

FUNDACIÓ JOAN MIRÓ ENVIRONMENTAL STATEMENT 2019

The data in this statement corresponds to 2019.



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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.

Dolors Ricart
General Manager, Fundació Joan Miró

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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

September 2019

THE FUNDACIÓ JOAN MIRÓ

The Fundació Joan Miró opened to the public on 10 June 1975. Its roots go back to the first major Joan Miró exhibition in Barcelona, in 1968, at the old 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.

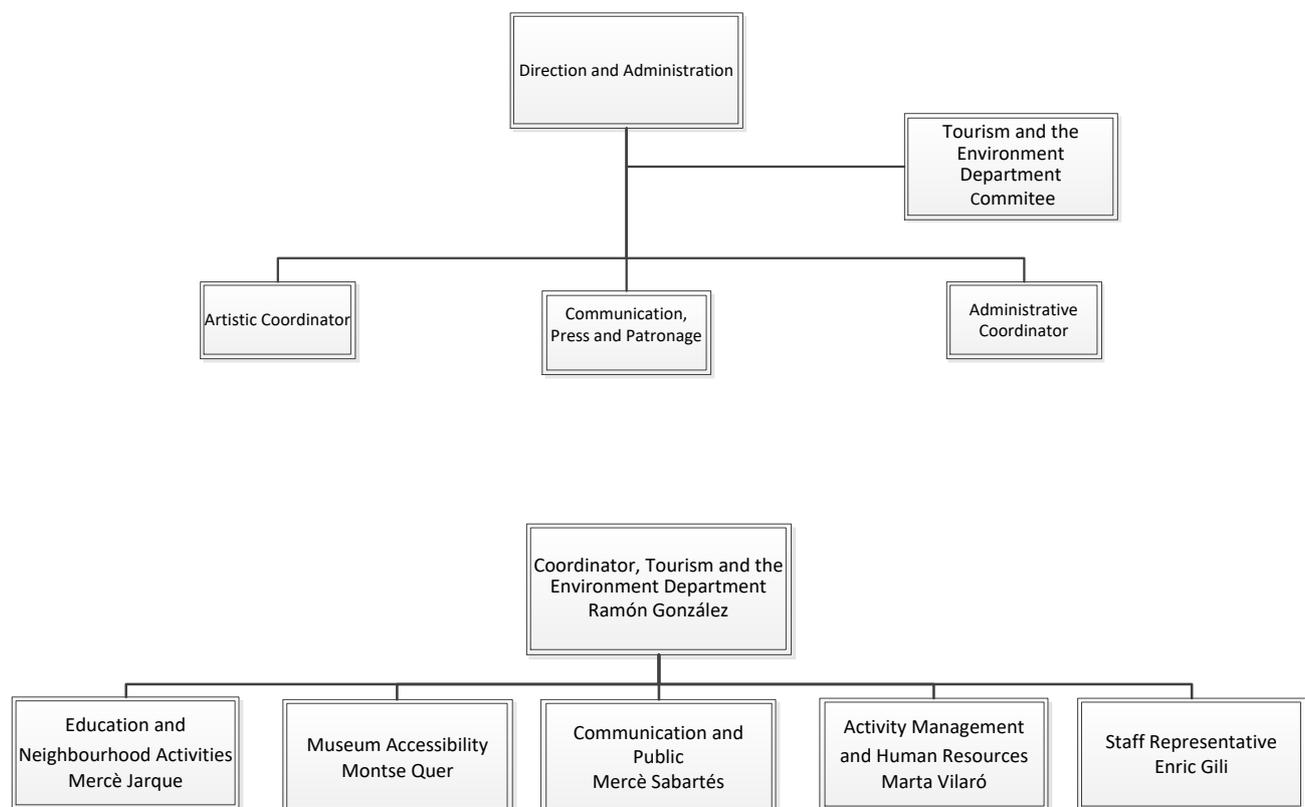
At a decidedly uninspiring time for the city's artistic and cultural scene, the Fundació Joan Miró was a refreshingly dynamic concept of an art museum in which Miró's art was shown alongside a variety of creative work by other artists, as reflected in the Fundació's full name: Centre for the Study of 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.

The Fundació is open from Tuesday to Sunday all year around.

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:	9102 - Museums activities
CNAE	9102 - Museums 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

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

Declaration of Compliance	
Plan for self-protection and fire prevention systems	The Fundació has a plan for self-protection and that has been revised and sent to the City Council of Barcelona, dated 11/02/2020. An emergency drill was implemented on 08/01/2019 (safety drill carried out with public at the museum) A simulated emergency fire drill was implemented on 20/01/2020 (fire in the boiler room).
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 Fundació Joan Miró. The inspection of fire prevention equipment was carried out on 11/11/2019, and this passed. This inspection is valid to 2029.

Declaration of Compliance

Environmental License	<p>The Fundació has an environmental license for its activity as granted by the City Council of Barcelona, dated 19/3/2009.</p> <p>The initial test was carried out on 15/7/2015, with the result conditioned on pending interventions in fire protection.</p> <p>All relevant interventions have been carried out and a new inspection is being arranged to ensure a positive test certificate.</p>
High voltage	<p>Last regular check on 01/10/2018. Next one due in 2021. We have a preventive maintenance contract with the maintenance company.</p>
Low voltage	<p>Last regular check on 12/01/2015. Next one due in 2020. We have a preventive maintenance contract with the maintenance company.</p>
Heating and air-conditioning	<p>The installation was put into service on 11 November 2005.</p> <p>We have a preventive maintenance contract with the maintenance company for cooling units and small air-conditioning units.</p> <p>Last annual technical maintenance inspection certificate is dated 30/12/2019.</p> <p>IPE energy efficiency inspection carried out by TÜV Rheinland on 13/06/2016. The next energy efficiency inspection is due in 2020.</p> <p>The next regular inspection of the entire installation is due in 2020.</p>
Control of leaks in heating and air-conditioning	<p>There is a registry of units containing fluorinated gases / substances affecting the ozone layer.</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> <p>In the previous year two leaks have occurred, for a total of 6.7 Kg and 4.2 Kg. of R410A gas respectively. The leaks were repaired with required subsequent monthly inspections.</p>
Pressurised devices	<p>Last Level A check carried out on 13/11/2019. Next one due in November 2020.</p> <p>Last Level B check carried out on 04/11/2015. Next one due in September 2021.</p> <p>Last Level C check carried out on 12/09/2018. Next one due in September 2024.</p>

Declaration of Compliance

Passenger and service lifts	<p>Dates of last regular regulatory inspection:</p> <p>Lift between floors / RAE 1-080101226 - 18/10/2018</p> <p>Lift to rooms (offices) / RAE 080060106 - 05/10/2018</p> <p>Service lift / RAE 080034095 - 05/10/2018</p> <p>The next inspection is due in 2020.</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 05/07/2019.</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). We are currently exempt.</p> <p>A Simplified Annual Packaging Declaration is made to Ecoembes, with the most recent one made on 04/12/2018.</p>
Legionella	<p>Preventative maintenance is carried out by the Fundació's maintenance staff.</p> <p>The last annual disinfection was carried out on 06/05/2019.</p> <p>Sampling and testing is done annually, with the most recent test carried out on 03/06/2019. The result was favourable.</p>
Storage of hazardous products	<p>Safety information sheets are available for hazardous cleaning, maintenance and restoration products in their place of use.</p>
Permit for the disposal and control of wastewater	<p>A permit for disposing of wastewater from the Metropolitan Area of Barcelona was issued on 10/09/2015.</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. The analysis carried out on 08/04/2019 detected a mercury reading beyond the permitted limits. Corrective actions are being carried out.</p>

Declaration of Compliance	
Mercury Fountain	<p>Alexander Calder's piece <i>Mercury Fountain</i> is on display at the Fundació. Since this unusual artwork uses liquid mercury, the Fundació 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.</p> <p>In 2011, the Catalan Ministry of Territory and Sustainability granted the Fundació's request to be exempted from Regulation 1102/2008 on the storage of mercury, enabling this work of art to be considered purely ornamental.</p>
ISO 14001 and EMAS certifications	ISO 14001 and EMAS certifications are valid until 22/09/2020 and 14/07/2020, respectively. The last audit was carried out by AENOR on 23, 24 and 25 May 2018.

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.

In 2019, parts of the actions set out in the Fundació's plan for the year were linked to the environment. Additional training activities are planned for 2020.

No complaints concerning the museum's environmental policy were received in 2019.

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.

There were no major changes in the Fundació's circumstances in 2019.

The table below shows the significant environmental aspects in normal, abnormal and emergency situations identified during the revision carried out in February–March 2019.

ENVIRONMENTAL ASPECT	SITUATION	ASPECT	ENVIRONMENTAL IMPACT	ACTIONS
Consumption of printed publications	N	D	Uses up of natural resources	Consumption of printed publications increased this year, partly because the weight of the paper used has changed and because the fall in visitor numbers has led to an increase in this indicator.
Consumption of packaging (shop bags)	N	D	Uses up of natural resources	Consumption of shop packaging has increased, since fresh stock was ordered.
Consumption of cleaning products	N	D	Uses up of natural resources	While the number of visitors has decreased, cleaning tasks have not been reduced, influencing consumption. An attempt will be made to adjust cleaning activities to visitor numbers (to be commented with the ISS).
Air-conditioning gas leaks	A	D	Air contamination	The air-conditioning units use as their cooling gas R410A, which has the potential to damage the O in the ozone layer. In function of the leak that occurred, the risk and related actions have been registered, along with all related interventions. Furthermore, even though the gas has a =0 potential to damage the ozone layer, the severity level has been marked as "3".
Excess consumption of mains water	N	D	Exhaustion of natural resources	A water leak occurred due to a tap being left on, leading to excess consumption of some 500 m3 in August 2018. Daily readings were made of the water counters and alarm systems so as to enable earlier detection of leaks.

N: normal; D: direct; I: indirect; A: abnormal; E: emergency

Actions were defined for significant aspects detected in 2019, and the following aspects were taken into account for setting the programme of objectives for 2018–2019:

Objective	Target	Figure achieved in 2019	Comments
1. Cut water consumption by 1% to 2% with respect to 2014	6,743 m ³ /year 0.0156 m ³ /visitor	6,269 m ³ /year 0.0196 m ³ /visitor	In terms of absolute quantities, water consumption has decreased by 8.9% in relation to 2014. However, the indicator of m ³ /visitor has grown by 10.26%, given that the number of visitors in 2019 was lower than in 2014 (a decrease of 17.83%). This goal was reached, taking into account the total volume of consumption.
2. Apply environmental criteria when installing exhibitions	Buy eco-labelled products (wood, etc.)	Achieved	The main goal of this objective was to apply environmental criteria when installing exhibitions by searching for suppliers offering eco-labelled products and encouraging the reuse of materials for temporary exhibitions, both internally and externally. Personnel installing exhibitions now have the necessary information to apply environmental criteria when making purchases, wherever possible. Furthermore, we also keep record of materials donated to other institutions or organisations.
3. Cut paper consumption (offices / publications)	Determine the number of printed copies made	584,929 copies made in formats DIN A4 and DIN A3 From June 2018 to March 2020 Achieved	At the end of 2017 we started trials with new multifunctional printers at different points throughout the Fundació. Monthly reports were prepared giving the number of photocopies made. We also continued our monthly monitoring of purchases of office paper. By March 2020, and since the installation of the multifunctional machines, a total of 584,929 A4 and A3 photocopies had been made.

In terms of **improvement actions for 2018–2019**:

Improvement action	Comments
Give obsolete electronic equipment to other cultural centres and employees at the Fundació	This is an on-going action at the Fundació. Reusing electronic equipment helps cut down on waste.
Donate exhibition materials (furniture, etc.) that are no longer required at the Fundació to other cultural centres or NGOs	This is an on-going action at the Fundació. Letting third parties reuse furniture and other materials helps cut down on waste.

In summary, we achieved **90% of the objectives** set at the start of 2018 (two out of three) and have carried out two planned improvement interventions.

ENVIRONMENTAL BEHAVIOUR INDICATORS

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

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

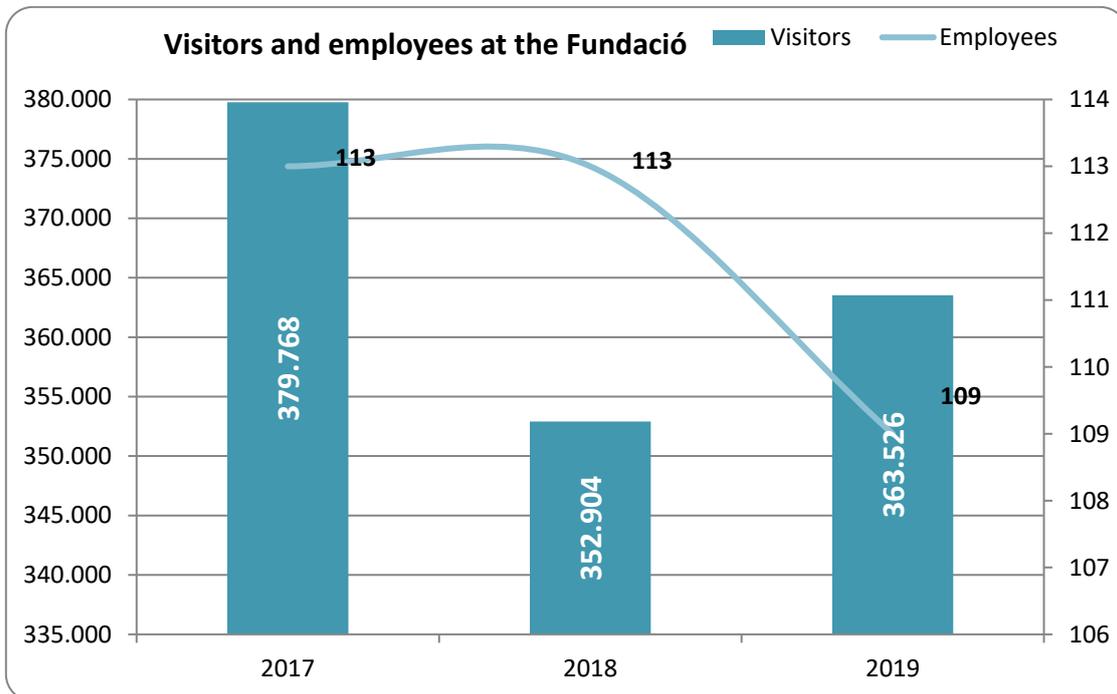
There is currently no Sectorial Reference Document available, therefore, for the control of the evolution of these aspects. Indicators defined by the organisation itself are employed, based on the knowledge it has of its own activity.

Given that our activity takes place in a 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.

The indicators are calculated on the basis of these figures from 2019:

- Visitors: 363,256 people
- Employees: 109 people

Visitor numbers increased by 3.01 % from 2018 to 2019. The variation in statistics over recent years can be seen 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.

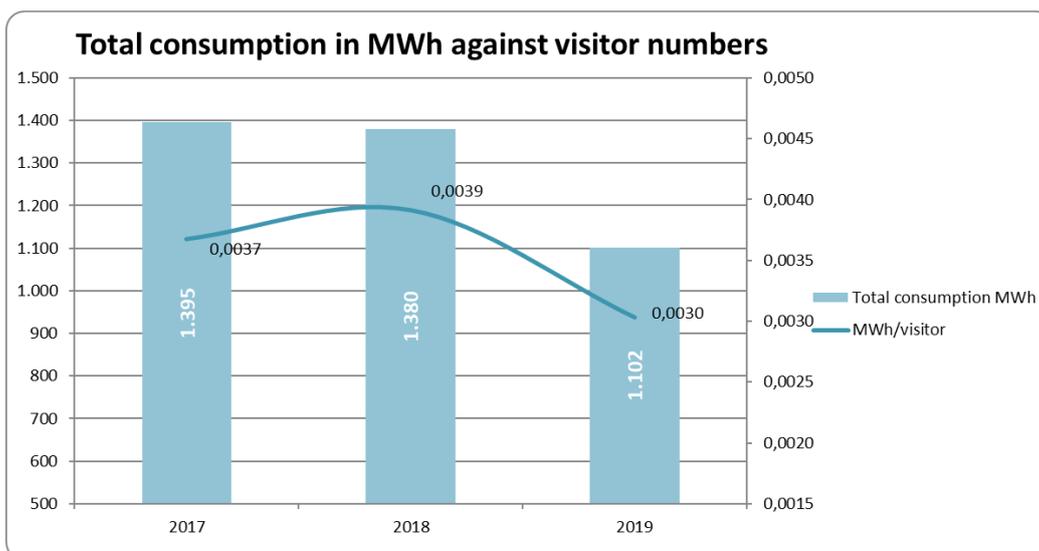
We have no equipment that uses energy directly from renewable sources. However, in line with our environmental commitment to work towards the use of renewable energy, all the electrical energy used at the Fundació in 2019 came exclusively from renewable energy sources, as certified by the energy supplier.

Electricity consumption

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

	2017	2018	2019
MWh	1.395	1.380	1.102
Evolution	-0,50%	-1,08%	-20,14%
MWh/visitor	0,0037	0,0039	0,0030
Evolution	12,12%	5,41%	-23,08%

These figures are shown in the following graph:



In 2019, total electric energy consumption fell by 20.14% and the indicator of MW/visitor dropped by 23.08%, in relation to 2018.

Electric energy consumption fell as a result of adjusting heritage conservation criteria and replacing lighting by LEDs.

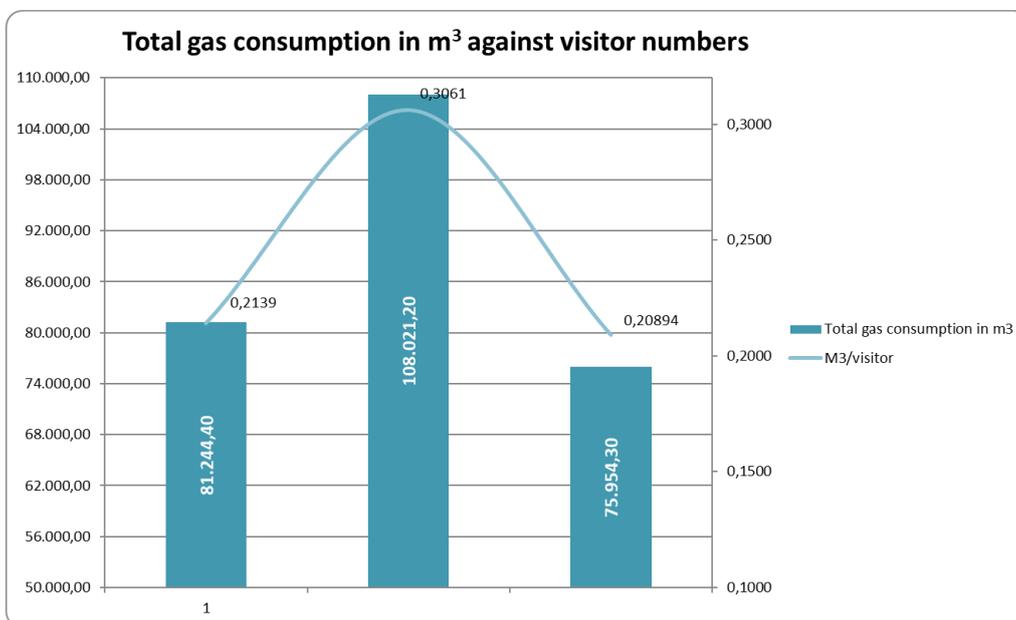
In 2019 we maintained our commitment to purchasing 100% green energy from our electricity supplier.

Natural gas consumption

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

	2017	2018	2019
m³	81.244	108.021	75.954
Evolution	-13,02%	32,96%	-29,69%
m³/visitor	0,2139	0,3061	0,2089

These figures are shown in the following graph:



In 2019, total natural gas consumption fell by 29.69% and by 31.74% in terms of m³/visitor.

Gas consumption is driven above all by external weather conditions (heating and humidifying the galleries to keep them within specific temperature and humidity parameters).

Natural gas is basically used to power the boilers for heating and for humidifiers. In 2019 this machinery was better adjusted to the building’s demand rather than following generic indicators, allowing for a reduction in consumption.

Diesel consumption

Diesel is used for the generators, which are only turned on for maintenance and in the case of a power cut.

In 2019 we purchased 94 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	1,102 MWh	---	1,102
Natural gas	75,954.30 m ³	910 m ³ = 12.44 MWh	1,038.32
Diesel	94 litres	1,181 litres = 13.02 MWh	1.04

The Fundació's total energy consumption in 2019 was 2,141.36 MWh, a decrease of 25.10% on 2018, when consumption was 2,859 MWh. This total is equivalent to 0.0059 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, we are looking into the possibility of installing solar panels for self-consumption levels in the office spaces.

WATER

A. Water sources

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



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

¹ The conversions were carried out using data from the Institute for Energy Saving and Diversification (IDEA), from 2011.

C. Water consumption

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

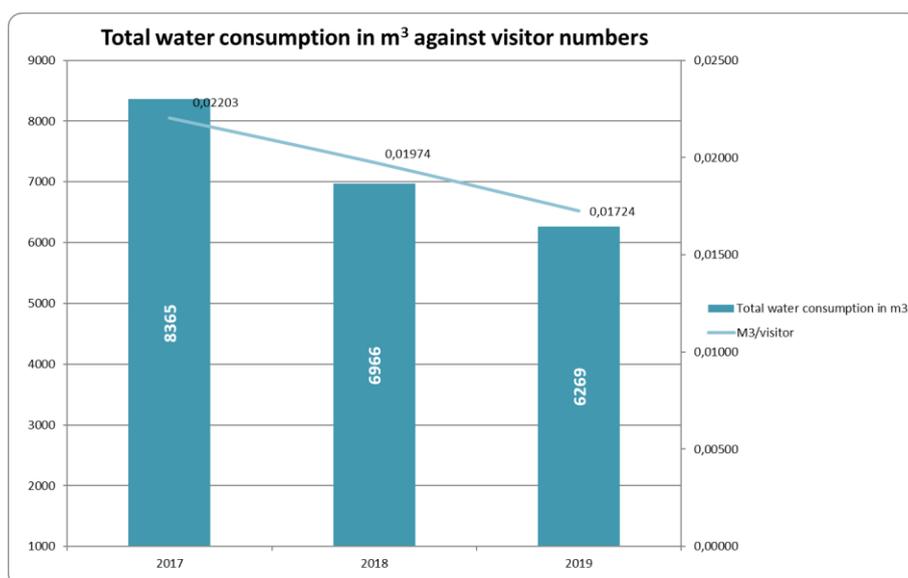
	2017	2018	2019
m ³	8.365	6.966	6.269
Evolution	0,42%	-16,72%	-10,01%
m ³ /visitor	0,0220	0,0197	0,0172
Evolution	12,38%	-10,39%	-12,64%

Total water consumption at the Fundació in 2019 was 6,269 m³, which is equivalent to 2.51 Olympic swimming pools.



An Olympic pool with a depth of 2 metres needs about 2,500 m³ of water

These figures are shown in the following graph:



In 2019, absolute water consumption fell by 10.01% with respect to 2018. An incident in April 2019 led to an excess of water consumption (about 180 m³, caused by a flaw in the programming of the water level of the pond in the north courtyard).

Over the past three years we have managed to significantly reduce total water consumption with respect to 2015, and we shall continue to reduce it further.



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
- ❖ Employees' 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 the necessary authorisation from the Entitat Metropolitana de Barcelona to dispose of wastewater properly.

An annual control is carried out and the results are sent to AMB. The results for the control carried out in April 2019 are shown in the table below.

CONTROL 2019 (08/04/19)

Parameter	Result	Limit
MES (mg/l)	40.00	750.00
pH (pH units)	8.66	6.00 – 10.00
Connectivity at 25 °C (µS/cm)	1,240.00	6,000.00
Total carbon (mg/l)	15.00	450.00
BOD ₅ (mg/l)	22.00	No limit
COD (mg/l)	59.00	1,500.00
TKN (mg/l)	19.30	90.00
Ammonium (mg/l)	13.80	60.00
Total phosphorus (mg/l)	2.01	50.00
Chlorides (mg/l)	193.00	2,500.00
Nitrates (mg/l)	9.40	100.00
Sulphates	103.00	1,000.00

Parameter	Result	Limit
Dissolved sulphides (mg/l)	<0.20	No limit
Total sulphides (mg/l)	<0.20	1.00
Oils and fat (mg/l)	1.88	250.00
Aluminium (mg/l)	<2	20.00
Mercury (mg/l)	193.00	100.00

Analysis of this sample shows that all the parameters were below the maximum permitted limits, with the exception of mercury. For this reason, we investigated the causes for the presence of mercury in wastewater, relevant corrective measures were implemented and the analysis was repeated on 02/05/2019. The result showed the levels to be within allowed levels (<5µg/l).

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 waste 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 and 2019:

Waste (tonnes)	2017	2018	2019
Fluorescent tubes	0.000	0.030	0.045
Toner and cartridges	0.040	0.000	0.007
Dry batteries	0.005	0.000	0.004
Adhesive waste	0.000	0.000	0.000
Electrical appliances	0.370	0.000	0.400
Contaminated cloths and absorbents	0.210	0.085	0.215
Aqueous solution	0.503	0.000	0.000
Scrap	5.030	0.000	0.000
Leftover paint	0.160	0.183	0.680
Contaminated containers	0.340	0.274	0.790
Electrical cables	0.000	0.320	0.000
Plastic	2.270	1.442	1.150
Wood	0.000	0.000	0.000
Organic	4,650	3.909	3.134
Glass	0.870	0.479	0.470
Paper and cardboard	5.060	1.854	3.022
General waste	10.890	2.960	3.536
Cooking oil	0.070	0.060	0.040
Battery waste	0.000	0.000	0.054

Non-hazardous
 Hazardous

The following categories of waste increased:

- Fluorescent tubes
- Dry batteries
- Electrical appliances
- Cloths and absorbents
- Leftover paint
- Contaminating packaging
- Paper and cardboard
- General waste

Waste decreased in all other categories. There has been a huge improvement thanks to a change in our model for internal waste management: special waste is managed through Ferrovial and the rest is weighed internally for our records and then placed in the on-street recycling containers managed by Barcelona City Council.

The new multifunction printers produce no toner or cartridge waste. However, in 2019 we shall have to dispose of our existing waste in this area.

Of the total waste produced (13.49 tonnes):

- 11.35 tonnes was non-hazardous waste
- 2.20 tonnes was hazardous waste

In addition, 8.18 tonnes (60.61%) corresponded to residual waste similar to urban waste:

- Paper and cardboard
- Glass
- Plastic
- General waste

The remainder (39,39%) corresponded to waste produced through maintenance of the building.

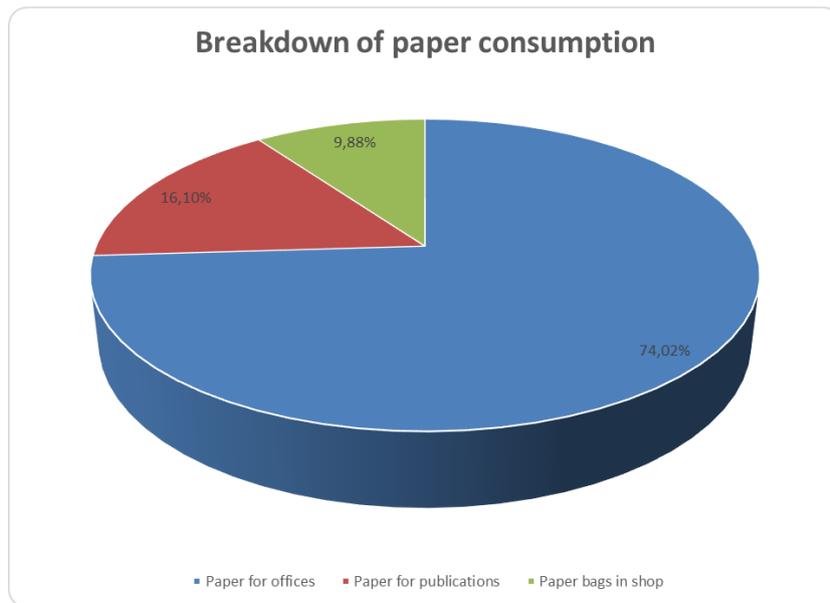
EFFICIENT CONSUMPTION OF MATERIALS

Consumption of Office and Gift Shop Products and Publications

Paper consumption at the Fundació breaks down into:

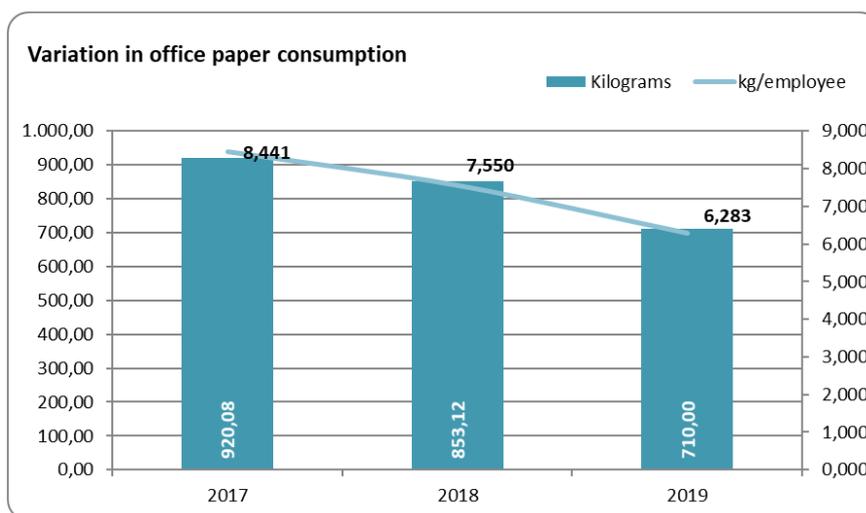
- Consumption of A4 paper in offices
- Consumption of paper for publications
- Consumption of paper bags (gift shop)

The breakdown of paper consumption is shown in the following chart:



The vast majority of paper consumption is for publications.

The following graphs show how consumption of the different kinds of paper has changed over recent years:



Office paper consumption fell significantly with respect to 2018 (22.83%), and, as a result, the kg/employee indicator also fell with respect to 2018 (25.56%),

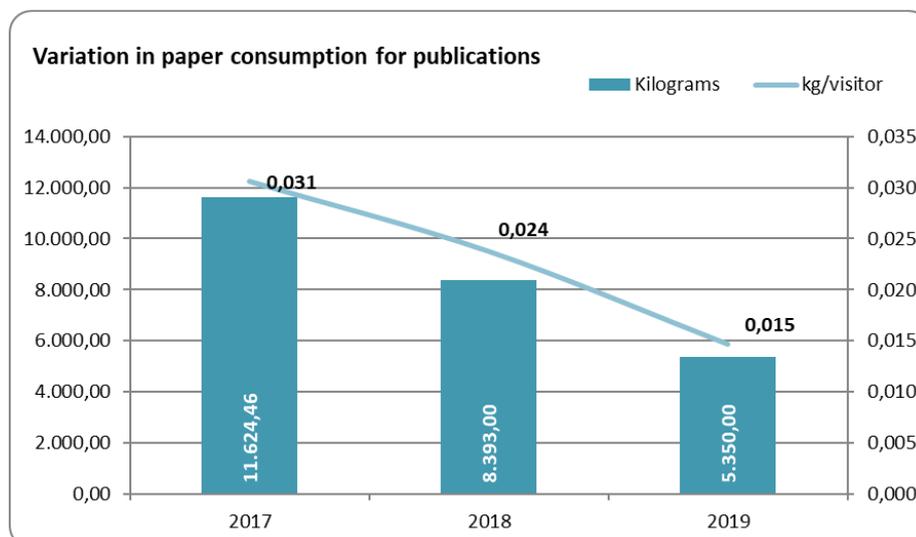
The decrease on previous years is the result of actions and awareness of staff at the Fundació, who continue to work in the following areas, among others:

- Reusing paper in offices
- Only printing documents when necessary
- Online ticket sales
- Online invitations
- Other

For 2019, along with documenting paper consumption for purchasing purposes, data has been compiled of copies made with the available multifunctional printers. From 16 January 2019 to 13 March 2020 this has been.

- 142,206 in black and white
- 107,752 in colour

With regards to paper used in publications, in 2019 there was a decrease with regards to 2018 of 53.98% in absolute terms and of 51.92% in terms of kg/visitor. In this case, the consumption of paper for publications is directly related to the number of temporary exhibitions, as well as the need to print related documents (posters, guides, and so on).

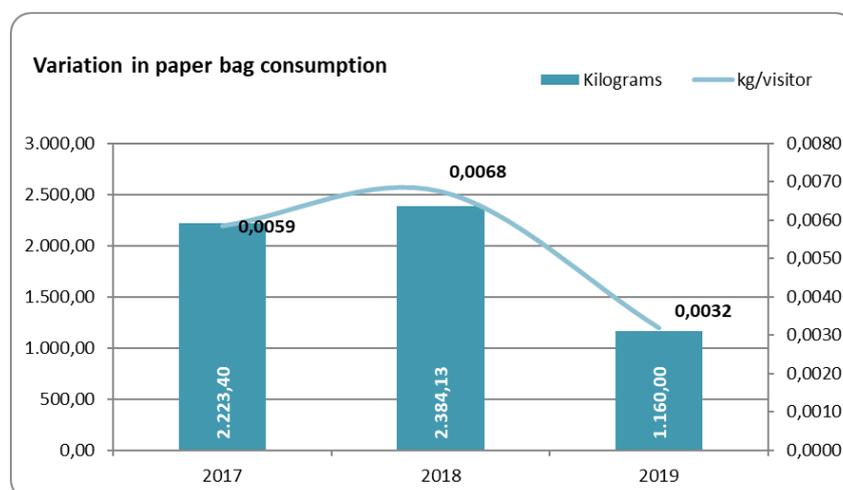


In 2018 and 2019 we examined the data on the weight of paper used for publications, which is the indicator used to calculate this environmental aspect.

The Communication Department has been working for several years to cut down on printed materials. In 2018 and 2019 we continued to work on the following actions, among others:

- Smaller print runs
- Adjusting printing to real needs (based on past experience)
- Inviting Friends of the Fundació in digital format
- Reduced printing by the Press Office and sending information in digital format

Overall, the Fundació has followed a responsible purchasing protocol for paper in order to reduce the environmental impact of its paper consumption for offices, publications and preparing materials. We bear in mind the kind of paper, suppliers, printers, inks, etc.



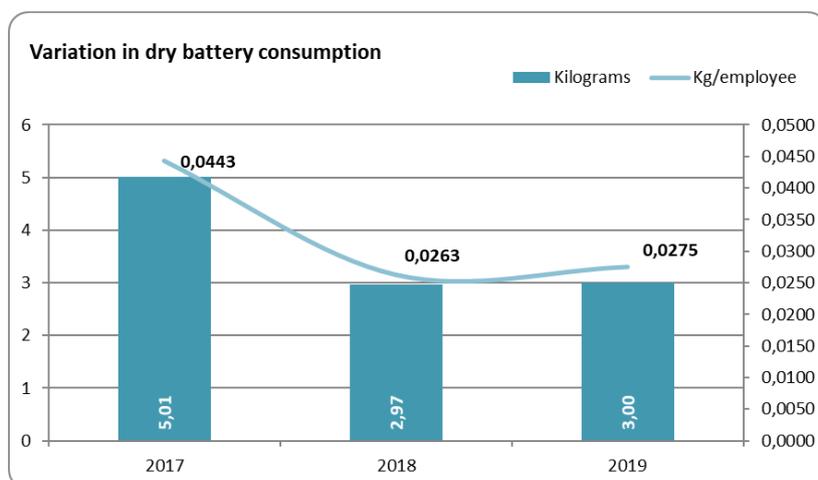
There was a decrease in the number of paper bags used in the gift shop in both absolute terms (47.83%) and in terms of the tonnes/visitor (45.50%) with respect to 2017.

This consumption could be related to the levels of stock, given that in previous years purchases of bags were higher.

Furthermore, consumption is directly related to the level of giftshop sales and the number of visitors.

Dry battery

In recent years we have made a determined effort in our offices and exhibitions to cut the consumption of non-rechargeable batteries by gradually replacing them with rechargeable ones.



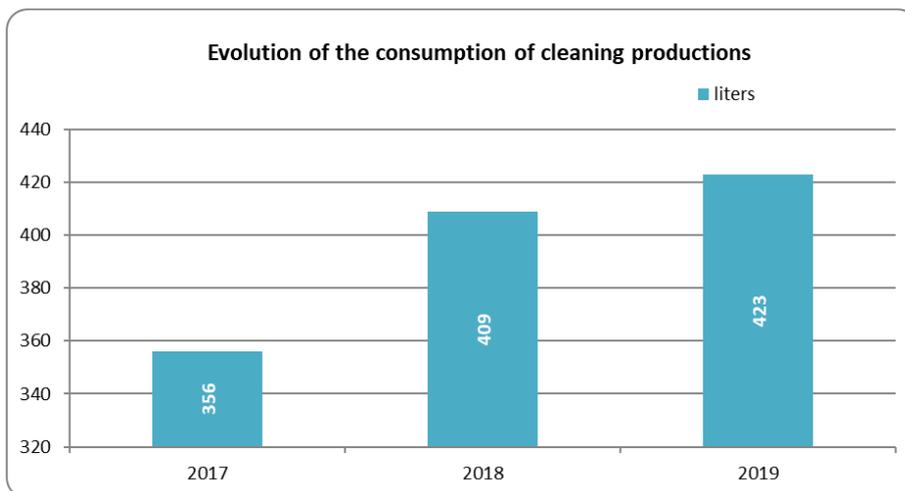
As shown in the graph, dry battery consumption remained at similar levels in 2019 to 2018.

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

The following graph shows how the total number of litres of cleaning products has changed over recent years:



Over the course of 2019 the consumption of cleaning products rose by 3.42% in relation to the previous year. All cleaning products used at the Fundació are duly eco-labelled.

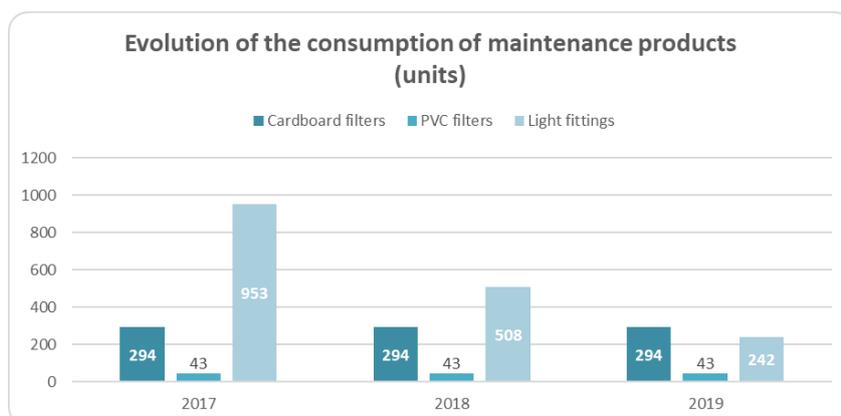
This aspect is linked to the number of visitors and the possible quantity of cleaning products already in stock.

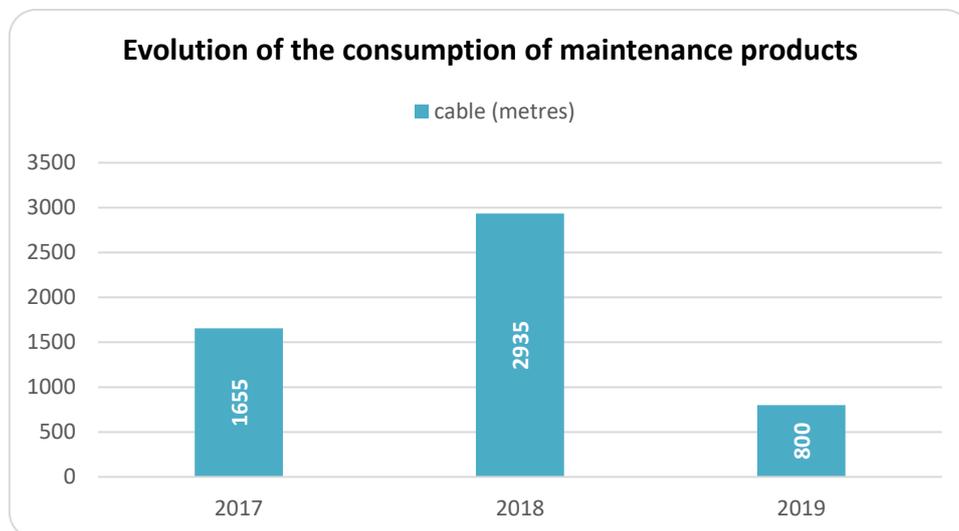
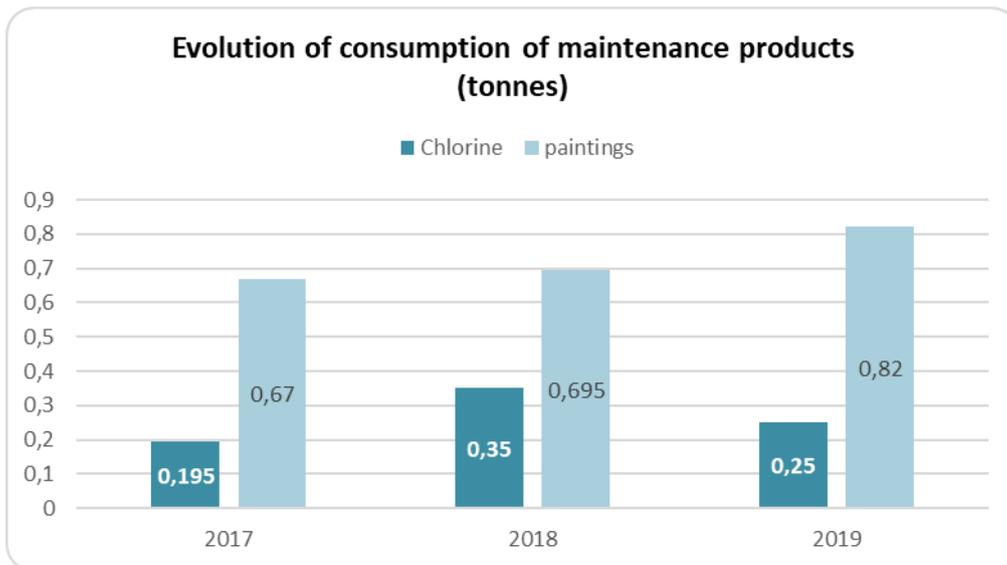
Consumption of Maintenance Products

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: chorine and pH regulator
- Electrical material: light fittings and cables

Consumption of maintenance products varies depending on the product in question. Cardboard filters, light fittings, cardboard reels and cables showed an increase, while PVC filters stayed steady and choline fell. This behaviour is 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 2019 the following purchases were made:

- Reels of Aircap bubble wrap: 70 kg
- Reels of plastic: 56 kg
- Paint for building maintenance (linked to exhibitions): 820 kg
- Reels of cardboard: 462 kg
- Glaze and varnish (restoring artworks): 1 litre
- Solvents (restoring artworks): 1.1 litres

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

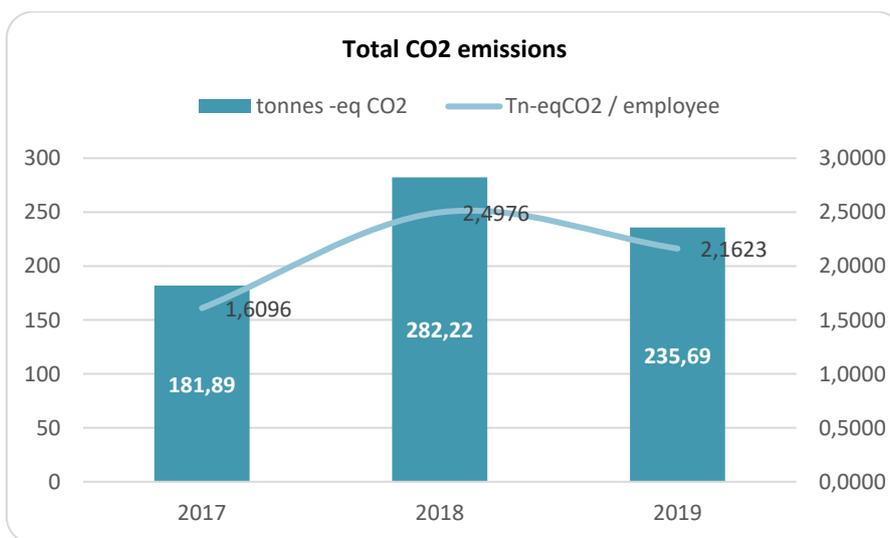
Atmospheric emissions come from the consumption of natural gas and diesel and the generation of waste, and are therefore directly linked to our activity. Diesel consumption is only occasional and wholly seasonal.

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), perfluorocarbons (PFC), sulphur hexafluoride (SF₆) and nitrogen trifluoride (NF₃). The conversion factors of the Catalan Office for Climate Change calculator were used in our calculations.

The following table shows the total CO₂ eq emissions when produced in 2019, as generated by **natural gas** and **diesel** consumption and **waste**, as well as **cooling gas leaks** in air-conditioning:

SOURCE OF EMISSIONS	EMISSIONS	UNIT
Natural gas	163.30	tonnes CO ₂ eq
Diesel	0	tonnes CO ₂ eq
Fluorinated gases	22.76	tonnes CO ₂ eq
Electricity	0.00	tonnes CO ₂ eq
Waste	3.69	tonnes CO ₂ eq
TOTAL	235,69	tonnes CO₂ eq

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



Since all the electricity consumed at the Fundació is green energy, no emissions are linked to it. In 2019 there was a reduction of 16.49 % in comparison to 2018.

This reduction was a direct consequence of the following factors:

- Reduction of natural gas consumption
- Zero consumption of diesel for the generators

	2017	2018		% variation 2019 vs 8
Tn- eq CO ₂	181,89	282,22	235,69	-16,49%
Tn- eq CO ₂ / employee	1,6096	2,4976	2,1623	-13,42%

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).

Noise Emissions

Noise is not a major issue at the Fundació. In 2011 we measured noise levels at 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 Fundació's activity in 2018 and no complaints have been received, no further noise measurements have been carried out.

Light Emissions

In 2019 there was no major change in light emissions. 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 accord 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 landscaped area already indicated.

TABLE OF INDICATORS

Area	Indicator	2017	2018	2019
Electric energy consumption	MWh/visitor	0-003673	0.003911	0.003031
Natural gas consumption	MWh/visitor	0.00292	0.30609	0.20894
Diesel consumption	MWh/visitor	0	0.00063	0.00000
Total energy consumption	MWh/visitor	0.0066	0.3106	0.2120
Water consumption	m3/visitor	0.022	0.020	0.017
Waste creation	t/ visitor	8.18921E-05	3.11699E-05	3.12219E-05
Municipal solid waste (MSW)	kg/visitor	6.25E-02	1.91E-02	2.25E-05
Hazardous waste	kg/employee	1.64E+01	7.88E+00	1.69E-02
Non-hazardous waste	kg/visitor	7.70E-02	3.03E-02	3.12E-05
Consumption of materials				
Office paper	t/employee	0.0081	0.0075	6.2832
Paper for publications	t/visitor	3.06E-05	2.38E-05	0.0129
Paper bags in shop	t/visitor	5.85E-06	6.76E-06	0.0032
Toner consumption	kg/employee	0.11	0	0
Dry battery consumption	kg/employee	0.044	0.026	0.0275
Cleaning liquid consumption	litres/m2 surface	0.0326	0.0375	0.0388
Toilet paper consumption	units/visitor	0.0104	0.0098	0.0109
Hand towel consumption (washrooms)	units/visitor	0.0052	0.0070	0.0055
Maintenance material consumption				
Cardboard filters	units/employee	2.60	2.60	2.73
PVC filters	units/employee	0.38	0.38	0.39
Light fittings	units/employee	8.434	4.496	2.220
Chlorine	kg/employee	3.10E+00	1.11E+00	2.29E-03
Cable	metres/employee	14.65	25.97	7.34
Consumption of exhibition materials				
Cardboard reels	t/employee	0.0041	0.0047	0.0048
Plastic film	t/employee	0.00000	0.00005	0.00005
Paint	t/employee	0.00593	0.00615	0.00638
Enamels, varnish, solvents, etc.	t/employee	0.0531	0.0089	0.0092
CO2 emissions	t CO2 / visitor			
CO2 emissions from electricity consumption	t CO2/ visitor	0	0	0
CO2 emissions from natural gas consumption	t CO2/ visitor	4.61E-04	6.58E-04	4.49E-04
CO2 emissions from diesel consumption	t CO2/ visitor	0.00E+00	1.79E-06	0.00E+00
CO2 emissions from waste generation	t CO2/ visitor	2.33E-05	9.66E-06	1.02E-05
CO2 emissions from cooling gas leaks	t CO2/ visitor	0.00E+00	1.30E-04	1.89E-04
CO2 emissions for transport of employees	t CO2/ employee	0.46230	0.46230	0.47927
Biodiversity	m2 built	10,915	10,915	10,915
Biodiversity	m2 built / employee	96.59	96.59	96.59
Total land use	m2	7,468	7,468	7,468

Area	Indicator	2017	2018	2019
Total built surface area	Total built surface / Total land use	0.98	0.98	0.98
Total landscaped surface area	Total landscaped surface / Total land use	0.48	0.48	0.48
Total enclosed surface	Total enclosed surface / 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

In 2018 the Fundació Joan Miró experienced the following incidents, accidents or emergency situations that had an environmental impact:

INCIDENT / ACCIDENT / EMERGENCY	ENVIRONMENTAL IMPACT
Water leak	Increase in water consumption
Refrigerant gas leak	Atmospheric pollution

In early 2020 the emergency drill corresponding to the year 2019 was carried out, consisting of a simulated fire in the boiler room. The result was positive. However, attention will be paid to the commentaries provided by the external fire prevention service.

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:

Ramón González
Head of Environment

Dolors Ricart
Deputy managing director