GREEN CERTIFICATION TO ACHIEVE SUSTAINABLE DEVELOPMENT GOALS

CERTIFICACIÓN VERDE PARA LOGRAR METAS DE DESARROLLO SOSTENIBLE

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abstract

The present article initiates the idea of certifying sports facilities for compliance with innovations in the field of resource saving. The search for mechanisms to stimulate sports complexes to move to rational models of resource use led to the development of the Green Ball environmental certification program. "Green Ball" is a protocol for environmental auditing of sports facilities, summarizing all the current proposals for environmental management; website for online certification and recommendations; model of effective environmental management. If a sports facility meets these criteria, it needs to be awarded the Green Ball environmental certification mark, which, by analogy with the TRP program, can be Bronze, Silver, and Gold, which is reminiscent of hotel stars and can become a recognizable brand in the sports industry. The advantage of the site is the possibility of self-auditing to obtain recommendations that will help optimize resource use, as well as call the auditor to the object. The developed project is environmentally, economically and socially effective, which contributes to the implementation of the ideas of the concept of sustainable development in the field of sports.

Keywords: sustainable development, environmental certification, energy saving, resource saving.

El presente artículo inicia la idea de certificar las instalaciones deportivas para el cumplimiento de las innovaciones en el campo del ahorro de recursos. La búsqueda de mecanismos para estimular a los complejos deportivos a pasar a modelos racionales de uso de recursos condujo al desarrollo del programa de certificación ambiental Green Ball. "Green Ball" es un protocolo para la auditoría ambiental de instalaciones deportivas, que resume todas las propuestas actuales para la gestión ambiental; sitio web para certificación y recomendaciones en línea; modelo de gestión ambiental efectiva. Si una instalación deportiva cumple con estos criterios, debe obtener la marca de certificación ambiental Green Ball, que, por analogía con el programa TRP, puede ser Bronce, Plata y Oro, que recuerda a las estrellas del hotel y puede convertirse en una marca reconocible. en la industria del deporte. La ventaja del sitio es la posibilidad de autoauditoría para obtener recomendaciones que ayudarán a optimizar el uso de los recursos, así como para llamar al auditor al objeto. El proyecto desarrollado es ambiental, económica y socialmente efectivo, lo que contribuye a la implementación de las ideas del concepto de desarrollo sostenible en el campo del deporte.

Palabras clave: desarrollo sostenible, certificación ambiental, ahorro de energía, ahorro de recursos.

Introduction

One of the goals of sustainable development is the transition to rational consumption and production patterns.
Sport and the environment are closely interrelated. For productive sports, you need an environmentally friendly environment. At the same time, the sport has become a huge industry (3% of global economic activity). Sports facilities consume a large amount of energy in the form of heat and electricity, and water and form waste [3, 8].
Resource conservation is not only an environmental problem but also an economic one. The functioning of an environmentally oriented economy requires not only a systematic environmental and economic approach to solving the problem of rational use of natural resources and environmental protection, but also the development and implementation of the concept of sustainable development and the mechanism for ensuring it [12, 14, 15, 16].

Objective

To create and implement a project for environmental certification of sports facilities, to determine the compliance of sports complexes with environmental requirements, and assign them a distinction mark, which can serve as an incentive to reduce the amount of resources consumed in those sports centers where resources are spent in unreasonably large amounts, that will contribute to the development of environmental culture and civic responsibility of the population to promote the improvement of the environmental situation and the implementation of the concept of sustainable development.

Methods

Theoretical analysis of scientific data and world experience in resource saving, questioning to choose a sign of environmental certification of sports facilities, an environmental audit of several facilities.

Results

A large number of sports complexes designed for large occupancy were built for major international competitions, which decreases after the competition and the number of resources consumed remains unreasonably high (for example, long corridors where the light is constantly on, and the throughput is 3-4 people per hour). It is necessary to find the right mechanisms to stimulate sports complexes to move to rational models of resource consumption [4, 10].
It is necessary to focus on the British fitness center "Cadbury House", the owners of which were the first in the world to fully switch to autonomous machines. Exercise bikes, treadmills, elliptical trainers translate the energy of visitors to the center into electricity, fully ensuring not only the work of the trainers themselves but also the functioning of the establishment.
Today, there are methods for environmental performance assessment of buildings: BREEAM (voluntary rating BRE Global), Green standard "RUS. Football stadiums"(approved by FIFA) [1, 9, 11, 17].
The uniqueness of our work lies in the initiative of certifying sports facilities for compliance with innovations in the field of resource conservation.
According to the final document of the 70th session of the UN General Assembly with a sustainable development agenda for the period from 2015 to 2030, one of the goals of sustainable development today are: ensuring the availability and rational use of water resources for all; ensuring universal access to affordable, reliable, sustainable and modern energy for all; ensuring the transition to rational consumption and production models [2]. When creating a project, we had a similar goal.
We offer the Green Ball environmental certification program as such a mechanism. The "green ball" is a developed protocol for an environmental audit of sports facilities, summarizing ALL current proposals for environmental management; website for online certification and recommendations; model of effective environmental management.
For certification, we selected 8 key objectives of environmental management. If the sports facility's activities comply with these criteria, we suggest assigning the Green Ball environmental certification mark to it, which, by analogy with the TRP program, can be Bronze, Silver, and Gold, which resembles the assignment of stars to hotels and can become a recognizable brand in the sports industry.
Evaluation criteria were selected for each of the 5 directions, the total number of which exceeds 60. The most striking examples can be aerator nozzles, which allow reducing water consumption by 2-3 times; motion sensors that reduce energy consumption by 60%; LED bulbs; various alternative energy sources; recycling and recycling solutions.
Based on these criteria, a protocol has been created for auditing sports facilities. The proposed protocol allows assessing the organization of the environmental management of a sports facility as a whole, and analyzing the current state of affairs in individual areas, which will make it possible to make competent management decisions [7].

Table 1 - Protocol of the environmental audit of sports facilities (+ this event is carried out; - not implemented)

Goal 1	Reduced water consumption	
Recommended activities for the implementation of the goal		+/–
1	Ultra-weak toilets	
2	Toilets with dual-mode flush	
3	Low power showers	
4	Nozzles Aerators	
5	Single lever faucets	
6	Sensor faucets with infrared water supply sensor	
7	Drain plug for sinks,	
8	Water pressure control valves	
9	Using class A technology	
10	Installation of water metering devices	
11	Aquastorozh installation	
Estimation of rational consumption of water resources in% (number of points available * 100/11)		

Goal 2	Reduced heat loss	
Recommended activities for the implementation of the goal		+/–
1	Facing the facades of the building, ceilings with heat-insulating plates and blocks	
2	The use of heat-shielding plasters	
3	The presence of air dampers, thermal curtains in the halls	
4	Existence of three-chamber double-glazed windows	
5	The presence of heat-reflecting and sunscreen films or glasses on the windows	
6	Heat pumps	
7	The orientation of the building to the "north-south"	
8	Different sizes of windows depending on the sides of the world	
9	No windows on the north side	
Evaluation of measures to reduce heat loss in% (number of available points * 100/9)		

Goal 3	Improving the efficiency of the heating system	
Recommended activities for the implementation of the goal		+/–
1	Building form as compressed as possible	
2	Geothermal system	
3	The presence of aluminum radiators	
4	Availability of energy consumption metering devices	
5	Availability of water filters at the inlet and outlet of the heating system	
6	The use of solar collectors and thermal batteries	
7	Thermostats on batteries	
8	Open radiators	
9	Heat reflectors behind the batteries (gap 2-3 mm)	
10	Heat storage application	
11	Heating meters	
Evaluation of the effectiveness of the heating system in% (number of points available * 100/11)		

Goal 4	Reduced energy consumption and reduced EMF exposure	
Recommended activities for the implementation of the goal		+/–
1	Replacing incandescent bulbs for LED bulbs	
2	Use of automatic lighting control system: photo relay, motion sensor, presence sensor	
3	Using light-colored walls	
4	Using class A technology	
5	Regular cleaning of window glass, lamps and motion sensors	
6	Maximum use of natural light	
7	Transparent lids of pots and containers for the refrigerator	

8	Electricity metering devices	
9	Multi-tariff counters	
10	Placement of simulators concerning EMF	
11	Reducing light pollution at night	
Evaluation of measures to reduce electricity consumption in% (number of points available * 100/11)		

Goal 5	Use of alternative energy sources	
Recommended activities for the implementation of the goal		+/–
1	The presence of solar panels	
2	The presence of wind turbines	
3	Biogas	
4	Getting energy when using simulators	
Evaluation of the use of alternative energy sources in% (number of available points * 100/4)		

Goal 6	Reduction in toxic contamination	
Recommended activities for the implementation of the goal		+/–
1	Non-use of PVC furniture	
2	Use of household chemicals that do not contain chlorine or organochlorine compounds	
3	The use of household chemicals that do not contain phosphates and phosphonates	
4	Lack of disposable plastic tableware	
5	Use of products made of moisture resistant cardboard instead of plastic	
Evaluation of the use of non-toxic materials in% (number of available points * 100/5)		

Goal 7	Organizing the environmental policy of a sports facility	
Recommended activities for the implementation of the goal		+/–
1	Introducing corporate energy-saving culture	
2	Conducting forums and competitions for resource conservation staff	
3	A large number of urns	
4	Distributing flyers, putting up posters in sports centers calling for resource saving	
5	Installation of containers for separate waste collection	
6	Availability of a system of bonuses and discounts for customers who use reusable bottles instead of plastic ones	
7	Availability of contracts with companies involved in the collection and disposal of garbage	
8	Paper use on both sides	
9	Using FSC Certified Paper	
10	Waiver of paperwork in favor of electronic	
11	Availability of results of environmental activities - "environmental transparency"	
Evaluation of the organization of environmental policy in% (number of points available * 100/11)		

Goal 8	The organization of the "green frame" of the building	
Recommended activities for the implementation of the goal		+/–
1	Green roof	
2	Green shield	
3	Ecoparking	
4	Minimum surface runoff	
Evaluation of the organization of the "green frame" of the building in% (number of available points * 100/4)		

Summary for all goals		Maximum number of points	Number of points available	%
Goal 1	Reduced water consumption	11		
Target 2	Reduced heat loss	9		
Goal 3	Improving the efficiency of the heating	11		

	system			
Goal 4	Reduced energy consumption and reduced EMF exposure	11		
Target 5	Use of alternative energy sources	4		
Goal 6	Reduction in toxic contamination	5		
Goal 7	Organizing the environmental policy of a sports facility	11		
Goal 8	The organization of the "green frame" of the building	4		
The total result of the organization		66	A	A*100/64

A bronze eco-label can be assigned to sports facilities where at least 51% of recommended activities are carried out, Silver - at least 75% and Gold - at least 90%.

We conducted an audit of 10 sports complexes to identify major non-compliances with environmental management requirements. As an object for further cooperation, the Zilant sports complex was selected, with which a contract was concluded and recommendations were provided.

The estimated economic effect from the project implementation on the example of the Zilant ice arena located in Kazan after the installation of the equipment gives a reduction in the cost of utilities by 30% (namely, 3.5 million). The cost recovery is 4 months.

From an economic point of view, the implementation of the measures recommended by us is beneficial for sports facilities, since reducing the number of resources consumed can significantly save (motion sensors save 70–80% of the electrical energy spent on lighting in the building and pay off within 1-2 years; nozzles-aerators reduce water consumption by up to 70%; solar panels pay for themselves completely for 2 - 3 years with an average service life of 30 years, etc. [3, 5, 6]. This may allow management to reduce prices for subscriptions without affecting profits.

To attract more sports complexes, and then enter the market of other regions, the Green Ball website was developed for an online audit of sports facilities.

The advantage of the site is the possibility of self-auditing to obtain recommendations that will help optimize resource consumption, as well as call the auditor to the object [13].

The social actions we have undertaken include training volunteers to conduct an audit, giving lectures on energy saving to increase environmental awareness, developing a system of discounts and benefits for "green" visitors. Sports complexes marked with the "Green Ball" sign may be attractive to visitors who adhere to the resource saving policy, i.e. Visitors in such complexes may be more [18, 19].

It is possible to organize a system of discounts for voluntary refusal of plastic containers, disposable consumer goods, which can be recorded by agreement of the parties in the form of a tick on the pass to the sports complex. In this case, the complex will decrease the amount of waste.

To implement the project, it is necessary to create a non-profit organization engaged in the creation and promotion of the Green Ball brand. The organization should study the competitive platform, analyze the market situation, trend the brand and increase its awareness through SMM (Social Media Marketing), create promotional materials and handouts, prepare volunteers and ultimately receive a patent for the Green Ball certification mark.

Conclusion

The developed "Protocol of environmental audit of sports facilities" makes it easy to evaluate sports facilities for environmental management. The proposed activities are mostly simple in execution, but require investments that quickly pay for themselves, which allows you to save significant resources.

The implementation of the project is consistent with the goals of sustainable development, helps to reduce the impact on the environment, by reducing the volume of consumed resources and generated waste. One of the most striking examples is the green frame of the building, including the green roof and the eco-parking, which contribute to a decrease in the concentration of pollutants in the air and an increase in the oxygen content.

The developed project is environmentally, economically and socially interesting for the implementation of the concept of sustainable development in the field of sports.

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