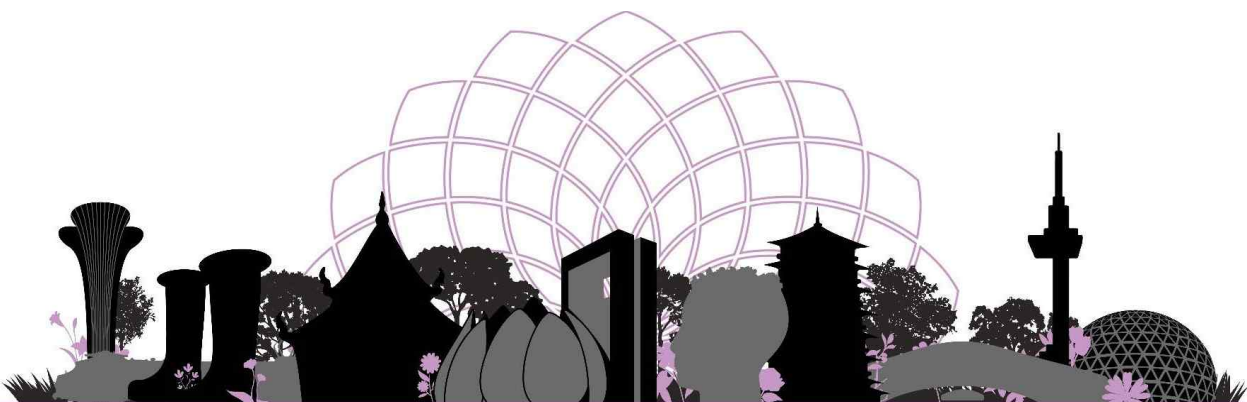


**AIPH**

# **Sustainability Strategy**



## Overview

- Suncheon, a lively city with sustainable ecology, has a sustainability strategy that aims to improve citizens' lives through the preservation and wise use of its ecological environment and realization of growth and its rich economy.
- The slogan "Suncheon, the Ecological Capital of South Korea" matches Suncheon's objective, expressing its policy goal to become a city that offers rich economic life in nature by committing to the principles and values of economy and educational community based on its ecological resources.
- A happy life can be realized through natural urban environmental infrastructure and sustainability, the concepts that bind current and future generations and warm our communities. The adversities of this time, such as the climate crisis, low growth, polarization, fine dust, aging societies, etc., can be overcome through the recovery of community culture, the basis of our lives. A community where families, neighbors, workplaces, cities, and the country come together can lead a sustainable city, and sustainable development is a concept that meets the needs of the current generation to preserve and protect the foundation through which future generations can meet theirs.
- The City of Suncheon aims to achieve its Sustainable Development Goals (SDGs) through the Suncheonman International Garden Expo 2023.

# 1. Introduction

## 1.1 Purpose

- To achieve sustainability for the Suncheonman International Garden Expo 2023, we need to act based on a consistent cross-program strategy that handles all key SDGs. The sustainability strategy of the Suncheonman International Garden Expo 2023 presents an overall method to integrate sustainability into the process of planning, designing, organizing, and operating while providing operational systems for each core area.



- Hosting the Suncheonman International Garden Expo 2023 will create a new green belt (ecology buffer zone) for the permanent preservation of Suncheonman Bay and secure new urban green areas to establish the city as Korea's representative ecological tourism destination that garners more than 5 million visitors annually.
- The Suncheonman International Garden Expo 2023 aims to achieve urban regeneration, create a garden education community and jobs, and develop the garden industry to create a garden city and model city for domestic and international garden industries.

## 1.2 Vision and Mission

### 1.2.1 Significance

- Seek international universality that meets the current trends
  - Considering the cultural characteristics that gardens possess, the Garden Expo must infer the trends by understanding those of each country rather than only observing those of the present. By taking into account the universal trends at international expos, the Suncheonman International Garden Expo 2023 must emphasize its image as the “ecological capital of South Korea” and become an expo that has “international universality.”
  - The Suncheonman International Garden Expo 2023, with its theme of gardens and flowers, expects to minimize the damages done to the environment and achieve efficient spatial operation. Also, it will provide an indirect experience of the country’s cultural resources and natural environment through its exhibitions.
- Sublimation to a Cultural Festival
  - As a cultural event, the Suncheonman International Garden Expo 2023 will be an opportunity to establish a cultural base within the region by spreading garden culture and serving as a cultural catalyst. It will present diverse types of parks and gardens and will be of a different nature to one-off flower expos or gardening expos that aim to introduce gardening products, as it will create gardens as artistic subjects.
- Purpose of the event: A part of urban development and regeneration
  - In Germany, Switzerland, and Japan, the same event was held to revitalize depressed regions and regions that had lost their purpose, and related facilities were later used as public parks and community facilities. We will secure the green axis (ecological axis) and maximize spatial efficiency (“City in Park”) through the Suncheonman International Garden Expo 2023.

### 1.2.2 Vision

- The vision of the Suncheonman International Garden Expo 2023 is “Garden in Citizens, Garden in Life, Suncheon Type Fair.” The event aims to enhance quality of life through gardens. The first international garden show that was held in 2013 created a booming trend of gardens in South Korea, and we plan to present the Suncheonman International Garden Expo 2023 as an interactive show that can permeate the lives of its visitors and enhance the quality of life.

- The theme is the completion of a “Suncheon-type” garden city led by citizens. With the completion of this city, which will be planned, implemented, and shared by the public’s leadership, we will expose the public to self-created regional values acquired by tending to their gardens, and we aim to create square-feet, urban, village, patch, and community gardens.
- Space represents the “gardenification” of the entire city’s ecology. Natural factors in the urban and Suncheon regions are connected into dots, lines, and faces to become ecological gardens, while the sea (Suncheonman Bay; the world’s 5th major coastal wetland), mountains (Jogyesan Mountain, Mohusan Mountain, Gyejoksan Mountain, Jeseoksan Mountain, Bonghwasan Mountain), rivers (Dongcheon Stream, Isacheon Stream, Haeryongcheon Stream), and villages (the old downtown and new downtown) are connected to the Suncheonman National Garden in the center.
- Hosted and Organized by
  - International organization: The International Association of Horticultural Producers (AIPH)
  - Hosted by: Korea Forest Service, Jeollanam-do Province, City of Suncheon
  - Organized by: the Suncheonman International Garden Expo 2023 Organization Committee
- Theme: The Hooded Crane of Suncheonman Bay, Soaring in the City!
  - Form of operation: An expo that spans across the entirety of Suncheon City and includes five of Suncheon’s resources, governed jointly by the private and public sectors
  - Key strategy: Plan a Suncheon-type garden expo based on the natural resources the region is rich in to deeply integrate into the daily lives of the public
  - Characteristics: A process to turn Suncheon into a true city of gardens by connecting with the environmental and park projects of Suncheon City and maintain the gardens as new public spaces
  - Interpret five of Suncheon’s resources into five themed expo halls → Forest Garden, Village Garden, Wetland Garden, Coastal Garden, and renewed National Garden
    - Forest Garden: A lake + mountain in a garden; forest garden for children
    - Village Garden: Gardens that are closely related to daily life, e.g., school gardens inside villages, kindergarten garden, cafe gardens, etc.
    - Wetland Garden: A wetland garden-type expo space
    - Coastal Garden: An indoor garden of a Korean peninsular or subtropical region
    - National Garden: A minimalistic style of garden with sunsets and tidal flats; present a Suncheon-type garden model, such as the East Asian Seepweed Garden

## 1.3 Value

- The Suncheonman International Garden Expo 2023 Organization Committee is committed to achieving the following goals with respect to honesty, transparency, and individuals and communities.
  - The Spread of Garden Culture in the Daily Lives of the Public: After six years of holding garden expos, we found that tourists are less attracted to the urban areas and that focus on the National Garden-centered garden culture and industry development has been excessive. With the Suncheonman International Garden Expo 2023, we aim to renew National Gardens while incorporating the entire urban area into the expo premises to spread garden culture to the public and vitalizing the economy with balanced national development.
  - Opportunities for Regional Regeneration and Urban Development: In Germany, Switzerland, and Japan, the same event was held to revitalize depressed regions and those that have lost their purpose, and related facilities were later used as public parks and community facilities. By hosting the event, we aim to vitalize the depressed old town areas and local economy.
  - Strengthening of the Urban Brand as a City of Gardens: The entire urban area will be transformed into a garden to increase its class and solidify its identity as a true garden city that presents the true lives and spaces of the citizens of Suncheon.
  - Ecological Capital of South Korea: The event aims to globally promote Suncheon's unique natural resources, ecology, and landscapes and create a future of Suncheon that fights against climate change and works toward carbon reduction and energy independence.

## 2. Situational Analysis

### 2.1 Normative and Institutional Framework

- It is imperative to comply with the regulations stipulated in the Sustainability Act, and strategic connections to relevant policies of Suncheon City are also required.
  - The 4th Sustainability Master Plan (2021–2040)
  - Suncheon City SDGs 2030

#### 2.1.1 The 4th Sustainability Master Plan (2021–2040)

- The September 2015 United Nations (UN) General Assembly adopted the “2030 Agenda for Sustainable Development” and established the system of Sustainable Development Goals (SDGs) composed of 17 goals in total.
- South Korea has implemented a localized version of the UN SDGs, the Korean Sustainable Development Goals (K-SDGs), to achieve the nation’s sustainable development. Related legal foundations may be found in the “Sustainable Development Act,” and as of 2022, the K-SDGs are implemented through “the 4th Sustainable Development Master Plan (2021–2040).”
- The current K-SDGs system is composed of 4 strategies, 17 goals, and 119 targets with 236 indicators to monitor national sustainability.

### 2.1.2 Suncheon City SDGs 2030

- The indicators that are closely related to the Suncheonman International Garden Expo 2023 are as follows:

<Urban and Environment>

Suncheon City SDGs			UN SDGs
Policy	Target	Indicator	Goal
1. Suncheonman Bay, where nature and humans coexist	1.1 Secure space to create a world-class park	1.1.1 Park area per capita	11. Sustainable city
	1.2 City of forests, renewed by citizens	1.2.1 Completion rate of planting ten million trees	13. Actions against climate change 15. Protection of land ecology
	1.3 Systematic preservation and wise use of Suncheonman Bay	1.3.1. Budget for the preservation and maintenance of Suncheonman Bay 1.3.2. Population of cranes	14. Protection of marine ecology
2. City of clean air and water circulation	2.2 Realize a city with clean air	2.2.1 Annual fine dust particle concentration 2.2.2 Average ozone concentration over eight hours	3. Health and well-being 11. Sustainable city 13. Actions against climate change

<Economy and Industry>

Suncheon City SDGs			UN SDGs
Policy	Target	Indicator	Goal
11. Realize a happy city for the citizens through the vitalization of the local economy	11.1 Develop new and industries that represent Suncheon	11.1.2 Increase rate of Suncheon's regional GDP	9. Industry, innovation, and infrastructure
	11.3 Create quality jobs in Suncheon	11.3.1 Employment rate	8. Quality jobs and economic feasibility

<Culture and Tourism>

Suncheon City SDGs			UN SDGs
Policy	Target	Indicator	Goal
12. City of ecology, culture, and tourism that visitors want to stay in	12.1 Beautiful ecological tourism city that stays beautiful for more than 10 years	12.1.1 Tourist satisfaction	11. Sustainable city
	12.2. A city where ideas for ecological art and cultural industry are experimented on, developed, and realized	12.3.1 No. of independently planned cultural artworks	8. Quality jobs and economic feasibility

<Agriculture>

Suncheon City SDGs			UN SDGs
Policy	Target	Indicator	Goal
13. Circular economy community agriculture	13.3 Establishment of mutual province-farmer growth through increased exchange	13.3.1 No. of accounts for the parcels of urban patches	11. Sustainable city
15. Sustainable agricultural and farming area development	15.3 Preservation of farming and mountain villages' natural landscapes	15.3.1 Expenses for the maintenance of natural landscapes	6. Clean water and hygiene 15. Protection of land ecology

## 2.2 Program Strategy

- The Suncheonman International Garden Expo 2023 Organization Committee prepared a comprehensive strategy to realize the foundation for achieving a sustainable legacy through by hosting this expo and buildings and infrastructure needed to host the event.



- The creation and operation of sustainable and eco-friendly expo premises are based on three concepts of planning, the concept of energy, concept of materials, and concept of water. A structural measure for energy is a building design with the best insulation and ventilation. The principle goal is to minimize the amount of energy demanded.
- The selection of materials is the very foundation of construction, be it a new or renovation project. To facilitate sustainability, it is imperative to check the manufacturing process and origin of materials according to the ecological standards. The materials' ecological balance is critical, and they should be clearly separated in disassembly and, ideally, recycled, while the durability of the material should also be checked.
- Water usage is a core concept of sustainable construction that must not be underestimated. Excessive use of water supply must be avoided, while equipment that supplies rainwater or gray water should be designed, and methods for rainwater storage and processing must be established.

### 2.3 Step-by-Step Requirement

- A step-by-step sustainability management plan must be drafted and implemented by each department. The plan must include the following items.
  - Sustainability performance requirements, key performance indicators (KPIs), other relevant sustainability indicators
  - A process that integrates the sustainability strategy requirement across the program into the project provision through design and construction
  - Frameworks, processes, and tools for the integrated design process
  - Frameworks, processes, and tools for the project team to manage the delivery of the sustainability requirements
  - Frameworks, processes, and tools for monitoring, measuring, and reporting the Sustainability KPIs of the design and construction stages
  - Frameworks, processes, and tools to guarantee the performance of the Sustainability KPIs in the design and construction stages
  - Frameworks, processes, and tools for sustainability training and raising awareness on the project level

### 2.3.1 Requirements for the Design Stage

- In the design stage, the sustainability management plan must be established to reflect the current work stage by project.
- A sustainability report is required as a component of the design report at each design stage's review. The following key aspects must be included.
  - Integrated design approach methods that include relevant analyses and research reports
  - Summary of the project approach topic, current progress in the selected design solution, key risks and opportunities
  - Delivery of strategic progress that includes plans for each key project (in the document or appendix), specific demand or topic of contract
  - Project performance of identified KPIs
  - Risks that may impact all aspects of project provision in all designs.

### 2.3.2 Requirements for the Construction Stage

- In the construction stage, a sustainability management plan by project must be established to reflect the current work stage. Documents related to program's total report strategy and required to meet the sustainability demand for each project must be submitted.
- Performance per sustainability KPI. certificates, inventory, and strategic requirements by topic must be included in the final report.

### 2.3.3 Guarantee Framework

- The accuracy of data provided across the program must be guaranteed. The Suncheonman International Garden Expo 2023 has a sustainability audit program to check whether or not the project team's activities align with the other aspects.

## 3. Policy

### 3.1 Human Rights

- UN SDGs goal 4.7 stipulates that “By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.” Also, 4.a includes the target to “Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all.”
- Based on these, we aim to provide human rights training to workers as the first step to becoming a city where human rights are upheld through the Suncheonman International Garden Expo 2023. A detailed index shall be determined by the number of human rights training program and participants.

### 3.2 Labor

- Respecting the rights of workers and adhering to the labor standards are the the basics of creating quality jobs. To create quality jobs and the enhance quality of life for all workers across the operation and entire supply chain, responsible and comprehensive work practices must be selected, and the corporation that manages the supply chain must utilize their leverage along with their suppliers to contribute to creating quality jobs across the globe. Labor policy includes livable wage, prohibition of child labor, and occupational health and safety.
- The Suncheonman International Garden Expo 2023 protects the human rights of workers and contributes to creating quality jobs based on the “Ordinance of Suncheon City for the Protection and Enhancement of Workers’ Rights” and “Ordinance of Suncheon City for the Designation of Essential Work and Protection and Support for Relevant Workers.”
- The Suncheonman International Garden Expo 2023 aims to set up indicators of the “ratio of workers per plan during the event period.”

### 3.3 Anti-corruption

- According to the Anti-Corruption Act, the Suncheonman International Garden Expo 2023 will implement anticorruption policies for the creation of its expo halls and operation. Also, the Expo will sign the UN Global Compact (UNGC) anti-corruption code of conduct and commit to applying the 10 UNGC anti-corruption principles across its operations.
- To this end, the Suncheonman International Garden Expo 2023 aims to set a “ratio of violators per worker” index based on the 10 UNGC anti-corruption principles.

### 3.4 Diversity and Inclusivity

- The policy on diversity and inclusivity is an essential basic policy for staff engagement. It refers to total devotion to promoting supportive and inclusive culture in all workplaces. UN SDGs goal 4.7 stipulates that “By 2030, ensure that all learners acquire the knowledge and skills needed to promote sustainable development, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.”
- To this end, the Suncheonman International Garden Expo 2023 recognizes expanding programs to raise awareness of gender equality as an essential task. To enhance the awareness of gender equality, one of the policy goals, we aim to set up a “ratio of participants in the gender equality program” indicator.

### 3.5 Accessibility

- Connection and circulation within the premises must be pedestrian-centric, healthy, safe, and easy. All components of the street aspects of the Suncheonman International Garden Expo 2023 must be considered to improve the pedestrian-centric environment. Pedestrian lanes must be well-connected to the nearby existing and planned neighbors, convenient, charming, unobstructed, and safe. The following is an example of pedestrian experience optimization.
  - Maximization of access to pedestrian lanes (e.g., removal of pedestrian blockades and inefficient paths, maximization of pedestrian lanes, etc.)
  - Clear and visible pedestrian signs and other navigational marks

- Appropriate lighting to enhance safety and security
- Functional building entrances and well-placed building facades (appropriate setback)
- Convenient facilities on streets (e.g., Retail shops, basic services, etc.)
- Appropriate approach to close distances and open spaces

### 3.6 Environment

- Environmental policies are about the users' environmental position and values. They serve to check environmentally hazardous procedures and emphasize more eco-friendly ways of working. Good environmental policy affirms the commitment of the Suncheonman International Garden Expo 2023 to protect the environment in a more responsible way to the broader local community.
- Environmental policies may also emphasize not only the reduction of expenses but also more eco-friendly work methods. By establishing an implementation plan, the implementation action, schedule, and responsibility of the officers in charge of helping the project achieve its environmental goal will be set. We will implement the following environmental policies.
  - Assignment of an officer in charge of environmental issues
  - Compliance to relevant regulations
  - Agreement to uphold the best environmental principles and continuous improvements

## 4. Purpose and Goal

### 4.1 Purpose

- The Suncheonman International Garden Expo 2023 is an expo that will span across Suncheon City and utilize all its five key resources, operated under a joint public and private governance. It is a Suncheon-type garden expo based on natural resources the region is rich in to deeply permeate the daily lives of the public. The Suncheonman International Garden Expo 2023, in particular, is a process to turn Suncheon into a true city of gardens by connecting with the environmental and park projects of Suncheon City and maintaining the gardens as new public spaces even after the expo.
- The Suncheonman International Garden Expo 2023 presents goals that the expo is set to achieve through the AIPH's sustainability priorities.

ID	Sustainability priority/goal	Key performance index	Standard	Goal
1	- Use plants and green spaces to support urban climate adaptation and restoration program	No. of gardens created	-	10
		No. of garden renewals	-	10
2	- Enhancement of urban nature and internationally sustainable gardening activities	No. of visitors	-	8 million
		No. of foreign visitors	-	200,000
		No. of participating countries	-	27
		No. of participating local governments	-	100
3	- Selection of the principle of circular economy, reduction of plastic waste and other forms of pollution, support for efficient production and ethical supply network management	No. of cases of resource recycling	-	100
		Recovery of recycled waste	-	5%
4	- Upholding of fair practices across horticultural value chains, diversity, and human rights, cultivation of plants, and creation of green spaces for all	Visitor satisfaction	-	70%
		Revisitation	-	30%
		Visitors from other regions	-	50%
5	- Assistance of people in recognizing the importance of plants and their habitats and promotion of engagement to measures to protect and enhance regional environments while educating and inspiring the public	AIPH General Assembly	-	1
		Conferences and academic seminars	-	5
		National Day, Local Government Day	-	30
		National Garden World Tour Festa	-	10

#### 4.2.1 Design

- These are goals for the design sustainability strategy of the Suncheonman International Garden Expo 2023.

ID	Purpose	Key performance index	Standard	Goal
1.1	- Design that uses space and resources efficiently	- Number of orders for integrated designs that have clear standards	-	10 cases
1.2	- Establishment of a system that can manage processes for efficient designs	- Number of reports for each stage	-	10 cases

#### 4.2.2 Constructor and Construction

- These are goals for the construction stage sustainability strategy of the Suncheonman International Garden Expo 2023.

ID	Purpose	Key performance index	Standard	Goal
2.1	- Use of renewable and recyclable materials for new buildings	- Buildings: Use of recycled materials	-	5 cases
2.2	- Garden plants: Creation of space through transplantation within Suncheon City	- No. of transplants within the premises	-	100 cases
2.3	- Local community: Establishment of an order system for the contribution to the local economy	- No. of participant local businesses	-	50

#### 4.2.3 International Participants

- The following are the goals related to international participants in relation to the sustainability strategy of the Suncheonman International Garden Expo 2023.

ID	Purpose	Key performance index	Standard	Goal
3.1	- Support so that participants and facility managers may understand and contribute to the responsible use of resources	- No. of foreign visitors	-	200,000
		- No. of participating countries	-	27 countries

#### 4.2.4 Transportation

- The transportation sustainability strategy of the Suncheonman International Garden Expo 2023 refers to goals that are related to pedestrian ambulation (pedestrian-centered circulation at the expo that promotes health, safe, and a seamless pedestrian lifestyle) and access that include the needs for special conditions for movement.

ID	Purpose	Key performance index	Standard	Goal
4.1	- Provision of safe, economic, accessible, and sustainable transportation systems	- Satisfaction rate for access to public transport	-	70%
4.2	- Operation of alternative transportation	- Number of visitors using the alternative transportation within the expo area	-	100,000
4.3	- Purchase of electric vehicles for maintenance	- Ratio of electric vehicles	-	80%
4.4	- Installation of facilities for the enhancement of the use of eco-friendly transportation	- Electric vehicle charging station installation ratio	-	100%

#### 4.2.5 Biodiversity

- The biodiversity sustainability strategy of the Suncheonman International Garden Expo 2023 sets up the requirements for the protection of flora and fauna in and outside of the region and the creation of biodiversity and ecology enhanced by the outcome of the expo.

ID	Purpose	Key performance index	Standard	Goal
5.1	- Control and management of intrusive species	- Control activities for intrusive species	-	100 sessions
5.2	- Research on the biodiversity of ecology	- Research on biodiversity	-	10 sessions
5.3	- Activities leading to habitat creation and preservation	- Habitat creation and preservation	-	10 sessions
5.4	- Regular surveys on species, habitats, and local communities	- Surveys	-	2 cases

#### 4.2.6 Energy

- The energy sustainability strategy of the Suncheonman International Garden Expo 2023 aims to minimize the impact of energy consumption and achieve carbon-neutral operations through energy reduction and the use of renewable energy.

ID	Purpose	Key performance index	Standard	Goal
6.1	- Minimization of carbon through the use of renewable energy	- Usage rate of renewable energy	-	30%
6.2	- Installation of systems for maximum efficiency (e.g., lighting, equipment, etc.)	- Ratio of Energy Consumption Rank 1 equipment	-	100%



## 4.2.7 Water Resources

- The water resource sustainability strategy of the Suncheonman International Garden Expo 2023 dictates not only the protection of water resources but also the reduction of its demand and replacement.

ID	Purpose	Key performance index	Standard	Goal
7.1	- Smart water management systems for the maintenance of buildings and gardens	- Ratio of smart control equipment and parts for water management	-	100%
7.2	- Introduction of equipment for the reduction of average water consumption	- Average water consumption	-	7 L
7.3	- Protection of water resources through the use of rainwater	- Rate of rainwater use	-	50%

- Decreased demand: All water resource consumption demands may be decreased through the following technologies.
  - Indoor water demand may be reduced using the following efficient or waterless fixing device and parts.
    - Flush toilet
    - Low-flow or waterless urinal
    - Ultraviolet (UV) sensor or low-flow tap with a shock style (or use a flow limiter)
  - Careful garden design that takes the following into consideration may reduce outdoor water usage.
    - Selection of plants that consider the precipitation pattern in the Suncheon region
    - Introduction of an irrigation system that considers the soil's moisture retention characteristics
    - Introduction of processes and equipment that consume minimal water during the sowing and creation period
- Protection of Water Resource: The protection of water resources is critical to establishing sustainable construction projects. The key aspects of waterway pollution caused through construction and operational activities and removal of the said pollution are as follows.
  - Design stage: Rainwater and subterranean water drainage management, seasonal management, and permanent surface water flow
  - Construction stage: Prevention of pollution, management and commissioning (pipe cleansing) of construction water (rainwater and subterranean water)
  - Demand for water is high and diverse at a construction site. To reduce water consumption at a construction site, careful planning in the strategic and work levels is required. Expected key water demand for construction sites are as follows.
    - Cleansing of dust and equipment cleansing
    - Cleansing of pipes
    - Water for plants

#### 4.2.8 Pollution

- The pollution sustainability strategy of the Suncheonman International Garden Expo 2023 aims to alleviate the impact of potential pollution that may arise from the operation of the expo.

ID	Purpose	Key performance index	Standard	Goal
8.1	- Minimization of excessive lighting	- High-efficiency public lighting system; public open space lighting technology that integrates automated control, sensors, or other energy-saving practices	-	Fully functional from before opening of the expo throughout its operation

#### 4.2.9 Carbon

- The carbon sustainability strategy of the Suncheonman International Garden Expo 2023 aims to make the expo carbon-neutral.
- Climate change is confirmed to be the most urgent environmental issue that may cause potentially devastating consequences to human development. Responding to climate change is the responsibility of all countries, generations, and further, humankind. Climate change is a long-term issue that has been developing for a long time; therefore, no matter how stringent the measures currently taken are, the outcome will not be visible instantly. It is essential to establish a system that can achieve long-term benefits.

ID	Purpose	Key performance index	Standard	Goal
9.1	- Minimization of carbon emissions during the expo period	- GHG emissions reduction strategy	No strategy - to be developed	Full integration
		- GHG emissions reduction rate	Total carbon emissions on-site in 2022	30% reduction

#### 4.2.10 Sustainable Event Operation and Management

- The sustainability strategy for sustainable event operations and management of the Suncheonman International Garden Expo 2023 will focus on the development of the capabilities of workers in the field and the citizens.

ID	Purpose	Key performance index	Standard	Goal
10.1	- Visitor and managers' sustainability training	- Awareness training	-	Quarterly
		- Information leaflet or booklet	-	5EA
10.2	- Sustainability progress and performance report	- International guideline-based sustainability report	-	Yes

- The Suncheonman International Garden Expo 2023 expects to create new buildings and gardens in the area and requires many programs for their operation. Related hardware and software must be focused on the establishment of the facility maintenance competency for visitors, workers who participated in the creation process, operational staff, and locals.
  - The training and perception program must consider workers, maintenance staff, and visitors in its creation. The training and perception strategy must integrate all components of sustainability and be visible within each developed strategy.
  - It is important for the staff to have a comprehensive understanding of sustainability measures required on-site, such as appropriate construction waste management and sorting.
  - In line with this, training for facility managers and administrators must include the understanding of the following items.
    - How the expo halls are intended to function; whether or not they are designed for enhanced performance; how to maintain the premises for optimized performance
  - The behavior of visitors may have a significant impact on the performance or development and sustainability related to energy and water consumption in particular. Even the small acts of turning off lights, electronic appliances, and control devices may create big differences. Therefore, the perception and training strategy must guarantee cultural awareness, language, age, gender, cultural, and educational background while being comprehensible to all users.
  - Such goal will be achieved through the following.
    - Selection of monitoring and confirmation processes that include quantification strategies to check environmental and economic saving
    - Enhancement of perception and training to strengthen the knowledge of users and managers for more efficient use of facilities
- Climate change has been confirmed to be the most urgent environmental issue that may cause potentially devastating consequences to human development. Responding to climate change is the responsibility of all countries, generations, and further, humankind. Climate change is a long-term issue that has been developing for a long time; therefore, no matter how stringent the measures currently taken are, the outcome will not be visible instantly. It is essential to establish a system that can achieve long-term benefits.

#### 4.2.11 Waste and Disassembly

- The sustainability strategy for the waste and disassembly processes of the Suncheonman International Garden Expo 2023 aims to creating minimum landfill waste.

ID	Purpose	Key performance index	Standard	Goal
11.1	- Minimization of landfill waste	- Ratio of landfill waste	-	100%

- **Reduction of Waste**

- The minimization of waste is best achieved through careful planning and consideration of all waste flows. Successful waste management can be achieved only when waste flow is fully understood. The strategy to minimize waste generation must be considered in all stages of work, from design to construction and operational decisions.
  - Design that utilizes preproduction options, standardization, and modular design concepts
  - Design with functional measures to minimize cuttings and waste generation. Cutting building components (e.g., plaster sheets and concrete blocks) generate waste cuts. Designs to minimize cuts, such as by fitting the ceiling height to the standardized plaster sheet size, can significantly reduce waste.
  - To minimize tailored production, design components to meet the market standards.
- Reduce waste significantly through careful planning and site management during construction. The key measures to be taken before the beginning of the construction are programming the work to reduce the necessity for work or prevent damages to completed surfaces. Provide appropriate materials and storage space during construction to remove potential damages and destruction to ultimately reduce waste.
- The operational decisions of a completed facility may also minimize the creation of waste. Developing food procurement, storage, and preparation systems may also minimize food wastage. Place reusable plates, cups, and cutlery appropriately to significantly reduce waste.

- **Reuse of Waste**

- The reuse of materials to reduce waste may pose issues related to the quality of materials and reliance on guarantee. However, by establishing a culture of material recycling and considering reasonable effort and expenses across the program, this strategy may have many positive effects across the design and construction process.

- **Recycling of Waste**

- Recycling is the most common aspect realized in the waste structure. Designing a waste recycling facility is critical in supporting this aspect.

## 5. Conclusion

- The Suncheonman International Garden Expo 2023 creates a new green belt (ecology buffer area) for the permanent preservation of Suncheonman Bay and secures new urban green areas to establish the city as Korea's representative ecological tourism destination garnering more than 5 million visitors annually.
- The Suncheonman International Garden Expo 2023 aims to achieve urban regeneration, create a garden education community and jobs, develop the garden industry to create a garden city and model city for domestic and international garden industries.
- Suncheon is the warmest region in the Korean Peninsula with an annual average temperature of 12.5°C and is the best place to grow flowers. It supplies 70% of royal azalea saplings, and 25% of thornbushes (and other plants growing in warm climate) nationwide and is a city with infinite development potential for forestry industry thanks to its wide range of climate coverage that spans from warm-temperature, temperate, and cold-temperature forests and rich forestry resources.
- Ecologically, Suncheon is an internationally recognized by UNESCO and Ramsar. It is a city that has UNESCO World Heritage Sites (Seonamsa Temple/2018, Naksaneupseong Fortress/2022), World Heritage Sites (Suncheonman Bay/ 2020), the first coastal wetland to be designated as a Ramsar Wetland (Jan. 2006), the first city to be certified as a Ramsar Wetland City (Oct. 2018), and is registered as a UNESCO Biosphere (Jul. 2018).
- As such, the city is working to become more ecological through the Suncheonman International Garden Expo 2023 based on its nature, history, and cultural resources as well as gardens. Suncheon, a lively city with sustainable ecology, has a sustainability strategy that aims to improve citizens' lives through the preservation and wise use of its ecological environment and realization of growth and rich economy.
- The Suncheonman International Garden Expo 2023 is committed to match the expo's sustainability strategies to its ultimate goals, comply with international guidelines related to sustainability strategies, and diligently report progress and performance.