

Measuring time

The Leonardo3 Museum presents two new machines recreated from Leonardo da Vinci's drawings

Under the scientific supervision of **Martin Kemp**, Professor Emeritus at Oxford University

Milan, December 16th 2025 – The Leonardo3 Museum (entrance at Galleria Vittorio Emanuele II, Piazza della Scala) is presenting a press preview of its new exhibition project, “**Measuring time**”. This exhibition is a journey focused on one of the most fascinating areas of research undertaken by the genius from Vinci: designing a mechanical clock capable of punctually measuring the course of time.

From December 17th 2025, the Museum's permanent collection will include two new machines: the **Clock** (from the *Madrid Codex I*, f. 27v) and the **Time Regulator** (from the *Codex Atlanticus*, f. 754r). These extraordinary, fully working reconstructions were created for the Leonardo3 Museum by master craftsman and leading expert in historical mechanics, **Alberto Gorla**, and his assistant, **Angelo Brunoni**.

Thanks to this new addition, visitors will be able to observe Leonardo da Vinci's mechanisms up close and hear the “sound of time” produced by devices that were designed over 500 years ago.

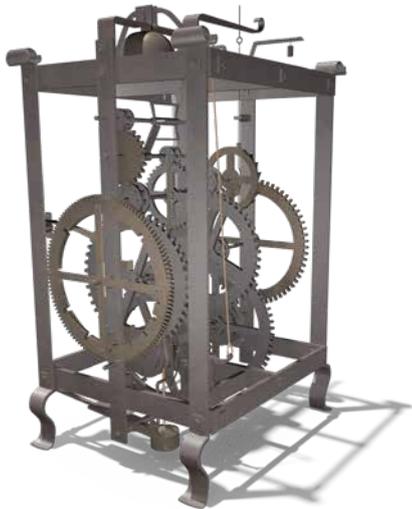
«We must persist in our promotion of culture. The Leonardo3 Museum continues to grow and generate new knowledge through its studies. Sharing our research with the public is both a duty and a privilege: it helps to keep alive the spirit of curiosity and innovation that Leonardo embodied. In March, we will celebrate thirteen years of activity, and we hope that the Municipality of Milan will recognise the value of a cultural institution that welcomes almost 300,000 visitors a year and will stabilise its presence rather than call it into question. Losing the Leonardo3 Museum and Study Centre would be an irreparable loss for the city», says **Massimiliano Lisa**, director of Leonardo3.

The measurement of time played a central role among Leonardo's mechanical interests. In the period he spent at the court of the Sforza family in Milan by the end of the 15th century, the master studied devices able to regulate motion by means of an external force, such as a falling weight. This was a complex challenge: in the 16th century, clocks were still subject to considerable inaccuracy, and Leonardo devoted many projects to perfecting the escapement mechanism, which controls the fall of the weight and regulates its speed.



Time regulator

Codex Atlanticus, folio 754 recto



Clock

Madrid Codex I, folio 27 verso

«Even without understanding the physics of pendulums» – explains **Edoardo Zanon**, the museum’s scientific director – «the machine depicted in the *Codex Atlanticus* works remarkably well thanks to an oscillating component. In the drawing, Leonardo highlights a small weight attached to the “fan”, suggesting the possibility of adjusting its height to modify the period of oscillation. This insight might have reduced the fallibility of the clocks of his time».

In *Madrid Codex I*, Leonardo studies a clockwork with a **verge escapement**, introducing such innovative solutions as pallets, fans, and by oscillating systems. In the *Codex Atlanticus*, however, he designs a **time regulator** driven by a fan that can slow down the descent of a weight — a concept that predates Galileo’s pendulum by over a century.

The exhibition offers a unique opportunity to explore Leonardo’s creative mind, where art, science and engineering merge in the pursuit of a perfect order that can capture the rhythm of time.

To enrich the presentation, Professor **Martin Kemp**, Emeritus Professor at the University of Oxford and **Scientific Supervisor of the Leonardo3 Museum**, will give an exclusive English-language lecture entitled *When TikTok was the big deal: the quest to measure time*. The morning will end with a gleaning by Dr **Sara Tagliagamba**, Director of the Nuova Fondazione Rossana e Carlo Pedretti, entitled *Gears, the Orbe della Luna and a Putto Ringing a Bell. A clock made by Andrea Verrocchio and the young Leonardo*.

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Leonardo3 Museum

The Leonardo3 research centre has been active since 2004 in the study and scientific widespreading of Leonardo da Vinci's work, and culminating in the creation of the Leonardo3 Museum. Located in Milan's Piazza della Scala, at the entrance of the Galleria Vittorio Emanuele II, the museum opened in 2013 and offers visitors a **unique opportunity to discover and explore Leonardo's multifaceted genius**. Visitors can interact with **over 200 three-dimensional machines and physical reconstructions, many of which are unique**. The **Award of Excellence released by the President of Italian Republic** certifies the originality and authority of the content on display. The Leonardo3 Museum has become a **Milanese cultural landmark, welcoming over 270,000 Italian and foreign visitors every year (in total, over 2 million since opening)**.

The analysis of original manuscripts has enabled the recreation of **previously unseen machines**, including the **Great Continuous Organ**, the **Harpsichord-Viola**, the **Mechanical Lion**, the **Rapid-fire Crossbow** and the **Great Kite**, among many others. **The exhibition gives visitors the chance to read Leonardo's writings digitally and understand his inventions in an interactive and innovative way** through multimedia stations, hands-on activities and virtual reality. **The museum is constantly evolving**, and its contents are expanded and renewed every year by the study centre in light of **new discoveries**.

Of particular interest in terms of impact on the visual arts is **the room dedicated to The Last Supper**. **Digital restoration** enables visitors to discover details otherwise lost in the original masterpiece. The **reconstruction of Santa Maria delle Grazie's refectory** also shows the decorations that adorned the room by 1498 onwards.

The two interactive walls focused on Leonardo's paintings and drawings are among the latest additions and deserve special mention. Both were supervised by **Martin Kemp**, Professor Emeritus at Oxford University and a world-renowned Leonardo expert, who works with the research centre as a **scientific advisor**.

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