

Standard Blue Leaf



First revision ____ September 2023

The Fun Lab

1. Introduction

The commitment to sustainability in the generation, renovation, and management of all types of facilities has become a trend to which no sector is oblivious, as in the case of the tourism sector. For some years now, many resort owners and managers have been trying to align their facilities with the sustainability standards applicable in the areas of architecture, operations, or governance, as well as obtaining some of the various existing certifications in this area to further differentiate their tourism product and increase their value proposition.

In this sense, the industry is demanding specific solutions to implement greater sustainability and efficiency in the outdoor areas of holiday resorts, since these are the facilities that are used much more intensively during periods of high seasonality and generate a greater negative impact -water, acoustic, lighting, etc.- in the municipalities where they are located, mature coastal holiday destinations.

Sustainability in outdoor spaces, swimming pools and their hydraulic equipment involves designing, constructing, managing and maintaining these areas in a way that minimizes environmental impact, promotes efficiency and ensures long-term durability.

This practice considers environmental, social and economic aspects at all stages, from planning and design to operation and maintenance

From an environmental perspective, sustainability in this standard is applied mainly in the use of design practices that reduce the consumption of natural resources, such as water and energy. In addition, rainwater collection and reuse systems are proposed, as well as water-efficient technologies, such as advanced filtration and recirculation systems. Sustainable and low environmental impact materials are also considered in the construction and maintenance of these areas.

In terms of social aspects, sustainability is related to the well-being and safety of the people who use these spaces. Accessibility for people with disabilities is ensured, safe and clean areas are provided, and adequate safety practices are promoted.

Regarding economic aspects, sustainability implies considering long-term aspects and allowing the viability of the business in balance with a zero impact of the activity on the environment and stakeholders. The life-cycle cost of hydraulic equipment is evaluated, considering energy efficiency and savings in water consumption, and whether adequate maintenance is carried out to prolong its useful life. Initial investment in sustainable technologies can generate significant savings in long-term operating costs.

2. The Fun Lab

The Fun Lab (TFL Consultoría y Proyectos de Ocio S.L.) is the engineering firm behind the development of this standard. We have a team of qualified professionals with extensive experience in the field of swimming pools, leisure areas and hydraulic and environmental projects, mainly for leading companies in the tourism sector.

In parallel, The Fun Lab is an independent inspection entity accredited by the ISO/IEC 17020 standard by ENAC (Entidad Nacional de Acreditación), for the inspection and certification of aquatic leisure areas following European and American standards.



In addition, the company is part of the Technical Body CTN 147/SC 2/GT 1 work team, belonging to the Spanish Association for Standardization (UNE), CEN/TC 136/WG, the European Committee for Standardization (CEN) and ASTM Committee F24, all of which are responsible for reviewing, updating and modernizing the UNE, EN and ASTM standards focused on swimming pools and aquatic leisure areas.

For all these reasons, our mission as an organization is to help our clients generate and promote safer, more sustainable and innovative leisure spaces.

3. Blue Leaf Standard

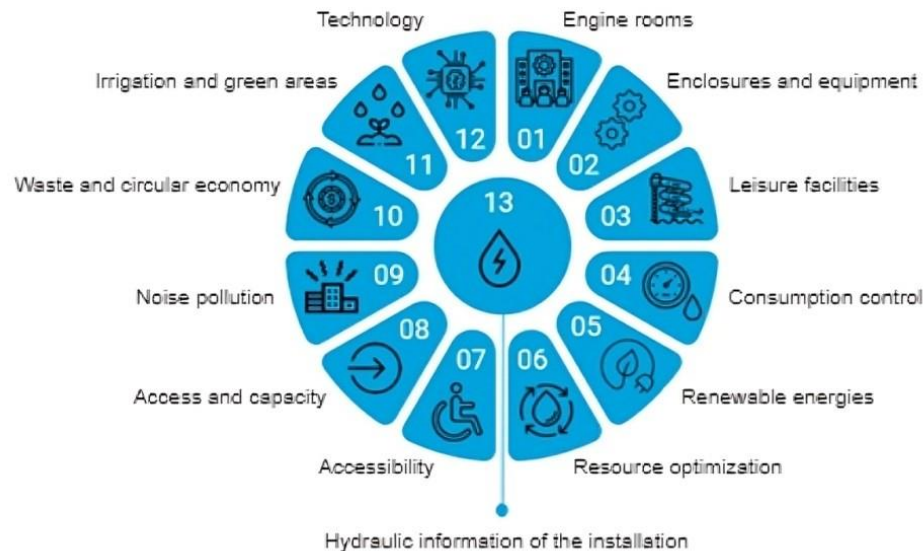
In a generalized way, at an international level, hotel companies with vacation assets currently manage and measure their level of integration of sustainability policies, taking as a reference various certification and sustainable management systems for tourism companies that provide tools for the evaluation, management, and improvement of an organization's global operations in environmental matters.

Meanwhile, international sustainable architecture standards provide guidance and indicators to certify good environmental practices in the design and construction of sustainable buildings and facilities.

However, the problem that arises in all these cases is that either little attention is paid to the outdoor common areas of these complexes, or the standards are very generic and do not allow for easy tangibilization into concrete actions and guidelines for these types of spaces.

As a result of this context, the **Blue Leaf Standard - Leverage for Efficiency in Aquatic Facilities** was born, a *framework* that aims to develop the first planning and management model that brings together a list of good guidelines for sustainable management in these outdoor spaces and, in addition, is a vehicle to accompany with actions and indicators to those resorts that wish to commit to the integration of sustainability in their strategies and day-to-day activities.

At the *core* of the project, a theoretical model has been created with more than 100 indicators and/or specific actions for the management of external areas, which are currently organized into the following thirteen pillars:



3.1. Objectives

The development of this standard aims to provide the holiday tourism sector with an operational guide to incorporate sustainability and efficiency in the management of its outdoor facilities, reducing the consumption of natural resources, minimizing waste generation, and promoting environmentally friendly practices.

In addition, the *Blue Leaf Standard* has the following specific objectives:

- Reduce water consumption in outdoor areas and swimming pools through the implementation of water saving and reuse technologies, as well as the adoption of responsible water use practices by staff and guests.
- Minimize energy consumption in outdoor areas and swimming pools, using energy efficient lighting, energy efficient filtration equipment, as well as renewable energy sources when feasible.
- Promote responsible waste management, establishing waste separation and recycling programs in outdoor areas and swimming pools, and educating staff and guests about the importance of reducing, reusing, and recycling.
- To promote the conservation of biodiversity and the protection of the natural environment, using native species in the design of gardens and the adoption of sustainable gardening practices, avoiding the use of chemical products that are harmful to the environment.
- Improve accessibility and safety in outdoor areas and swimming pools, ensuring that they are adequately adapted for people with reduced mobility and comply with established safety standards.
- Establish monitoring and measurement indicators to evaluate the environmental performance of outdoor spaces, swimming pools and their equipment, and perform regular monitoring to identify areas for improvement and take corrective actions.

3.2. Scope

The *Blue Leaf Standard* has been developed with the purpose of being adaptable to any resort or sports center with outdoor swimming pool areas, leisure areas and their surroundings that wishes to evaluate, measure, and improve its performance in terms of sustainability, among which we can find:

- Hotels and resorts
- Campgrounds
- Water and/or theme parks
- Summer swimming pools in leisure and sports centers

The model is suitable to be implemented in any complex wishing to perform ad-hoc performance, a new construction, or a complex in the process of renovating its facilities.

3.3. Structure

The *Blue Leaf Standard* is divided into three main components. Firstly, we have the Pillars, which are the fundamental dimension or thematic area that is considered crucial to achieve sustainable development, these being those set out above.

Secondly, we have the Criteria, which are a standard or set of requirements established to evaluate sustainable performance in a given area. Criteria can be specific to each pillar of sustainability.

Finally, we have Indicators, which are a quantitative or qualitative parameter used to evaluate performance or progress in relation to a specific criterion. Indicators are tools to measure and monitor the impact of actions or practices in terms of sustainability.

The proposed standard integrates both quantitative and qualitative indicators, thus allowing for a greater perspective of the facilities and a more in-depth analysis; when quantitative data is required, the units to be used will also be indicated if so required.

4. Blue Leaf Standard Indicators

1	ENGINE ROOMS
1.1	Equipment
1.1.1	Does the facility have LED lighting?
Definition Refers to whether the facilities in question are equipped with lighting systems that use LED (light emitting diode) technology. LED lighting is an efficient form of lighting that uses less energy and has a longer lifetime compared to conventional light sources such as incandescent or fluorescent bulbs.	
1.1.2	Are user information screens implemented?
Definition Corresponds to whether the resort in question uses displays or other electronic devices to provide relevant information to guests or visitors in the pool area. These information displays may show details of water temperature, water chemistry, or other useful information to users.	
1.1.3	Does the facility have a natural ventilation system?
Definition This refers to whether the facility's machine room has a system that allows air circulation in a natural way, without relying on mechanical equipment or artificial ventilation systems. It is based on taking advantage of natural air currents, such as temperature differences and convection currents, to allow adequate air renewal. This may include the presence of strategically placed openings, such as windows, skylights or vents, which allow fresh air to enter and stale air to escape.	
1.1.4	Does the facility have green roofs?
Definition Green roofs, also known as green roofs or green roofs, are systems that incorporate vegetation on top of the plant room. These systems can have significant environmental benefits, such as reducing the heat island effect, absorbing rainwater, improving air quality and promoting biodiversity.	
1.1.5	Does the enclosure have natural lighting?
Definition Refers to whether the hydraulic machine room of a facility or building has natural light from the outside. Daylighting refers to sunlight entering a space through windows, skylights or other openings.	
2	ENCLOSURES AND EQUIPMENT
2.1	Changing rooms
2.1.1	Are the locker rooms equipped with faucet timers?

Definition	
<i>Refers to whether the faucets located in the locker rooms are equipped with a timing system. Faucet timing is a measure that is implemented for the purpose of controlling and limiting the water flow time at the faucets. These systems are usually automatic and are designed to shut off the water supply after a certain preset period of time.</i>	
2.1.2	Do the locker rooms have perlators on the faucets?
Definition	
<i>It corresponds to whether the faucets located in the locker rooms are equipped with perlators. The perlators, also known as aerators, are devices that are installed at the ends of the faucets and mix air with the flowing water, generating a soft and foamy jet. These devices have multiple benefits, both for water savings and user comfort.</i>	
2.1.3	Do the showers in the locker rooms have flow restrictors?
Definition	
<i>Refers to whether showers located in locker rooms are equipped with flow restrictors. Flow restrictors are devices that are installed in showers to limit water flow and reduce the amount of water used during bathing. These devices have the ability to maintain adequate water pressure while reducing the flow rate, resulting in more efficient and responsible consumption of the water resource.</i>	
2.1.4	Do the faucets in the locker rooms have flow restrictors?
Definition	
<i>Refers to whether the faucets located in the changing rooms are equipped with flow restrictors. Flow restrictors are devices that are installed in showers to limit water flow and reduce the amount of water used during bathing. These devices have the ability to maintain adequate water pressure while reducing the flow rate, resulting in more efficient and responsible consumption of the water resource.</i>	
2.1.5	Are the urinals and toilets in the locker rooms dual flush?
Definition	
<i>Refers to whether urinals and toilets located in locker rooms are equipped with a dual flush mechanism. Dual flush is a flushing system that allows the user to select between two water volume options at the time of flush activation. Typically, these options are a full flush for solid waste and a partial flush for liquid waste.</i>	
2.1.6	Do the locker rooms have LED lighting?
Definition	
<i>Refers to whether the locker rooms are equipped with LED lighting systems. LED lighting, which stands for Light Emitting Diode, is a highly efficient and sustainable lighting technology. LED lighting systems use semiconductor diodes to produce light more efficiently than conventional light sources, such as incandescent or fluorescent bulbs.</i>	
2.2	Toilets
2.2.1	Do the toilets have timers on the faucets?
Definition	
<i>Refers to whether the faucets located in the toilets are equipped with a timing system. Faucet timing is a measure that is implemented for the purpose of controlling and limiting the time of water flow in the faucets. These systems are usually automatic and are designed to shut off the water supply after a certain preset period of time.</i>	
2.2.2	Do the toilets have perlators on the faucets?
Definition	
<i>It corresponds to whether the faucets located in the toilets are equipped with perlators. The perlators, also known as aerators, are devices that are installed at the ends of the faucets and mix air with the flowing water, generating a soft and foamy jet. These devices have multiple benefits, both for water savings and user comfort.</i>	

2.2.3	Do the faucets in the toilets have flow restrictors?
Definition <i>Refers to whether the faucets located in the changing rooms are equipped with flow restrictors. Flow restrictors are devices that are installed in showers to limit water flow and reduce the amount of water used during bathing. These devices have the ability to maintain adequate water pressure while reducing the flow rate, resulting in more efficient and responsible consumption of the water resource.</i>	
2.2.4	Do the urinals and toilets in the toilets have dual flush?
Definition <i>Refers to whether urinals and toilets located in toilets are equipped with a dual flush mechanism. Dual flush is a flushing system that allows the user to select between two water volume options at the time of flush activation. Typically, these options are a full flush for solid waste and a partial flush for liquid waste.</i>	
2.2.5	Do the toilets have LED lighting?
Definition <i>Refers to whether the washrooms are equipped with LED lighting systems. LED lighting, which stands for Light Emitting Diode, is a highly efficient and sustainable lighting technology. LED lighting systems use semiconductor diodes to produce light more efficiently than conventional light sources, such as incandescent or fluorescent bulbs.</i>	
2.3	Showers
2.3.1	Do the showers have timers on the faucets?
Definition <i>Refers to whether the showers are equipped with a timing system. Faucet timing is a measure that is implemented for the purpose of controlling and limiting the water flow time at the faucets. These systems are usually automatic and are designed to shut off the water supply after a certain preset period of time.</i>	
2.3.2	Do the showers have perlators on the faucets?
Definition <i>It corresponds to whether the showers are equipped with perlators. The perlators, also known as aerators, are devices that are installed at the ends of the faucets and mix air with the flowing water, generating a soft and foamy jet. These devices have multiple benefits, both for water savings and user comfort.</i>	
2.3.3	Do shower faucets have flow restrictors?
Definition <i>Refers to whether the showers are equipped with flow restrictors. Flow restrictors are devices that are installed in showers to limit water flow and reduce the amount of water used during bathing. These devices have the ability to maintain adequate water pressure while reducing the flow rate, resulting in more efficient and responsible consumption of the water resource.</i>	

3	LEISURE FACILITIES
3.1	Water games
3.1.1	Do the water games have an activator to turn on the effect of the games?

Definition	
<i>It has to do with whether the water games, such as fountains or interactive water jets, have a device or mechanism that allows the effect of the games to be activated. In water games, the activator is a key component used to turn on or control the different effects of the games. This activator can take different forms depending on the design and technology used in each particular aquatic game. Some common examples of triggers include: Buttons or switches or proximity sensors.</i>	
3.1.2	Do the water games have a timer for the effect of the games?
Definition	
<i>Corresponds to whether the water games are equipped with a timer device or mechanism that controls the duration or time in which the effect of the games is activated and maintained. The timer in aquatic games is a component used to program and regulate the duration of the effects, such as water jets, lights, or other interactive elements present in the game. This timer can be configured to turn the effects on and off automatically at predetermined intervals or according to a specific schedule.</i>	
3.1.3	Are the effects of water games sequenced by zones?
Definition	
<i>Consists of whether the waterplay effects are sequentially timed or coordinated in different areas or specific zones of the waterplay. When water play effects are sequenced by zones, it means that different groups of effects are set up to be activated and deactivated at specific times and in designated areas of the water play. This may include synchronization of water jets, lights, or other interactive elements to create a coordinated and immersive experience for users and to save water by not having all of the games active throughout the run.</i>	

4	CONSUMPTION CONTROL
4.1	Flow meters
4.1.1	Does the installation present a sectorization of the hydraulic networks with independent water meters?
Definition	
<i>refers to whether the hotel's outdoor areas have been divided into different sectors or zones, and whether each sector has separate water meters. The sectorization of the hydraulic networks involves the subdivision of the water supply system into smaller areas or sections within the hotel's outdoor facilities. Each sector is supplied independently and may have different water consumption needs. The presence of independent water meters in each sector makes it possible to monitor and control water consumption more precisely in each sector, which can help to manage and optimize the use of water resources.</i>	
4.2	Detectors
4.2.1	Is a leak alarm system in place?
Definition	
<i>A leak alarm system is a set of devices and sensors designed to constantly monitor pipelines, ducts or equipment for possible leaks. These devices are connected to a centralized detection system that, upon detection of a leak, emits an alarm signal to alert personnel responsible for site safety and maintenance.</i>	
4.2.2	Is there an alarm system in place for consumption peaks?
Definition	
<i>A peak consumption alarm system is a set of devices and sensors designed to monitor water or energy consumption in real time. These devices are connected to a centralized system that analyzes the data and, when a predefined threshold is exceeded, triggers an alarm to alert the personnel in charge of consumption management and control.</i>	

5	RENEWABLE ENERGIES
5.1	Solar energy support
5.1.1	Is solar energy used in machine room equipment?
<p>Definition <i>This corresponds to whether solar energy is used as a power source for equipment and devices in the mechanical rooms. In the context of machine rooms, this implies using systems or devices that capture solar energy and use it to power the equipment present in these rooms.</i></p>	
5.1.2	Is the pool water heated by solar energy?
<p>Definition <i>Refers to whether the pool water is heated using solar energy as the heat source through methods such as solar thermal collectors, solar blankets or solar heat pumps.</i></p>	
5.1.3	Is the lighting in the engine room solar-powered?
<p>Definition <i>This refers to whether the engine room uses solar energy as a power source for lighting in the engine room. In the context of solar energy, it is possible to use this renewable energy source to provide lighting in different spaces, including the engine room.</i></p>	
5.1.4	Does the lighting of outdoor spaces use solar energy?
<p>Definition <i>Refers to whether the lighting of outdoor areas, such as gardens, patios, parking lots or other outdoor spaces, is done using solar energy as a power source. In the context of solar energy, it is possible to use this renewable energy source to provide lighting in outdoor spaces.</i></p>	
6	RESOURCE OPTIMIZATION
6.1	Reuse of water resources
6.1.1	Is rainwater reused in different areas of the outdoor facilities?
<p>Definition <i>Rainwater reuse involves collecting and storing the water that falls during rainfall for later use in different activities, such as watering gardens, cleaning outdoor areas, or recharging fountains and ponds.</i></p>	
6.1.2	Does the outdoor facility have a gray water reuse system?
<p>Definition <i>Graywater refers to water generated by domestic or commercial activities that is not contaminated with sewage. This may include water from sinks, showers, washing machines and other similar sources. Graywater reuse involves collecting and treating graywater for use in a variety of non-potable applications, such as watering gardens, washing outdoor areas, or recharging fountains and ponds.</i></p> <p>Score 2 points</p>	

6.1.3	Is the water from filter washings reused?
Definition <i>During the regular maintenance of a swimming pool, it is common to wash the filters to remove accumulated impurities and debris. Instead of discarding the water used in this process, a reuse system can be implemented to collect and treat this water for reuse in the pool or in other non-potable applications.</i>	

7	ACCESSIBILITY
7.1	Access to facilities
7.1.1	Do the facilities have accessibility ramps to outdoor spaces?
Definition <i>Accessibility ramps are architectural elements designed to replace or complement stairs, allowing people with wheelchairs, walkers, or other mobility limitations to enter and exit outdoor spaces safely and without obstacles. These ramps are constructed with an appropriate slope, non-slip surfaces, and supporting handrails to ensure the comfort and safety of users.</i>	
7.1.2	Is there an enabled access or hydraulic lifting equipment to access the pool basin?
Definition <i>This refers to whether there is an adequate and safe way for people to enter the pool water, either through a designated entrance or through the use of specialized equipment such as a hydraulic lift. The designated access may include stairs or steps within the pool that allow people to enter and exit easily. On the other hand, a hydraulic lift is an option for people with reduced mobility or physical disabilities. This equipment allows people to be raised and lowered smoothly in and out of the water, providing accessibility to the pool.</i>	
7.1.3	Is there an adapted vehicle equipment to access the pool basin at the facility?
Definition <i>A pool access vehicle is a motorized device that provides a safe and accessible transportation solution for people with physical disabilities. This type of vehicle usually has special features, such as a platform lift or a ramp, which allow people to access the pool in a comfortable and safe way.</i>	
7.1.4	Does the facility have an adapted vehicle equipment to access nearby beaches?
Definition <i>An adapted vehicle equipment for accessing nearby beaches is a motorized device used to safely and accessibly transport people with physical disabilities from facilities to beaches. This type of vehicle usually has special features, such as a platform lift or ramp, that allow people with reduced mobility to reach the beach unimpeded.</i>	
7.1.5	Does the pavement of the facility's outdoor spaces comply with Class III slip-resistant?
Definition <i>Class III slip resistance is a rating used to evaluate the ability of a surface to provide traction and reduce the risk of slips and falls. If outdoor space paving meets Class III slip resistance, it means that it has been evaluated and certified as a surface that provides an adequate level of slip resistance, even in wet or damp conditions. This is especially important in outdoor areas, such as patios, decks, walkways and pool areas, where there may be an increased risk of slipping due to the presence of water, rain or other wet conditions.</i>	

8	ACCESS AND CAPACITY
8.1	Capacity control and surveillance
8.1.1	Is there an automatic gauging control inside the pool?
<p>Definition <i>Automatic gauging control inside the pool refers to a system that uses technology and sensors to count and track the number of people accessing the pool area. This system can operate through motion detection, the use of counting devices, or through the use of technology such as cameras or proximity sensors. The purpose of this automatic capacity control is to ensure that the maximum capacity of the pool is not exceeded and to avoid crowds that could compromise the safety and comfort of users.</i></p>	
8.1.2	Is there a capacity control in outdoor spaces?
<p>Definition <i>Capacity control in outdoor spaces is a common practice to ensure the safety, comfort and pleasant experience of guests and users. These measures may be established by resort owners or managers, and may be subject to local or national regulations and guidelines related to the tourism industry. Capacity controls in outdoor areas of resorts may include capacity limits for specific areas, use of reservation systems or shifts to access certain outdoor facilities, access control through staff or technology, constant monitoring of the number of people present, among other measures.</i></p>	
8.1.3	Is there surveillance/security inside the pool?
<p>Definition <i>It involves determining whether the pool in question has surveillance or security personnel in charge of supervising and ensuring the safety of users. Pool security personnel are responsible for monitoring users' activities, preventing hazardous situations, responding to emergencies, and ensuring compliance with established safety standards.</i></p>	
8.1.4	Is there surveillance/security outside the pool?
<p>Definition <i>It involves determining whether there is surveillance or security personnel outside the pool area in charge of supervising and ensuring the safety of users. The presence of surveillance or security outside a pool can be a measure implemented in several places, especially in those where a significant influx of people is expected or where it is considered necessary to maintain the safety of swimmers. The surveillance or security personnel outside the pool are responsible for monitoring the surrounding area, preventing risk situations, responding to emergencies and ensuring compliance with established safety standards.</i></p>	
8.1.5	Is there surveillance/security of outdoor spaces?
<p>Definition <i>Refers to whether the resort in question has surveillance or security personnel in charge of supervising and ensuring security in outdoor areas of the resort, such as gardens, outdoor recreational areas, parking lots, among others. The surveillance or security personnel for outdoor areas are responsible for monitoring the environment, preventing suspicious or dangerous activities, responding to emergencies, and maintaining compliance with security rules and regulations.</i></p>	
9	NOISE POLLUTION
9.1	Noise prevention and mitigation
9.1.1	Is any soundproofing method implemented in the machine rooms?

Definition	
<i>Corresponds to whether measures or techniques are used to reduce or control the noise generated by machines and equipment in the machinery rooms located in outdoor areas. The main purpose of soundproofing is to mitigate the effects of noise in the environment, protect people working in the machine rooms and minimize noise transmission to other nearby areas.</i>	
9.1.2	Is low noise equipment available in machine rooms?
Definition	
<i>In the context of hydraulic machine rooms, low-noise equipment refers to the presence of machinery, components and systems that have been specifically designed and manufactured to minimize noise emission. This equipment is designed to operate more quietly compared to conventional equipment, which helps to reduce noise levels in the machine room and surrounding environment. This equipment can be low-noise motors and pumps or vibration isolation systems.</i>	
9.1.3	Is there an operating time control for high noise equipment?
Definition	
<i>The control of operating times in high noise equipment refers to the adoption of measures to limit or regulate the hours or periods during which this equipment can operate and generate high noise levels. These measures can be implemented with the objective of minimizing noise nuisance to people in the environment and complying with local regulations and standards related to noise pollution.</i>	
9.1.4	Is the use of noisy machinery or tools limited?
Definition	
<i>Limiting the use of noisy machinery or tools refers to the implementation of measures to control or reduce the noise impact generated by this equipment. These measures are usually aimed at minimizing the annoyance or disturbance caused by noise, protecting people's hearing health and complying with regulations and standards related to noise pollution. This limitation can be done through strategies such as establishing restricted hours or zoning the use of certain machinery with high noise impact.</i>	
9.1.5	Are activities such as the use of machinery or different activities that generate noise limited during rest hours?
Definition	
<i>The limitation of noisy activities during rest hours refers to the adoption of measures to control or reduce the acoustic impact generated by such activities during times when a quieter environment is expected and conducive to rest and well-being of people.</i>	

10	WASTE AND CIRCULAR ECONOMY
10.1	Waste management and environmental impact
10.1.1	Is there a waste management manual that includes all materials?
Definition	
<i>An all-inclusive waste management manual refers to a document that provides guidelines, procedures and best practices for the proper management of all types of waste present at a specific site. This manual aims to facilitate the correct separation, storage, transportation, treatment and final disposal of waste, ensuring its safe and environmentally friendly management. The waste management manual that includes all materials can cover a wide range of waste, such as organic waste, solid waste, hazardous waste, construction and demolition waste, electronic waste, among others.</i>	
10.1.2	Are recycled materials used in the facilities?

Definition
 The use of recycled materials in the resort's facilities refers to the incorporation of materials that have been transformed from previously used products or materials, instead of using virgin materials or materials of non-recycled origin. This practice aims to reduce the demand for natural resources, minimize waste generation and contribute to environmental sustainability. For example, in this practice we can find the use of bricks, blocks, tiles, beams, panels or insulation made from recycled materials such as glass, plastic, wood or metal or on the other hand, the use of furniture, accessories and decorations made from recycled materials such as recycled wood, recycled plastics, recycled textiles or recycled glass.

10.1.3 Are materials obtained from sustainable resources used in the facilities?

Definition
 The use of sustainably sourced materials in facilities refers to the choice of materials that are responsibly sourced, produced or grown and have a lower environmental impact compared to conventional materials. These materials are obtained from renewable sources, are sustainably managed throughout their life cycle, and are procured through ethical and environmentally friendly practices. Examples of materials obtained from sustainable resources that can be used in facilities include: certified wood, recycled materials, plant-based products (such as bamboo, cork or hemp) and so on.

10.1.4 Are suppliers located nearby to reduce the environmental impact of transporting materials?

Definition
 Locating nearby suppliers to reduce the environmental impact of transporting materials means searching for and selecting suppliers that are located in close geographical proximity to the resort. This is done with the objective of minimizing the distances traveled during the transportation of materials, which in turn reduces greenhouse gas emissions and other environmental impacts associated with transportation. This also helps to streamline supply management and stimulate the local economy.

11 IRRIGATION AND GREEN AREAS

11.1 Installed equipment

11.1.1 Does the irrigation system have pressure limiters?

Definition
 Pressure limiters are devices designed to control and regulate water pressure in an irrigation system. These devices can be pressure regulating valves, pressure reducers or automatic controllers that adjust and maintain water pressure in a predetermined range.

11.1.2 Does the irrigation system have sprinklers?

Definition
 Spray heads are irrigation system components used to distribute water evenly and in a controlled manner over the area to be irrigated. These devices are installed on sprinklers or irrigation emitters and are responsible for dispersing the water in the form of spray or fine droplets, allowing it to be distributed evenly over the irrigated area. This system helps to distribute the water evenly over the ground while generating water savings due to a more precise application of water, avoiding over-irrigation.

11.1.3 Are there independent water meters in each assigned irrigation zone?

Definition
 A separate water meter in each assigned irrigation area refers to a metering device that is installed in the water supply network of each specific irrigation area. These meters allow recording and controlling the water consumption used exclusively for the irrigation of that particular zone. Having this zoning allows for greater control and management of the water resource, in addition to helping to detect leaks in the network and monitor water consumption.

11.1.4	Does the installation have rain sensors?
Definition <i>Rain sensors are devices designed to detect the presence of rain and automatically suspend irrigation when a certain level of precipitation is reached. These sensors are placed in a strategic location, usually in an open area exposed to the weather, and are designed to detect rainfall and send a signal to the irrigation system controller to stop scheduled irrigation.</i>	
11.1.5	Is an automatic irrigation controller implemented?
Definition <i>An automatic irrigation controller, also known as an irrigation controller or timer, is an electronic device used to automatically program and control the turning on and off of the irrigation system. This device allows you to set watering schedules, frequencies and durations according to the needs of the landscape.</i>	
11.2	Vegetation
11.2.1	Are native plants used in the vegetation?
Definition <i>Native plants are those that originate and adapt naturally to a particular ecosystem or geographic region. These plants have the advantage of being adapted to the climatic conditions, soil and environmental factors specific to the area in which they grow naturally. By using native plants in the vegetation of a resort, several benefits can be obtained: adaptability, biodiversity conservation, water savings, among others.</i>	
11.2.2	Have trees with low water requirements been planted?
Definition <i>It involves determining whether trees that require less water for growth and survival have been used in the resort. Trees with low water requirements, also known as drought-tolerant trees or drought-resistant trees, are plant species that have the ability to adapt and grow under conditions of water scarcity. These trees have developed mechanisms to conserve water, such as small leaves or waxy canopies, deep root systems, or the ability to store water in their tissues.</i>	
Score 1 point	
11.2.3	Are ecological phytosanitary products used on vegetation?
Definition <i>Plant protection products are substances used to protect plants from pests, diseases and weeds. Organic crop protection products are characterized by being of natural origin, biodegradable and less toxic to the environment and non-target organisms. These products are usually based on ingredients derived from plants, minerals or beneficial organisms, and are designed to control pests and diseases in a more selective and sustainable manner.</i>	

12	TECHNOLOGY
12.1	Implementation of control software
12.1.1	Is energy consumption control software in place?
Definition	

<p>An energy consumption control software is a technological tool that allows collecting, analyzing and visualizing data related to energy consumption in real time. This software is used to monitor and control the use of energy in different areas and equipment of the resort, such as lighting, air conditioning, appliances, hot water systems, among others.</p>	
12.1.2	Is hydraulic equipment control software available?
<p>Definition It involves determining whether the resort uses a specialized computer system to monitor and manage the operation of hydraulic equipment such as pumps, valves, filters and other devices related to water and fluid systems.</p>	
12.1.3	Is equipment control software in place for outdoor spaces?
<p>Definition An outdoor equipment control software is a technological tool that allows centralized monitoring and management of different devices and equipment located outdoors, such as outdoor lighting, irrigation systems, water fountains, security systems, among others.</p>	

13	Hydraulic information of the installation
13.1	Hydraulic equipment
13.1.1	Are the pumps equipped with variable frequency drives?
<p>Definition A variable frequency drive is an electronic device used to control the speed and power of pumps by adjusting the frequency and voltage supplied to the pump motor. This allows to regulate the operating speed of the pump and adapt it to the specific needs of each moment. This mainly helps to have a better system efficiency, energy saving and less wear of the pump.</p>	
13.1.2	Does the system have efficient booster pumps (attach data sheet for evaluation)?
<p>Definition Efficient water drive pumps are those that are designed to minimize energy losses and maximize efficiency in transferring energy to water. This is achieved through optimized hydrodynamic design, advanced motor technology, high quality materials and appropriate control systems.</p>	
13.1.3	What type of water treatment is used in the system?
	<ul style="list-style-type: none"> pH - Chlorine
	<p>Definition Treatment of a pool with pH and chlorine refers to the process of adjusting and maintaining the proper pH and chlorine levels in the pool water to ensure effective disinfection and a safe environment for swimmers.</p>
	<ul style="list-style-type: none"> Salt Chlorination
<p>Definition The treatment of a swimming pool with salt chlorination is an alternative method to the use of traditional chlorine in which a chlorine generator is used to produce chlorine from the salt dissolved in the pool water.</p>	

	<ul style="list-style-type: none"> • Ozone
	<p>Definition Ozone pool treatment is a disinfection method that uses ozone as a disinfecting agent in the pool water. Ozone is a gas composed of three oxygen atoms that is generated from oxygen in the air using an ozone generator. Ozone disinfects pool water by eliminating bacteria, viruses, algae and other contaminants present in the water. Unlike chlorine, ozone leaves no chemical residue and does not produce unpleasant odors.</p>
	<ul style="list-style-type: none"> • Other
	<p>Definition In addition to pool treatment with pH-chlorine, ozone and salt chlorination, there are other disinfection and water treatment methods and technologies used in swimming pools such as UV treatment, chlorine dioxide treatment, bromine treatment and others.</p>
13.1.4	Is an automatic chemical dosing system in place?
	<p>Definition An automatic chemical dosing system is a system that automatically administers and controls the proper amount of chemicals needed, such as chlorine, pH corrector or other products used in water treatment. These systems are designed to maintain optimum levels of chemicals in the water consistently and accurately, avoiding the need to manually dose chemicals periodically.</p>
	What types of filter media are used in the system?
	<ul style="list-style-type: none"> • AFM
	<p>Definition AFM (Active Filter Media) is a type of filter media used in swimming pool filtration systems. AFM is a state-of-the-art filter media that is used as an alternative to traditional media such as sand or glass. AFM is made from recycled and specially processed glass. Unlike sand or conventional glass, AFM has a modified surface structure that gives it superior filtration and particle retention properties.</p>
13.1.5	<ul style="list-style-type: none"> • Glass
	<p>Definition Glass pool filter is a type of filter media used in swimming pool water filtration systems. The glass filter is a more modern and efficient alternative to sand as it offers several advantages. The glass used in the filter is an inert, non-porous, high purity material that provides more effective filtration and improved water clarity.</p>
	<ul style="list-style-type: none"> • Silex sand
	<p>Definition The silex sand filter is a type of filter media commonly used in swimming pool filtration systems. It consists of a layer of silex sand, which is a type of sand composed mainly of silica, placed inside the pool filter.</p>
13.1.6	Does the facility have a ventilated chemical storage facility?
	<p>Definition A ventilated chemical storage facility is a designated area that meets certain characteristics to ensure safe storage of chemicals. These features include the presence of adequate ventilation to allow air circulation and prevent the accumulation of harmful gases or chemical vapors in the environment.</p>

13.1.7	Do the chemicals have separate cuvettes?	
<p>Definition <i>This refers to whether the chemicals used in pool water treatment are stored in separate containers or tanks independent of each other. The use of separate buckets for chemicals is a recommended safety measure in environments where chemicals are handled. Each bucket is dedicated to a specific chemical and is used to safely store, transport and handle that particular chemical.</i></p>		
13.1.8	Is a coagulation and flocculation system in place?	
<p>Definition <i>In the context of a swimming pool, the coagulation and flocculation system can be used as part of the water treatment process to improve water clarity and quality. These processes are especially useful for removing suspended particles, turbidity and other solids that can affect the appearance and cleanliness of the water.</i></p>		
13.2	Pool dimensions and type of pool	
13.2.1	What is the type of pool installed?	
	<ul style="list-style-type: none"> • Children's pool or paddling pool 	
	<p>Definition <i>A paddling or wading pool is a shallow pool designed specifically for children to play and splash in the water safely. These pools usually have a shallow depth, generally less than 0.60 meters, and often have play features and interactive elements to entertain children.</i></p>	
	<ul style="list-style-type: none"> • Swimming pool with depth equal or less than 1.50m 	
	<p>Definition <i>Refers to a pool whose maximum depth is equal to or less than 1.50 meters.</i></p>	
	<ul style="list-style-type: none"> • Swimming pool with depth greater than 1.50m 	
	<p>Definition <i>Refers to a pool whose maximum depth is greater than 1.50 meters.</i></p>	
<ul style="list-style-type: none"> • Sports pool 		
<p>Definition <i>A sports pool is an aquatic facility designed specifically for sporting purposes, such as competitive swimming, water polo, diving, among others.</i></p>		
<ul style="list-style-type: none"> • Relaxation pool (whirlpool, jacuzzi, etc.) 		
<p>Definition <i>A relaxation pool refers to a type of pool that is used primarily for relaxation and wellness purposes. It includes whirlpools, hot tubs, spas and other facilities with massage and/or warm water features.</i></p>		
13.2.2	What is the width of the pool (in "m")?	
<p>Definition <i>Pool width refers to the horizontal distance between the side edges of the pool.</i></p>		

13.2.3	What is the length of the pool (in "m")?
Definition <i>Refers to the linear dimension measurement that indicates the distance from one end to the other end of the pool in a straight line.</i>	
13.2.4	What is the average depth of the pool (in "m")?
Definition <i>The average depth of a pool refers to the average of the depths at different points in the pool. This involves measuring the vertical distance from the surface of the water to the bottom of the pool at various points and then calculating the average of those measurements.</i>	
13.2.5	What is the surface area of the pool (in "m ² ")?
Definition <i>The water surface of a pool refers to the total area occupied by the water at the top of the pool. If the shape of the pool is other than a rectangle or square, it must be calculated in accordance with current regulations.</i>	
13.2.6	What is the volume of water in the pool (in "m ³ ")?
Definition <i>The water volume of a pool refers to the total amount of water it can hold. It is calculated by multiplying the surface area of the pool by its depth.</i>	
13.3	Pool operating times
13.3.1	How many days of the year is the pool open?
Definition <i>Seeks to obtain information on the number of days the pool is available and accessible for use.</i>	
13.3.2	How many hours a day does the pool operate?
Definition <i>Seeks to obtain information on the number of hours per day the pool is available and accessible for use.</i>	
13.4	Pool basin elements for pools with skimmer
13.4.1	How many skimmers does the pool have?
Definition <i>Seeks to obtain information on the number of skimmers present in a pool. Skimmers are devices designed to help maintain the water quality of a pool by removing floating debris such as leaves, insects, oils and other debris. Skimmers are usually installed at the edges of the pool and are connected to the filtration system.</i>	
13.4.2	What is the diameter of the skimmer connection piping (in "mm")?
Definition <i>The diameter of the skimmer connection pipe is the measurement of the inside width of the pipe. This measurement is important because it determines the water flow capacity that can be handled by the skimmers and the pool filtration system.</i>	

13.4.3	How many sumps does the pool have?
Definition <i>It is intended to obtain information on the number of sumps present in a pool. The sumps are devices installed at the bottom of the pool and are designed to allow the circulation and drainage of the pool water.</i>	
13.4.4	What is the diameter of the connection pipe of the drains (in "mm")?
Definition <i>The diameter of the pipe connecting the sumps refers to the inside size or width of the pipe. This measurement is important because it determines the water flow capacity that can be handled by the sumps and the pool drainage system.</i>	
13.4.5	How many impellers does the pool have?
Definition <i>Information is sought on the number of impellers present in a pool. Impellers are devices installed on the pool wall and are designed to generate a flow of water in the pool. The impellers play an important role in circulating the water and creating currents in the pool.</i>	
13.4.6	What is the diameter of the impeller connection piping (in "mm")?
Definition <i>The diameter of the impeller connection pipe refers to the inside size or width of the pipe. This measurement is important because it determines the water flow capacity that can be handled by the impellers and the pool circulation system.</i>	
13.4.7	How many sweepers does the pool have?
Definition <i>It is intended to obtain the number of sweepers present in a pool. Sweepers, also known as cleaning heads or pool cleaners, are devices used to clean and remove debris and sediment that accumulates on the bottom of the pool. The sweepers are usually connected to a filtration system or cleaning pump and work by generating a flow of water that sucks and collects debris from the bottom of the pool.</i>	
13.4.8	What is the diameter of the connecting piping for the pool cleaners (in "mm")?
Definition <i>The diameter of the connecting piping to the screens refers to the inside size or width of the piping used to allow water flow to the screens. It is important to ensure a adequate water flow and a proper connection between the filtration system and the screens.</i>	
13.5	Swimming pool basin elements with perimeter grating
13.5.1	What is the volume of the equalizing vessel (in "m3")?
Definition <i>The equalization basin, also known as equalization tank, is an additional reservoir used to store water that is used to compensate for water loss due to evaporation, overflow or draining of the pool. The volume of the surge tank refers to the total capacity of water it can hold. It represents the additional space needed to maintain the proper water level in the pool.</i>	
13.5.2	How many sumps does the pool have?

Definition	
<i>It is intended to obtain information on the number of sumps present in a pool. The sumps are devices installed at the bottom of the pool and are designed to allow the circulation and drainage of the pool water.</i>	
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13.5.7	What is the diameter of the connecting piping for the pool cleaners? (Data in "mm")
Definition	
<i>The diameter of the connecting piping to the screens refers to the inside size or width of the piping used to allow water flow to the screens. It is important to ensure adequate water flow and a proper connection between the filtration system and the screens.</i>	
13.6	Pumps
13.6.1	How many pumps are operating simultaneously in the installation (attach photos of pump and nameplate)?
Definition	
<i>Information is sought on the number of pumps used in the pool system. Pumps are devices used for the circulation and movement of water. They are responsible for sucking the water out of the pool, sending it to the filtration system for cleaning and then returning it back into the pool. The main function of pumps in a pool is to keep the water moving to ensure even distribution of chemicals and to facilitate filtration and cleaning.</i>	
13.6.2	What is the flow rate of each operating pump (data in "m ³ /h")?

Definition <i>Refers to the flow rate of each operating pump.</i>	
13.6.3	What is the brand of pumping equipment?
Definition <i>The brand name of the pumping equipment refers to the company or manufacturer that produces and markets the pumps used in the system.</i>	
13.6.4	What is the model of the pumping equipment?
Definition <i>The pumping equipment model refers to the specific designation or name that identifies a particular type of pump within a manufacturer's product line or series.</i>	
13.6.5	How many hours of daily operation does the pump(s) have?
Definition <i>It is intended to provide information on the amount of time the pool pumps run during a typical day. The length of time the pumps run daily can vary depending on several factors, such as pool size, pump capacity, weather conditions, contaminant load, and owner preference.</i>	
13.7	Pumping equipment piping
13.7.1	What is the diameter of the delivery pipe (in "mm")?
Definition <i>The diameter of the rising main refers to the inside size or width of the pipe. The rising main refers to the piping through which water is pumped from the pump to the outlets or distribution devices in the pool. These outlets may include return nozzles, water jets or any other water distribution system within the pool.</i>	
13.7.2	What is the suction pipe diameter (in "mm")?
Definition <i>The diameter of the suction pipe refers to the inside size or width of the pipe. The suction pipe is used to draw water out of the pool and into the filtration or circulation system. It can be connected to skimmers, sumps or pool bottom vacuums, and its diameter is important to ensure proper and efficient water flow.</i>	
13.8	Filtration equipment and valves
13.8.1	How many filters does the installation have? (Attach photos of the filter and the data sheet)
Definition <i>Seeks to obtain information on the number of filters used in a pool for the water filtration and cleaning process. Filters are essential components of a pool circulation and filtration system. They are used to remove impurities, sediment, particles and contaminants from the water, keeping it clean and safe for use.</i>	
13.8.2	What is the filter brand?
Definition <i>The brand name of the filter refers to the manufacturer or company that designed and produced the filter used in the pool.</i>	
13.8.3	What is the filter model?

Definition	
<i>The filter model refers to the unique designation or identification given to a particular filter within a specific brand. Each filter may have a model assigned to it that distinguishes it from other similar filters within the same product line.</i>	
13.8.4	What is the diameter of the valve manifold or the selector? (Data in "mm")
Definition	
<i>Looking for information about the diameter of the valve manifold or selector valve used in a pool filtration system. The valve battery or selector valve are important components in a pool filtration system. They are used to control the flow of water and direct it through different stages of the filtration process, such as filtering, rinsing, draining or closing.</i>	
13.8.5	What is the filtering surface (in "m ² ")?
Definition	
<i>Filter surface area refers to the total area of the filter media, such as sand or other materials used in the pool filter. This surface area is where the water filtration process occurs, where particles and contaminants are captured and retained, allowing the water to be cleaned and maintained in a condition suitable for use.</i>	
13.8.6	What is the diameter of the connection pipe (in "mm")?
Definition	
<i>The filter connection pipe diameter refers to the size of the pipe used to connect the filter inlet and outlet to the pool plumbing system.</i>	
13.9	Water consumption
13.9.1	What is the annual water consumption (in "m ³ ")?
Definition	
<i>Seeks to obtain information on the amount of water consumed or used in the pool during a year. Annual pool water consumption can vary significantly depending on several factors, such as pool size, frequency of use, local climate, maintenance practices, and the efficiency of the filtration and water treatment system.</i>	
13.10	Consumption of chemicals
13.10.1	What is the annual consumption of chemical products? (Data in "L")
Definition	
<i>It aims to obtain information on the amount of chemicals used in the maintenance and treatment of pool water during a year. The annual consumption of chemicals in a pool can vary according to different factors, such as pool size, frequency of use, water conditions, treatment practices and source water quality.</i>	