

UNE CITÉ DANS LE CIEL

L'ARBRE AUX HÉRONNS



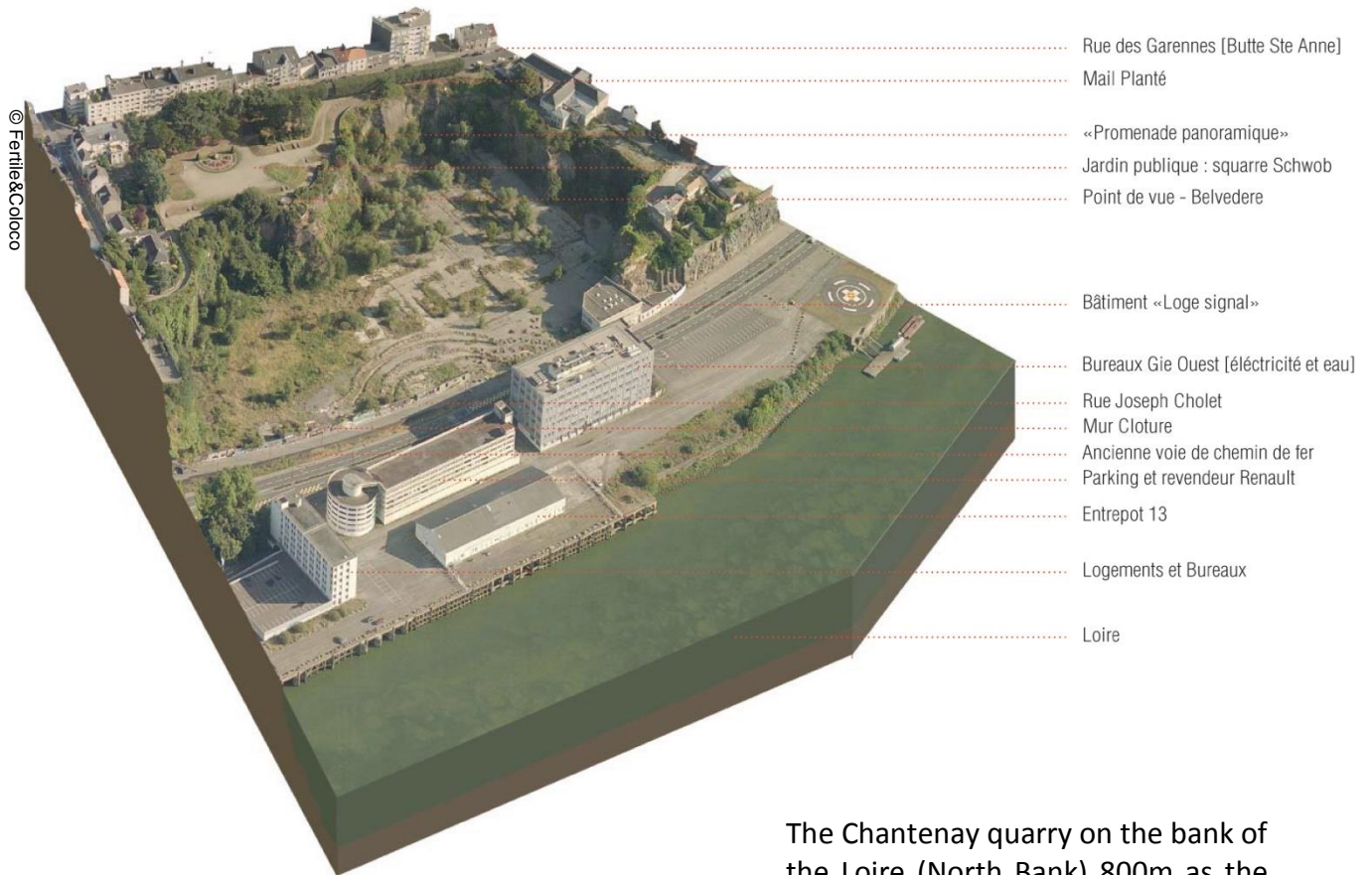
LES MACHINES DE L'ÎLE
- NANTES -



Authors: François Delarozière and Pierre Orefice

Preamble

On July 7th 2016, Johanna Rolland, Mayor of Nantes and President of Nantes Métropole announced the launch of the Herons' Tree project. It will be carried out over 4 years, the grand opening thus set for 2022. It will be implanted in the Chantenay quarry.



Max length: 135m

Max width: 260m

Highest point on the cliff: 32m

The parking lot, the warehouse 13 and the «Loge signal» building should be demolished.

The fate of the old mills situated between the quarry and the river is not yet decided.

Different ideas are being studied.

This two and a half hectares quarry is a green heaven for the Tree. Since the dismantlement of the breweries, nature has invaded the quarry. It was dug out in the black granite of Brittany's southern ridge.

Its south, south west orientation has given it a true microclimate allowing for the implantation of extraordinary gardens.



« Imagine the Herons Tree here, 800m as the heron flies from the Carrousel des Mondes Marins.

It's the best idea in the world!

Whether you arrive on foot, by boat or from the top of the quarry, the image imposes itself, in unison with the cliffs and their vegetation which will magnify the Tree's hanging gardens.

The Herons Tree will make of this quarry at the bottom of Chantenay one of the most beautiful urban gardens in the world »

We've had this project from the beginning of the Machines de L'île adventure. At the opening of the first part in 2007, **the prototype branch** was here, on the pediment of our warehouse (les Nefs) and **the model of the Herons' Tree** was already a part of the Galerie des Machines.

The project has evolved: today, **the city in the sky** concept gathers **the hanging gardens** and **the mechanical bestiary** that inhabits the branches... The Tree and the quarry will of course unify and bridges will be created.

Mechanical animals will go from the cliff to the closest branches. A mechanical Osprey nesting in the cliff could dive along a cable right through the branches... The tip of the branches will shelter a **mechanical aviary**; these birds will nest in the branches of the Herons' Tree next to actual living birds perched there enjoying the protection provided by the quarry.

A **greenhouse** to nurture plants destined for the hanging gardens would be found at the bottom of the cliff... **Rainwater** trickling down the hill would be harvested and piped to the branches...

It will take four years to construct the Tree. For the first two years, everything will be redesigned and enriched by the possibilities this quarry offers.

We will often give updates on the ongoing evolutions of the project and different steps in its implementation.

2018 / 2022 4 years of construction

We made a commitment to the thousands of backers from the crowd funding to relay, in 14 chapters, the incredible adventure of the construction of the Tree in this extraordinary garden located along the Loire river at the heart of Nantes.

Due to the configuration of the quarry and to the promenade which will open in 2019 along the edges of the cliff, the public will have a diving view on the Tree's construction site.

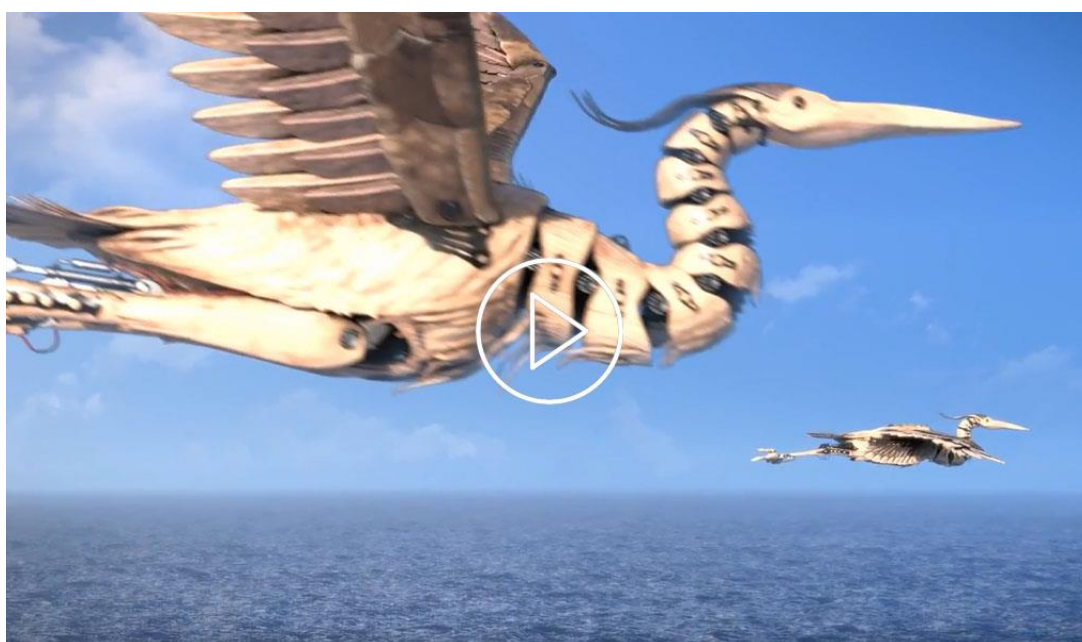
Imagine the assembly of the 22 branches on the trunk of the Tree: a crane will be built onto one of the two main branches. It will enable the installation of the branches following a precise balancing protocol of the Tree. Once the branches will be bolted in place, the crane will be disassembled to install the Herons' boarding platforms. This construction site will be public and an actual stage where we will be able to follow the growth of the Tree from the natural balconies provided by the quarry.

It will be engraved in the memories of this place, the neighborhood and the inhabitants of Nantes.

Thank you for your interest and enjoy the read.

François Delaroziere and Pierre Orefice Co-authors

The Herons' Tree in pictures





L'ARBRE AUX HÉRONS
- UNE CITÉ DANS LE CIEL -

The tree is made of steel and measures **50 metres (165 feet) in diameter** and **30 metres (100 feet) in height**.

It is crowned by **2 giant herons**; each can carry up to twelve passengers for a circular flight. The tree's **22 branches stretch** a combined length of 1.4 kilometres (0,7miles).

Plants take root in the steel and the public can visit **incredible gardens** going from branch to branch, like a series of interconnected hanging terraces. Accesses to the herons and to the hanging gardens are separate.



©Jean-Dominique Billaud

*The 1:10 scale model of the Tree and the ascending chairs
2012 to 2015 in the Galerie des Machines*

LE VOL DU HÉRON

– THE FLIGHT OF THE HERON –

Like the Great Elephant, the herons are **living machines**.

Both of these wading birds nest in the Tree along the Loire. They fly one after the other. At peak periods, there are **5 to 6 flights per hour**; at quieter times, a single heron will soar. 16 people can board each heron including one wheelchair.

The birds can be reached via external staircases. Three platforms enable better management of embarking and disembarking passengers.



©Jean-Dominique Billaud

The Heron prototype (1/2 scale) and the Inchworm



LE VOL DU HÉRON

« To imagine what a heron's flight truly represents, you must try to see the world from the point of view of a child.

Imagine a 9-year-old child sitting astride a Heron. Out in front, the heron's head stands out against the sky, its eyes move, the beak opens, and the neck is mobile.

If the child looks left and right, he'll see two large wings gently flapping to control the heron's flight. Underneath, he discovers the tree and its inhabitants, as well as the Île de Nantes and Loire River 40 metres (131 feet) below.

The child is flying. He can feel the machine every time the heron flaps its wings and he becomes one with the animal.

These herons are alive. Every moment of their flight glorifies both the animal and the machine.

This trip is even wilder than riding aboard the Grand Elephant!

Visitors to this City in the Sky will be hypnotized by the Heron as it soars above, stretching out its neck and wings.

This vision is one of the reasons why visitors must reach the large belvederes at the top of the tree from which they can watch the flight of the Herons. »



The herons seen by Stephan Muntaner

LES JARDINS SUSPENDUS

– THE HANGING GARDENS –

The gardens are accessible via a double helix staircase located inside the trunk: one to go up, the other to go down. Visitors can walk along **branches overgrown with plants** and footbridges to go from one branch to the other and finally reach the top of tree.

Here, they discover the tree, the herons, the Loire River and Île de Nantes from the different belvederes **30 metres (100 feet) up in the air**. At the end of the itinerary through the hanging gardens is an outdoor bar which has been built onto a lower branch.

The total capacity of the tree is limited to 400 people (i.e., everybody walking through the Tree, plus the passengers aboard the Herons).



Test of the plant palette on the prototype branch in 2007

– THE PROTOTYPE BRANCH –

The prototype branch began a new phase of cultivation. From 2007 to 2014, we chose a palette of plants that were adapted to the physical constraints of the Tree.

We gradually add to the first vegetation spots (which had a substrate volume of 40 litres) new containers with a substrate volume ranging from 400 to 2000 litres.

Certain forks in the branch will host micro-landscapes (tiny ponds with aquatic plants for example).

But most importantly the containers will be directly built into the actual structure of the branches

We added vegetation to the staircase going down from the branch. The results after two years are satisfying; they show how the vegetation will be integrated in the Tree's structures.

This branch is an exceptional tool foreshadowing the cultivation principles for the Herons' Tree.



© Pierre Orefice

The Prototype Branch in 2013



– THE CITY IN THE SKY –

« **Imagine...** You walk over to the Tree... Little by little, you discover the details of the branches as they slowly fill your field of view. You've got **your head in the clouds** and, through the web of branches, you see the heron in full-flight as it swoops through the sky along with hundreds of visitors moving through the branches of the Tree...

It is nothing short of a full-on City in the Sky...

When your eyes grow accustomed to it and see more clearly, you will be able to observe *people* moving vertically between the lower and upper branches (the canopy) in the **ascending chairs**. Further up, the strange **Travelling Treehoppers**, scuttle up and down branches.

If you walk around the Tree, you will see an **Inchworm** carrying visitors from one branch to another, or a column of giant ants climbing the trunk... A mechanical **Osprey Eagle**, attached to a zip-line, glides through the branches...

Your eyes will then be drawn to the **Greenhouse Branch** reflecting a unique light that grabs your attention. This tropical branch will nurture plants from faraway latitudes...

The closer you get, the richer the image becomes.

Again, looking up at the sky the image you see is surreal. To grasp it, you must climb up and enter this **City in the Sky**.

Like for the Great Elephant, your relationship to the image will be the same for the Herons Tree. The Grand Elephant is a city machine, accessible to everyone. You are free to follow it along its path. Similarly, you are free to discover the Tree and enjoy this City in the sky. »



LE MONDE DE L'ARBRE
- DANS LA GALERIE DES MACHINES -
– THE WORLD OF THE TREE –
- IN THE GALERIE DES MACHINES -

We are furthering our research to create a unique world for the Herons Tree. Here in the Galerie, we test ideas and prototypes: **The Inchworm, the Travelling Treehoppers, and a mechanical Ant. The ascending chairs** which enable the public to grasp the Tree visually.

The Galerie's laboratory studies the carnivorous and epiphyte plants that will be on display in the greenhouse branch.

Since 2014, one can find The Giant Ant in the Galerie, which can take up to 5 visitors on its back.

In 2016, the Spider replaced the model of the Herons' Tree at the centre of the Galerie. Since we started showcasing the Tree in the Galerie the attendance has gone up by more than 35%.

Today the studies for the Herons' Tree are truly underway. This design, studies and calculations phase will keep going in 2018 and 2019. During this phase, the Co La Machines will build prototypes essential to the launch of the construction. They will be showcased as and when they are built in the Galerie.

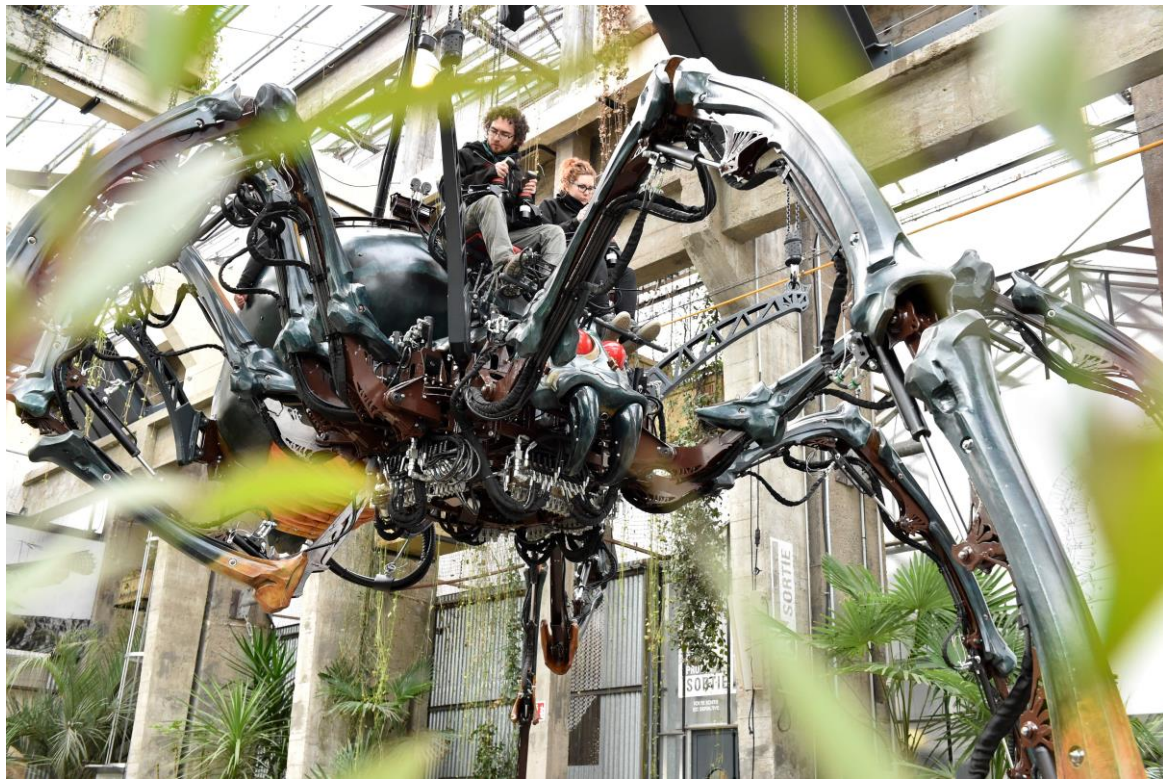


Aboard the giant Ant in the Galerie des Machines



Testing bench for the ant's walk in the Galerie des Machines

The Spider in the Galerie des Machines



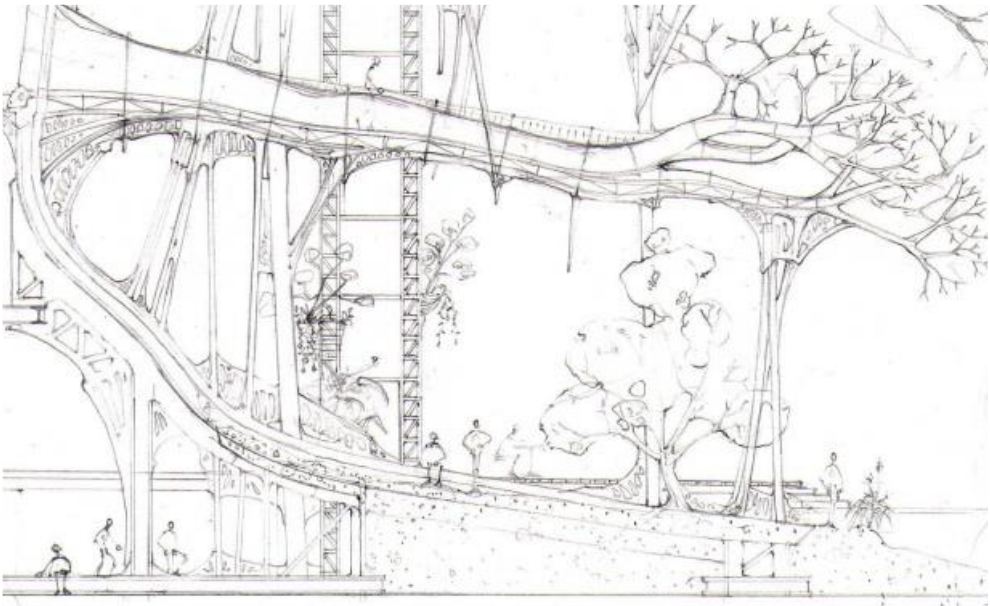
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*The Spider will inhabit the Herons' Tree.
Rolling into a ball it will slide up in between two branches to reach the fork of a high branch.*

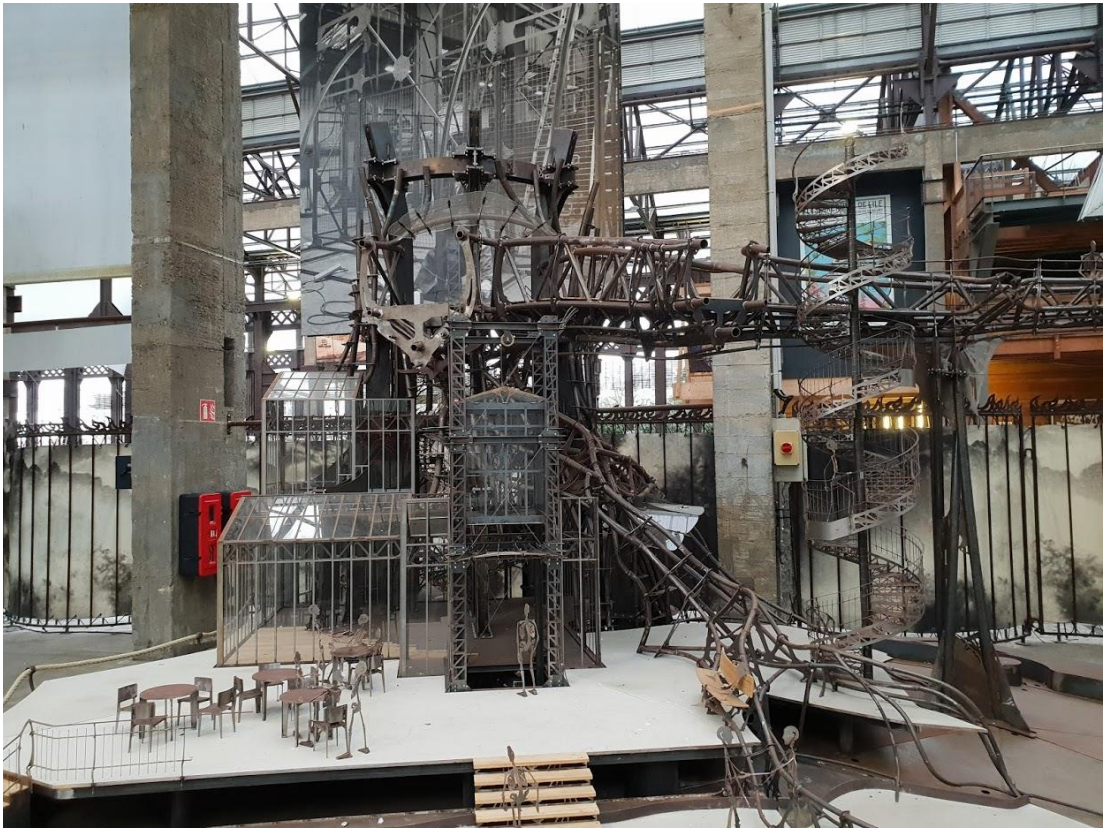


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For the re-opening of the Machines in February 2018, a 1/5 scale model of the trunk, branches and roots was installed in the Galerie.



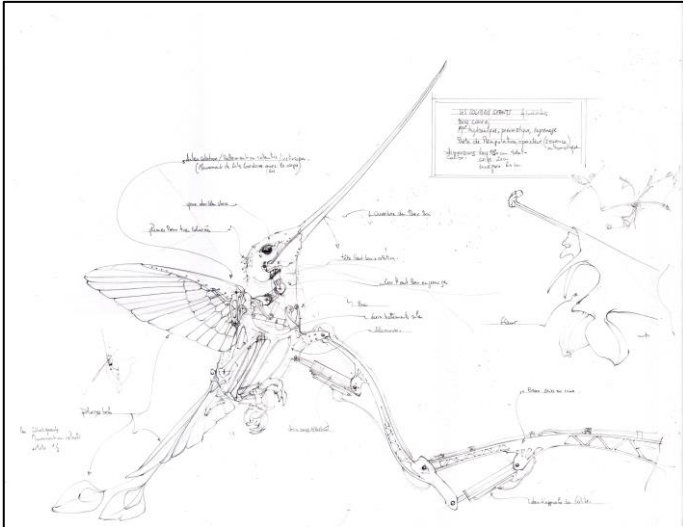
Sketch by François Delarozier



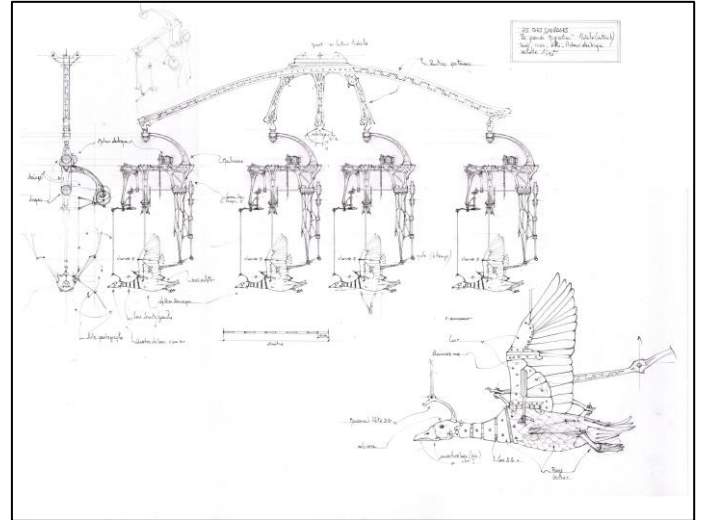
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1/5 scale model of a portion of the Tree visible in the Galerie

Likewise, the first elements of the mechanical aviary are being tested with the visitors: **A Giant Hummingbird** harvesting a flower and a flight of mechanical Geese. These automata will be many to inhabit the Tree; it is their reliability which will be put to test in the Galerie.



*Giant Hummingbird by François Delaroziere
2017*

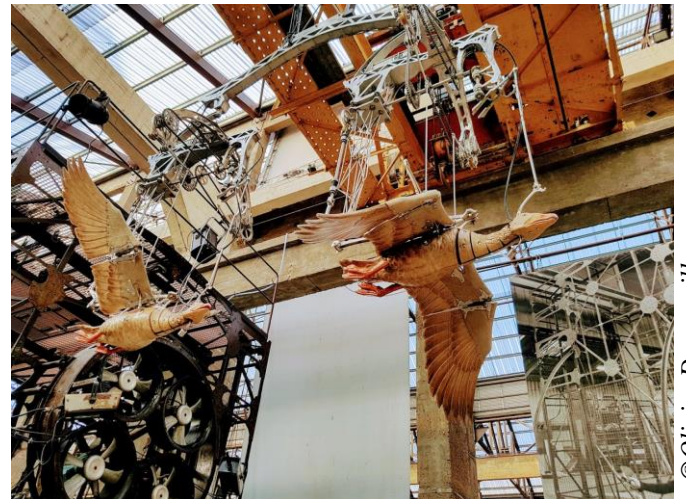


Wild Geese by François Delaroziere 2017



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*Giant Hummingbird in the Galerie des
Machines*



©Olivier Dassonville

Wild Geese in the Galerie des Machines



The Tree is

Majesty
Power
Resistance
Strength, beauty

Kings would mete out justice under an
oak

But, it is also

Longevity
Origins
Genealogy, Roots
A connection to the earth
It brings earth and sky together; it is a sign of
elevation

At last

It offers shade from the sun
It makes the city beautiful
It protects and provides shelter for living things (biodiversity)
It transforms CO2 into oxygen by absorbing carbon
If we protect it, we protect life on Earth
It is a sign of conviviality (the African "Parley Tree")

The power, the excess and the accessibility of the Herons' Tree allows a city to appropriate the theme of Trees and all their qualities. People from around the world will come to see the Herons' Tree in Nantes.