public participation and raises awareness of environmental issues Motivating, educating and engaging the public	Increases public participation

7. Conclusions

This article explores how ecological art principles can be applied within urban environments, particularly in landscape architecture. Notably, protecting and restoring ecosystems in urban settings requires a distinct approach compared to natural areas. Through selected projects using a combination between art, design, and architecture concepts, to create an eco-installation in the urban space, it was highlighted that, during the early phases of promoting the green city concept, Eco-Public Art promotes visual support, tools, and the form of knowledge. All these sustainable projects hope to have the best approach to public art because of their attitude and behavior toward the major issues. This is a result of the general public's greater interest in and attraction to objects with high aesthetic value that they can see, touch, and imagine. When it comes to matters like sustainability, people are more likely to think, recall, comprehend, learn, and act in public settings than in front of written materials. The sense of conscience is an art that evolves or is pleasant to see, with a direct message to everything that stands out in the environment, the form of the art no longer has to be abstract and the choice of material is worth it Based on the environmental criteria to make the art

permanent. These elements constitute fundamental principles in the creation of eco-public art, particularly within the context of landscape architecture and its focus on public spaces. This strategy of integrating diverse eco-art installations within public spaces fosters a direct or indirect connection with the public. This aims to cultivate a sense of environmental responsibility by encouraging early engagement with the artwork, to give the public more to show appreciation, and to develop more appreciation for the environment. Art may Eco-Public seems to have been a small effort, but it can represent enormous hope for the realization of a green city and a long-lasting and viable public space.

Abbreviations

LAGI	Land Art Generator Initiative
BMI	Body Mass Index
URA	Urban Redevelopment Authority

Author Contributions

Ghada Bouzguenda is the sole author. The author read and approved the final manuscript.

Funding

This work is not supported by any external funding.

Conflicts of Interest

The authors declare no conflicts of interest.

References

- [1] Morelli, John "Environmental Sustainability: A Definition for Environmental Professionals," *Journal of Environmental Sustainability*: 2011, Vol. 1: Iss. 1, Article 2.
<https://doi.org/10.14448/jes.01.0002>
- [2] Mebratu, D. "Sustainability and Sustainable Development: Historical and Conceptual Review." *Environmental Impact Assessment Review* 18 (1998): 493-520.
[https://doi.org/10.1016/S0195-9255\(98\)00019-5](https://doi.org/10.1016/S0195-9255(98)00019-5)
- [3] Stoltz B. A Nature Thing: What Does Contemporary Ecological Art Produce? *Arts* 2023, 12, 67.
<https://doi.org/10.3390/arts12020067>
- [4] Kapliński, O. Architecture: Integration of Art and Engineering. *Buildings* 2022, 12, 1609.
<https://doi.org/10.3390/buildings12101609>
- [5] Ahmed, H. T.; Aly, A. M. Recycled Waste Materials in Landscape Design for Sustainable Development (Al-Ahsa as a Model). *Sustainability* 2023, 15, 11705.
<https://doi.org/10.3390/su151511705>
- [6] Carmela Cucuzzella, Analysing eco-art installations for their value in affecting change, *International Journal of Education Through Art*, Volume 19, Issue Art, Sustainability and Partnerships, 2023, p. 43-58, https://doi.org/10.1386/eta_00117_1
- [7] Stokmane, I., & Dupate, M. Green Infrastructure Development within Urban Environment provided by Privately Owned Public Spaces. *Landscape Architecture and Art*, 2023, 22(22), 81–88. <https://doi.org/10.22616/j.landarchart.2023.22.08>
- [8] Milburn, L.-A. S.; Brown, R. D. The relationship between research and design in landscape architecture. *Landsc. Urban Plan.* 2003, 64, 47–66.
[https://doi.org/10.1016/S0169-2046\(02\)00200-1](https://doi.org/10.1016/S0169-2046(02)00200-1)
- [9] Nikologianni, A. Landscape Design and Drawing as Tools for Understanding Climate Emergency and Sustainability. *Architecture* 2024, 4, 188-196.
<https://doi.org/10.3390/architecture4010012>
- [10] Sullivan, C. *Drawing the Landscape: The Art of Hand Drawing and Digital Representation*; Wiley: Hoboken, NJ, USA, 2014.
- [11] Sheppard, S. R. Bridging the sustainability gap with landscape visualisation in community visioning hubs. *Integr. Assess. J.* 2006, 6, 79–108.
- [12] Arts Brookhaven: A Vision for Culture and Creativity in our Community City of Brookhaven Arts and Culture Strategic Plan, 2020.
www.brookhavenga.gov/sites/default/files/fileattachments/community/page/18926/brookhaven_plan_english_final_spreads_hq.pdf
- [13] Baker, K. Sense of place: Understanding architectural and landscape design through a layering of visual representations. *J. Learn. Des.* 2014, 7, 74–83.
<http://dx.doi.org/10.5204/jld.v7i1.138>