

TRAVELING EXHIBITION

L3  
LEONARDO

# The Book of Secrets

*in the Results of Ideas*

Amazing machines from a thousand years ago



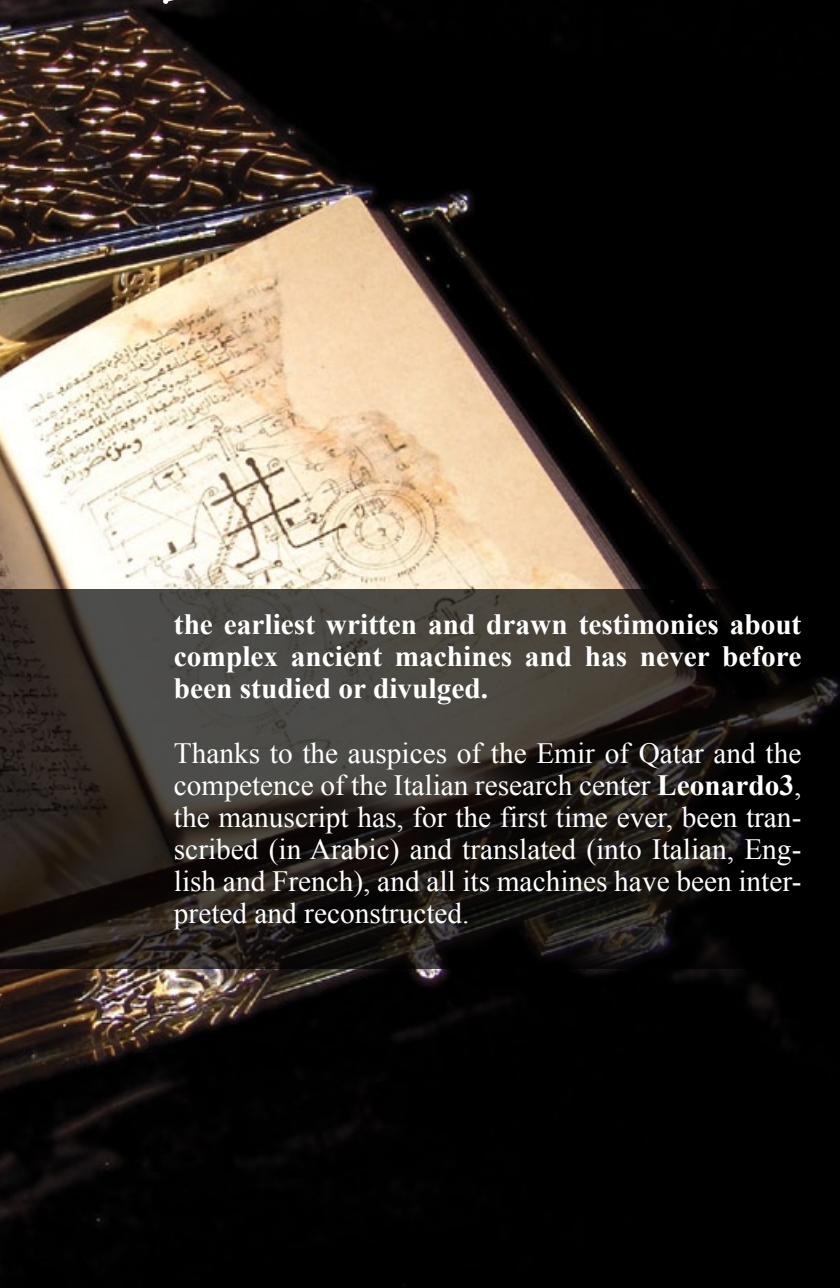


## History

*The Book of Secrets* is a manuscript that dates back to the year 1000, written by Andalusian engineer Ibn Khalaf al-Muradi. The only copy of it that survives was made in Toledo, Spain in 1266. The manuscript is priceless, since it includes descriptions and drawings of more than thirty ingenious devices, including mechanical apparatuses, water clocks, automatic calendars and war machines.

**The manuscript is extraordinarily important for the history of science because it represents one of**

The manuscript is being revealed to the world after a thousand years



the earliest written and drawn testimonies about complex ancient machines and has never before been studied or divulged.

Thanks to the auspices of the Emir of Qatar and the competence of the Italian research center **Leonardo3**, the manuscript has, for the first time ever, been transcribed (in Arabic) and translated (into Italian, English and French), and all its machines have been interpreted and reconstructed.

All the work that has been carried out on the manuscript was presented in an exhibition at the **Museum of Islamic Art in Doha** and was one of the main attractions at the museum's inauguration on November 22, 2008.

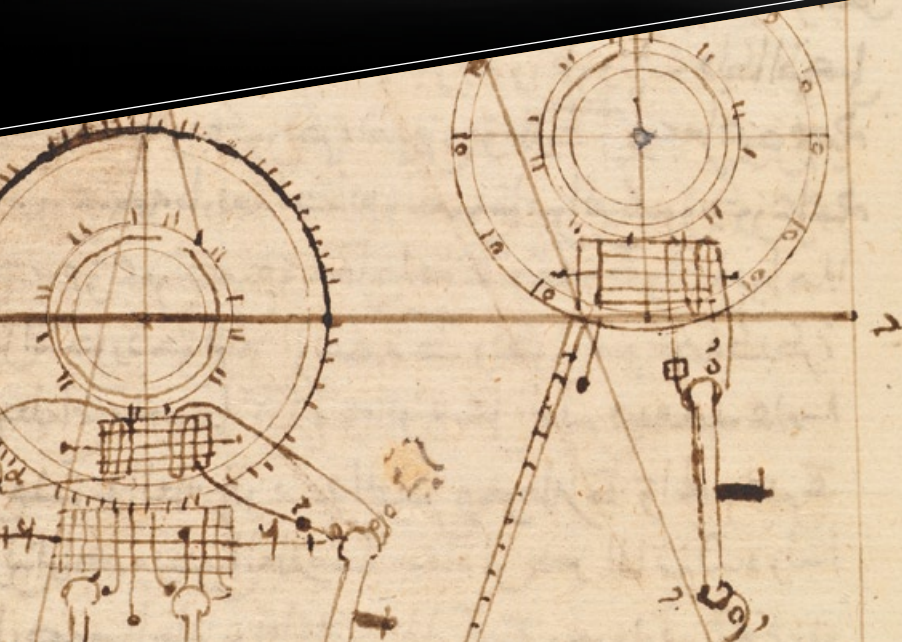
In 2010, this exhibition will begin traveling, in order to unveil the ancient machines around the world. The exhibition presents a digital and interactive reconstruction of the manuscript and explains all its machines to the public through three-dimensional models animated through a holographic touch screen and other interactive digital stations. Some of the machines from the *Book of Secrets* have also been physically reconstructed.

The research project was sparked by Leonardo's discovery of this important Arab manuscript, *The Book of Secrets in the Results of Ideas*, in the Biblioteca Medicea Laurenziana in Florence, where the only surviving copy is preserved. It has never before been fully studied or disclosed in all its complexity. It is a unique source for the study of ancient Arab technology, to which reference must be made when studying the inventions of the Renaissance, like those by Leonardo da Vinci. The enormous and difficult task of interpreting the manuscript has facilitated the reconstruction of all the mechanisms and machines. Surprisingly, they are all functioning, though not without some mysteries...

A drawing from The Book of Secrets



Machine #12: The Clock of Maidens and Murderers





## Exhibition sections

### **Holographic touch screen**

Visitors can explore the digital replica of the original manuscript by turning its pages, looking at detailed close-ups, reading translations of the entire text and examining the interactive 3D models of more than 30 machines.

### **Flat tables - touch screen**

Additional interactive touch-screen stations are devoted to the manuscript, the entire process behind the project to interpret the ancient machines, and a more in-depth explanation of the physical models on display in the exhibition.

The Museum of Islamic Art  
in Doha (Qatar) where the exhibition  
premiered in November 2008



### Physical models

Rounding out the exhibition experience are the physical reconstructions (the first ever!) of some of the machines. At the premiere, *The Fortress Demolisher* (Figure 23, folio 35v) and *The Clock with Three Characters* (Figure 11, folio 21r) were introduced. The curators would like to present two new physical reconstructions of the machines in each new location of the exhibition.

### Exploded views

All 96 pages of the manuscript have been physically reproduced and are also presented in an exploded view inside two glass towers.

### Info panels

The manuscript, the project and the machines are described in short texts on glass panels.

### Details

The exhibition arrives ready for installation, with curatorial information, public relations materials, and publication and educational materials. Custom installation plans are designed for each location and the assembly is done by L3's personnel. Lectures by the curators responsible for interpreting the machines are also included. Exhibitors pay an exhibition loan fee and cover the costs of insurance and shipping.



Physical model: Clock with Three Characters

# Gallery

All the machines of the exhibition in 3D

## THE BOOK OF SECRETS MACHINES' INDEX



BACK



*Holographic touch screen*

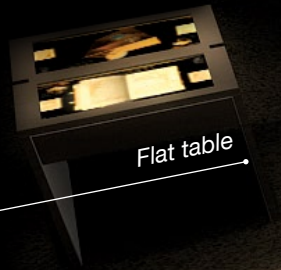
*A visitor in front of the interactive Book of Secrets on the holographic touch screen*



*Physical model: Fortress Demolisher*

# Floorplan

- Size: from 2,000 to 5,000 square feet (from 180 to 460 square meters)
- The layout and parts of the exhibition can be adapted to suit your budget and exhibition space
- Depending on your budget, we can build physical models of machines never presented before for an exclusive premiere in your space!



Flat table



Exploded view of the manuscript

Physical models

Holographic touch screen

Info panels



*When I looked at the science of engineering and saw that it had disappeared after its ancient heritage, that its masters have perished, and that their memories are now forgotten, I worked my wits and thoughts in secrecy about philosophical shapes and figures, which could move the mind, with effort, from nothingness to being and from idleness to motion. And I arranged these shapes one by one in drawings and explained them.*

*From page 1 of the Book of Secrets  
Ibn Khalaf al-Muradi  
Year 1000 AD*

This exhibition is a witness to the uniting force of culture. The manuscript is of Arab origin, has migrated from Spain to Italy and has returned to the Islamic world thanks to the exhibition in Qatar. Starting in 2010, this traveling exhibition will bring the manuscript to the world through an interactive digital version, also proving the importance of technology in reaping the fruits of cultural heritage. The public will thus discover that technology has a longer history than is generally thought. A thousand years ago, inventors and engineers created amazing, functioning automatons that established the basis for modern mechanics and were also, in many ways, real works of art.

