



Environmental statement 2021

Fundació Joan Miró

We are well aware of the importance of environmental protection. This keen awareness underpinned our decision to formalise our commitment to continuous improvement towards sustainable development.

Within this framework, we have renewed certification for our Environmental Management System (EMS), which equips us with the necessary tools to undertake a thorough environmental assessment, thereby ensuring continuous improvement in the processes linked to our activity as a museum by motivating and securing the commitment of each and every one of our stakeholders. We have sought to involve our employees, our suppliers and our external partners as well as our visitors, who are the institution's end users.

Our Environmental Management System allows us to assess the environmental impact associated with our activity. This information triggers a process of continuous improvement in our daily work to minimise this impact and establish patterns of self-control to optimise operations throughout the entire system and thus ensure it runs as efficiently and effectively as possible.

Marta Vilaró

Deputy Managing Director, Fundació Joan Miró

OUR ENVIRONMENTAL POLICY	5
THE FUNDACIÓ JOAN MIRÓ	6
ENVIRONMENTAL MANAGEMENT SYSTEM AND SUSTAINABILITY	8
COMPLIANCE WITH MAIN LEGAL REQUIREMENTS	11
STAKEHOLDER TRAINING AND AWARENESS RAISING	13
IDENTIFYING AND ASSESSING KEY ENVIRONMENTAL ASPECTS	14
ENVIRONMENTAL PERFORMANCE INDICATORS	21
ENERGY EFFICIENCY	22
TOTAL ENERGY CONSUMPTION	23
NATURAL GAS CONSUMPTION	23
DIESEL CONSUMPTION	25
Total Energy Consumption	25
WATER	26
WASTE	29
EFFICIENT CONSUMPTION OF MATERIALS	30
Consumption of Office Products and Publications	30
Cleaning Products	32
Consumption of maintenance products	33
Consumption of Restoration Products	35
EMISSIONS	36
Atmospheric Emissions	36
Noise Emissions	38
Light Emissions	38
BIODIVERSITY	39
TABLE OF INDICATORS	39
ALEXANDER CALDER'S MERCURY FOUNTAIN	40
EMERGENCY SITUATIONS	41
BAT's and INDICATORS	41
Restaurant and coffee shop	41
	3

Library services and shop	42
NEXT VALIDATION	42

OUR ENVIRONMENTAL POLICY

True to its values and keenly aware of its responsibility to protect nature, the Fundació Joan Miró Centre for the Study of Contemporary Art aims to be a benchmark environmentally friendly organisation. It has therefore renewed its environmental management system based on European EMAS Regulations and the international ISO 14001 standard, as well as adhering to Biosphere, in all its facilities and activities, as a sign of its firm commitment to sustainable development. This policy encompasses all of our employees and partners. Each of them is committed to putting this policy and the values that stem from it into practice. In addition, this policy also forms the framework of reference for establishing and reviewing the objectives and milestones for continuous improvement in the Fundació's environmental performance. The Fundació's environmental policy is rooted in the following principles:

Systematic integration of environmental protection and pollution protection into all our activities

In order to carry out our activities in the most environmentally friendly way possible, we are committed to using the best available techniques and practices in all of our activities in the field of environmental protection, in addition to complying with the regulations in force and any other requirements to which the organisation subscribes, in keeping with our commitment to continuous improvement.

Prevention

In accordance with the goals we have set ourselves for managing the impact created by our activities, we are committed to using all the technical and human resources necessary to prevent any pollution that might be created by our activity.

Promoting our values and communicating best practices

We are committed to transparently communicating information about our environmental impact, fostering dialogue and sharing ideas with our stakeholders (neighbours, government administrations, suppliers and employees).

Acting responsibly

Mindful of the serious issue of environmental pollution and its impact, and of our direct role in contributing to it, we are committed to implementing every possible means to manage and control it.

Marko Daniel
Director, Fundació Joan Miró
September 2022

THE FUNDACIÓ JOAN MIRÓ

The Fundació Joan Miró opened to the public on June 10th, 1975. Its roots go back to the first major Joan Miró exhibition in Barcelona, in 1968, at the former Hospital de la Santa Creu. This show led a number of leading figures in the world of art and culture to start thinking seriously about setting up an emblematic space for Miró's work in Barcelona. In accordance with the artist's wishes, however, this new institution would also have to showcase work by a wide range of contemporary artists.

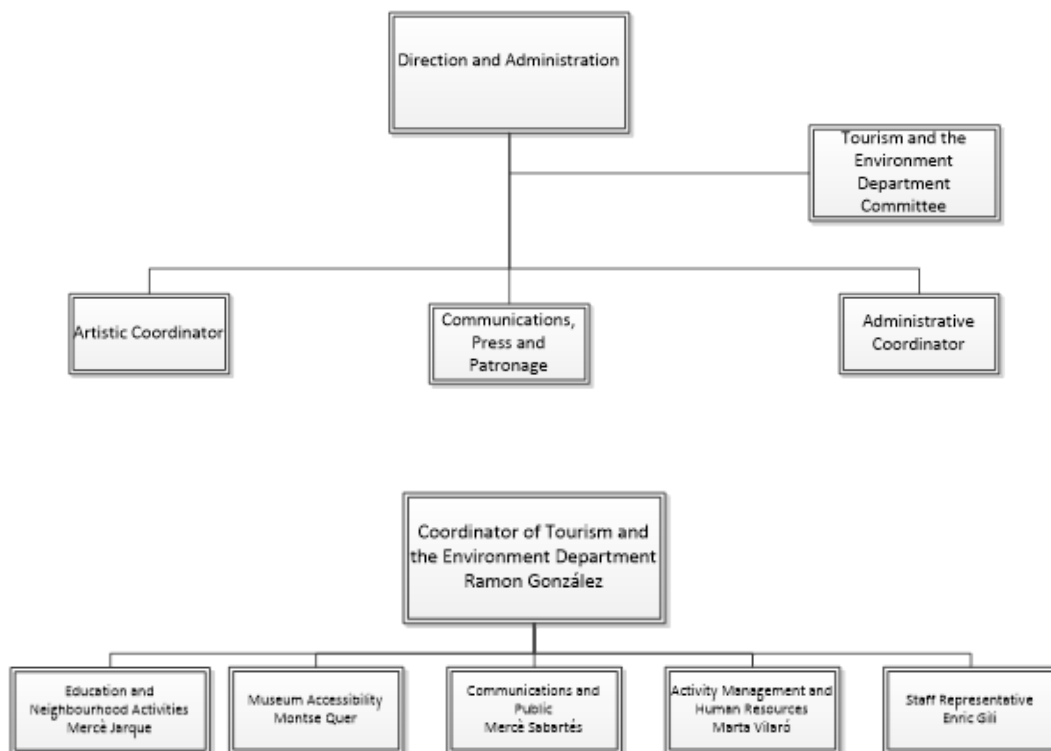
At a decidedly uninspiring time for the city's artistic and cultural scene, the Fundació Joan Miró was a refreshingly dynamic concept of an art museum in which Miró's art was shown alongside a variety of creative work by other artists, as reflected in the Fundació's full name: Centre for the Study of Contemporary Art (CEAC). In recognition of its outstanding heritage, the Fundació has been classified as a Museum of National Interest.

The Fundació Joan Miró is a private Catalan foundation. It is represented and governed by a Board of Trustees, which was originally made up of a group of artists, intellectuals and friends and relatives of Joan Miró. Today there are a maximum of twenty-five trustees, representing the Spanish Ministry of Culture, the Catalan Government, Barcelona City Council and the world of business and the arts.

The Fundació is housed in a building designed by architect Josep Lluís Sert, cofounder of GATCPAC (Grup d'Arquitectes i Tècnics Catalans per al Progrés de l'Arquitectura Contemporània) and a close friend of Joan Miró. It was built on land on the side of Montjuïc Park provided by Barcelona City Council.

Under normal circumstances, the Fundació is open all year round, from Tuesday to Sunday, with no restrictions on capacity. However, the museum's activity over the course of 2021 was greatly affected by the health crisis caused by COVID-19, as well as by restrictions on mobility and capacity decreed periodically by the Government of Catalonia, entailing a maximum capacity first of 50% (from January to August), and then of 70% (from September to December). All the activity of the museum was carried out in accord with COVID-19 protocols.

Our environmental management system is structured as follows:



Other information of interest

Name:	Fundació Joan Miró (Centre for the Study of Contemporary Art)
Address	Av. Miramar s/n, 08038 Barcelona
Tel	+34 934 439 470
Fax	933 298 609
Email	info@fundaciomiro-bcn.org
Website	www.fundaciomiro-bcn.org
NIF	G08428138
NACE (main activity)	9102 - Museums activities
NACE (secondary activities)	9105 - Library activities 9106 - Archives activities 4719 - Other retail sale in non-specialised stores 5610 – Restaurants and mobile food service activities 6820 – Rental or operating of owned or leased real estate 7490 - Other professional, scientific and technical

	activities
CNAE (main activity)	9102 - Museum activities
CNAE (secondary activities)	9105 – Library activities 9106 – Archives activities 4719 – Other retail sale in non-specialised stores 5610 - Restaurants and mobile food service activities 6820 – Rental or operating of owned or leased real estate 7490 - Other professional, scientific and technical activities
Head of Environment	Ramon González (Head of Maintenance and Safety)
EMAS Register	ES-CAT-000386
Adhesion to Biosphere	Approved December 2019 (annual validity)

ENVIRONMENTAL MANAGEMENT SYSTEM AND SUSTAINABILITY

The Fundació's EMS is based on the international ISO 14001 standard and EMAS European regulations, which allow companies to voluntarily sign up to a Community Eco-management and Audit Scheme. This continuous improvement system is fully integrated within the Fundació's overall management structure.

The scope of our EMS encompasses activities designed to conserve, preserve and promote work by Joan Miró by means of:

- Permanent exhibition of the collection
- Temporary exhibitions
- Cultural events
- Educational programmes
- Archive and library
- Management of museum visits

- Bookshop and gift shop services
- Management of food and refreshment services (restaurant and cafe)
- External hiring of spaces

Based on our management policy, we carry out an analysis of the environmental aspects linked to our activity (energy, paper and water consumption, for example), along with our visitors' and our suppliers' activities. We set out a series of goals to reduce the impact of our activity, improve the quality of our services and raise our visitors' level of satisfaction. We also regularly monitor the system to ensure it is working properly.

Our Management Manual sets out the EMS lines of action and stipulates how the different activities are to be carried out in order to integrate environmental management as part of our day-to-day management.

Within the framework of the principles of continuous improvement, and responding to the concerns of the Fundació, the Direction has chosen to adhere to Biosphere. Furthermore, since December 2019 the Fundació is a member of "Barcelona + Sustainable".

What is Biosphere?

The Biosphere© certification is awarded by the Responsible Tourism Institute (RTI), an independent organism created in 1995 with the goal of encouraging action and programmes in sustainable development in tourist destinations and enterprises. The RTI arose with the support of UNESCO by means of a Memorandum of Understanding, which has facilitated the development of activities, projects and events featuring cooperation between both organisms. The RTI is also a founding member of the Global Sustainable Tourism Council (GSTC), under the auspices of the United Nations Foundation.

For over twenty years, the Responsible Tourism Institute (ITR) has played a leading role in the contribution of tourism to Sustainable Development.

It arose out of the World Conference on Sustainable Tourism (1995), sponsored by UNESCO, the ILO, the United Nations Environment Programme (UNEP) and

the EU. Since then, the mission of the ITR has been to promote the principles of the World Charter for Sustainable Tourism (approved at the 1995 Conference), and of all directives and precepts on Sustainable Development as advanced by the UN.

What is the role of the City Council of Barcelona?

Starting in 2016, the City Council of Barcelona began to promote sustainable and responsible tourism, signing an agreement with Biosphere.

Amongst the goals of this agreement, focused on encouraging tour operators to implement programmes of sustainable development, is the creation of its own brand to recognise efforts in improving sustainable tourism. The goal is, furthermore, to raise and focus demand for the certification by introducing specific criteria relevant for the sustainability of tourism in Barcelona, and encouraging and expanding the Biosphere-Barcelona community as a strategy in extending this certification to other establishments and facilities.

COMPLIANCE WITH MAIN LEGAL REQUIREMENTS

The Fundació Joan Miró keeps up to date with current environmental legislation and the relevant legal requirements it is bound by, and checks to ensure it is complying with them.

The Fundació declares that it complies with all environmental legislation applicable to the activity this environmental declaration is subject to, corresponding to the signing date of this document:

Declaration of Compliance

Plan for self-protection and fire prevention systems	The FJM has a plan for self-protection and that has been revised and sent to the City Council of Barcelona, dated 11/02/2020.
Fire safety equipment	A contract has been signed with external companies for the regulatory maintenance and inspection of the fire detection system and the dry extinction system, and for the regulatory maintenance and inspection of fire extinguishers and hose reels. Quarterly inspections are carried out by maintenance personnel of the FJM. The inspection of fire prevention equipment was carried out on 21/09/2020, and this passed. This inspection is valid until 2029.
Environmental License	The FJM has an environmental license for its activity as granted by the City Council of Barcelona, dated 19/03/2009. The initial test was carried out on 15/07/2015, with the result conditioned on pending interventions in fire protection. All relevant interventions have been carried out and a new inspection is being arranged to ensure a positive test certificate.
High voltage	Last regular check on 25/10/2021, with a favourable result. Next check due in 2024. The Fundació has a preventive maintenance contract with the maintenance company.
Low voltage	Last regular check on 24/08/2020, with a favourable result. Next check due in 2025. We have a preventive maintenance contract with the maintenance company.
Heating and air-conditioning	The installation was put into service on 11/11/2005. We have a preventive maintenance contract with the maintenance company for cooling units and small air-conditioning units. Last annual technical maintenance inspection certificate is dated 31/12/2021. IPE energy efficiency inspection (boilers) carried out on 05/10/2020. The next energy efficiency inspection is due in 2024.

	<p>IPE energy efficiency inspection (refrigeration equipment) carried out on 13/06/2016.</p> <p>Due to the repair of one of the refrigeration units in 2021, the IPE energy efficiency inspection and the IPIC complete installation inspection were scheduled for March 2022.</p>
Control of leaks in heating and air-conditioning	<p>There is a registry of units containing fluorinated gases / greenhouse gas emissions.</p> <p>Inspections for leaks are carried out bi-annually/annually, in function of tons of CO₂ equivalent to cooling gas in the air-conditioning units.</p>
Pressurised devices	<p>Last Level A check carried out on 26/10/2021. Next check due in October 2022.</p> <p>Last Level B check carried out on 13/09/2021. Next check due in September 2024.</p> <p>Last Level C check carried out on 12/09/2018. Next check due in September 2024.</p>
Passenger and service lifts	<p>Dates of last regular regulatory inspection:</p> <p>Lift between floors / RAE 1-080101226</p> <ul style="list-style-type: none"> - 09/11/2020 <p>Lift to rooms (offices) / RAE 080060106</p> <ul style="list-style-type: none"> - 23/11/2020 <p>Service lift / RAE 080034095</p> <ul style="list-style-type: none"> - 02/11/2020 <p>The next inspection is due in 2022.</p> <p>We have a preventive maintenance contract with an authorised maintenance company.</p>
Natural gas	<p>The natural gas installation contract is in the name of Barcelona City Council.</p> <p>The last inspection was carried out on 15/07/2019.</p> <p>The next one is due in 2024.</p>
Waste management	<p>Our waste producer code is P-12714.1.</p> <p>Given the low volume of waste we produce, we are exempt from having to make an Annual Waste Declaration.</p> <p>We carried out a Minimisation of Hazardous Waste Report in June 2013 and submitted it to the ARC (Waste Agency of Catalonia). As less than 10 tonnes of hazardous waste are produced annually, we are currently exempt.</p> <p>A Simplified Annual Packaging Declaration is made to Ecoembes, with the most recent one made on 29/12/2021.</p>
Legionella	<p>Preventative maintenance is carried out by the FJM's maintenance staff.</p> <p>The last annual disinfection was carried out on 01/03/2021.</p> <p>Sampling and testing are done annually, with the most recent test carried out on 01/03/2021. The result was favourable.</p>

<p>Permit for the disposal and control of wastewater</p>	<p>A permit for disposing of wastewater from the Metropolitan Area of Barcelona was issued on 29/01/2021.</p> <p>This permit was requested, as required by the applicable norm, through a Declaration of Responsibility.</p> <p>This permit will remain in force provided that there is no significant change in our wastewater disposal or any change in applicable legislation.</p> <p>We analyse the quality of our wastewater every year. In the analysis carried out on 18/01/2021, all parameters were within the legal limits.</p>
<p>Storage of hazardous products</p>	<p>Safety information sheets are available for hazardous cleaning, maintenance and restoration products in their place of use.</p>
<p>Mercury Fountain</p>	<p>Alexander Calder's piece <i>Mercury Fountain</i> is on display at the FJM. Since this unusual artwork uses liquid mercury, the FJM monitors it very closely. A specialist company cleans the piece and annual analytical tests are carried out on the air to detect any possible presence of mercury. In 2011, the Catalan Ministry of Territory and Sustainability granted the FJM's request to be exempt from Regulation 1102/2008 on the storage of mercury, enabling this work of art to be considered purely ornamental.</p>
<p>ISO 14001 and EMAS certifications</p>	<p>ISO 14001 and EMAS certifications are valid until 22/09/2023 and 25/09/2023, respectively. The last audit was carried out by AENOR on 27 and 28 July 2021.</p>

STAKEHOLDER TRAINING AND AWARENESS RAISING

Raising awareness and training museum staff about salient environmental issues is key to the success of our EMS.

The Head of Environment carries out environmental awareness-raising tasks with employees in the form of emails reminding them of good practice, new environmental goals, etc. The Environmental Declaration is freely available to all employees.

The Fundació Joan Miró's training plan for the year 2021 was carried out in full. Training activities were considered to be efficient, with many related to environmental concerns.

No complaints concerning the museum's environmental policy were received in 2021.

Raising stakeholder awareness

The Fundació's educational programmes aim to raise visitors' environmental awareness. These activities work on subjects linked to the environment (recycled materials, ecology, etc.).

Other environmental aspects with implications for stakeholders include the following:

- Green purchasing in the gift shop (ecological products, local products, etc.)
- Green purchasing in the bookshop (as far as possible)
- Use of ecological paper (ecolabels, FSC, PFEC) in offices and the Communication Department
- Reusing exhibition materials internally or donating them to other organisations

IDENTIFYING AND ASSESSING KEY ENVIRONMENTAL ASPECTS

Every year the Fundació identifies all environmental aspects directly linked to its own activities and those of any third parties that might have an effect on them.

The assessment system incorporates a lifecycle analysis perspective and follows a methodology based on the concepts and criteria defined as follows:

- **Magnitude:** reflects the quantitative change in the environmental aspect with respect to the goal set by the organisation.
- **Severity:** measures the repercussion or danger of the aspect for the environment.
- **Level of intervention:** reflects the level of intervention required by the organisation for a specific aspect.

Potential aspects in emergency situations are only assessed if there are any incidents during the year. Over the course of 2021, the museum's circumstances improved considerably in relation to the previous year, due to the softening of restrictions related to the COVID-19 health crisis. Despite this, certain restrictions have been upheld, such as limitations on capacity and mobility as decreed by health authorities. For this reason, data related to environmental aspects of the organisation do not yet correspond to normal operating terms. The expectation is that, with the return of the health situation to normal circumstances, data from 2022 will begin to be comparable to figures obtained before the pandemic.

With regard to indirect environmental aspects, those relating to temporary exhibitions of itinerant works are taken into account, as well as those relating to the mobility of visitors travelling to the Fundació, in both cases considering total kilometres. However, this data is not evaluated, as there is no way of controlling or influencing it. Despite this, approximate figures are indicated, allowing us to observe their evolution over time.

During the revision carried out in March 2021, the FJM identified aspects appearing in the following table, pointing to significant environmental concerns in normal, abnormal and emergency circumstances. In each case, an associated environmental impact and actions that might be taken to minimise them are indicated:

ENVIRONMENTAL ASPECT	SITUATION	ASPECT	ENVIRONMENTAL ASPECT	ACTIONS
Water consumption	N	D	Using up natural resources	Water consumption in absolute value was reduced by 68% compared to 2014 (Objective No. 1 of the 2020–2021 programme). But the indicating value (m ³ /visitor), as well as that of electricity consumption, increased due to the reduced number of visitors.
Consumption of decalcified water	N	D	Using up natural resources	As a result of the COVID-19 health crisis, there was a very significant reduction in the number of visitors, and the consumption of decalcified water has been reserved for the maintenance of the facilities. Therefore, it is a circumstantial fact and no action needs to be taken in this regard.

ENVIRONMENTAL ASPECT	SITUATION	ASPECT	ENVIRONMENTAL ASPECT	ACTIONS
Consumption of cleaning products	N	D	Using up natural resources	As a result of the COVID-19 health crisis, there was a very significant reduction in the number of visitors, while the cleaning of the facilities was maintained, which meant an increase in the indicator. In addition, the cleaning service has been strengthened to ensure proper cleaning and disinfection of the facilities for the reopening of the museum and the influx of visitors. Therefore, the consumption of cleaning products cannot be reduced.

N: normal; D: direct

These concerns were further taken into account when defining the **programme of objectives for the period 2020–2021 –2022**. The planned objectives have been developed with regard to improvement projects presented in the context of FEDER grants (improvements in energy efficiency and the use of renewable energy, along with support for cultural heritage):

Objective	Target	Figure achieved in 2021	Comments
<p>1. Cut water consumption by 1% to 2% with respect to 2014 (Base year, as visitor numbers were not affected by the pandemic, and 2014 was the most recent year with no water leaks registered.)</p>	<p>0.0152-0.0154 m³/visitor</p>	<p>0.0393 m³/visitor</p>	<p>Total water consumption in 2021 in absolute terms has been reduced by 82.23%, compared to consumption in 2014. Continuous achievements in 2021 include:</p> <ul style="list-style-type: none"> - Daily and weekly control of water consumption (leak detection) - Establishment of good environmental practices in offices and raise awareness amongst the general public <p>However, the consumption per visitor indicator with regard to 2014 has risen by 60.33%. This is due to the fact that basic building maintenance has remained stable, while the number of visitors has not yet returned to pre-pandemic levels. Taking into account the fact that consumption has decreased and visitor numbers are projected to rise, the objective has been maintained for 2022, and will include the following objectives for 2023:</p> <ul style="list-style-type: none"> - Installation in the irrigation line of an automatic, programmable valve (closure in function of flow and time). - Installation of a direct level control in the pond. - Revision and maintenance of water tap aerators.

<p>2. Reduction of energy consumption by 5-6% in relation to 2019 (Base year, not taking 2020 into account due to the health crisis.)</p>	<p>Reduction of energy consumption by 5%-6% (0.0056 - 0.0055 MWh/visitor)</p>	<p>0.0195 MWh/visitor</p>	<p>Broadly speaking, the milestones set to achieve this goal are:</p> <ul style="list-style-type: none"> - Improvement of the building's energy efficiency through the realignment and renewal of its spaces. - Substitution of incandescent lighting by LED lighting (<i>completed</i>). - Control of water pumps and consumption. Water pumps for recirculation of climate control water, variators and control management. - Self-consumption. Energy creation from solar panels. - Renewal of lifting equipment <p>The final deadline for the implantation of these objectives is December 2023. At that point in time, it will be possible to determine if the objectives have been met or not. The person responsible for managing these goals is the Foundation's Head of Environment.</p>
--	---	---------------------------	--

<p>3. Promote cultural heritage, increasing use of the building's spaces and the number of visitors. Increasing the number of visitors to the General Library, improvement of accessibility and the renovation of a space for families, with the aim of advancing the observation and experience of art. Increase of visitor numbers by 12%.</p>	<p>Increase up to a 12% the number of Library visitors (from 149 to 167)</p>	<p>No data until 2023.</p>	<p>Broadly speaking, the milestones set to achieve this goal are:</p> <ul style="list-style-type: none"> - Renovation of the General Library (<i>completed</i>). - Return of the Joan Miró Permanent Collection to the galleries designed by Josep Lluís Sert for this purpose, and shift of temporary exhibitions to galleries corresponding to the expansion of the building in 1988 and 2001 (<i>completed</i>). - Renovation of a space for families, with the aim of advancing the observation and experience of art. <p>The final deadline for the implementation of these objectives is December 2023. At that point in time, it will be possible to determine if the objectives have been reached or not, as all figures will be available. The person responsible for managing these goals is the Foundation's Head of Environment.</p>
---	--	----------------------------	---

In summary, we can say that of the 3 goals defined for 2020–2021–2022, the first is pending periodic review once the FJM returns to normal, in terms of visitor numbers. The data gathered pertains to 2021, so that it will not be until the data from 2022 is available that it will be possible to confirm whether the objectives have been met. With regard to objectives 2 and 3, in 2021 part of the defined content was initiated. The follow-up review will take place at the end of 2023, after which it will be possible to assess whether the goals have been achieved.

In terms of **improvement actions for 2021–2022:**

Improvement actions	Comments
<p>1. Renewal of the Biosphere certificate for Sustainable Tourism</p>	<p>Biosphere tracking via SGS</p>
<p>2. Promote messages related to sustainability in order to generate greater visitor awareness</p>	<p>Halted from 2020 until the present as a result of COVID-19. The goal has been renewed for 2022–2023.</p>

<p>3. Implement natural ventilation to reduce the FJM's electricity consumption</p>	<p>Actions completed in 2021. The routine of systematic natural ventilation has been maintained.</p>
<p>4. Reusing of office supplies by potentially interested schools</p>	<p>Over the course of 2021, collaboration has taken place with the Escola Impremta for the reuse of paper. Further to this, when the Fundació creates publications (catalogues, books and so on), the remaining paper is requested from the printing shop to be reused for projects related to schools and workshops.</p>
<p>5. Promote the use of public transport to travel to the FJM</p>	<p>Over the course of 2021, the "Come to the Fundació" campaign was implemented.</p>
<p>6. Installation of bicycle parking for workers</p>	<p>The definitive project has been determined.</p>
<p>7. Application of sustainability measures to the restaurant</p>	<p>Various measures have been put into place, such as the use of recycled glass in water bottles and the use of recycled recipients for salads.</p>
<p>8. Increase the consumption of organic and local products via the vending machines</p>	<p>To be implemented over the course of 2022.</p>
<p>9. Establish an energy consumption baseline for the whole building that serves as a reference in order to study the deviations once the FJM resumes its normal activity</p>	<p>The data obtained over the course of 2020 will serve as the base for comparisons of the consumption of energy and natural resources used to maintain the building, without taking into consideration visitor numbers. Comparisons will be able to be made once data from upcoming years is available.</p>
<p>10. Re-establish the tasks of the Communications and Activities Department in order to offer visitors a new concept of (interactive) museum</p>	<p>Over the course of 2021, digitalisation measures have been implemented for many of the museum's activities.</p>
<p>11*. Possible availability of new solar panels</p>	<p>The FEDER investment grant has been applied for, with all corresponding planning.</p>
<p>12*. Reduction of plastic waste</p>	<p>Over the course of 2021 changes have been implemented in vending machines, moving to paper cups and spoons.</p>
<p>13*. Improvement of energy efficiency of the air conditioning system, reducing energy consumption by shifting from constant to variable volume</p>	<p>See Objective 2 of the programme of objectives for the period 2020–2021–2022.</p>

*Improvement initiatives defined in 2022.

With regard to the aforementioned improvement actions, they have all been maintained for 2022, with the exception of IA3.

ENVIRONMENTAL PERFORMANCE INDICATORS

At the Fundació we monitor our environmental performance by using key indicators linked to the following aspects:

- Energy efficiency
- Water
- Waste
- Efficient use of materials
- Emissions
- Biodiversity

The Sectoral Reference Document for the Tourism sector is currently available. This document has been revised to consider possible indicators that could help the Fundació measure its environmental performance, and the FJM has concluded that this guide is focused more on the hotel and restaurant sector, and that therefore it would not be of great use. Therefore, indicators defined by the organisation itself are employed, based on the knowledge it has of its own activity.

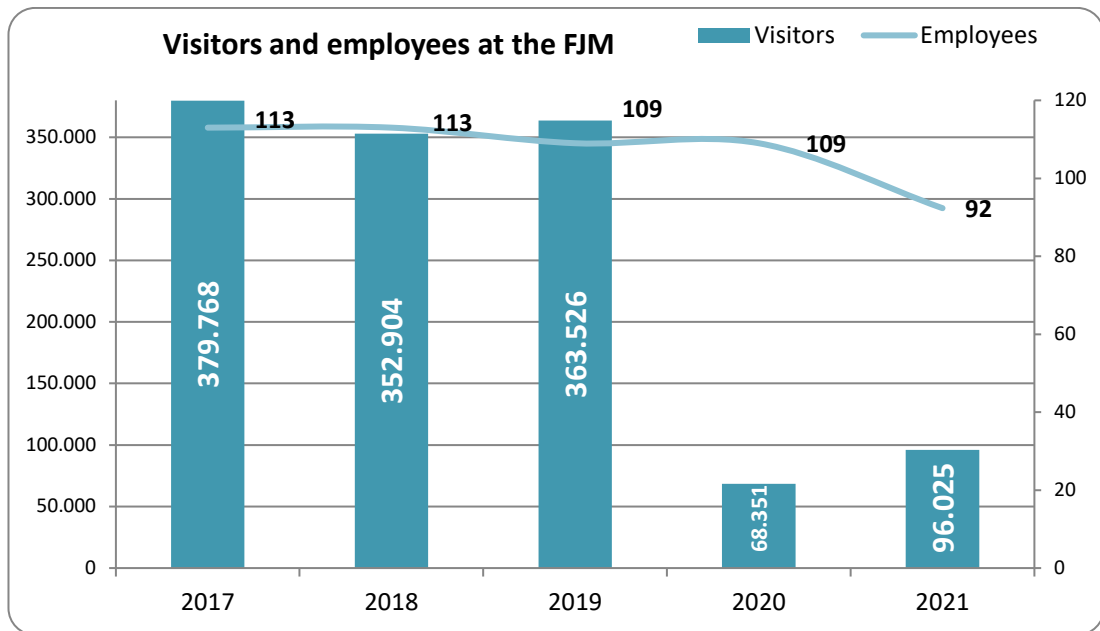
Given that our activity takes place in the museum, the most appropriate indicators are those calculated in terms of the number of visitors, apart from a few aspects linked to the number of employees, such as paper consumption in the offices from printed copies made.

It should be noted that the environmental indicators for the year 2020 have been affected by Covid-19: the museum was closed during the state of alarm and its reopening has been affected by limitations on capacity and mobility.

The indicators are calculated on the basis of these figures from 2021:

- **Visitors:** 96,025 people
- **Employees:** 92 people (circumstantially, there have been retirements, a reduction of restaurant staff and a reduction of gallery staff)

With regard to the evolution of visitor numbers, in 2021 the figure increased by 40.49% in relation to 2020. The variation in statistics over recent years can be observed in the following graph:



ENERGY EFFICIENCY

Energy consumption at the Fundació breaks down into three kinds: **electricity, natural gas and diesel.**

As a museum, the Fundació has significant energy consumption, since a key part of its activity is conserving art works within very strict temperature and humidity parameters. We have to be able to humidify or dehumidify and increase or decrease the temperature in the galleries, and this requires the use of equipment such as heating, air conditioning and humidifiers.

Gas is basically used to power the boilers for heating and diesel is used for the generators, which are only turned on for maintenance and in the case of a power cut.

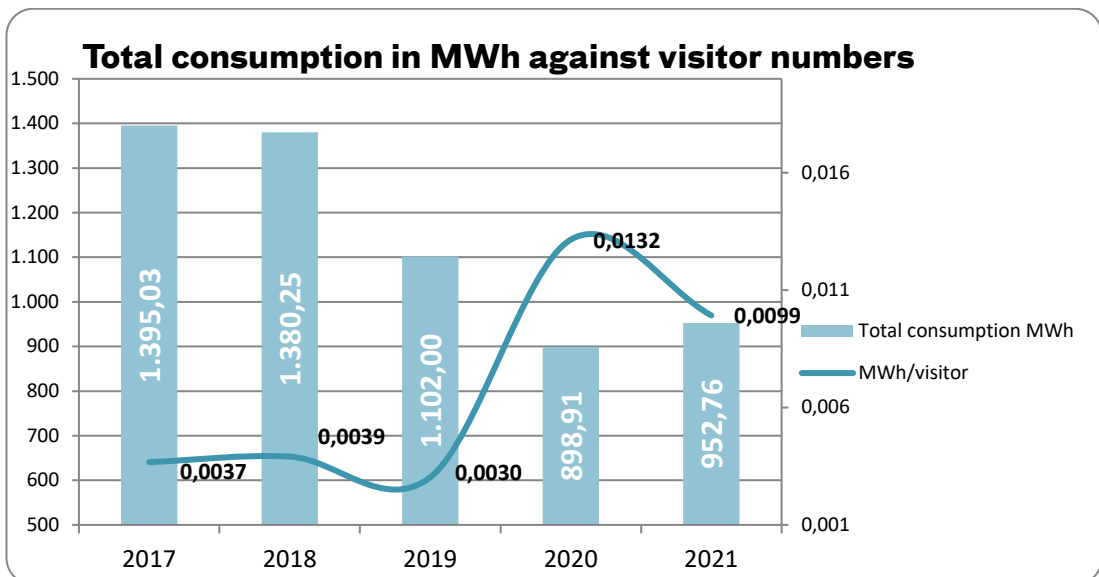
We have no equipment that uses energy directly from renewable sources. However, in line with our environmental commitment to work towards the use of renewable energy, all the electrical energy used at the Fundació in 2021 came exclusively from renewable energy sources, as certified by the energy supplier.

TOTAL ENERGY CONSUMPTION

The following table shows the variation in **electricity consumption** over recent years:

	2017	2018	2019	2020	2021
MWh	1,395	1,380	1,102	899	953
Variation	0.50 %	1.08 %	20.14 %	18.43 %	5.99%
MWh/visitor	0.0037	0.0039	0.0030	0.0132	0.0099
Variation	12.12 %	5.41 %	23.08 %	338.38 %	24.55 %

These figures are displayed in the following graph:



In 2021, total electricity consumption increased by 5.99%, and the MWh/visitor indicator decreased by 24.55% due to a greater number of visitors in relation to 2020.

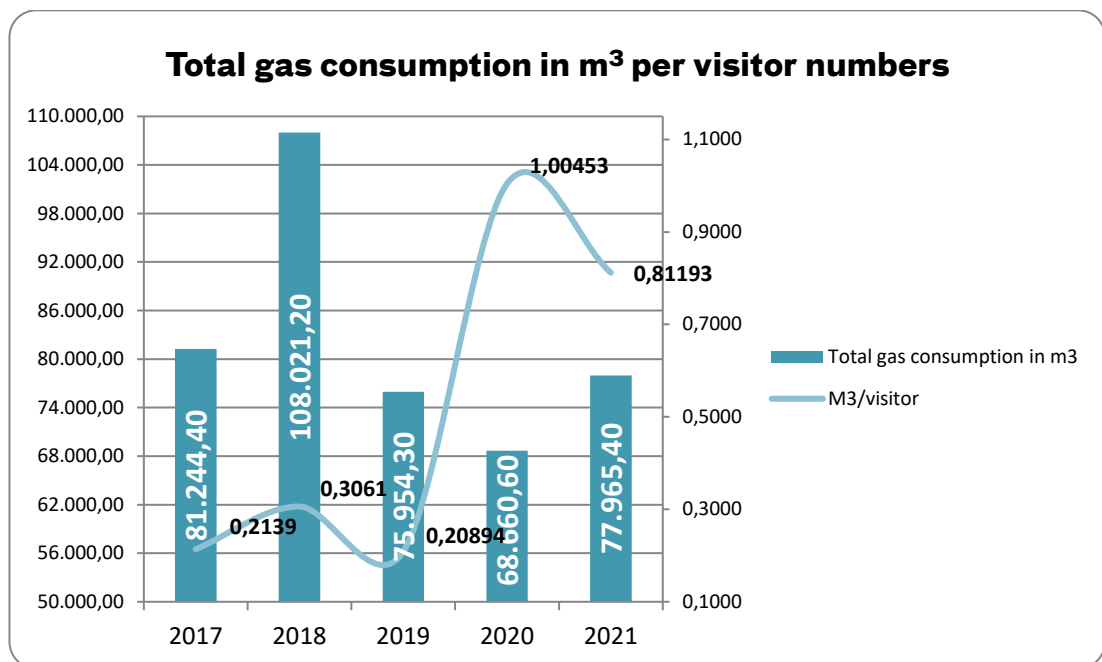
In 2021 we maintained our commitment to purchasing 100% green energy from our electricity supplier.

NATURAL GAS CONSUMPTION

The following table shows the variation in **natural gas consumption** over recent years:

	2017	2018	2019	2020	2021
m³	81,244	108,021	75,954	68,661	77,965
Variation	-	32.96%	-	-9.60%	13.55%
m³/visitor	0.2139	0.3061	0.2089	1.0045	0.8119
Variation	-	43.08%	-	380.78%	19.17%

These figures are displayed in the following graph:



Over the course of 2021, natural gas consumption grew by 13.55% in terms of total consumption, while decreasing by 19.17% in relation to the m³/visitor indicator, due to a rise in visitors to the Fundació.

The evaluation of this data shows that gas consumption is conditioned mainly by external climate factors (heating and humidifying the galleries to keep them within specific temperature and humidity parameters), which the graph shows in terms of a rise and a reduction. It must be kept in mind that natural gas consumption is basically for heating (boilers) and the creation of steam for humidifiers.

DIESEL CONSUMPTION

Diesel is used for the generators, which are only turned on for maintenance of the high-tension electrical installation, and in the case of a power cut, which would leave the Fundació without electrical energy.

In 2021 the Fundació consumed 194 litres of diesel.

Total Energy Consumption

The Fundació's total energy consumption comprises electricity, natural gas and diesel. To assess the environmental impact of our total energy consumption, and given that we cannot add together different units for electricity and heating, we have expressed the individual consumption from each energy source in the same units: MWh.

Energy source	Consumption	Conversion factor ¹	Consumption in MWh
Electricity	952.76 MWh	---	952.76
Natural gas	77,965.4 m ³	PCS 11.78kWh per m ³	918.43
Diesel	194 liters	1,181 liters = 13.02 MWh	2.14

In 2021, the Fundació's total energy consumption was 1,873.33 MWh. As a result, this figure rose by 9.7% over 2020, when the total consumption was 1,707.73 MWh. This signified a value of 0.0195 MWh/visitor.

The Fundació's building, designed by architect Josep Lluís Sert, is classified as a Cultural Asset of National Interest by the Catalan government. Since no major changes may be made to its architecture, it is not possible to install renewable energy devices. Nonetheless, the possibility of improving this by installing solar panels for self-consumption in the office spaces is under study.

¹ The conversions were made using the Greenhouse Gas (GHG) Emissions Calculation Guide of 27 April 2022.

WATER

A. Water sources

Most of the Fundació's water is supplied by the AGBAR water utility.



The Fundació **has a general water meter** fitted by the company and **three internal meters** (softened water, water for watering plants and water for making steam) to monitor consumption and detect any leaks or other issues that might affect consumption.

B. Main uses

Water consumption at the Fundació varies depending on different uses:

- **Purified water** for humidifying works on display and human consumption (restaurant, kitchen and employees' canteen)
- **Softened water** for use in facilities (toilets, washbasins, etc)
- **(Untreated) water for watering plants** in the landscaped inner courtyards

C. Water consumption

The following table shows the variation in water consumption over recent years:

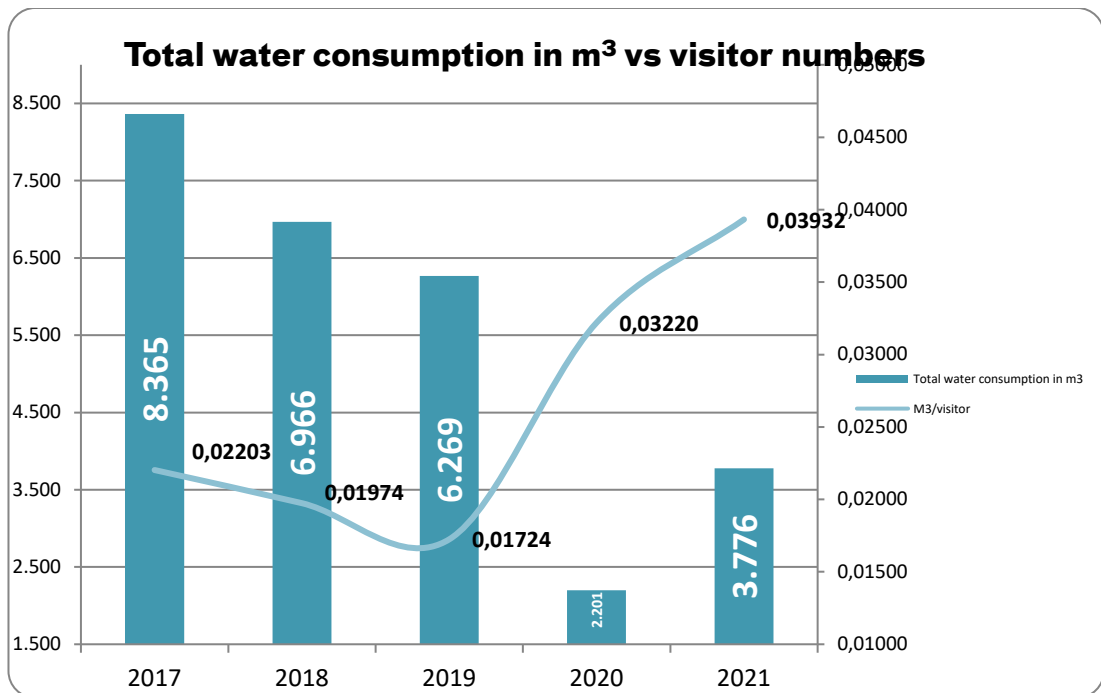
	2017	2018	2019	2020	2021
m³	8,365	6,966	6,269	2,201	3,776
Variation	0.42%	-16.72%	-10.01%	-64.89%	71.56%
m³/visitor	0.0220	0.0197	0.0172	0.0322	0.0393
Variation	12.38%	-10.39%	-12.64%	86.73%	22.12%



Total water consumption at the FJM in 2021 was 3,776 m³, which is equivalent to almost 1.5 Olympic swimming pools.

An Olympic pool with a Depth of 2 meters needs about 2,500 m³ of water.

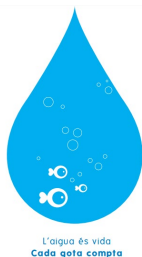
These figures are shown in the following graph:



In 2021, total water consumption decreased by 71.56% with respect to 2020.

Due to the reduced number of visitors in relation to 2017, 2018 and 2019, the indicator of cubic meters per visitor is still at a high level. However, efforts will continue to be made to lower this indicator.

D. Internal management



By **monitoring water consumption**, we have been able to detect incidents quickly and effectively.

Following the incident in August 2018 (two valves were left open), we increased monitoring and control of water consumption. We currently take meter readings before the museum opens.

E. Wastewater management

The sources of **wastewater** at the Fundació under normal conditions are the following:

- Kitchen and restaurant
- Employee's toilets and changing rooms
- Cleaning facilities
- Refrigeration
- Water from the osmosis process and softening process

As a result, under normal conditions the Fundació produces **similar** wastewater to **domestic use**.

The Fundació has obtained the necessary authorisation from the Entitat Metropolitana de Barcelona to dispose of wastewater properly.

An annual control analysis is carried out (January 2021). The results are shown in the table below.

Control 2021 (18/01/2021)		
Parameter	Result	Limit
MES (mg/l)	19.30	750.00
pH (pH units)	7.95	6.00 – 10.00
Connectivity at 25°C (µS/cm)	2,000.00	6,000.00
Total carbon (mg/l)	98.00	450.00
BOD ₅ (mg/l)	64.00	sin límite
COD (mg/l)	110.00	1,500.00

TKN (mg/l)	134.00	90.00
Ammonium (mg/l)	25.30	60.00
Total phosphorus (mg/l)	8.20	50.00
Chlorides (mg/l)	352.00	2,500.00
Nitrates (mg/l)	9.60	100.00
Sulphates (mg/l)	223.00	1,000.00
Dissolved sulphides (mg/l)	<0.2	sin límite
Total sulphides (mg/l)	<0.2	1.00
Oils and fat (mg/l)	<1.00	250.00
Aluminium (mg/l)	<0.5	20.00
Mercury (µ/l)	<5	0.10

Analysis of this sample shows that all the parameters are below permitted limits, with the exception of NTK

The NTK analysis was repeated on 08/04/2021, with the following result:

Analysis 2021 (repetition of NTK parameter 08/04/2021)

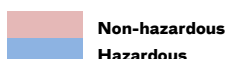
Parameter	Result	Limit
NTK (mg/l)	<3	90.00

WASTE

The Fundació creates non-hazardous waste similar to urban waste: paper and cardboard, light packaging, glass, organic matter, general waste, wood, etc., both when setting up and taking down exhibitions and as a result of its visitors. It also creates hazardous water in its maintenance and restoration activities: mineral oils, fluorescent tubes, contaminated containers, etc. In the office it creates waste in the form of batteries, toner, ink cartridges, etc. All the waste is stored and managed by authorised companies (in the case of both hazardous waste and waste created when setting up and taking down exhibitions) or the municipal waste service (in the case of waste similar to urban waste).

The following chart shows the variation of waste over the periods 2017, 2018, 2019, 2020 and 2021:

Waste (t)	2017	2018	2019	2020	2021
Fluorescent tubes	0.0000	0.0304	0.0446	0.0000	0.0000
Toner and cartridges	0.0400	0.0000	0.0074	0.0000	0.0000
Dry batteries	0.0047	0.0000	0.0040	0.0010	0.0000
Adhesive waste	0.0000	0.0000	0.0000	0.0000	0.0000
Electrical appliances	0.3700	0.0000	0.4000	0.0000	0.3500
Contaminated cloths and absorbents	0.2100	0.0850	0.2150	0.0600	0.0400
Aqueous solution	0.5030	0.0000	0.0000	0.0000	0.0000
Scrap	5.0300	0.0000	0.0000	0.1200	0.0000
Leftover paint	0.1600	0.1830	0.6800	0.1300	0.0000
Contaminated containers	0.3400	0.2740	0.7900	0.0700	0.2900
Electrical cables	0.0000	0.3200	0.0000	0.0000	0.3000
Plastic	2.2700	1.4420	1.1496	0.2109	0.3041
Wood	0.0000	0.0000	0.0000	0.0000	0.1800
Organic	4.6500	3.9090	3.1336	0.4970	0.8222
Glass	0.8700	0.4790	0.4704	0.0328	0.0282
Paper and cardboard	5.0600	1.8540	3.0223	0.6045	2.7579
General waste	10.8900	2.9596	3.5356	0.8597	3.2685
Cooking oil	0.0700	0.0600	0.0400	0.0200	0.0100
Battery waste	0.0700	0.0600	0.0000	0.0000	0.0000



As we can clearly see, the creation of waste grew in 2021, nearing normal levels as seen before the pandemic.

In reference to the type of waste produced (8.35 tonnes):

- 7.37 tonnes were of non-hazardous waste.
- 0.98 tonnes were of hazardous waste.

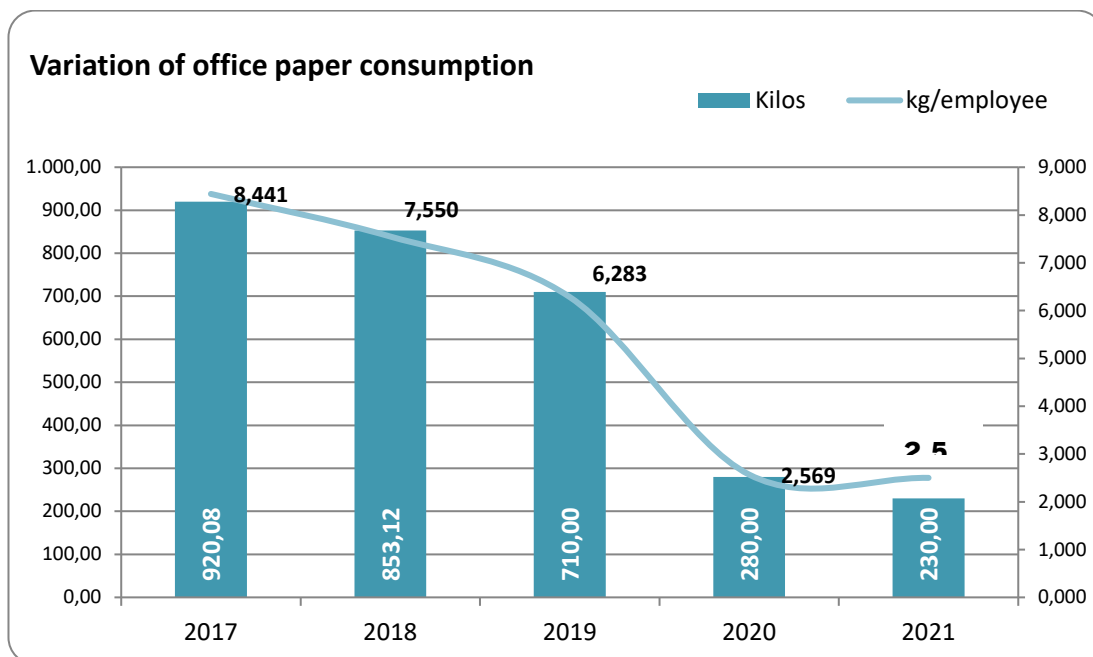
EFFICIENT CONSUMPTION OF MATERIALS

Consumption of Office Products and Publications

Paper consumption at the Fundació breaks down as follows:

- Consumption of A4 paper in offices
- Consumption of paper for publications

The following graph shows how consumption of office paper has varied:



Office paper consumption decreased by 17.86% in relation to 2020, and, as a result, the kg/employee indicator decreased in the same period by 2.68%.

This decrease in relation to the previous year is the result of staff working from home and the decrease in the allowed capacity of the Fundació, as well as ongoing efforts in the following areas:

- Reuse of paper in offices
- Only printing documents when necessary

For 2021, along with documenting paper consumption for purchasing purposes, data has been compiled of copies made with the available multifunctional printers. From 15 February 2020 to 30 April 2022:

- 49,219 in black and white
- 50,396 in colour

The summary of printing carried out in recent years is the following:

Printing			
	B&W	Colour	Total
2018*	168,282	166,689	334,971
2019**	142,206	107,752	249,958
2020***	24,903	21,748	46,651
2021****	49,219	50,396	99,615

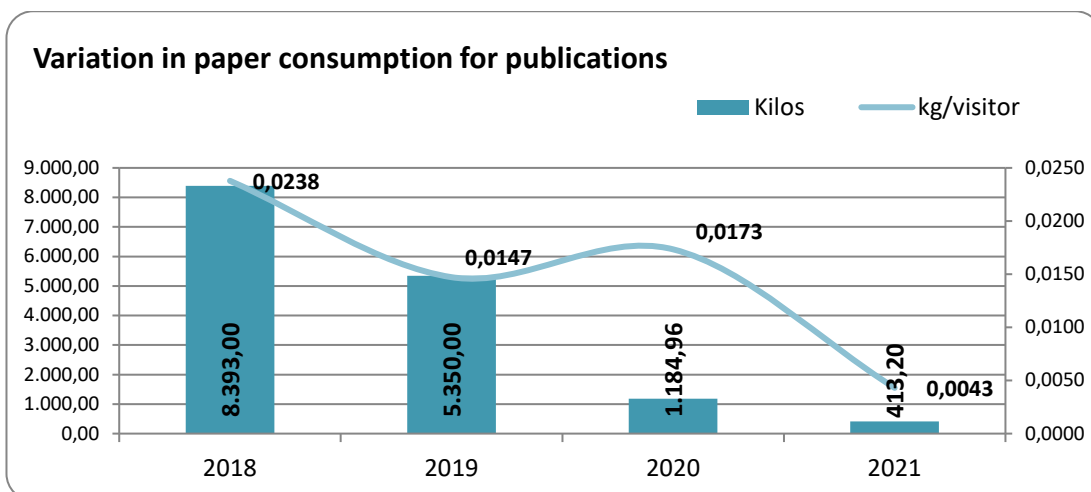
*print data collected since installation of multifunction printers in mid-2018

**calculation made with the data from 16 January 2019 to 13 March 2020

***calculation made with data from 13 March 2020 to 15 February 2021

****calculation made with data from 15 February 2021 to 30 April 2022

With regard to paper used in publications, in 2021 there was a major decrease in relation to 2020. In total figures, the drop has been of 65.13%, and the relative value (indicator kg/visitor) has decreased by 75.18%. For this latter case, the impact of the pandemic has been significant, while the Fundació has also emphasised the creation of digital content, reducing the use of paper.



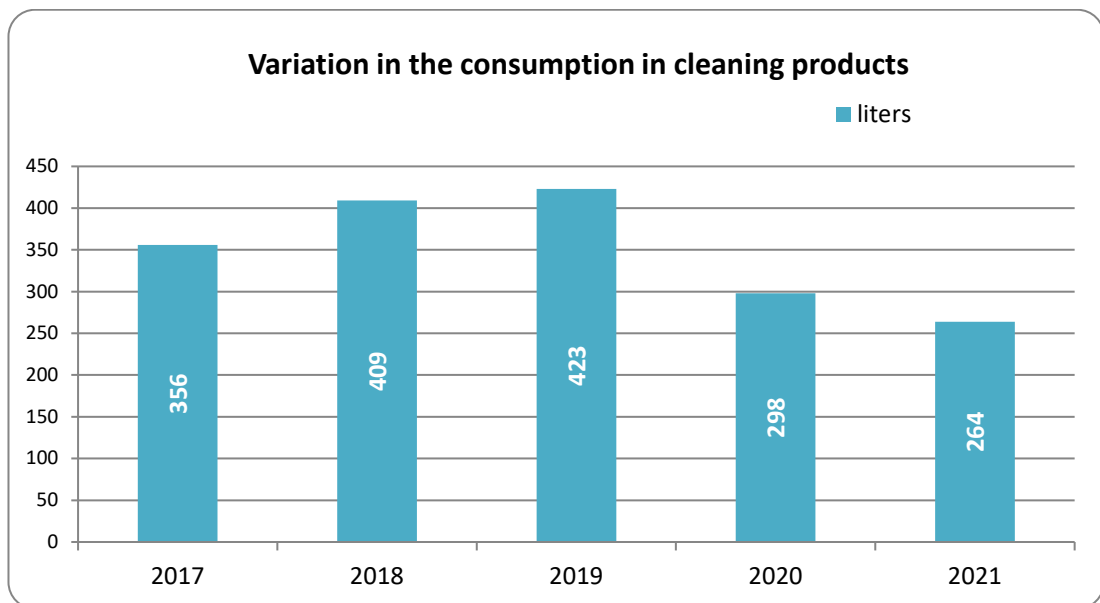
Cleaning Products

Consumption of cleaning products is monitored and we have safety information sheets for the products used, which are basically the following:

- Stain remover
- Limescale remover
- Brightener
- Disinfectant

- Ammonia-based products
- Window cleaning products
- Dishwasher detergent

The following graph shows how the variation in use of cleaning products over recent years:



In 2021, the use of cleaning products decreased by 11.41% compared to the previous year, a clear result of capacity limitations and museum staff working from home. It is worth highlighting that all cleaning products used at the FJM are duly eco-labelled.

This decrease is linked to the number of visitors and the possible quantity of cleaning products already in stock.

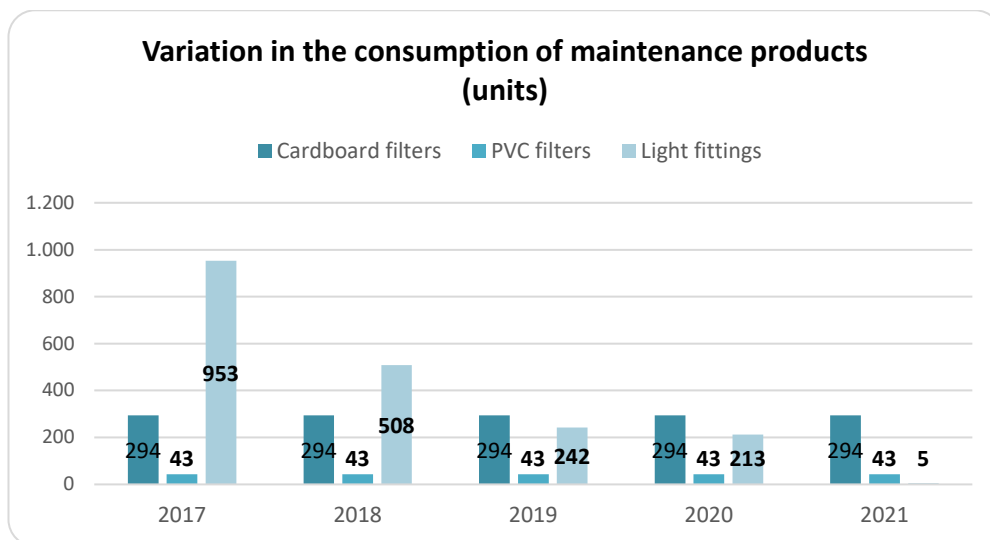
Consumption of maintenance products

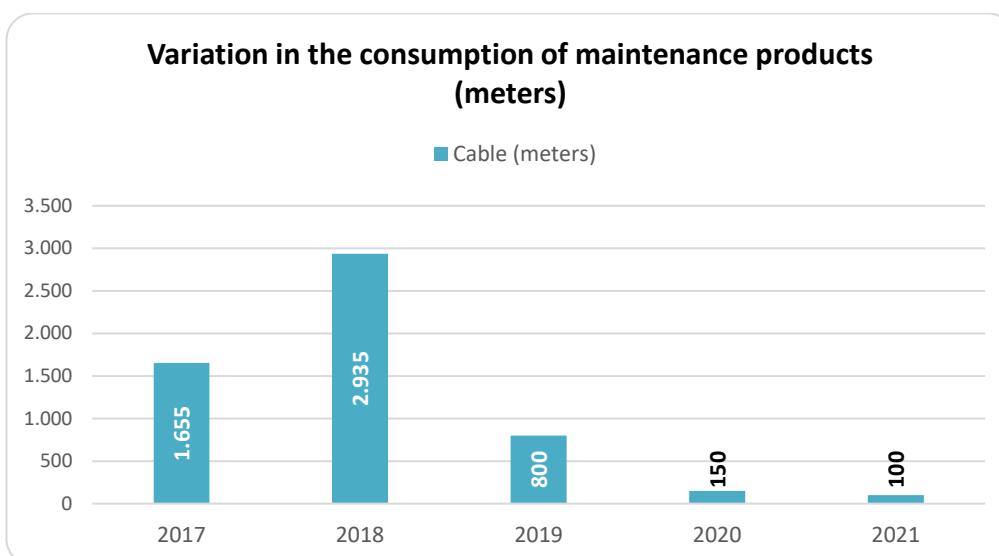
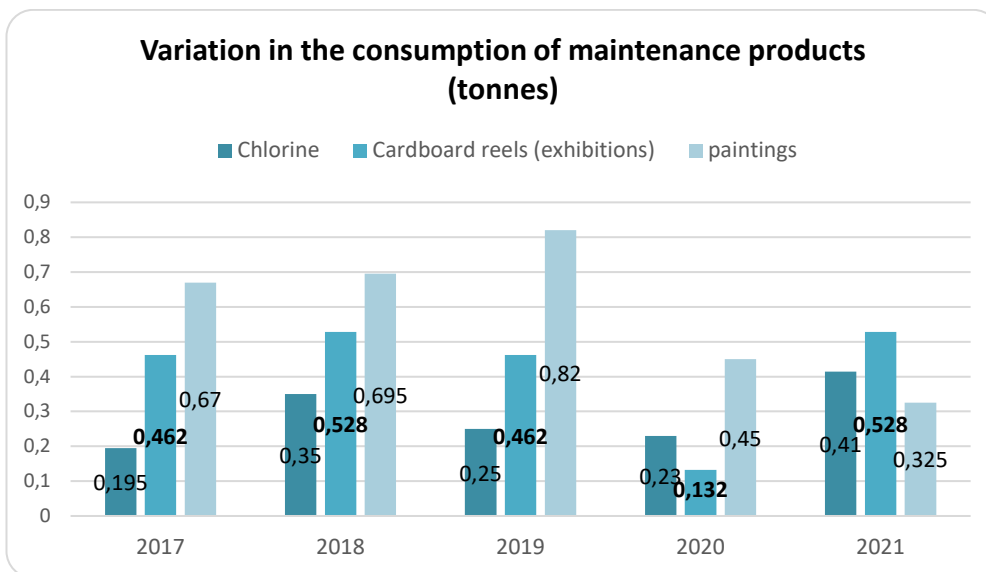
Maintenance of our facilities calls for products that might have an environmental impact. The Fundació monitors consumption and the kinds of products:

- Materials for temperature control installations: cardboard filters, PVC filters, cardboard reels
- Material for water treatment: chlorine and pH regulator
- Electrical material: light fittings and cable

Consumption of maintenance products varies depending on the product in question. In this regard, consumption of filters, cardboard reels and cable tends to be stable in relation to previous years. In contrast, figures related to lighting maintenance have decreased significantly due to the inclusion of LED technology, which reduces maintenance dramatically. The consumption of cardboard reels for exhibitions, as well as paint, has remained more or less the same in relation to previous years, leaving aside a minor rise in the consumption of chlorine.

These variations are shown in the following graphs:





Consumption of these products is closely tied to maintenance tasks in the building and to setting up temporary exhibitions, so no objectives or actions for improvement are planned for this aspect.

Consumption of Restoration Products

Consumption of these products for exhibitions and restoration work at the Fundació varies greatly and depends on the activities carried out each year, as well as on the purchasing policies determining the amounts purchased and price.

In 2021, virtually no products related to restoration were purchased:

- Reels of Aircap bubble wrap: 0 kg

- Reels of plastic: 0 kg
- Paint for building maintenance (linked to exhibitions): 325 kg
- Reels of cardboard: 528 kg
- Glaze and varnish (restoring artworks): 13 liters
- Solvents (restoring artworks): 0.7 liters

Since 2016 the Fundació has regularly donated pieces of furniture it no longer had any use for to other cultural organisations. This practice continued in recent years, which gave added value to exhibition furniture that might otherwise have been managed as waste.

EMISSIONS

Atmospheric Emissions

Atmospheric emissions come from the consumption of natural gas, diesel and the generation of waste, and are therefore directly linked to our activity.

Emissions related to the transportation of works of art are not included in these estimates, given the difficulty involved in obtaining reliable data. Furthermore, it should be noted that during the health crisis, the number of travelling exhibitions was significantly reduced.

Greenhouse gases are referred to by CO₂ equivalent (CO₂ eq), which comprises the six greenhouse gases set out in the Kyoto Protocol: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFC) and sulphur hexafluoride (SF₆). As for perfluorocarbons (PFCs) and nitrogen trifluoride (NF₃), they have not been taken into account, as there is no equipment giving rise to them at the Fundació. The conversion factors of the Catalan Office for Climate Change calculator were used in our calculations, using the active version applicable to each declared year.

The following table shows the total CO₂ eq emissions produced in 2021, as generated by **natural gas** and **diesel** consumption and **waste**, as well as **cooling gas leaks** in air-conditioning:

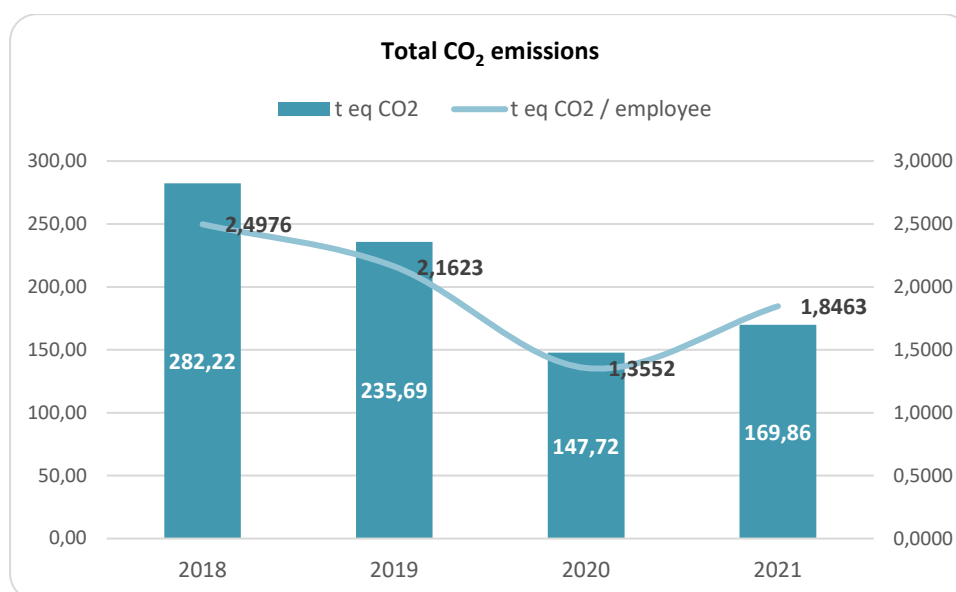
Direct Emissions

SOURCE OF EMISSION	CO ₂ EMISSIONS (t CO ₂ eq)	CH ₄ EMISSIONS (t CO ₂ eq)	N ₂ O EMISSIONS (t CO ₂ eq)
Natural Gas	166.943	0.463	0.088
Diesel	0.556	0.002	0.001
Fluorinated Gases	0.000	0.000	0.000
Electricity	0.000	0.000	0.000
TOTAL	167.499	0.465	0.089

Indirect Emissions

SOURCE OF EMISSION	CO ₂ EMISSIONS (t CO ₂ eq)
Waste	2.36
TOTAL	2.36

The following graph shows how the emissions have changed over time:



Seeing as all the electricity consumed at the Fundació is green energy (the green certificate of origin provided by EDP is available, which guarantees that the source of the electricity consumed in 2021 comes exclusively from renewable energy sources), no emissions are linked to it. In 2021 there was an increase of 14,99% in comparison to 2020.

This increase was a direct consequence of the following factor:

- Increase in the consumption of natural gas caused by the return to normal activity at the Fundació Joan Miró, in comparison to 2020

	2018	2019	2020	2021	% variation 2021 vs 2020
t eq CO₂	282.22	235.69	147.72	169.86	14.99%

In addition, the figures for CO₂ emissions are linked both to consumption on the Fundació's premises and to the conversion factors published in the Guia de l'Oficina Catalana del Canvi Climàtic (Guide of the Catalan Office for Climate Change). With regard to SO_x, NO_x and PM emissions, they have not been established, as they are not related to significant environmental considerations and impacts.

Noise Emissions

Noise is not a major issue at the FJM. In 2011 we measured noise levels as part of the project for our environmental licence and the results fell within the stipulated limits as stipulated by Barcelona urban environmental bylaws. Since there was no major change in the FJM's activity in 2021 and no complaints have been received, no further noise measurements have been carried out.

Light Emissions

There was no major change in light emissions in 2021. In 2015, budgetary limitations permitting, we had planned to install an exterior lighting system for use on special occasions, to be fitted in accordance with current legislation on light pollution at night. This project is still awaiting the necessary funds.

BIODIVERSITY

The Fundació Joan Miró is located on the side of Montjuïc Park in Barcelona. Although this is not a protected space, it has great intrinsic natural value, with animals and plants of high interest. The museum facilities occupy 10,915 m².

By design the Fundació generally blends in very well with its natural surroundings and doesn't create any environmental impacts for its environment and surroundings.

The Fundació has landscaped areas, which are the responsibility of Barcelona City Council's Parks and Gardens Department. These areas are watered using sprinklers once a week. No phytosanitary products are used to treat plants.

In summary, in accordance with Regulation 2018/2026, the indicators in the area of biodiversity are as follows:

- Total land use: 7,468 m²
- Total built surface: 7,311 m²
- Total landscaped surface: 3,606 m²
- Total enclosed surface: 3,864 m²

The Fundació does not have surface area available for the promotion of biodiversity, apart from the landscaped area already indicated.

TABLE OF INDICATORS

Area	Indicator	2019	2020	2021
Electrical energy consumption	MWh/visitor	0.0030	0.0132	0.0099
Natural gas consumption	MWh/visitor	0.2089	0.0250	0.0096
Diesel consumption	MWh/visitor	0.0000	0.0000	0.00002
Total energy consumption	MWh/visitor	0.2120	0.0382	0.0195
Water consumption	m ³ /visitor	0.0172	0.0322	0.0393
Waste production				
Hazardous waste	kg/employee	19.6330	2.3853	10.6522
Non-hazardous waste	kg/visitor	0.0312	0.0342	0.0768
Consumption of materials				
Office paper	t/employee	0.0063	0.0027	0.0025

Paper for publications	kg/visitor	0.0147	0.0173	0.0043
Paper bags in shop	kg/visitor	0.0032	0.0019	0.0000
Toner consumption	t/employee	0.0000	0.0000	0.0000
Dry battery consumption	t/employee	0.0275	0.0093	0.0000
Cleaning liquid consumption	liters/m ²	0.0388	0.0273	0.0361
Toilet paper consumption	units/visitor	0.0109	0.0581	0.0115
Hand towel consumption (washrooms)	units/visitor	0.0055	0.0291	0.0097
Maintenance material consumption				
Cardboard filters	units/employee	2.7339	2.6972	3.1957
PVC filters	units/employee	0.3945	0.3945	0.4674
Light fittings	units/employee	2.2202	1.9541	0.0543
Chlorine	kg/employee	2.2936	2.1101	0.0045
Cable	meters/employee	7.3394	1.3761	1.0870
Consumption of exhibition materials				
Cardboard filters	t/employee	0.0048	1.2110	0.0057
Plastic film	t/employee	0.0001	0.0000	0.0000
Paint	t/employee	0.0064	0.0041	0.0035
CO₂ emissions	t CO ₂ / visitor	0.0006	0.0022	0.0018
Biodiversity	m ² built	10,915	10,916	10,916
Biodiversity	m ² built / employee	96.59	96.59	96.59
Total land use	m ²	7,468	7,468	7,468
Total built surface area	Total built area / total land use	0.98	0.98	0.98
Total landscaped surface area	Total landscaped area / total land use	0.48	0.48	0.48
Total enclosed surface	Total enclosed area/ total land use	0.52	0.52	0.52

ALEXANDER CALDER'S MERCURY FOUNTAIN

In 1975 the Fundació Joan Miró collection acquired a piece by artist Alexander Calder entitled *Mercury Fountain*. It is made out of iron and painted aluminium and uses mercury as a liquid that flows in a closed circuit and sets the piece in motion.

The Fundació is well aware of the importance of closely monitoring this fountain and has carried out a series of actions and established a number of protocols for this installation to ensure the safety of the piece and visitors and to protect the

environment, including a risk analysis for people, analyses of the levels of mercury in the area, drawing up protocols in the case of any incidents during maintenance, medical protocols and waste control, among others.

EMERGENCY SITUATIONS

Throughout 2021, there were no incidents, accidents and/or emergencies that led to any form of environmental impact.

For late 2021 an emergency fire drill was planned for the boiler room. However, for work-related reasons and the fact that most staff were not working on site, this drill was postponed until February 2022.

BAT's and INDICATORS

Consideration has been made of the sectorial regulations of various CNAE (National Classification of Economic Activities), as applied to the activities of the FJM. In this case, those revised are related to the following:

Restaurant and coffee shop

- Commission Decision (EU) 2016/611 of 15 April 2016, relative to the referential document on best practices in environmental management, sectorial indicators of environmental performance and comparative parameters of excellence for the tourist sector, in the context of Regulation (EC) No 1221/2009, related to the voluntary participation of organisations in the EU Eco-Management and Audit Scheme (EMAS). In this particular case, the decision has been made that none of the indicators and none of the related BATs are adequate, at this time, for the development and management of the activity of the FJM. In an indirect manner, the indicator of waste creation is controlled, including practices of internal management (selective collection and weighing of all waste created).

Library services and shop

- Commission Decision (EU) 2015/801 of 20 May 2015, relative to the referential document for best practices in environmental management, sectorial indicators of environmental performance and comparative parameters of excellence for the retail commerce sector, in the context of Regulation (EC) No 1221/2009 of the European Parliament and of the Council, related to the voluntary participation of the organisation. In this case, the decision has been made to use the indicator of the number of paper bags per total number of visitors, which has been controlled for many years.

NEXT VALIDATION

This declaration corresponds to the renewal of EMAS certification.

This Environmental Declaration is valid for one year from its validation date. It was prepared and approved by:

Ramon González
Head of Environment

Marta Vilaró
Deputy Managing
Director