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World Heritage Sites

Living, preserving and improving our legacy



Ordem dos Engenheiros de Portugal

Created in 1936 (celebrates 88 years in 2024), the Ordem dos Engenheiros of Portugal / Portuguese Engineers Association (OEP) has as its main objectives:

- Access control to the professional engineer's activity and practice in Portugal;
- Assure the quality, promotion and progress of engineering;
- Encourage efforts of its members in scientific, professional and social skills;
- Preservation of ethics and deontological behaviour, valorisation and professional qualifications of engineers.
- 62.000 members



Ordem dos Engenheiros headquarters building



Engineering | 12 Colleges and Fields of Expertise



Agronomical



Environmental



Civil



Electrotechnical



Geological and Mines



Computer



Geographical



Material



Forest



Mechanical



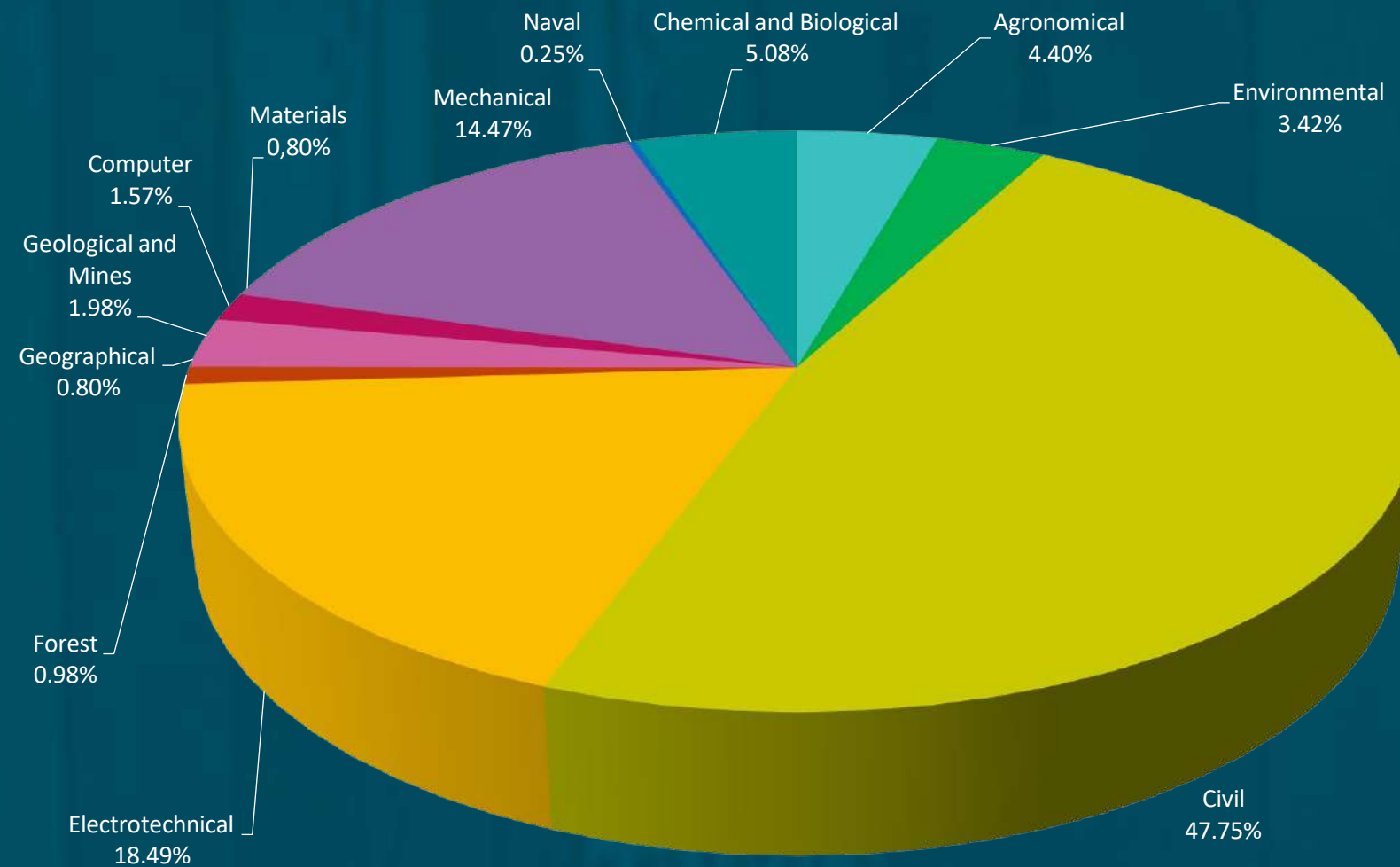
Naval



Chemical and Biological



Colleges and Fields of Expertise



Degrees and qualification levels

Acting on behalf of the State of Portugal, the OEP is the legal Portuguese Institution that exclusively assigns the professional title of “Engineer” and regulates the exercise of the Profession in Portugal.

- **Members can be admitted into the OEP:**
 - Academic bachelor degree (3 years/Level 1), or master (5 years/Level 2) in engineering, according to the Bologna process;
 - Academic degree in engineering, or legal equivalent in a cycle (5 or 6 years/Level 2) before the Bologna process;
 - In international agreements only Level 2 members are allowed;
- **Qualification levels:** Effective, Senior and Advisor Member.
- **OEP supports the professional qualification of engineers through the granting of Qualification Levels and Specialist titles.**



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World Heritage Sites

Living, preserving and improving our legacy

Convention Concerning the Protection of the World Cultural and Natural Heritage

Since its creation (1972), the UNESCO WORLD Heritage List has more than 1100 sites spread across 167 countries. This list includes monuments, architectural ensembles, cultural and natural landscapes of universal value.





World Heritage

It covers natural and cultural assets that UNESCO recognizes as having exceptional value for humanity. These places are protected and preserved for future generations, representing the diversity and cultural richness of the planet.





Selection criteria

I.- To represent a masterpiece of human creative genius;

II.- To exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;

III.- To bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;

IV.- To be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;

V. - To be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;

Selection criteria

VI.- to be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. (The Committee considers that this criterion should preferably be used in conjunction with other criteria);

VII. - To contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;

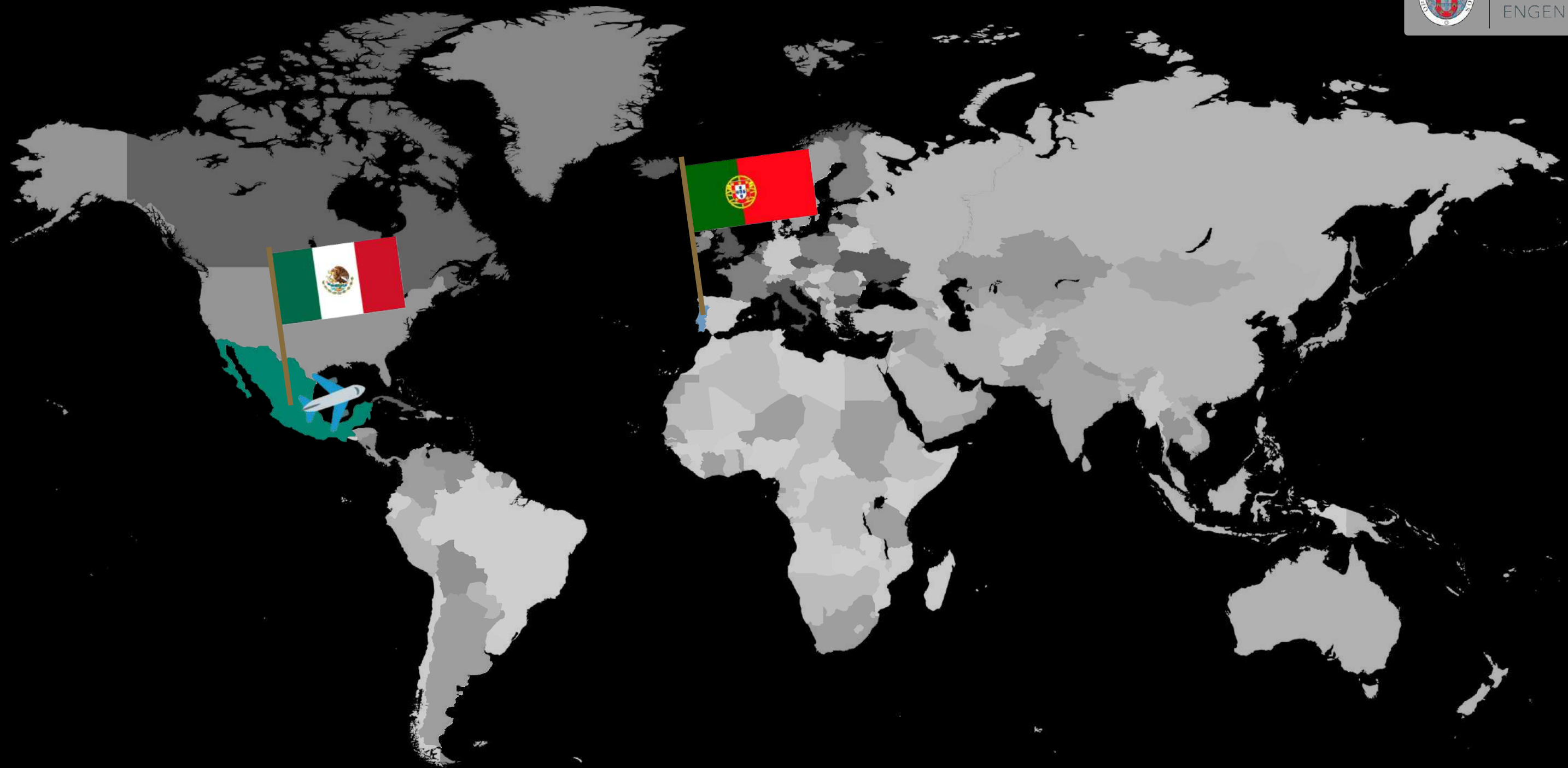
VIII.- To be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;

IX.- To be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;

X.- To contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

Countries with the greatest number of cities inscribed on the World Heritage list





Portugal's Cultural Heritage

Wealth and diversity

Portugal is a country with a very rich and diverse cultural heritage, with several regions that stand out for their historical, architectural and scenic importance.

Classified locations

Over the years, several Portuguese sites and monuments have been classified by UNESCO as World Heritage, given their exceptional relevance to humanity.

Ancestral legacy

These places preserve an ancestral legacy, reflecting the evolution of Portugal's culture, architecture and traditions over the centuries.



Portugal's Cultural Heritage

Angra do Heroísmo





ANGRA DO HEROÍSMO

- 1983 -

Portugal's Cultural Heritage

Évora



Portugal's Cultural Heritage

Porto



An aerial photograph of Porto, Portugal, showing a dense urban landscape with numerous buildings featuring red-tiled roofs. A large, green, rectangular park area is visible in the upper left quadrant. A tall, dark, Gothic-style church spire stands out in the center. The text "PORTO" is written in large, white, sans-serif capital letters across the middle of the image, with "- 1996 -" written below it in a similar style.

PORTO

- 1996 -

Portugal's Cultural Heritage

Guimarães



An aerial photograph of Guimarães, Portugal, showing the historic castle (Castelo de Guimarães) in the center, surrounded by green spaces and paths. To the right, there are modern residential buildings and parking areas. The text "GUIMARÃES" is prominently displayed in large white letters across the center, with "- 2001 / 2023 -" below it.

GUIMARÃES

- 2001 / 2023 -

Portugal's Cultural Heritage

Elvas





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World Heritage Sites / Cities

PAST

PRESENT

FUTURE



Sites as living elements



Living in a World Heritage Site / City

How to achieve balance between:



Residents



Workers



Tourists

Living in a World Heritage Site

Residents

Considering the physical and social degradation of these places, historic centers are often inhabited by people with low resources.



Guimarães resident



Évora resident

Living in a World Heritage Site

Workers and tourists

Considering that:

- Workers need better accessibility,
- Tourist search for historical and unique places



Traffic in Oporto city center



Living and preserving the Site

How to guarantee current and future experiences in a heritage that is classified and that we have an obligation to preserve?

The requirements for habitability and comfort are, in most cases, incompatible with the reality of a monument, let alone with the homes that were built around them and are classified historic centers.



How to **improve**/update the Site while **preserving** its memory?



Evolutional sites

Action principles

- To rehabilitate public spaces;
- To rehabilitate buildings owned by the State;
- To implement policies for the acquisition of properties for the installation of services (museums, day centers, schools, health centers, ...);
- To provide technical and financial support to private individuals in the rehabilitation of housing and stimulation of commerce.
- To establish visitation and load capacity measures for Sites



What is the role of engineering in the future of **World Heritage Sites?**

What is the role of engineering in the future of **World Heritage Sites?**

1. In risk analysis

earthquakes, coastal overtopping, storms, flash floods - floods, fires



Copenhagen 17th century Library, Denmark



Notre-Dame Church, France



Historic Town of Grand-Bassam, Côte-D'Ivoire



Kathmandu Valley, Nepal

What is the role of engineering in the future of **World Heritage Sites?**

2. Reducing the vulnerability



Tombs of the Buganda Kings, Uganda



Archaeological site of Pompei and Vesuvius,
Italy



Venice Lakes, Italy



Ayutthaya, Thailand

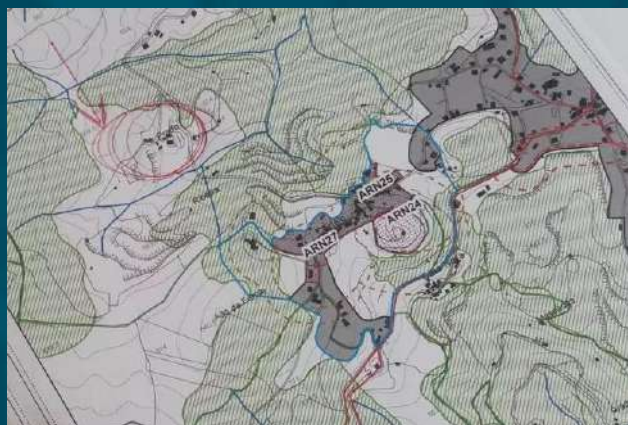
What is the role of engineering in the future of **World Heritage Sites?**

3. Adapting and preserving ancestral techniques and materials with new technology



What is the role of engineering in the future of **World Heritage Sites?**

4. Defining the strategy for territory management:
occupation and load capacity limits



What is the role of engineering in the future of **World Heritage Sites?**

5. Introducing energy and water efficiency with new concepts and processes



What is the role of engineering in the future of **World Heritage Sites?**

6. Defining new forms of mobility within classified areas



Engineering in **World Heritage Sites** guarantees

- 1) Rigorous interventions with quality and compatible materials;
- 2) Smart energy solutions;
- 3) Maintenance and adaptation to current requirements;
- 4) Authorities control;
- 5) Adoption of low-intrusion solutions in classified structures.

Engineering in **World Heritage Sites** actively contributes to

- 1) Valuing the Sites memory;
- 2) Improving the quality of life;
- 3) Increasing market interest.

Portugal's Cultural Heritage



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MADEIRA

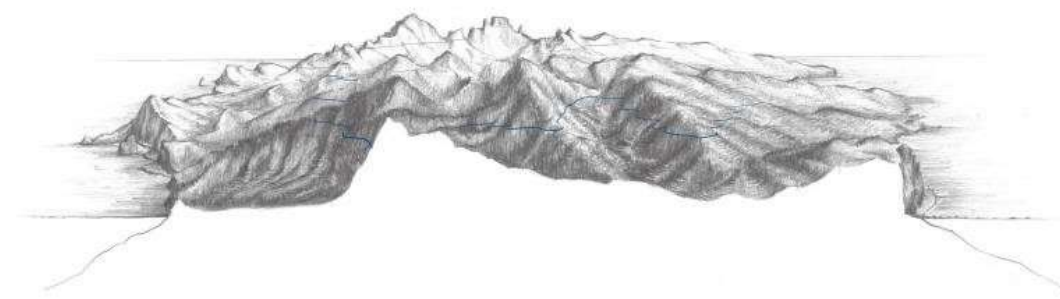
- CANDIDATE -



Levadas da Madeira

It is a multifunctional system of gravity water transport channels, for human consumption, agricultural irrigation and other irrigation, production of electrical energy, action of traditional mills, and some for the enjoyment of nature, through hiking.

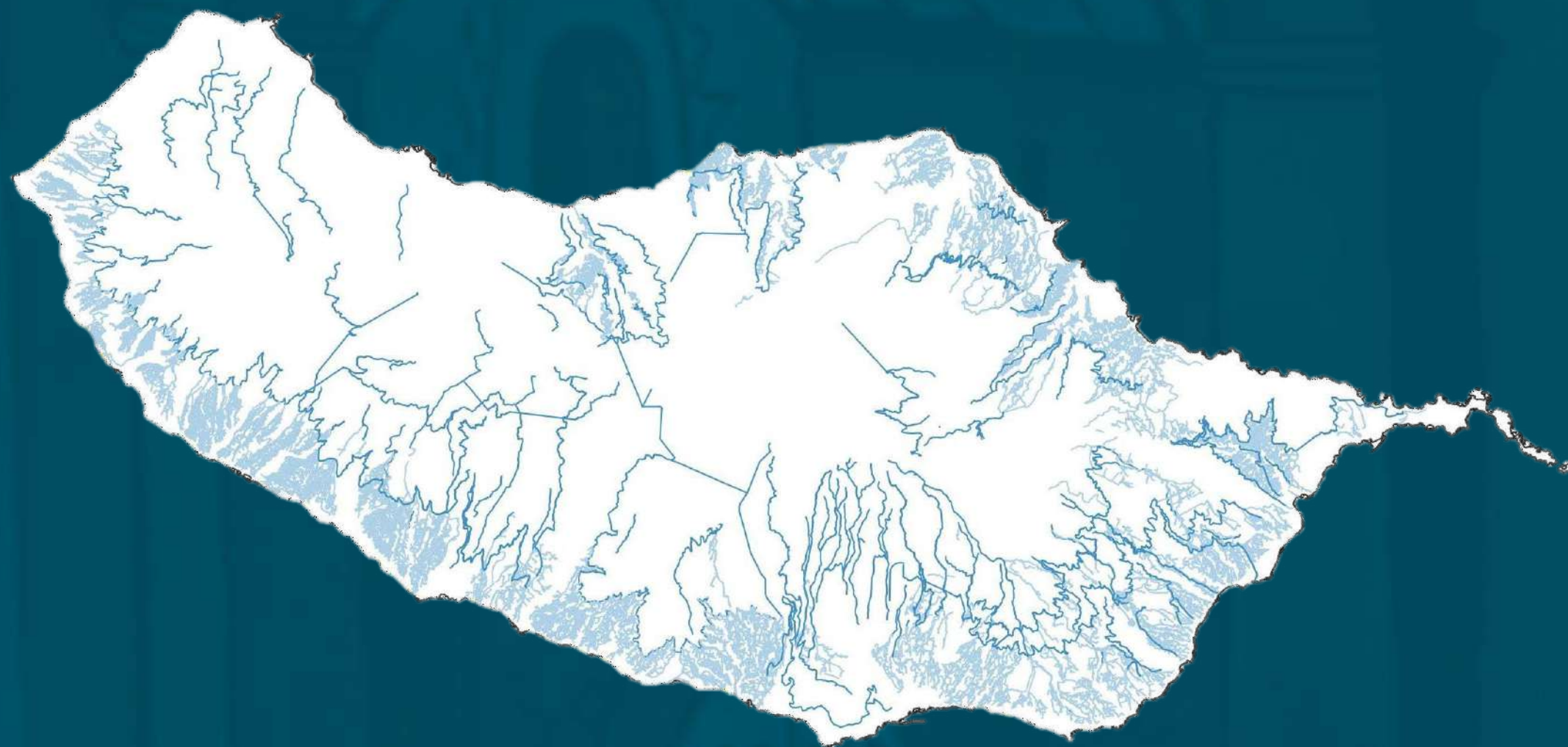
LEVADAS DA MADEIRA



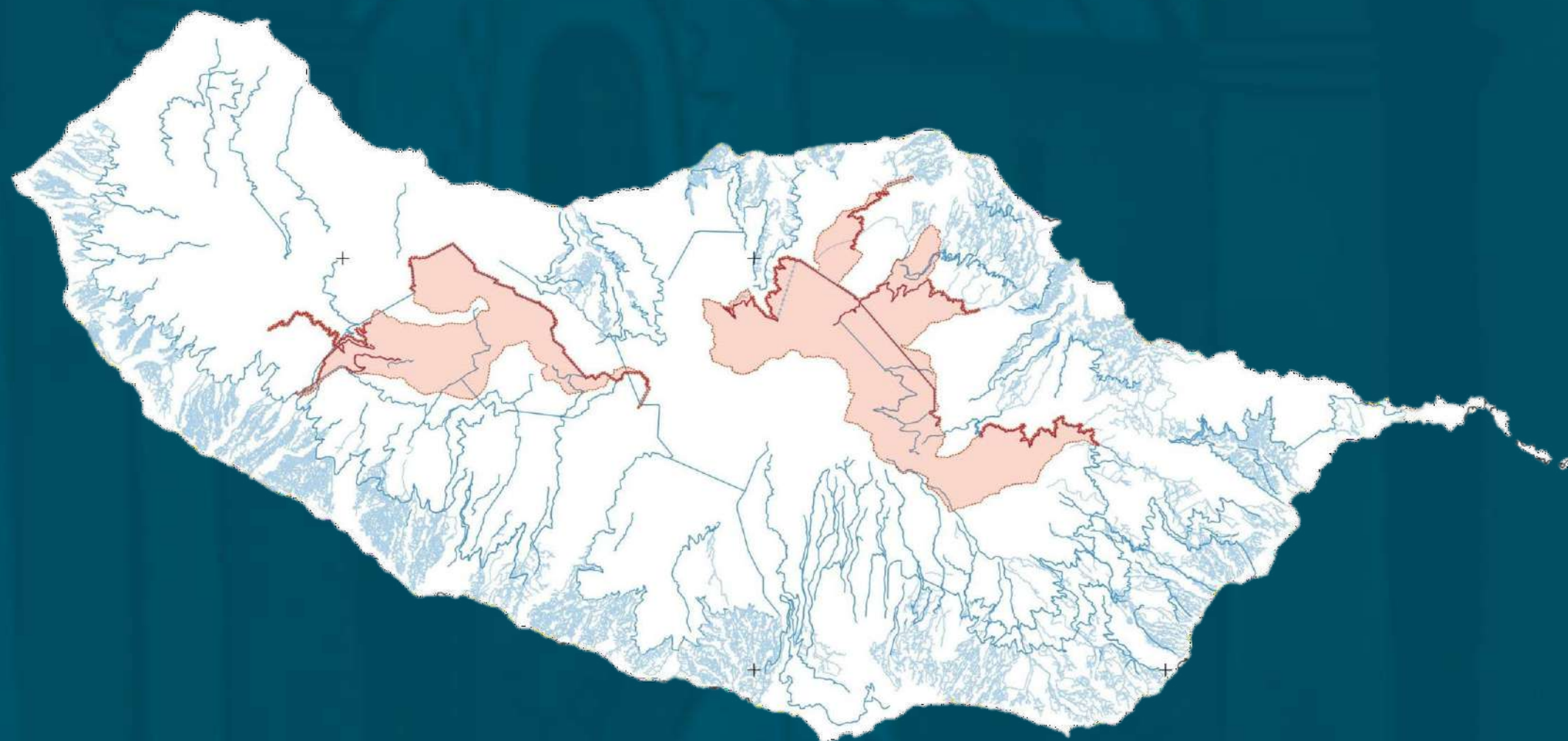
NOMINATION TO THE WORLD HERITAGE LIST OF UNESCO

MADEIRA - PORTUGAL

JANUARY 2023



- nominated property (25.20 ha)
- buffer zone (7584.48 ha)
- levada
- levada in tunnel
- main channels
- secondary channels
- Madeira island (BARAM 2020)



- nominated property (25.20 ha)
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Levadas da Madeira

Selection criteria

IV - To be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history

The Levadas da Madeira constitute material testimony to two significant periods in human history:

1. Systematic ocean navigation of the 15th-17th centuries

- Sugarcane cultivation;
- Vineyard culture associated with polyculture.

2. Post-War Period

- Production of electrical energy;
- Tourism (pedestrianism);
- ✓ Wise use of different materials and construction techniques;
- ✓ Character of multifunctionality and management integrating different uses and functions.

Levadas da Madeira

Selection criteria

V - To be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change

The construction of the Levadas da Madeira guaranteed the habitability of human beings on the island of Madeira:

1. Mastery of orography;
2. Food guarantee all year round;
3. Consolidation, maintenance and development of traditional settlements.

Unique character of the relationship between human beings and Nature in a situation of scarcity and adversity of natural elements – water, soil and orography.



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Construção da Levada do Norte, anos 50, Arquivo CAAHM, Museu de Eletricidade - Casa da Luz



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Trabalhos na construção da
Levada do Norte, anos 50,
Foto Perestrellos



“The Levadas da Madeira correspond to a multiseccular construction with approximately 600 years, where several generations knew how to combine form and function, using local resources, reintegrating them harmoniously into nature.”



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CONSEJO DIRECTIVO



¡Gracias!

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