



MINISTÉRIO DAS OBRAS PÚBLICAS, TRANSPORTES E COMUNICAÇÕES  
*Gabinete do Ministro*

**INTERVENÇÃO DE SUA EXCELÊNCIA  
O MINISTRO DAS OBRAS PÚBLICAS, TRANSPORTES  
E COMUNICAÇÕES**

***Mário Lino***

por ocasião do Seminário

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*(vale a versão lida)*



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Mister President of the European Association for Earthquake Engineering

Senhor Presidente da Sociedade Portuguesa de Engenharia Sísmica

Senhor Presidente do Laboratório Nacional de Engenharia Civil

Dear guests and participants,

First of all, I wish to thank the Organizing Committee for having invited me to be here with you at the closure of this Workshop on “Seismic Risk Reduction in Europe”.

Also, I would like to thank the President of the European Association for Earthquake Engineering (EAGE), Professor Robin Spence, for the honour of having chosen Portugal to host this event, promoted and organized by your distinguished international association and the Portuguese Society for Earthquake Engineering, with the co-operation of the National Laboratory for Civil Engineering (LNEC), at the occasion when 250 years have passed since the 1755 earthquake, occurred in the 1<sup>st</sup> of November, which devastated Lisbon and largely affected other areas of the country.

But Portugal has not suffered earthquakes only in its continental part. For example, in the 1<sup>st</sup> of January of 1980 an earthquake of magnitude 7.0 of Richter scale, occurred in the Terceira island,



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in Azores, causing dozens of casualties and leaving 15.000 people homeless in the city of Angra do Heroísmo.

To Portugal, the relevance of the theme of this Workshop is, as a consequence, quite significant.

In effect, events such this workshop promote the spreading of knowledge about earthquakes and their consequences on constructions and contribute also to the sensitization of the civil society to the risks that are inherent to seismic events, allowing a better understanding and a swifter reply to this type of natural catastrophes.

This Workshop was fundamentally devoted to the formulation of an European Community policy on earthquake risk mitigation. The occurrence of a severe earthquake in the Indian Ocean, on the 26<sup>th</sup> of December 2004, followed by a disastrous tsunami and, quite recently, the earthquake occurred in Pakistan on the last 6<sup>th</sup> of October, which devastated a largely populated zone, reveals the urge in making a deep thought on the conception and design of structures against the action of earthquakes, as well as to define adequate codes of practice.

Because of their importance, the Structural Eurocodes must be pointed out and, as far as the Workshop is concerned, the Eurocode 8. This Eurocode, whose secretariat is settled in Portugal, more specifically, at LNEC, deals with the dispositions regarding the design of seismic-resistant structures.

This is why the Portuguese Government has intended to urgently promote the publication of legislation corresponding to these Eurocodes, as an alternative to the Portuguese legislation still in appliance.



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In spite of the remarkable progress achieved in the last decades, reflected in the development of new codes on structural analysis and design methods, it is still difficult to give an appropriate answer to all the problems which remain as a frontier to structural engineering. This issue is an increasingly major concern, when we face the need of improving the safety conditions of old constructions, some of them already considered as world heritage.

In the domain of seismic risk evaluation, Portugal has a Centre of Excellence in earthquake engineering research– the National Laboratory for Civil Engineering – and has extremely demanding rules concerning anti-seismic construction.

I am proud to say that, in the context of applied research, LNEC has an experimental facility in the area of earthquake engineering which, since 1994, is one of the six so-called European Large Installations.

The work of the Portuguese Society for Earthquake Engineering is also demonstrative of the relevance of this theme in Portuguese technical and scientific activities.

I take this opportunity to proudly recall the international prestige of Dr. Ferry Borges, a former director of LNEC and a pioneer in establishing the concepts of probabilistic structural design.

The development of S&T generates new public risks as much as provide help for preventing or mitigating them.



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Risk governance requires knowledge and wisdom. It means managing at the same time complexity, change and uncertainty, which are factors that the public opinion and the media have difficulties to deal with.

The above mentioned earthquakes lead to a deeper thought about the roles of observation and alert in risk governance. The effects of these earthquakes also show the importance of developing new approaches to deal with the definition of more effective systems including structural and non-structural measures that are required to minimize the magnitude of casualties and damages.

Could we minimize the extent of their effects, enhancing the existent structural codes and design and construction practice?

Have we instruments for an adequate response against earthquakes, considering the unpredictability of their occurrence, with very short potential reaction times?

What are the lessons to be learned?

The complexity of these issues shows that the role played by S&T can be improved if inserted in the right framework.

Thus, I take the opportunity to once again congratulate the organizers of this Workshop for the theme which reflects one of the major concerns of our society.

I am sure that this Workshop will have a significant contribution to improve our scientific approach in order to get a better answer as required by our society, having in mind not only the evolution of



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knowledge on new materials and on new codes for structural engineering, but also that we need to involve the social sciences: risk is an interdisciplinary affair which includes a wide variety of domains ranging from ethics to safety management.

At last, I want to express to all of you my thanks for your participation in this Workshop.

Thank you.