Statement of Intent for the Implementation of the Bizot Green Protocol

The effects of the climate crisis are having a significant impact on museum operations and the preservation of cultural heritage collections. For this reason, it is essential to adopt new operational approaches and develop updated methodologies aimed at reducing energy consumption while mitigating the risks of damage and deterioration to museum objects. Within this context, Museo Egizio has chosen to endorse the principles of the Bizot Green Protocol and is committed to integrating sustainable practices into its collection care and management strategies.

This document outlines the actions undertaken by Museo Egizio over the last decade and the initiatives currently being developed for the coming years. The topics addressed are organized into three main areas:

1. **Energy Efficiency and Building Services Management**
   This section describes the interventions carried out on the Museum's technical systems, with particular reference to environmental control and lighting systems. These measures are intended to ensure temperature, relative humidity and lighting conditions consistent with the parameters recommended by the Bizot Green Protocol and with current Italian regulations.
2. **Collection Care and Microclimate Monitoring**
   This section illustrates the methods employed for the continuous monitoring of exhibition and storage environments, as well as the strategies adopted to regulate and maintain appropriate microclimatic conditions.
3. **The Evolving Role of the Museum Courier and Transportation Planning**
   This section examines the changing role of the courier in contemporary museum practice, with particular attention to measures adopted to optimize travel, reduce transport-related emissions and ensure compliance with Italian regulations governing the movement of cultural property.

Before addressing these three areas in detail, it is important to note that all objects preserved by Museo Egizio are owned by the Italian State. Consequently, every activity concerning their management and conservation must comply with the directives issued by the Italian Ministry of Culture and with the requirements established by the competent Superintendency (Soprintendenza).

Furthermore, the Museum is housed within a protected historic building, the Collegio dei Nobili, originally designed by Michelangelo Garove beginning in 1679. The historical and architectural significance of the building imposes specific limitations on structural interventions and on the implementation of energy-efficiency measures.

Energy Efficiency and Building Services Management

Museo Egizio houses a collection of approximately 40,000 artefacts, of which 3,300 are currently displayed in the permanent galleries and approximately 12,000 are exhibited in the Galleries of Material Culture. These collections are distributed across a visitor-accessible area of approximately 12,000 square metres over five floors.

The exhibition spaces are equipped with an advanced environmental control system. The system is powered through an integrated geothermal and boiler-based solution and consists of three heat pumps supplying thermal transfer fluids to fourteen air handling units, fan coil units and radiant panels. All components are interconnected and regulated through a remote building management system supported by continuous feedback from a network of environmental sensors installed throughout the galleries.

The geothermal system, commissioned in 2015, represents one of the earliest applications of this technology within an Italian museum context. The integration of geothermal technology with conventional systems allows for precise and continuous calibration of the environmental parameters required for the preservation of the collections while simultaneously ensuring adequate visitor comfort.

Continuous monitoring and the ongoing assessment of the most efficient operating configurations also contribute to optimizing energy consumption and reducing the overall environmental impact of the system.

Collection Care and Microclimate Monitoring

In accordance with regulations issued by the Italian Ministry of Culture, gallery temperatures are maintained within a range of 18–22°C, while relative humidity is maintained between 45% and 60%, depending on the materials preserved within each environment.

In addition to maintaining average values, particular attention is paid to controlling and limiting fluctuations in temperature and relative humidity in accordance with the requirements established by the relevant Italian UNI standards (UNI 10829:1999, UNI 10969:2002 and UNI 10586:1997). These parameters are fully consistent with the recommendations outlined in the Bizot Green Protocol.

Another environmental factor subject to continuous monitoring is illuminance (lux) within exhibition spaces, ensuring both visitor comfort and the protection of light-sensitive materials. Acceptable illuminance levels vary according to the nature of the objects displayed and their specific conservation requirements.

Museo Egizio houses collections composed of a wide range of materials, each requiring tailored conservation measures. Most objects are displayed within protective cases equipped with passive climate-control systems, including silica gel buffering materials, designed to mitigate the effects of microclimatic fluctuations and limit direct interaction with visitors, thereby reducing the risk of mechanical damage and physicochemical deterioration.

The Evolving Role of the Museum Courier and Transportation Planning

Beginning in late 2025, Museo Egizio revised and strengthened its procedures governing loans and object transportation in order to align them more closely with international conservation standards.

The updated protocol introduces an enhanced pre-loan assessment process for borrowing institutions, aimed at verifying the compatibility of environmental conditions, technical infrastructure and security measures with the conservation requirements of the collections.

The protocol includes a detailed technical review of exhibition and storage facilities at borrowing institutions, with particular attention to identifying potential risks that could compromise the integrity of the objects, such as uncontrolled environmental fluctuations, inappropriate lighting levels or the absence of continuous monitoring systems.

At the same time, Museo Egizio has implemented measures aimed at improving environmental sustainability, including the reuse of transport crates for two-dimensional objects. The extension of this approach to three-dimensional artefacts is currently under development through the design of modular and reusable packing systems capable of providing high levels of protection while reducing the environmental impact associated with transportation activities.

The adoption of this enhanced protocol improves the traceability of conservation conditions, raises the standards required of borrowing institutions and promotes more sustainable practices within the museum loans sector.

With regard to the use of couriers during the transportation of museum objects, virtual courier solutions cannot always be adopted. Because the collections of Museo Egizio are State-owned cultural assets, current regulations enforced by the competent Superintendency require the physical presence of an authorized courier during every movement of the objects. This role must be performed either by a qualified member of Museo Egizio staff or by an authorized representative of the Italian State responsible for supervising the operation.

Future Developments

In order to further improve environmental management within Museo Egizio and reduce the environmental impact associated with museum activities, particularly collection loans, a series of medium- and long-term strategic actions has been identified.

A key initiative is the establishment of an interdisciplinary working group aimed at strengthening collaboration among the Conservation and Diagnostics Department, the Travelling Exhibitions and Loans Coordination Department, the Technical Office, and the Safety and Environment Office. This technical committee will facilitate a more comprehensive assessment of environmental challenges, the evaluation of operational impacts and the identification of targeted and sustainable solutions.

In parallel, data loggers will be installed within selected display cases to improve the monitoring of microclimatic conditions and generate data that will support further optimization of collection environments. Experimental studies will also be undertaken to investigate the response of different materials to variations in temperature and relative humidity, thereby improving understanding of environmental impacts on museum objects.

Particular importance will be given to the development of a detailed carbon footprint assessment for the Museum. This will provide an essential tool for tracking energy consumption, identifying major sources of emissions and establishing effective priorities for climate mitigation actions.

By its nature and mission, Museo Egizio is a constantly evolving institution. This evolution requires the continuous updating of technical systems, conservation methodologies and collection-management procedures so that the Museum can progressively integrate best practices in climate adaptation and mitigation.

Taken together, these initiatives represent a concrete commitment to a more responsible, sustainable and forward-looking approach to museum management and collection care, ensuring the long-term preservation of cultural heritage while remaining consistent with the Museum’s strategic vision and with national and international conservation and sustainability frameworks.