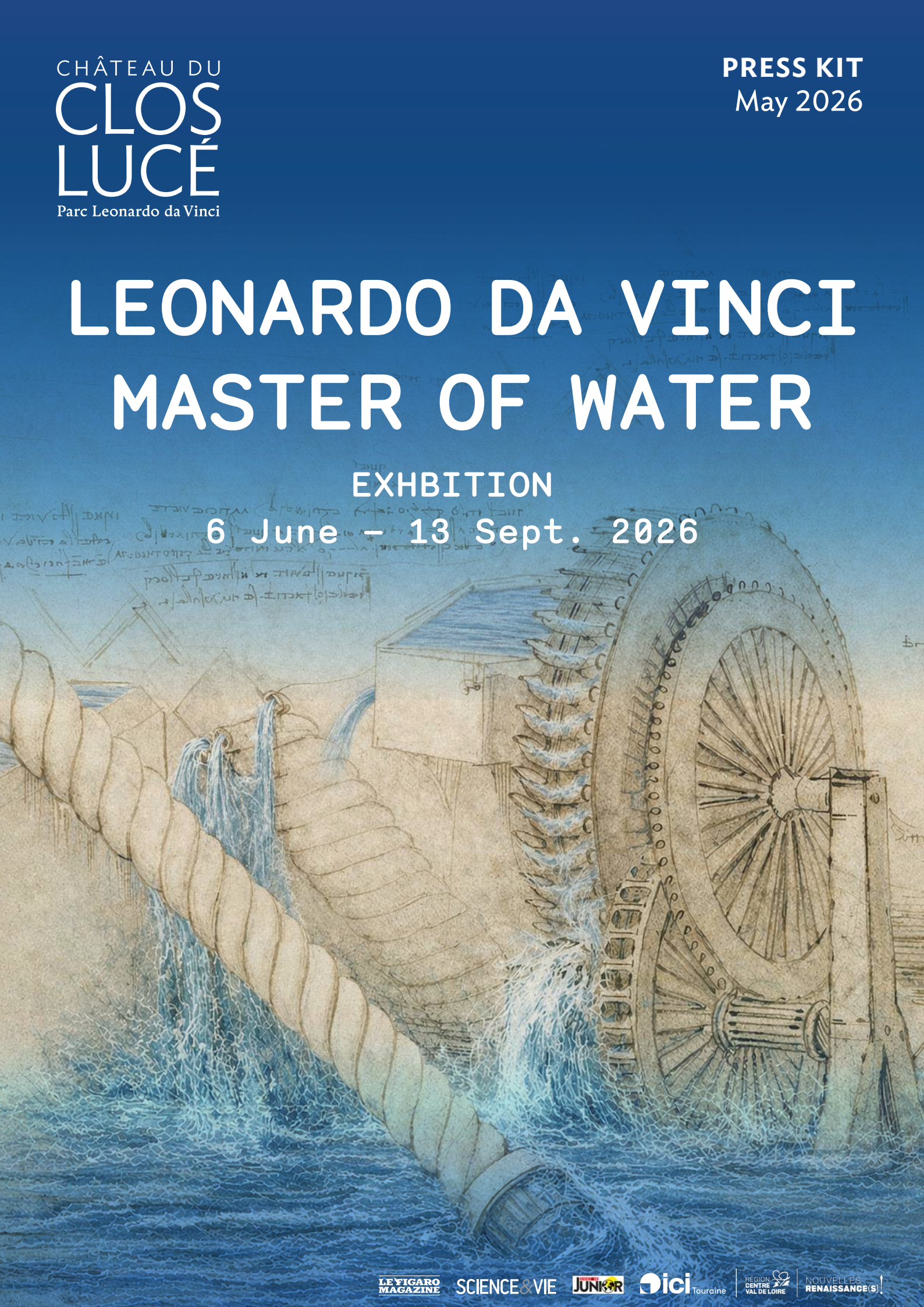
CHÂTEAU DU
CLOS
LUCÉ
Parc Leonardo da Vinci

PRESS KIT
May 2026

LEONARDO DA VINCI
MASTER OF WATER

EXHBITION
6 June – 13 Sept. 2026



LE FIGARO MAGAZINE · SCIENCE&VIE · JUNIOR · ici Touraine · RÉGION CENTRE VAL DE LOIRE · NOUVELLES RENAISSANCE(S)

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Parc Leonardo da Vinci

RÉGION
CENTRE
VAL DE LOIRE

UN ÉVÈNEMENT
NOUVELLES
RENAISSANCE(S)!

CONTENTS

FOREWORD

“Water is the driving force of all nature.”
For 45 years of his life, the study of water is one of Leonardo da Vinci’s abiding passions.

A new scientific and immersive exhibition, designed, produced and realised under the direction of the Château du Clos Lucé, reveals this captivating and little-known facet of the studies, works and previously unpublished research of the great Renaissance scholar.

This unprecedented exhibition provides insights into Leonardo da Vinci’s intellectual process of acquiring knowledge through observation of and experimentation with water.

He explores the nature of water in all its forms, movements and manifestations in order to understand its laws and to better master its force and its uses. A true visionary, he already imagines how it can be collected, transported, distributed and used for the benefit of mankind.

He observes and draws rivers, streams and seas, as well as vortices, currents and floods. He invents and experiments with all manner of hydraulic machines, mills, paddle wheels, boats, canals and bridges. He plans major, large-scale hydraulic works for his patrons, both in Italy and in France.

Through meticulous observations, remarkably precise drawings and bold inventions, Leonardo da Vinci establishes himself as a pioneer of modern water engineering.

Immerse yourself in the mind of the “Master of Water” through drawings – including two originals by Leonardo da Vinci – models, works of art and Renaissance manuscripts, and rediscover a resource more relevant today than ever, at the heart of contemporary climate challenges.

François Saint Bris
President, Château du Clos Lucé

A WORD FROM THE CENTRE-VAL DE LOIRE REGION

From 6 June to 13 September 2026, the Château du Clos Lucé is devoting 330 square metres of exhibition space to its new exhibition, “Leonardo da Vinci, Master of Water”. This educational and immersive journey will reveal how water was, for Leonardo, an object of study, a source of inspiration and a founding principle of his thought. He observed its flows, drew its movements, understood its cycles, and thereby anticipated a holistic vision of the living world.

For Leonardo, water represents balance and interdependence. From the natural cycle to its interplay with the environment, it sustains biodiversity and connects all forms of life. This profoundly humanistic approach places humanity not above nature, but within it, in a relationship of observation, respect, and responsibility. A vision that resonates directly with the challenges of our time.

The Centre-Val de Loire Region fully embraces this vision of the world. Through its commitment to culture, it affirms culture’s ability to illuminate the major issues of our time. By supporting ambitious projects such as this exhibition, it showcases exceptional heritage while fostering a collective reflection that aligns perfectly with the Nouvelles Renaissances – the Region’s summer season, which celebrates the vitality of the territory through creation, heritage and the art of living.

A land of invention, shaped by the Loire and its tributaries, the Centre- Val de Loire is a place where nature and culture are in constant dialogue. Water moulds its landscapes, inspires artists, and informs the collective imagination. It is at once memory and future. By supporting the Clos Lucé, a site of artistic and scientific exploration, the Region affirms its ambition: to make culture a lever for transmission and transformation.

The exhibition “Leonardo da Vinci, Master of Water” invites everyone to an immersive experience in which science, art and territory come together. It is an invitation to see the world in new ways, illuminated by a visionary genius and a region that is firmly oriented towards the future.

François Bonneau
President of the Centre-Val de Loire Region

WHAT IS WATER?

Water is a molecule composed of two hydrogen atoms and one oxygen atom (H_2O). It exists naturally in three states: liquid, solid (ice) and gaseous (vapour); a characteristic essential to its role in maintaining the Earth's equilibria.

The oceans represent 97% of the water on Earth while fresh water accounts for 3%.

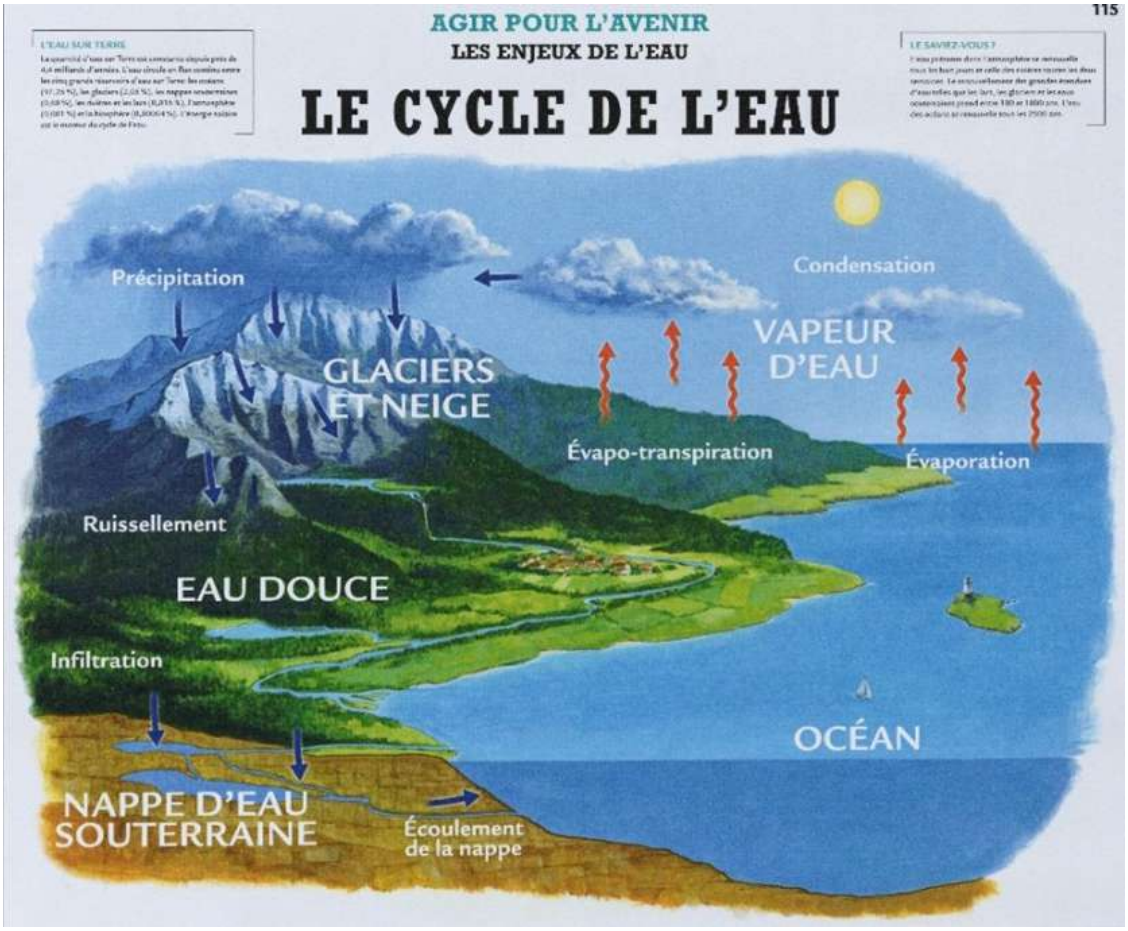
Water is essential to life: it covers approximately 70% of the Earth and makes up nearly 60% of the human body.

It plays a vital role in hydration, circulation, digestion and the regulation of body temperature.

In myths, cultures and religions, it symbolises life, purification, and fertility, but also destruction, chaos and transformation - from flood narratives to rites of passage.

A constant across all civilisations, it has shaped societies and their technologies (water mills, water wheels, pumps and elevators, irrigation systems). This ability to transmit motive force fascinates the engineers of the Renaissance, foremost among them Leonardo da Vinci.

THE WATER CYCLE
A SYSTEM IN MOTION



Water is constantly moving according to a natural cycle:
- Evaporation (water → vapour)
- Condensation (formation of clouds)
- Precipitation (rain, snow)
- Runoff and infiltration
- Return to the seas and oceans

This cycle, invisible and constant, structures landscapes, shapes reliefs, nourishes soils and sustains life.

For Leonardo da Vinci, this perpetual movement of water is one of the keys to understanding the dynamics of nature.

INTRODUCTION
BY THE EXHIBITION CURATORS PASCAL BRIOIST AND ANDREA BERNARDONI

For Leonardo da Vinci, moving water represents an energy that can be harnessed to power machines, yet it is also an untamed force capable of causing destruction and flooding if left uncontrolled. It is precisely water's versatility as a subject for experimental investigations that gives it such a central place in Leonardo's research. It becomes one of his highest priorities, to the point that he conceives, and even begins drafting, a treatise devoted entirely to water. The *Codex Leicester,* now the property of the Bill & Melinda Gates Foundation, bears witness to this ambition. This manuscript gathers and synthesises a large part of his observations on natural phenomena and their technical applications.

We know from Giorgio Vasari that Leonardo develops an interest in these questions from the time of his training in Florence, and his commitment to the study of water only grows stronger throughout his career. Upon his return to Florence in 1502, after nearly twenty years in Milan in the service of the Sforza, water stands at the very heart of his work.

During this period, he pursues a dual objective. On the one hand, he seeks to organise his knowledge into a scientific treatise, drawing on the expertise of Lombard water masters. On the other, he develops concrete projects, such as the regulation of the Arno River and the creation of a navigable canal linking Florence to the sea. The index he compiles on folio 15v of the *Codex Leicester* gives a clear idea of the breadth of his research into hydraulics and hydrology:

1. Of water in itself;
2. Of the sea;
3. Of subterranean rivers;
4. Of rivers;
5. Of the nature of the abyss;
6. Of the obstacles;
7. Of gravels;
8. Of the surface of water;
9. Of the things placed therein;
10. Of the repairing of rivers;
11. Of conduits;
12. Of canals;
13. Of machines turned by water;
14. Of raising water;
15. Of matters worn away by water.

This vast programme remains unfinished, but it reveals the full extent of his ambitions.

In parallel with his experiments, Leonardo assembles a significant library for his time. He takes an interest in ancient and medieval texts on natural philosophy and notably, around 1502, discovers the works of Archimedes on floating bodies. This reading is decisive: it introduces a mathematical approach to the ***statics of fluids*.*** We know that he collaborates with the mathematician Luca Pacioli on these subjects: a folio preserved in the *Codex Atlanticus,* probably written in the mathematician's own hand, proves to be a copy of the second book of Archimedes' *De insidentibus aquae*.

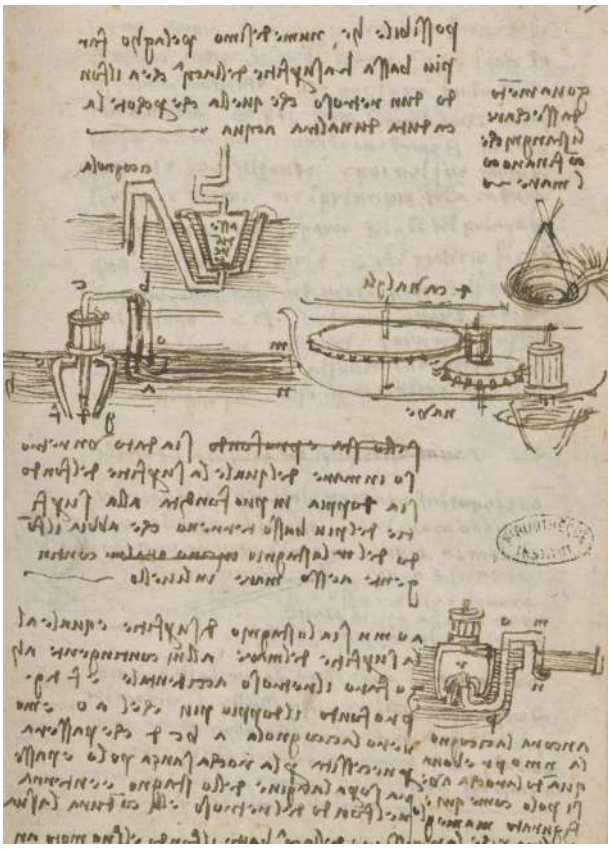
Leonardo's work on ***hydrostatics*,*** his theory of forces, floating or submerged bodies, the immersion of one liquid in another, and the downward motion of the heavier, bear witness to the influence of his readings.

His method also rests, of course, on observation. In his time, there is neither a theorist of fluids nor any tools to describe flows precisely; these would only be developed in the 18th century by Lagrange and Euler. Leonardo thus draws on the experience of engineers and canal workers, notably the "water masters" active in Florence and Milan.

During his first stay in Milan (1482–1499), Leonardo also has the opportunity to study natural and artificial watercourses at close hand. He takes an interest in excavation techniques, ***dredging****, canal management, and flow regulation. It is at this time that he observes the behaviour of currents in the presence of obstacles. He notes, for example, that at a narrow passage, the speed of water increases while the flow rate remains constant, a fundamental intuition in ***hydraulics*.*** He also observes that narrow sections cause stronger turbulence and greater erosion of the banks. These phenomena would not be described and mathematically formulated until the 18th century by Giovanni Battista Venturi and Daniel Bernoulli.

Undoubtedly the results that command the most respect today are his studies of vortices. Without access to modern mathematical tools, he describes with precision the complexity of these phenomena. In a drawing preserved in Windsor (RL 12660), he analyses the fall of a water jet into a basin and represents the multiple turbulences that form at different scales, the initial vortex giving rise to secondary vortices. He distinguishes the variables involved, namely the size and depth of the basin, the height of the fall, the presence of air in the jet, and shows how air is caught in the vortex, creating a movement of air bubbles towards the surface.

This research feeds his inventions. By studying the forces at work in vortices, which tend to lift objects in a spiral motion, he imagines a pump based on the rotation of water and centrifugal force (*Manuscript F,* folio 15r). Leonardo draws a cylinder with a wheel that, by making the water rotate, pushes it upwards, then channels it into a discharge pipe. Although never realised, this device forms part of his projects for draining the Pontine Marshes, south of Rome, where he seeks solutions to set stagnant water in motion and improve the habitability of a place made inhospitable by nature.

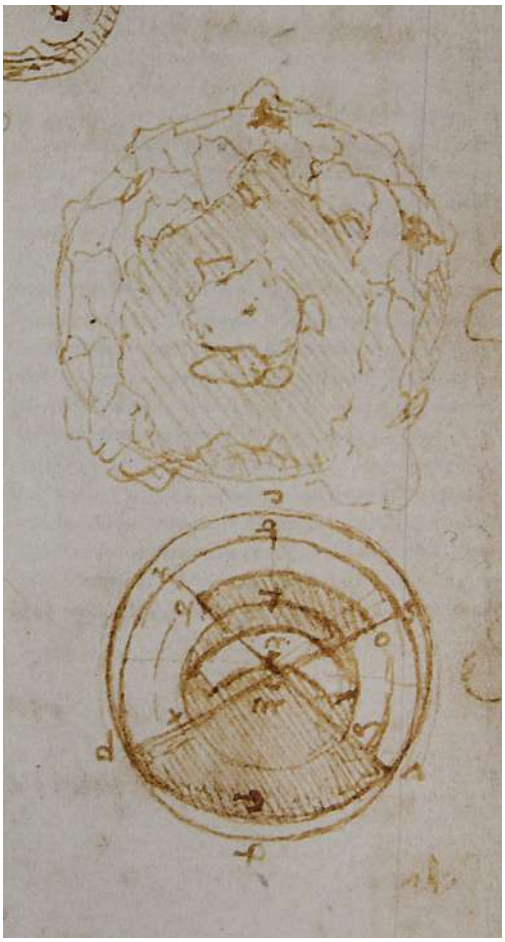


Leonardo da Vinci, Study for a centrifugal pump, Paris, Bibliothèque de l'Institut de France, *Manuscript F*, fol. 15r (facsimile) © Château du Clos Lucé – Parc Leonardo da Vinci. Photo : Léonard de Serres

Leonardo da Vinci, *Studies of Water*, Windsor, Royal Collection Trust, RL 12660v © Royal Collection Enterprises Limited 2026 | Royal Collection Trust

Leonardo also devotes himself to the study of water as a natural element and seeks to understand the role it plays in the transformations of the Earth. The astonishing news of Christopher Columbus's discovery of a new world modifies Europeans' perception of the balance between seas and emerged lands, refuting the ancient belief that beyond the Strait of Gibraltar there was nothing but sea. Even though Leonardo's manuscripts make no explicit reference to the discovery of the Americas, we cannot rule out that it was precisely this discovery that prompted him to study the geology and history of the Earth. How and when had the seas and emerged lands formed? How had they changed over time? Leonardo addresses these questions at a time when he is extremely busy with anatomical dissections, and it is by drawing an analogy with the structure of the human body and its evolution over time (childhood, youth, maturity, old age) that he questions the age of the Earth and the way it has transformed over time.

Following the traditional analogy between the microcosm (man) and the macrocosm (the universe), according to which the former reflects in itself the structure, laws, and order of the universe, Leonardo applies the anatomical method to his study of the Earth, explaining surface ***hydrogeological**** phenomena by analogy with those observed in the human body. Watercourses are thus comparable to blood vessels. Straight watercourses are younger than meandering ones, whose morphology results from the erosion suffered by their banks over time.

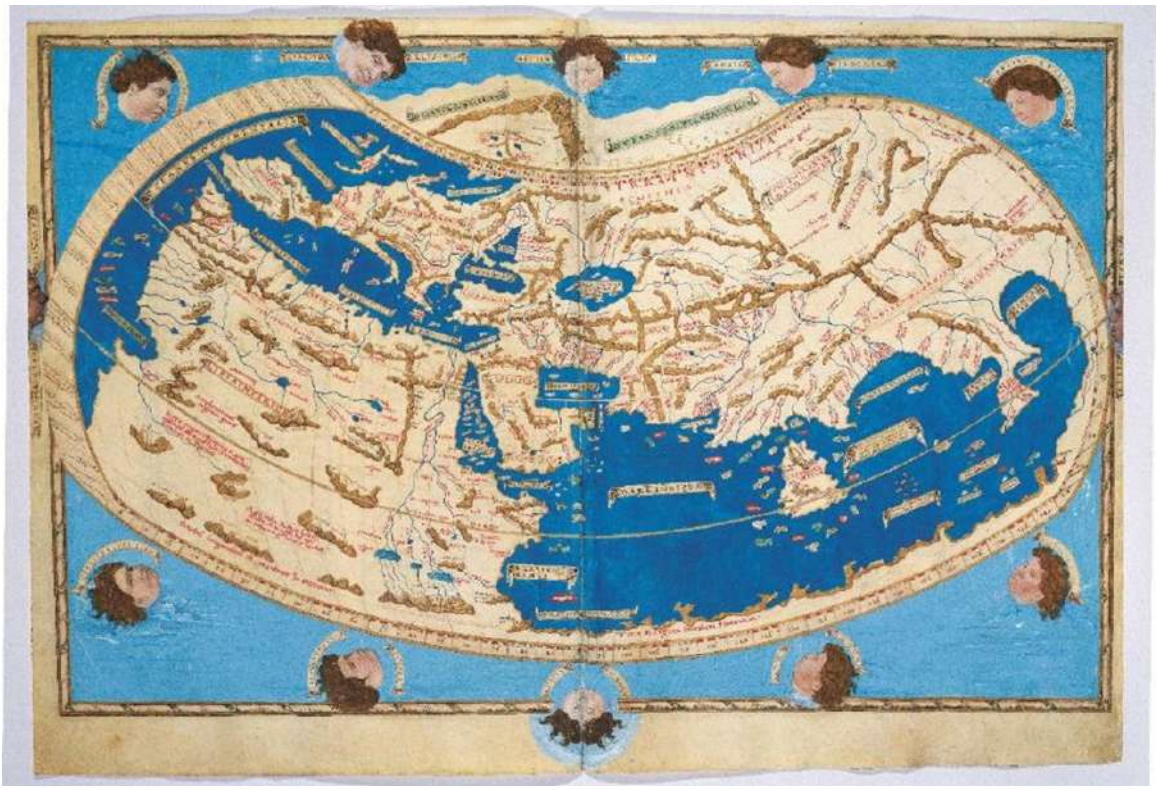


Leonardo da Vinci, Collapse of a colossal land mass into an aquatic cavern at the centre of the globe, *Codex Leicester,* fol. 36r, USA, Bill & Melinda Gates Fondation (facsimile) © Château du Clos Lucé – Parc Leonardo da Vinci. Photo : Léonard de Serres

This vision leads him to break with traditional views. Contrary to Aristotelian thought, which sees the world as immutable, Leonardo imagines an Earth in permanent transformation. He also rejects the biblical idea of a single universal flood and instead proposes a succession of floods and natural disasters such as earthquakes. In the *Codex Leicester,* where he attempts to summarise his geological views, Leonardo concludes that the Earth is far older than biblical chronology indicates. For him, fossils are the remains of animals that actually lived in the past and testify to repeated modifications of the planet's surface over a succession of floods and the emergence of new lands. Leonardo da Vinci advances the visionary idea that the active uplift of mountains does not result from the retreat of waters, but from the collapse of the Earth's internal structure, where large masses would have detached due to underground water erosion, leading to a variation in the land-water distribution at the surface (*Codex Leicester,* folio 36r).

In elaborating his theory of the Earth as a living organism, Leonardo also attempts to explain the origin of mountain springs. How can water gush from openings at high altitude, only to descend towards the valley and rejoin the sea? Having considered the traditional Aristotelian explanation based on the condensation of underground vapours generated by the heat at the Earth's centre, he rejects it in light of his observations of cave vaults. After conducting numerous experiments to understand how water can rise upwards, for example by reproducing the phenomenon of capillary absorption or by studying various siphon systems, Leonardo eventually develops an alternative idea according to which the water in the mountains comes from rains produced by the evaporation of the seas, absorbed by the soil and then redistributed to rivers (*Codex Leicester,* folios 3v, 26r, 34v). With this insight, he outlines a comprehensive understanding of the water cycle.

Thus, the study of water runs through Leonardo's entire body of work, connecting his artistic, scientific and technical research. It leads him to propose a profoundly new vision of the Earth and its transformations. However, his era is not yet ready to fully embrace these ideas. Based on observation and intuition rather than on established scientific demonstrations, they remain long overlooked. It is not until the 19th century that reflections on fossils and observations of the Earth's crust make it possible to demonstrate scientifically what Leonardo had intuitively understood through his studies of water.

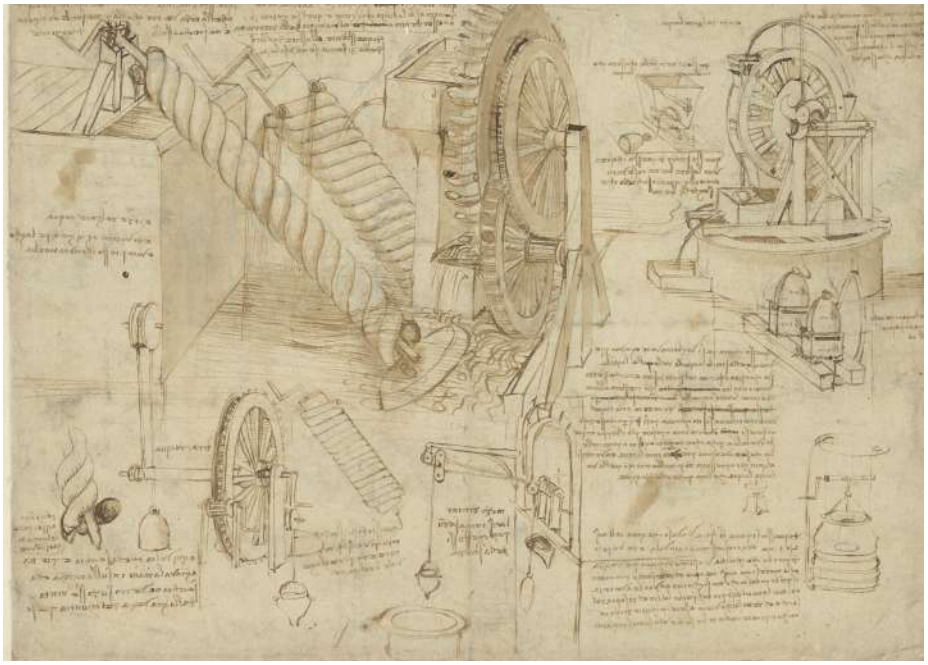


Claudius Ptolemaeus, *Cosmographia Jacobo Angelo interprete, cum tabulis Henrici Martel*, Florence, Biblioteca nazionale centrale di Firenze, Magliabechiano XIII.16 © Biblioteca nazionale centrale di Firenze

This 15th-century copy of a map taken from the eight-volume Cosmographia by the Greek scholar Ptolemy depicts the ancient world, showing only Europe, Asia and Africa. The Mediterranean is well detailed, but the coasts of Africa and Asia are much more approximate.

ORIGINAL DRAWINGS BY LEONARDO DA VINCI

Two original drawings by Leonardo da Vinci are on exceptional loan from the Biblioteca Ambrosiana in Milan. These are two of the finest folios from the famous *Codex Atlanticus,* depicting machines for raising water: an ***Archimedes' screw**** and a machine for drawing water from a well and conveying it into dwellings (folio 26v), along with a fountain and mechanical devices for pressurising water (folio 7r).

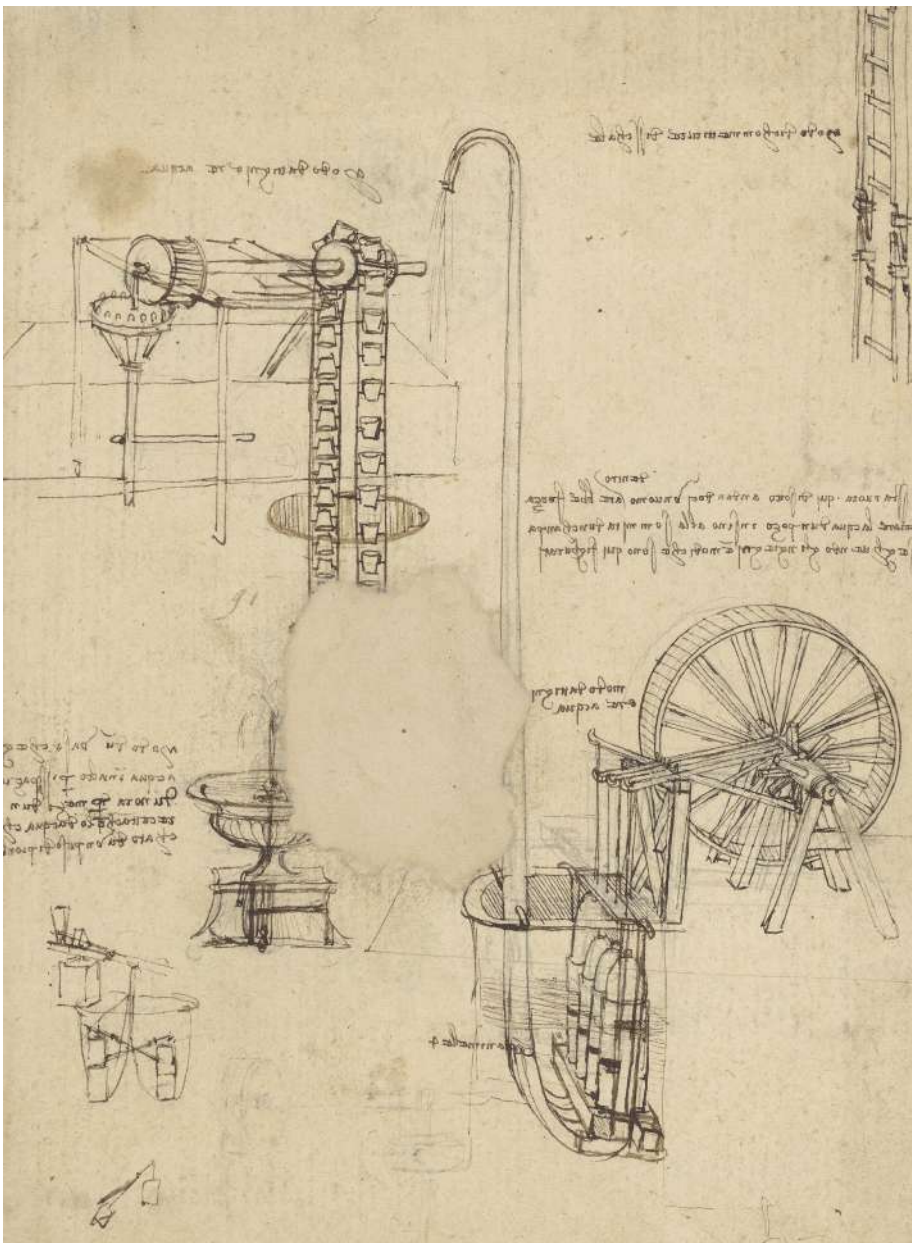


Leonardo da Vinci, Hydraulic Machines for Pumping, Lifting, and Transporting Water, Milan, Veneranda Bibioteca Ambrosiana – Pinacoteca, *Codex Atlanticus,* fol. 26v © Veneranda Biblioteca Ambrosiana - Metis e Mida Informatica - Mondadori Portfolio

Folio 26v is the recto of a sheet almost entirely devoted to water-pumping machines. The problem Leonardo da Vinci seeks to solve is how to raise and convey water. One of the oldest methods is the "Archimedes' screw", an endless screw that draws water from a lower basin and conveys it upwards.

Often attributed to Archimedes himself (3rd century BC), the mechanisms of the "Archimedes' screw" were studied and documented in depth by Leonardo da Vinci.

This ingenious device works by using a helical screw that rotates inside a tube, effectively lifting liquids from a lower level to a higher level. Its enduring efficiency is evident even today, as Archimedes' screws are still used for irrigation, in wastewater treatment plants, and even for low-head hydroelectric power generation.



Leonardo da Vinci, Machines for lifting water, Milan, Veneranda Bibioteca Ambrosiana – Pinacoteca, *Codex Atlanticus*, fol. 7r © Veneranda Biblioteca Ambrosiana - Metis e Mida Informatica - Mondadori Portfolio

Folio 7r contains drawings and notes relating to raising water using pumps, buckets and pulleys, as well as several sketches on the same subject, including devices for increasing the pressure of water in a fountain, a drawing of an extension ladder with an ingenious interlocking system, and a continuous spouting fountain “lasting one hour”.

This study of machines is particularly interesting, because it reveals the extraordinary capacity of the artist and engineer to innovate and perfect traditional engineering systems. Leonardo da Vinci did not merely observe the creations of his predecessors; throughout his life, he strove to modify and improve them, in a constant quest for perfection.

THE EXHIBITION PATH

ROOM 1
INTRODUCTION

This introductory section lays the scientific, cultural, and symbolic foundations of water. It explores its physical definition (H_2O), its presence on the planet and in the human body, its role as a source of energy, as well as the vocabulary and symbolic representations associated with it in cultures, myths, and religions. This space also highlights the water cycle and the representation of this element in Renaissance art.

During the Renaissance, water became a key pictorial element: river landscapes, springs, seas and coastlines, springs and fountains, reflections and transparency. It enabled artists to explore movement, light, depth and atmosphere.

In Leonardo da Vinci's work, water is never merely a backdrop: it structures the space, connects the figures and expresses the inner life of the world.

The works on display in this section by Sandro Botticelli and Leonardo da Vinci (*The Birth of Venus, The Baptism of Christ, The Annunciation, Virgin of the Rocks, Ginevra de' Benci, Mona Lisa*) illustrate this discreet yet fundamental presence of water.

Icosahedron, reconstruction by Claude Picoux after a drawing by Luca Pacioli in *Divina Proportione* © Claude Picoux

In 1498, Leonardo da Vinci collaborates with the mathematician Luca Pacioli on the publication of *Divina Proportione*.

He draws regular polyhedra that, according to Plato, correspond to the shapes of the atoms making up the five elements :

water is formed of icosahedra (solids with 20 faces), **air** of octahedra (solids with 8 faces), **fire** of tetrahedra (solids with 4 faces), **earth** of cubes (solids with 6 faces), and **ether** of dodecahedra (solids with 12 faces).

Leonardo da Vinci, *Ginevra de' Benci,* Washington, National Gallery of Art (copy after the original, production Bottega Tifernate) © Château du Clos Lucé - Parc Leonardo da Vinci

Leonardo da Vinci, A study of a cascade of falling water and the eddies it creates, Windsor, Royal Collection Trust, RL 12662r
© Royal Collection Enterprises Limited 2026 | Royal Collection Trust

The curls of Ginevra de' Benci's hair recall Leonardo da Vinci's drawings of vortices.

Sandro Botticelli, *The Birth of Venus,* Florence, Gallerie delle Uffizi (copy after the original, production Bottega Tifernate) © Château du Clos Lucé - Parc Leonardo da Vinci

Venus, goddess of love, appears in the famous painting by Sandro Botticelli as an ideal of beauty and spiritual love. Carried by the breath of the wind Zephyr, she emerges from the sea, standing on a shell. At this moment, she stands between two worlds :

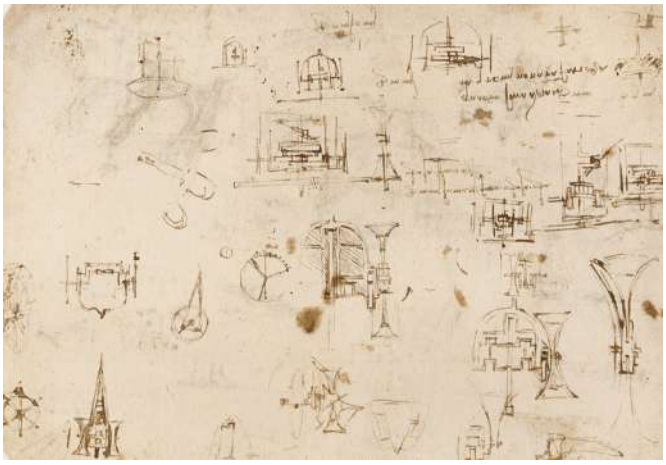
- the sea, symbol of the divine, recognisable by its waves and marine plants.
- the earth, symbol of the human world, which she is about to join.

ROOM 2
WATER SHAPES THE EARTH

Leonardo da Vinci, a keen reader of ancient and medieval authors, conceived of the Earth as a living organism, structured by the "veins" formed by rivers, streams and seas.

This section explores his vision of the macrocosm and microcosm, his reflections on the origin of sediments, erosion, run-off and flooding.

It also highlights his studies on currents, waves and swells, as well as his inventions related to navigation and the marine world (***paddle boats****, double-hulled vessels, ***bulbous bows****, swing bridges, bridges for military campaigns, canal bridges).



Leonardo da Vinci, Boat with paddle-wheel propulsion system, Milan, Veneranda Biblioteca Ambrosiana – Pinacoteca, *Codex Atlanticus,* fol. 1063r © Veneranda Biblioteca Ambrosiana - Metis e Mida Informatica - Mondadori Portfolio

Boat with paddle-wheel propulsion system, reconstruction by Luigi Tursini after a drawing by Leonardo da Vinci, Milan, Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci © Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci

Propulsion using paddle wheels and cranks was already known in the Byzantine Empire during the Early Middle Ages, but Leonardo here draws inspiration from a machine built by Brunelleschi, the *Badalone, which was used to transport marble to the construction site of Florence Cathedral, even though its design had been a closely guarded secret. Sienese predecessors of Leonardo, such as Taccola and Francesco di Giorgio Martini, had already designed vessels propelled in this way.**

Leonardo da Vinci, Revolving Bridge, Milan, Veneranda Biblioteca Ambrosiana – Pinacoteca, *Codex Atlanticus*, fol. 855r © Veneranda Biblioteca Ambrosiana - Metis e Mida Informatica - Mondadori Portfolio

Revolving bridge, reconstruction by Ermenegildo Menichetti after a drawing by Leonardo da Vinci, Milan, Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci © Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci

This bridge operates on a counterweight system. It can be built on one bank of a watercourse and deployed across to the opposite bank by means of a vertical pivot fitted with capstans. In a military context, it can be retracted to prevent an army from crossing.

ROOM 3
THE DYNAMICS OF WATER: PRINCIPLES AND EXPERIMENTS

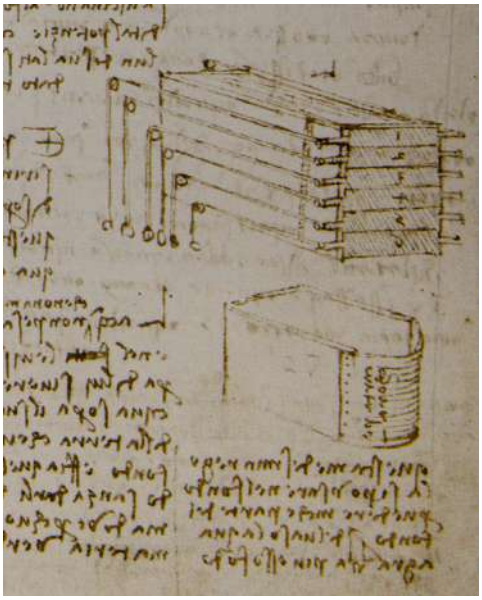
For forty-five years, Leonardo da Vinci studies the ***dynamics of fluids****, making water a central focus of his research.

His study of flows, vortices and even perpetual motion highlights the scientific and experimental rigour of his approach.

This approach draws on the writings of authors such as Archimedes and Heron of Alexandria, as well as analytical drawing, observation and experimentation through the design of models.

Leonardo da Vinci, Studies of water, and a seated old man, Windsor, The Royal Collection, RL 12579r © Royal Collection Enterprises Limited 2026 | Royal Collection Trust

This pen-and-ink portrait of a melancholic old man is set against drawings of eddies created by obstacles in a river. The text on the page advises the reader : ‘‘Observe the movement of the water’s surface, which is composed like hair, which has two directions : one that follows its own weight, and the other that follows the dictates of the curls’’.



Leonardo da Vinci, Study on Water Pressure, *Codex Madrid,* Madrid, Biblioteca Nacional de España (facsimile) © Château du Clos Lucé – Parc Leonardo da Vinci. Photo : Léonard de Serres

Study on Water Pressure, reconstruction by Jean-Louis Pironio after a drawing by Leonardo da Vinci © Jean-Louis Pironio

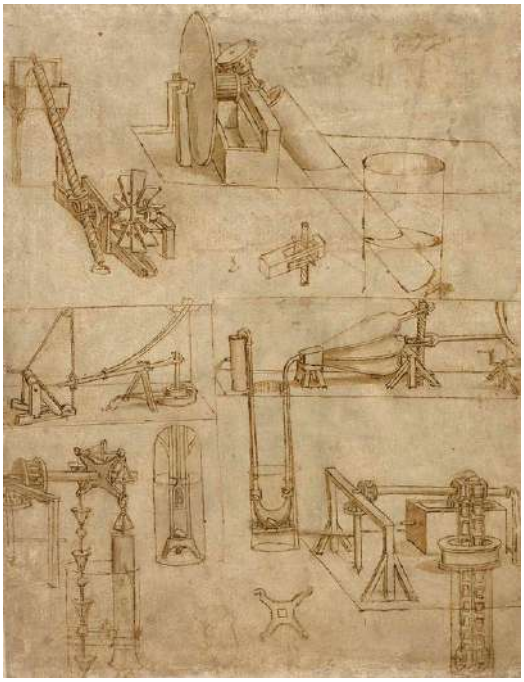
Leonardo da Vinci repeatedly carries out hydrostatic experiments and understands that the pressure of water in a reservoir is greater when it is full, as demonstrated by the jets of water ejected from holes at different heights. This sheet from the *Codex Leicester* presents a device for measuring water pressure at various heights in a reservoir using weights. The weight depends solely on the distance between the point at the bottom of the reservoir and the surface of the liquid, and not on the volume of water contained in the vessel or its shape.

ROOM 4
WATER DRIVING FORCE OF MACHINES, FOR BENEFIT OF MANKIND

Leonardo da Vinci explores water as a source of energy, alongside animal and wind power.

Following in the footsteps of the Sienese engineers, he designs and perfects numerous pre-existing hydraulic machines : large ***Archimedes' screws*, water wheels*,*** mills, turbines, pumps of various types (lifting and excavating pumps) and devices designed for draining marshes.

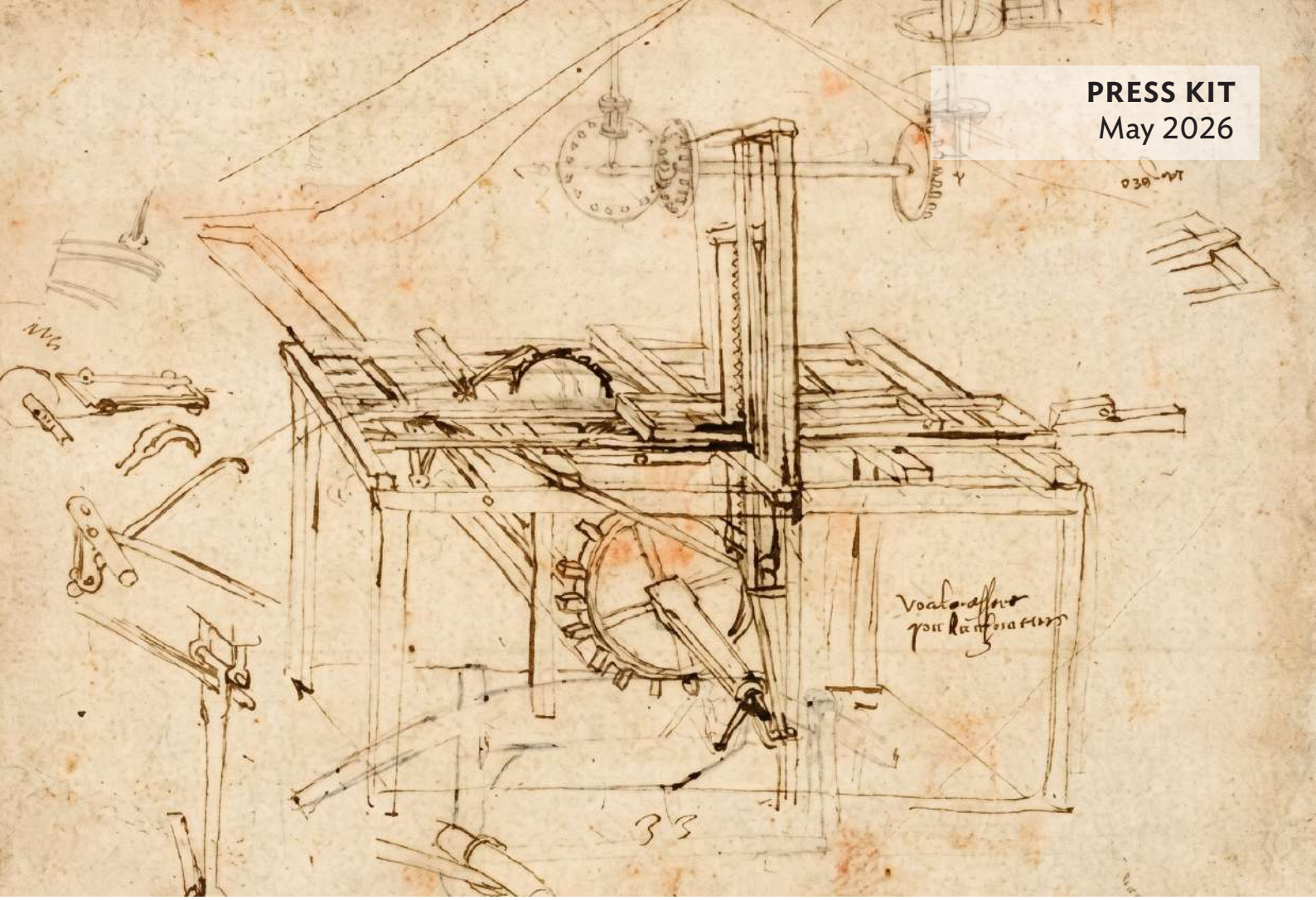
This section highlights Leonardo's technical ingenuity and his ambition to harness the power of water for the benefit of mankind.



Leonardo da Vinci, Six water pumping machines and detail of bellows, Milan, Veneranda Biblioteca Ambrosiana – Pinacoteca, *Codex Atlanticus*, fol. 6r
© Veneranda Biblioteca Ambrosiana - Metis e Mida Informatica - Mondadori Portfolio

Archimedes' Screw, reconstruction by Dario Noè after a drawing by Leonardo da Vinci, Vigevano, Museo della Roggia Mora © La città ideale - Ecomuseo della Roggia Mora (Mulino di Mora Bassa). Dario Noè

The helical screw, designed to transport water from bottom to top, is set in motion by a watermill wheel. The watermill wheel, driven by a current, transfers motion via gears to a bucket. Other systems complete the set: a well wheel, a counterweight crank, and a leather bag-shaped bellows.



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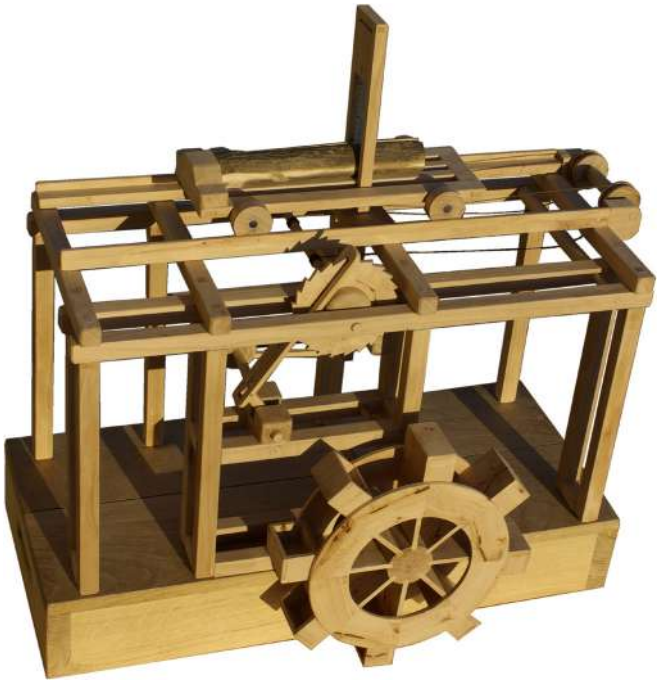


This apparatus, described by Taccola and also drawn by Francesco di Giorgio Martini, and later copied by Leonardo da Vinci, is probably a machine in use as early as the beginning of the 15th century among Franciscan monks whom Taccola visited. A water wheel here operates the saw blade back and forth via a crank and connecting rod mechanism. The log is pulled by a rope on a trolley.

Leonardo da Vinci, Hydraulic saw, Milan, Veneranda Bibioteca Ambrosiana – Pinacoteca, *Codex Atlanticus,* fol. 1078r

Hydraulic saw, reconstruction by Claude Picoux, after a drawing by Leonardo da Vinci

ROOM 5
CONDUCTING AND REGULATING WATER

This room presents Leonardo da Vinci's major hydraulic and territorial projects, designed to control, channel and regulate water, as well as the machines he imagined for this purpose.

Among the projects featured are the Florence Canal, the diversion of the Arno, the development of the River Adda in the Milan area, the projects for Cesena and Cesenatico in the Marche region, and those for the Cher and Sauldre rivers in Sologne as part of a royal palace project at Romorantin.

It also highlights systems for regulating water in urban settings (dykes, reservoirs, ***locks****, canals, fountains and ***water meters****).

Milan, with its network of ***navigli**** managed by the Lombard water masters, occupies a central place in his vision of the ideal city.

Frans Hogenberg (engraver), Plan of Milan taken from the work *Civitates orbis terrarum,* Milan, Achille Bertarelli Print Collection – Castello Sforzesco © Comune di Milano, all rights reserved

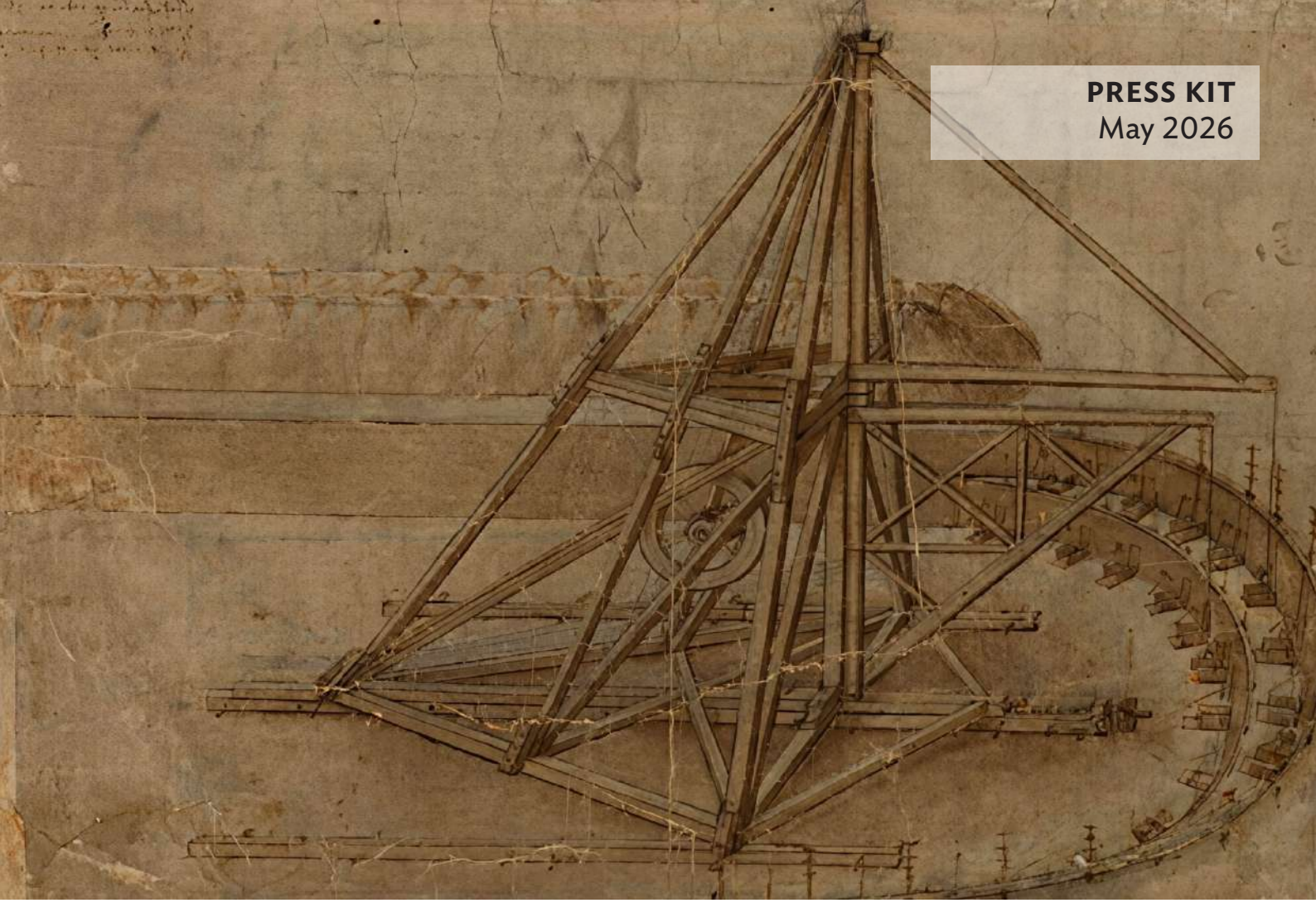
Leonardo da Vinci, Canals of the ideal city, Paris, Bibliothèque de l'Institut de France, *Manuscrit B*, fol.37v (facsimile) © Château du Clos Lucé – Parc Leonardo da Vinci. Photo : Léonard de Serres

In 1485, in an urban planning proposal for a district of Milan, Leonardo designs his ideal city on two levels according to traffic flow: the upper level for the aristocracy and the merchants, the lower for the rest of the population. Underground canals carry goods and waste.

Leonardo da Vinci, Project for an hydraulic machine, Milan, Veneranda Biblioteca Ambrosiana – Pinacoteca, Codex Atlanticus, fol. 229r © Veneranda Biblioteca Ambrosiana - Metis e Mida Informatica - Mondadori Portfolio

Water meter, reconstruction by Dario Noè, after a drawing by Leonardo da Vinci, Vigevano, Ecomuseo della Roggia Mora © La città ideale - Ecomuseo della Roggia Mora (Mulino di Mora Bassa). Dario Noè

Around 1510, in Domodossola, then under French rule, Leonardo da Vinci designs for Bernardo da Giovanni Rucellai a water meter intended for installation on a conduit. A manuscript by Lorenzo Della Volpaia (Cod. Marciano f.7) attests that this meter was indeed built, making it one of the few documented examples of machines by Leonardo.



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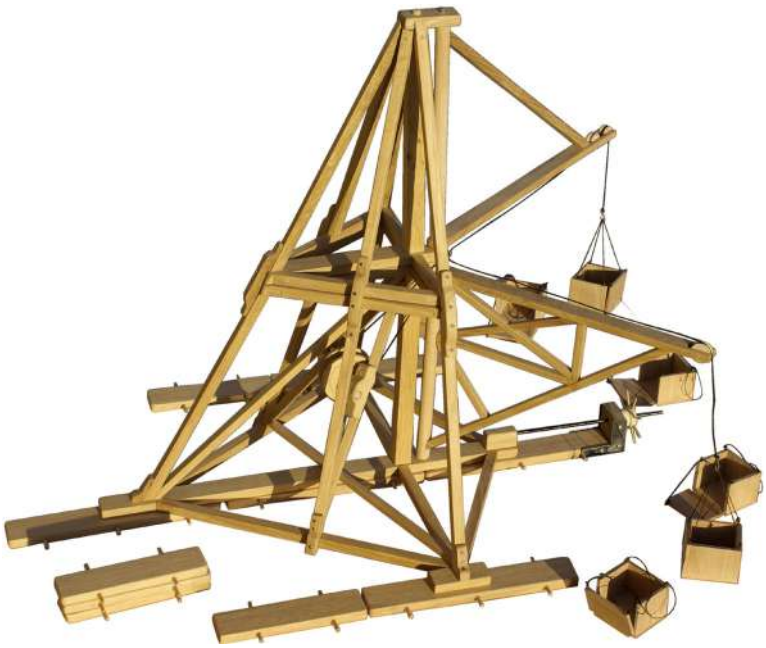


Leonardo da Vinci, Crane, digger, Milan, Veneranda Bibioteca Ambrosiana – Pinacoteca, *Codex Atlanticus,* fol. 4r © Veneranda Biblioteca Ambrosiana - Metis e Mida Informatica - Mondadori Portfolio

Giant Excavator, reconstruction by Claude Picoux, after a drawing by Leonardo da Vinci © Claude Picoux

The cranes for “emptying ditches” were used to remove spoil during the excavation and maintenance of canals. Leonardo had the opportunity to study and develop these machines while they were in use in the Milanese canals.

Cranes are mounted on rotating circular platforms that move on bases fitted with rollers. On the platforms are caissons which, when filled with stones, serve as counterweights. The machines are moved along the canals and basins by means of winches.

TIMELINE
LEONARDO DA VINCI AND WATER: STUDIES, PROJECTS, AND WORKS

1464-1482 Leonardo da Vinci joins Verrocchio's polytechnical workshop in Florence as an apprentice. He studies the River Arno. During his youth, he witnesses first-hand its destructive power when it floods. In his notes, he describes the devastating power of these natural forces.

1473 Leonardo's first landscape drawing, depicting the Fucecchio Marshes in Tuscany.

Leonardo da Vinci, Arno Valley Landscape, Florence, Gallerie degli Uffizi, inv. 436E, 8P

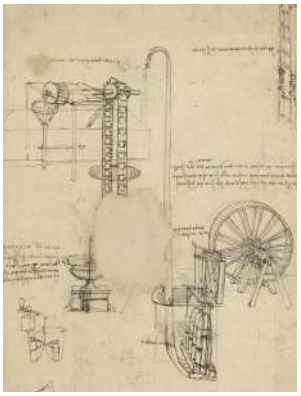
1472-1475 *Annunciation.* The background to the scene is a seascape with a harbour.

Leonardo da Vinci, *Annunciation*, Florence, Gallerie degli Uffizi, inv. 1890, n° 1618

1474-1476 *Ginevra de' Benci,* with a landscape featuring a lake in the background.

Leonardo da Vinci, *Ginevra de' Benci*, Washington, National Gallery of Art, inv. 1967.6.1.a

1477-1482 Drawings of several hydraulic lifting machines.



Leonardo da Vinci, *Codex Atlanticus,* fol. 7r, Milan, Veneranda Biblioteca Ambrosiana – Pinacoteca

1480-1482 Ink drawing of hydraulic machinery for pumping, lifting and transporting water.

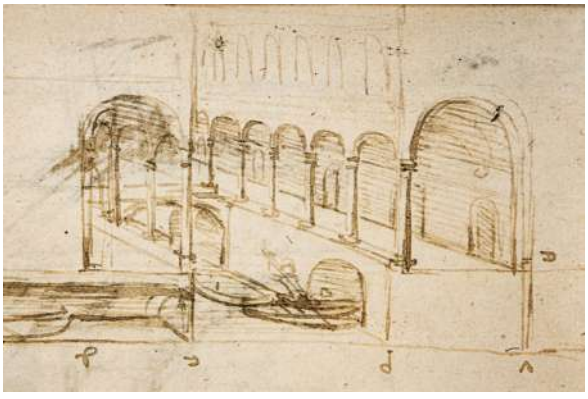
Leonardo da Vinci, *Codex Atlanticus,* fol. 26v, Milan, Veneranda Biblioteca Ambrosiana – Pinacoteca

1482-1485 At the age of thirty, Leonardo enters the service of Ludovico Sforza, Duke of Milan. In a famous letter, he summarises in ten points his knowledge and expertise in civil engineering, hydraulics, military engineering, and the organisation of festivities. He notably states that he can "convey water from one place to another" (*Codex Atlanticus*, fol. 1082r).

1483-1494 *Virgin of the Rocks*. The background of the painting shows a body of water at the foot of mountains shrouded in mist.

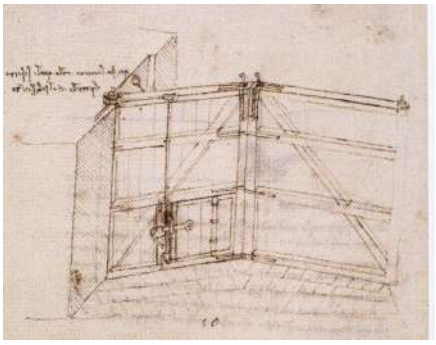
Leonardo da Vinci, *The Virgin, the Child Jesus, Saint John the Baptist and an Angel,* known as *Virgin of the Rocks,* Paris, musée du Louvre, inv. 777

Vers 1485 Project for an ideal, functional city as part of the development of new districts in Milan, which Leonardo envisioned in terms of flows, canals and locks.



Leonardo da Vinci, Canals of the ideal city, Paris, Bibliothèque de l'Institut de France, *Manuscrit B,* fol.37v

1490 Leonardo draws locks with mitre gates designed by Milanese water masters.



Leonardo da Vinci, *Codex Atlanticus*, fol. 656r, Milan, Veneranda Biblioteca Ambrosiana – Pinacoteca

1493 Leonardo refines his studies on canals. During a stay at Ludovico Sforza's summer residence in Vigevano, in the province of Pavia, he observes the flows of the Ticino River and designs several mills in the town.

1499-1500 After the French invasion of Milan, Leonardo enters the service of the Republic of Venice, threatened at the time by the Ottomans under Sultan Bayezid II. He proposes diverting the Isonzo River to flood certain plains in the valley and halt the enemy's advance.

1502 Commissioned as a military engineer by Cesare Borgia, Leonardo produces a map of the Valdichiana (Chiana Valley) in the region of Arezzo.

Leonardo da Vinci, A Map of Southern Tuscany, Windsor Royal Collection Trust, RL 12278r

1502 While in the service of Cesare Borgia, who sought to establish Cesena in Emilia-Romagna as the capital of his duchy, Leonardo undertakes works at the port of Cesenatico. He designs a system of secondary canals and movable palisades to protect it from silting and the force of the waves.

1500-1506 Leonardo returns to Florence, where he works on projects to regulate the Arno River as well as various civil and military engineering projects. He begins compiling notes for a "Treatise on Water", illustrated with drawings that reflect his observations of nature and water in all its manifestations (for example, the winding course of rivers and the process of erosion).

Leonardo da Vinci, *Codex Leicester*, Bill Gates' private collection, ff. 14r and 32r

1503 Studies of water jets and vortices.

Leonardo da Vinci, *Studies of Water,* Windsor, Royal Collection Trust, RL 12660v

1503-1506 *Mona Lisa.* The background features a mountainous landscape marked by a slow-moving river and a fast-flowing river spanned by a bridge.

Leonardo da Vinci, *Mona Lisa*, Paris, musée du Louvre, INV 779

1503-1504 While serving the Republic of Florence, Leonardo proposes modifications to the dams on the Arno River to the east of the city.

Léonard de Vinci, *A Map of the Arno West of Florence*, Windsor, Royal Collection Trust, RL 12678

Léonard de Vinci, *A Weir on the Arno East of Florence,* Windsor, Royal Collection Trust, RL 12680

1503-1504 Monumental project: Leonardo advises Machiavelli and the city-state of Florence on diverting the Arno's course away from Pisa, thereby depriving it of sea access and supplies, making it more vulnerable to Florentine reconquest.

Leonardo da Vinci, "Rotta d'Arno" Project Map, Madrid, Biblioteca Nacional de España, Codex Madrid II, ff. 52v and 53r

1504-1506 Leonardo is involved in the war between the Florentine Republic and Pisa, its eternal rival, which demands independence.

Leonardo da Vinci, *Map of the Florence Canal Project,* Madrid, Biblioteca Nacional de España, Codex Madrid II, ff. 22v et 23r

Leonardo da Vinci, *The Arno Valley with the Route of a Proposed Canal*, Windsor, Royal Collection Trust, RL 12279

Été 1504 Leonardo surveys other sections of the Arno to the east and west of Florence. Based on his surveys, he draws up accurate maps of both regions, probably at the request of the Florentine government.

Leonardo da Vinci, *A Bird's-Eye View of Western Tuscany,* Windsor, Royal Collection Trust, RL 12683

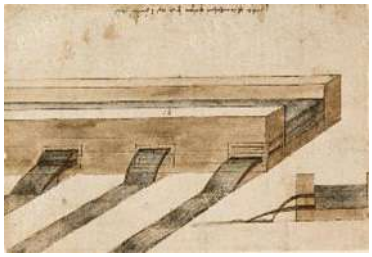
1506-1508 Study for Charles d'Amboise, Governor of Milan, on regulating water intake from the Naviglio Grande canal in Milan in order to improve water distribution and navigation.

Andrea Solario, *Portrait of Charles II d'Amboise, Paris*, musée du Louvre, INV 674

1508 Project for a lateral canal along the Adda (a tributary of the Po), over a length of three miles. With Lombardy now under the rule of Louis XII of France, the project aims to make the Adda navigable by means of a canal that bypasses the unnavigable section of the Adda between Brivio, a town located at the outlet of Lake Como, and Trezzo, at the mouth of the Martesana Canal that connects Milan to the Adda River. This bypass avoids the impassable rocks and rapids at Tre Corni.

Leonardo da Vinci, *Codex Atlanticus*, fol. 911r, Milan, Veneranda Biblioteca Ambrosiana – Pinacoteca

1508 Louis XII, king of France, grants Leonardo da Vinci a royal concession to draw twelve ounces of water from the Naviglio Grande in Milan at the place known as San Christoforo.



Leonardo da Vinci, *Codex Atlanticus,* fol. 1097r, Milan, Veneranda Biblioteca Ambrosiana – Pinacoteca

1513 Leonardo enters the service of Pope Leo X and his brother Giuliano de' Medici.

1514 At the request of Leo X, Leonardo draws up a map of the Pontine Marshes.

Leonardo da Vinci, A Map of the Pontine Marshes, Windsor, Royal Collection Trust, RL 12684

1515 Leo X commissions his brother Giuliano de' Medici, Leonardo da Vinci's patron, to undertake a project to drain the Pontine Marshes, located 80 km south-east of Rome. Attempts to drain these malarial marshes had been made since Roman times. Leonardo is placed in charge of the project and envisions a system of gravity-fed diversion canals and centrifugal pumps to evacuate the water from the marshes to the sea.

Leonardo da Vinci, Paris, bibliothèque de l'Institut de France, *Manuscript F,* Ms 2177, fol. 15r

1516-1519 Invited to reside at Clos Lucé in France, King Francis I appoints Leonardo "First Painter, Engineer and Architect to the King" and grants him an annual pension of 1000 ecus. The king consults Leonardo, in his capacity as an urban planner and hydraulic engineer, on the construction of a grandiose palace in the centre of the kingdom at Romorantin, on the banks of the canalised Sauldre. For Romorantin, Leonardo plans to create a vast hydraulic network consisting of canals, locks and mills.

In order to purify the water, he studies ways to separate muddy and clear water and then remove the former in order to help clean the royal city and eradicate the epidemics of plague and malaria caused by stagnant water.

Leonardo da Vinci, *A Design for a Palace*, Windsor, Royal Collection Trust, RL 12292v

1517-1518 Leonardo works on a project for the king of France to connect the Cher to the Sauldre via a canal and a system of locks. On the same folio, he appears to suggest the possibility of linking the Loire Valley to the Lyons region.

Leonardo da Vinci, *Codex Atlanticus,* fol. 920r, Milan, Veneranda Biblioteca Ambrosiana – Pinacoteca

1517-1518 Leonardo is interested in the course of rivers, currents and eddies. As a field engineer, he mapped the Loire at the Île d'Or in Amboise.

Leonardo da Vinci, *Studies of Water, and a Seated Old Man*, Windsor, Royal Collection Trust, RL 12579r
Leonardo da Vinci, The Loire river at Amboise, Londres, British Library, *Codex Arundel,* fol. 269r

1517-1518 A series of 14 Deluge drawings. A dramatic evocation of an awe-inspiring cataclysm illustrated by tempests, storms and floods; astonishing images of a universe condemned to impermanence.

Leonardo da Vinci, *A Deluge, Windsor*, Royal Collection Trust, RL 12380

THE EXHIBITION CURATORS

PASCAL BRIOIST

PROFESSOR OF MODERN HISTORY AT THE UNIVERSITY OF TOURS AND MEMBER OF THE CENTRE FOR ADVANCED RENAISSANCE STUDIES (CESR)


© Philippe Matsas

Pascal Brioist is a Professor of Modern History at the University of Tours and member of the Centre for Advanced Renaissance Studies (CESR). He has been studying Leonardo da Vinci for over twenty years and is an advisor for the Chateau du Clos Luce. He was involved in the development of the Leonardo da Vinci Architect Gallery, inaugurated in June 2021. He also organised in 2015 an international event labeled "Marignan 2015", a re-enactment based on the festivities given in 1518 by King Francis I in Amboise. He co-curated the exhibitions "Leonardo da Vinci and Anatomy, the Mechanics of Life" (2023), "Leonardo da Vinci and the Perfumes of the Renaissance" (2024) and "Taking Inspiration from Nature: from Leonardo da Vinci to the Present Day" (2025).

Over the years, Pascal Brioist's research has led to a better understanding of Leonardo da Vinci's work in Romorantin and more generally of his activities in France from 1516 to 1519. He has published a number of books and articles on the subject, such as *Léonard de Vinci, homme de guerre* (Alma, 2013), *Les Carnets de Léonard de Vinci* (Gallimard, 2019) and *Les Audaces de Léonard de Vinci* (Stock, 2019).

ANDREA BERNARDONI

PROFESSOR OF HISTORY OF SCIENCE AND TECHNOLOGY AT THE UNIVERSITY OF L'AQUILA AND COLLABORATOR OF THE MUSEO GALILEO IN FLORENCE

Andrea Bernardoni holds a doctorate in the History of Science from the University of Florence. He has dedicated many years to the history of technology at the Institute of the History of Science at the Museo Galileo in Florence. He has served as co-curator of significant exhibitions devoted to Leonardo da Vinci, including "Leonardo, Water and the Renaissance" (Castello Sforzesco, Milan, 2004), "The Mind of Leonardo: The Universal Genius at Work" (Uffizi Gallery, Florence, 2006–2007), "Leonardo da Vinci and France" (Chateau du Clos Lucé, Amboise, 2009), "Explosions, Fusions, Transmutations: The Monument to Francesco Sforza and the Chemical Arts in Leonardo" (Biblioteca Ambrosiana, Milan, 2013).

In 2025, he has been co-curator of the Clos Lucé exhibition dedicated to biomimicry: "Taking Inspiration from Nature: from Leonardo da Vinci to the Present Day".

He is the author of numerous publications on the history of science and technology of the Renaissance, including the essays *De re metallica* and *The Twilight of the Middle Ages*, published in 2013 in the volume *The Italian Contribution to the History of Thought: Technology* (Treccani Encyclopaedia, Rome).

Since 2013, as part of the Artes Mechanicae research group, he has conducted studies in the experimental history of technology, focusing on two main strands: the study and reconstruction of machines from antiquity to the Renaissance, and the technical analysis of "technological dreams", notably Leonardo da Vinci's flying machines.

SCENOGRAPHY BY AGENCE NC

STATEMENT OF INTENT

The exhibition "Leonardo da Vinci, Master of Water" offers a total immersion into the universe of the Italian engineer. The visitor route is structured around five sections, featuring paintings, numerous drawings, explanatory films, and models, some of which are tactile and interactive.

The interactive models, on loan from the Ecomuseo di Vigevano, a town that was at the heart of Leonardo da Vinci's projects, allow visitors to discover hydraulic principles through hands-on interaction. Visitors can operate an Archimedes' screw, a water meter, and a Milanese lock to gain a better understanding of how they function. These devices, which faithfully reproduce Leonardo's research, offer an experience in which water is no longer merely observed but actively experimented with.

The scenography has been designed to recreate a floating universe, with shades of blue, plays of light, reflective surfaces, and sound effects. Each space seems in perpetual motion, mirroring water itself.

The models are displayed on podiums covered with a shimmering, undulating coating that evokes sea (blue), river (silver), or land (brown). The lighting interacts with this coating, creating reflections throughout the exhibition space and contributing to the visitor's immersion.

HIGHLIGHTS OF THE SCENOGRAPHIC JOURNEY

• **Introduction:** A projection of moving water onto a silver veil (circles in water and wave propagation) introduces the exhibition title and guides visitors into the experience.

• **Section 1:** Visitors rediscover water through six landmark works from the history of Renaissance art. Beside them, light boxes with special lighting highlight the areas where water appears.

• **Section 2:** A dialogue is established between Leonardo da Vinci's sources of inspiration (fossils, various works from antiquity and the Middle Ages) and his own inventions, such as models of boats and bridges. A touchscreen table allows visitors to explore some thirty of Leonardo's maps in ultra-high definition.

• **Section 3:** Visitors discover the principles of vortices, siphons, waterfalls, eddies, and perpetual motion through models, videos, and 3D animations.

• **Section 4:** An intimate display space showcases the two original drawings by Leonardo da Vinci, exceptionally loaned by the Biblioteca Ambrosiana in Milan. They are enhanced by LED strips that provide special lighting.

• **Section 5:** The journey concludes with visitors exploring Leonardo's inventions for extracting water from the earth. Numerous models illustrate the various principles he developed, alongside drawings and video installations.

AGENCE NC

The NC Agency specialises in the design of exhibitions and museum tours. Permanent or temporary, small or large, heritage or thematic, modest or spectacular, cultural or event-based, the agency's signature applies to a wide variety of projects.

Its activity covers major cultural sites, in France and abroad, but also a private clientele. Its core business also encompasses interior design. The courtyard in Paris's 11th arrondissement, where it is based, has become over the years a melting pot that brings together graphic designers, lighting designers, writers and multimedia designers. Driven by intuition and curiosity, Agence NC brings its distinctive touch to a still young discipline, which combines the art of the ephemeral, knowledge, heritage and entertainment. It is in this creative and innovative atmosphere that staging is born, whose ambition of form and content makes each project unique.

L'Agence NC has worked on projects for major institutions such as Cartier, Hangar Y, the Van Gogh Museum and the House of Dior. In 2025, it designed the exhibition "Louvre Couture". The same year, it was also entrusted with the scenography of the exhibition "Lire le ciel" at the Mucem. The agency worked on the scenography for the CIAP of the Quadrilatère de Beauvais, as well as the scenography for the Treasury of Notre-Dame de Paris and its tower visitor route.

NATHALIE CRINIÈRE, ARCHITECT AND EXHIBITION DESIGNER


© Agence Nathalie Crinière

Nathalie Crinière graduated from Ecole Boulle in interior architecture and from Ecole Nationale Superieure des Arts Decoratifs of Paris in industrial design. While in higher education she also studied at the Georgia Tech Institute of Technology in Atlanta, Georgia, USA. She then spent a year in Barcelona, working at the agency of interior architect Pepe Cortes.

She set up her own practice, Agence NC, which specialises in exhibition design and interior architecture.

CO-EDITION

THE EXHIBITION CATALOGUE

"LEONARDO DA VINCI, MASTER OF WATER"

The exhibition catalogue, co-edited by the Château du Clos Lucé and Éditions Skira, features twelve original contributions from academics, researchers, and leading experts on Leonardo's work:

• **Foreword** by François Saint Bris, President, château du Clos Lucé

• **The Word of the Centre-Val de Loire Region** by François Bonneau, President of the Centre-Val de Loire Region

INTRODUCTION: WATER

• **Introduction: Leonardo and the Power of Water** by Andrea Bernardoni, Professor of History of Science and Technology at the University of L'Aquila, and Consultant at the Museo Galileo in Florence, and Pascal Brioist, Professor of Modern History at the University of Tours and member of the Centre for Advanced Renaissance Studies (CESR)

• **Waters, Lakes, Springs and Waves in the Painting of Leonardo da Vinci** by Pietro C. Marani, Honorary Professor at the Polytechnic University of Milan and President of the Ente Raccolta Vinciana at the Sforza Castle in Milan

• **The Language of Water in the Work of Leonardo da Vinci** by Barbara Fanini, researcher in Italian linguistics at the University of Florence and collaborator of the Accademia della Crusca

WATER SHAPES THE EARTH

• **Landscapes in Metamorphosis: Water and the History of the Earth** by Domenico Laurenza, Professor of Modern Art History at the University of Cagliari

THE DYNAMICS OF WATER: PRINCIPLES AND EXPERIMENTS

• **The "Book of Waters": A Project by Leonardo** by Romain Descendre, Professor of Italian Studies at the École Normale Supérieure de Lyon

• **Giovanni Battista Venturi and the History of Hydraulics: Leonardo da Vinci as a Starting Point** by Margherita Bovo, doctoral student in History of Science at the University of Bologna and the University of Tours (CESR)

WATER, DRIVING FORCE OF MACHINES

• **Leonardo da Vinci and the Quest for an Ideal Hydraulic Engine** by Andrea Bernardoni

• **Beauty and Utility in Leonardo da Vinci's Water Features and Hydraulics** by John Venerella, researcher and translator of the writings of Leonardo da Vinci

CONDUCTING AND REGULATING WATER

• **Measuring Boats, Locks and Supports: Leonardo and the Navigable Waterways of Milan** by Claudio Giorgione, art historian and curator at the National Museum of Science and Technology Leonardo da Vinci in Milan

• **Leonardo da Vinci and the Maps of the Arno** by Filippo Camerota, Scientific Director of the Museo Galileo in Florence

• **Leonardo and Water in Vinci** by Alexander Neuwahl, founder of Artes Mechanicae in Florence

• **Leonardo da Vinci's Hydraulic Projects at Romorantin** by Pascal Brioist

GLOSSARY

Archimedes' Screw
A device consisting of a spiral screw inside a tube. When turned, it raises water from a lower level to a higher one. This system is still used today for irrigation or water treatment.

Badalone
A boat used during the Renaissance, particularly in Florence, to transport heavy materials (such as marble). It operates using a mechanical system inspired by paddle wheels, allowing it to move even against the current.

Dredging
The removal of mud, sand or debris from the bed of a river, port or canal. This maintains sufficient depth for navigation and prevents waterways from becoming blocked.

Fluid Dynamics
The branch of science that studies liquids (such as water) in motion: currents, waves, vortices, etc. Leonardo da Vinci took a keen interest in this through his observations of rivers and turbulence.

Fluid Statics
Another name for hydrostatics:
the study of liquids at rest and the forces acting upon them (pressure, equilibrium, buoyancy).

Lock Chamber
Structure that enables boats to move from one water level to another (for example, between two canals at different heights). The boat enters an enclosed basin (the lock chamber), after which the water level is adjusted to raise or lower the vessel.

Hydraulics
The science and technology concerned with the use of watercourses, waterfalls, tides, ocean currents and waves to collect, transport and store water, as well as to generate energy (for example, using mills or turbines) or perform mechanical work.

Hydrodynamics
The science of fluids in motion. It studies incompressible fluids and the resistance they offer to bodies moving relative to them. Fluids in motion generate kinetic energy.

Hydrogeology
An interdisciplinary science that studies groundwater.

Hydrography
The science that studies and maps surface waters, such as rivers, lakes, seas and oceans, as well as tidal ranges and ocean currents. It determines the shape of coastlines and the depth of the oceans and seas.

Hydrology
The science of the cycle and movement of water on and below the Earth's surface.

Hydrostatics
The branch of physics that studies liquids at rest. It examines, for example, the pressure of water in a container or the buoyancy of objects.

Navigli
The name given to Milan's canal network. These canals were used to transport goods, irrigate land, and manage the water circulation networks in the city.

Paddle Boat
A vessel propelled by wheels fitted with paddles (small planks) that turn in the water. By pushing water backwards, they drive the boat forwards.

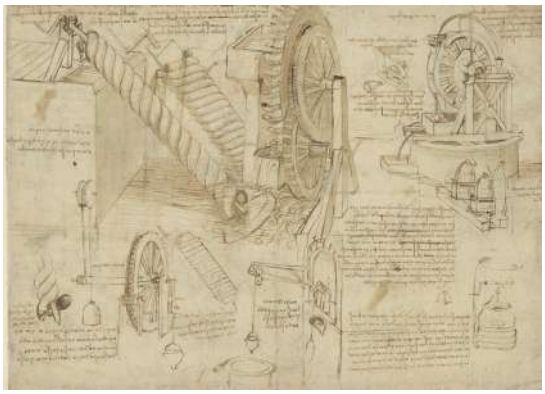
Paddle Wheel
A wheel equipped with blades (paddles) that is turned by flowing water. This rotation drives machines, such as mills or systems for lifting water, to capture, lift, and transport water.

Water (etymology)
From the Greek *hydros* and the Latin *aqua.*

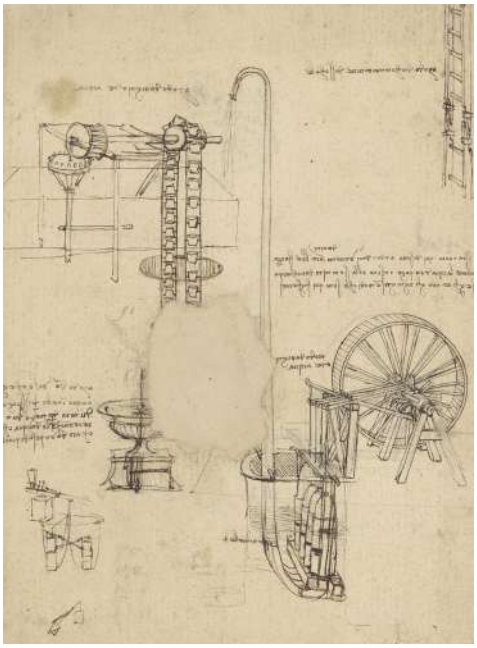
Water Meter (by Leonardo da Vinci)
A device conceived to measure the quantity of water flowing through a pipe. It allows precise control and distribution of water, for example in a city or a network of canals.

VISUALS AVAILABLE FOR THE PRESS

ORIGINAL DRAWINGS BY LEONARDO DA VINCI



Leonardo da Vinci, Hydraulic Machines for Pumping, Lifting, and Transporting Water, Milan, Veneranda Bibioteca Ambrosiana – Pinacoteca, *Codex Atlanticus,* fol. 26v © Veneranda Biblioteca Ambrosiana - Metis e Mida Informatica - Mondadori Portfolio



Leonardo da Vinci, Machines for lifting water, Milan, Veneranda Bibioteca Ambrosiana – Pinacoteca, *Codex Atlanticus,* fol. 7r © Veneranda Biblioteca Ambrosiana - Metis e Mida Informatica - Mondadori Portfolio

ROOM 1 – INTRODUCTION

Leonardo da Vinci, *Ginevra de' Benci,* Washington, National Gallery of Art (copy after the original, production Bottega Tifernate) © Château du Clos Lucé - Parc Leonardo da Vinci

Leonardo da Vinci, A study of a cascade of falling water and the eddies it creates, Windsor, Royal Collection Trust, RL 12662r © Royal Collection Enterprises Limited 2026 | Royal Collection Trust

Leonardo da Vinci, *Mona Lisa,* Paris, musée du Louvre (copy after the original, production Bottega Tifernate) © Château du Clos Lucé - Parc Leonardo da Vinci

Leonardo da Vinci, *Annunciation,* Florence, Gallerie delle Uffizi (copy after the original, production Bottega Tifernate) © Château du Clos Lucé - Parc Leonardo da Vinci

Sandro Botticelli, *The Birth of Venus,* Florence, Gallerie delle Uffizi (copy after the original, production Bottega Tifernate) © Château du Clos Lucé - Parc Leonardo da Vinci

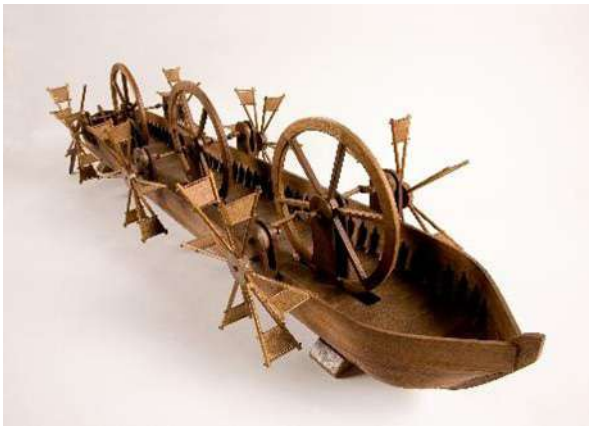
Icosahedron, reconstruction by Claude Picoux after a drawing by Luca Pacioli in *Divina Proportione* © Claude Picoux

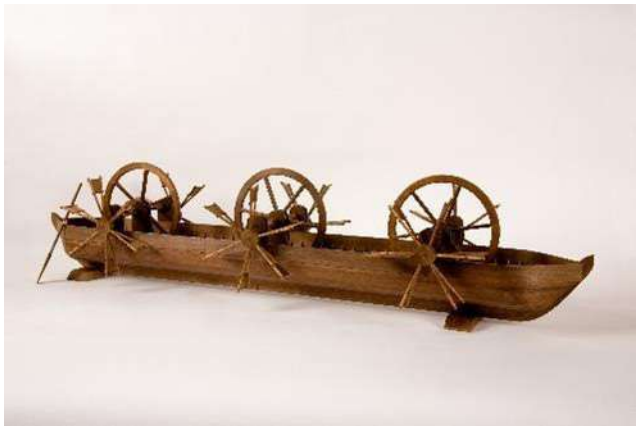
ROOM 2 – WATER SHAPES THE EARTH

Claudius Ptolemaeus, *Cosmographia Jacobo Angelo interprete, cum tabulis Henrici Martel,* Florence, Biblioteca nazionale centrale di Firenze, Magliabechiano XIII.16 © Biblioteca nazionale centrale di Firenze

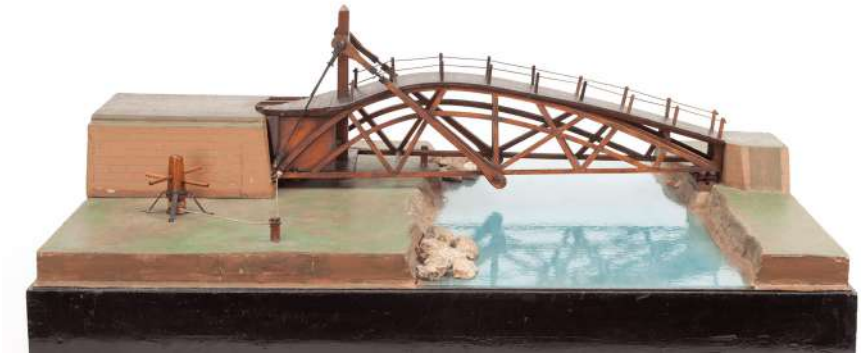
Leonardo da Vinci, Collapse of a colossal land mass into an aquatic cavern at the centre of the globe, *Codex Leicester,* fol. 36r, USA, Bill & Melinda Gates Fondation (facsimile) © Château du Clos Lucé – Parc Leonardo da Vinci. Photo : Léonard de Serres

Boat with paddle-wheel propulsion system, reconstruction by Luigi Tursini after a drawing by Leonardo da Vinci, Milan, Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci © Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci





Badalone (a ship imagined by Filippo Brunelleschi for transporting marble to the construction site of the Dome of Florence Cathedral), interpretation by the Department of Mechanical and Industrial Technologies of the University of Florence, Vinci, Museo Leonardiano © Museo Leonardiano



Revolving bridge, reconstruction by Ermenegildo Menichetti after a drawing by Leonardo da Vinci, Milan, Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci © Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci

ROOM 3 - THE DYNAMICS OF WATER: PRINCIPLES AND EXPERIMENTS

Leonardo da Vinci, Study of a Whirpool, Windsor, Royal Collection Trust, RL 12660v © Royal Collection Enterprises Limited 2026 | Royal Collection Trust

Leonardo da Vinci, A study of water flowing around obstacles, Windsor, Royal Collection Trust, RL 12660r © Royal Collection Enterprises Limited 2026 | Royal Collection Trust

Leonardo da Vinci, Studies of water, and a seated old man, Windsor, The Royal Collection, RL 12579r © Royal Collection Enterprises Limited 2026 | Royal Collection Trust

Leonardo da Vinci, Study on Water Pressure, *Codex Madrid,* Madrid, Biblioteca Nacional de España (facsimile) © Château du Clos Lucé – Parc Leonardo da Vinci. Photo : Léonard de Serres

Study on Water Pressure, reconstruction by Jean-Louis Pironio after a drawing by Leonardo da Vinci © Jean-Louis Pironio

ROOM 4 – WATER DRIVING FORCE OF MACHINES, FOR BENEFIT OF MANKIND

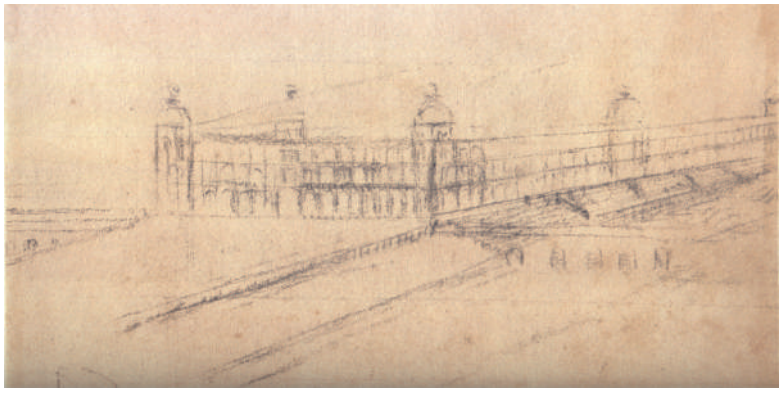
Archimedes' Screw, reconstruction by Dario Noè after a drawing by Leonardo da Vinci, Vigevano, Museo della Roggia Mora © La città ideale - Ecomuseo della Roggia Mora (Mulino di Mora Bassa). Dario Noè

Hydraulic saw, reconstruction by Claude Picoux, after a drawing by Leonardo da Vinci © Claude Picoux

Plaster cast of a marble bas-relief depincting a hydraulic saw, after Ambrogio Barocci, Milan, Museo Nazionale della Scienza e della TecnologiaLeonardo da Vinci, inv. 5760 © Museo Nazionale della Scienza e della TecnologiaLeonardo da Vinci

ROOM 5 – CONDUCTING AND REGULATING WATER

Frans Hogenberg (engraver), Plan of Milan taken from the work *Civitates orbis terrarum*, Milan, Achille Bertarelli Print Collection – Castello Sforzesco © Comune di Milano, all rights reserved



Leonardo da Vinci, A Design for a Palace, Windsor, Royal Collection Trust, RL 12292v © Royal Collection Enterprises Limited 2026 | Royal Collection Trust

3D reconstruction of the project for the royal palace of Romorantin, based on drawings by Leonardo da Vinci (Codex Arundel, folio 270v, and Windsor, Royal Collection Trust, RL 12292v) © Château du Clos Lucé – Parc Leonardo da Vinci. Produced by Le Lokal Production

Leonardo da Vinci, Canals of the ideal city, Paris, Bibliothèque de l'Institut de France, *Manuscrit B,* fol.37v (facsimile) © Château du Clos Lucé – Parc Leonardo da Vinci. Photo : Léonard de Serres

Leonardo da Vinci, Study for a centrifugal pump, Paris, Bibliothèque de l'Institut de France, *Manuscript F,* fol. 15r (facsimile) © Château du Clos Lucé – Parc Leonardo da Vinci. Photo : Léonard de Serres

Water meter, reconstruction by Dario Noè, after a drawing by Leonardo da Vinci, Vigevano, Ecomuseo della Roggia Mora
© La città ideale - Ecomuseo della Roggia Mora (Mulino di Mora Bassa). Dario Noè

Giant Excavator, reconstruction by Claude Picoux, after a drawing by Leonardo da Vinci © Claude Picoux

Dredger for cleaning the muddy bed of a canal, model by Luigi Tursini after a drawing of Leonardo da Vinci, Milan, Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci © Museo Nazionale della Scienza e della Tecnologia Leonardo da Vinci

Milanese single-leaf lock, reconstruction by Dario Noè, after a drawing by Leonardo da Vinci, Vigevano, Ecomuseo della Roggia Mora © La città ideale - Ecomuseo della Roggia Mora (Mulino di Mora Bassa). Dario Noè

Giacomo de Novi, High relief of a 15th-century fountain, Milan, Civic Collections of Ancient Art - Castello Sforzesco © Museo d'Arte Antica del Castello Sforzesco, Milano

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Leonardo da Vinci, Hydraulic Machines for Pumping, Lifting, and Transporting Water, Milan, Veneranda Biblioteca Ambrosiana – Pinacoteca, *Codex Atlanticus*, fol. 26v © Veneranda Biblioteca Ambrosiana - Metis e Mida Informatica - Mondadori Portfolio