



Art &
Fact.
INNOVATION

INNOVATING



LINK BUILDER BETWEEN
TECHNOLOGY AND BIODIVERSITY



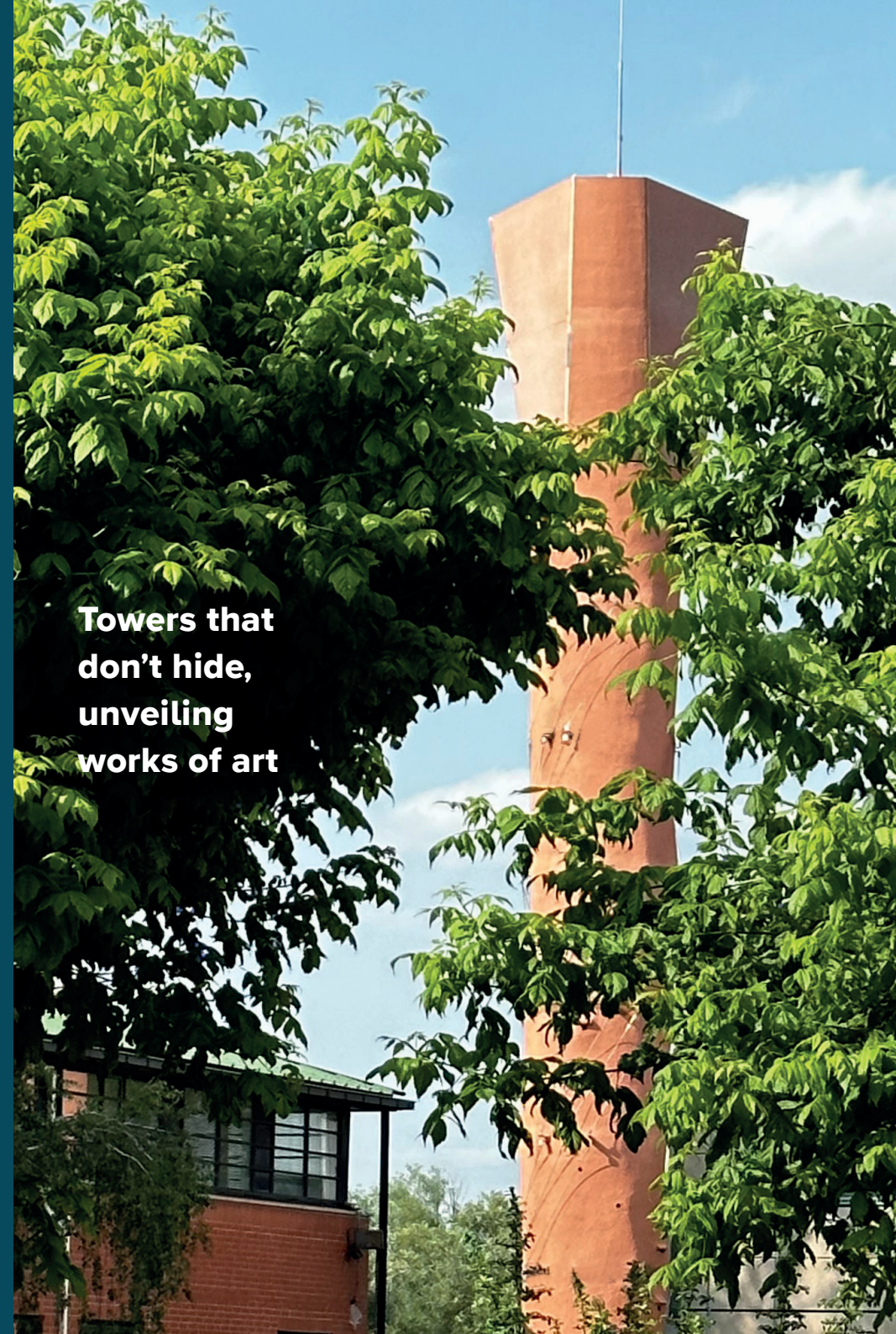
WORLD PREMIERE TOWER

3 years of research and innovation

3 years reasearching, innovating and testing, creating and manufacturing were necessary to create this world premiere.

- Customizable structure
- High Technology
- Biodiversity refuge
- Lined in biosourced material

We are proud to show you today our 15m (50ft) structure that was freshly set up in Every Courcouronnes France. This structure houses six 4G & 5G antennas.

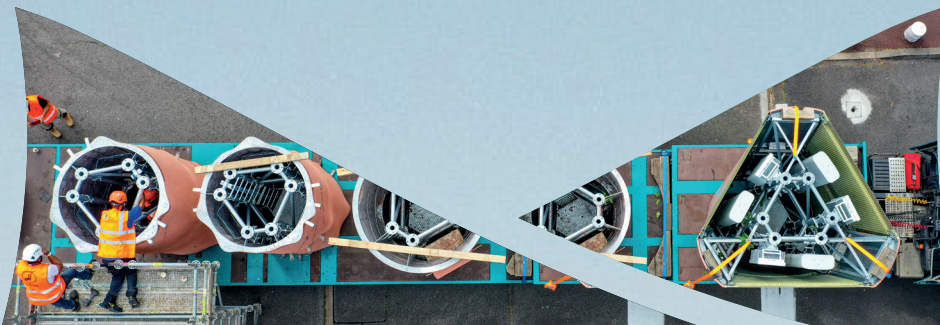


**Towers that
don't hide,
unveiling
works of art**

A CUSTOMIZABLE STRUCTURE

SHAPE
HEIGHT
COLOR
VEGETATION

from imagination
to realisation



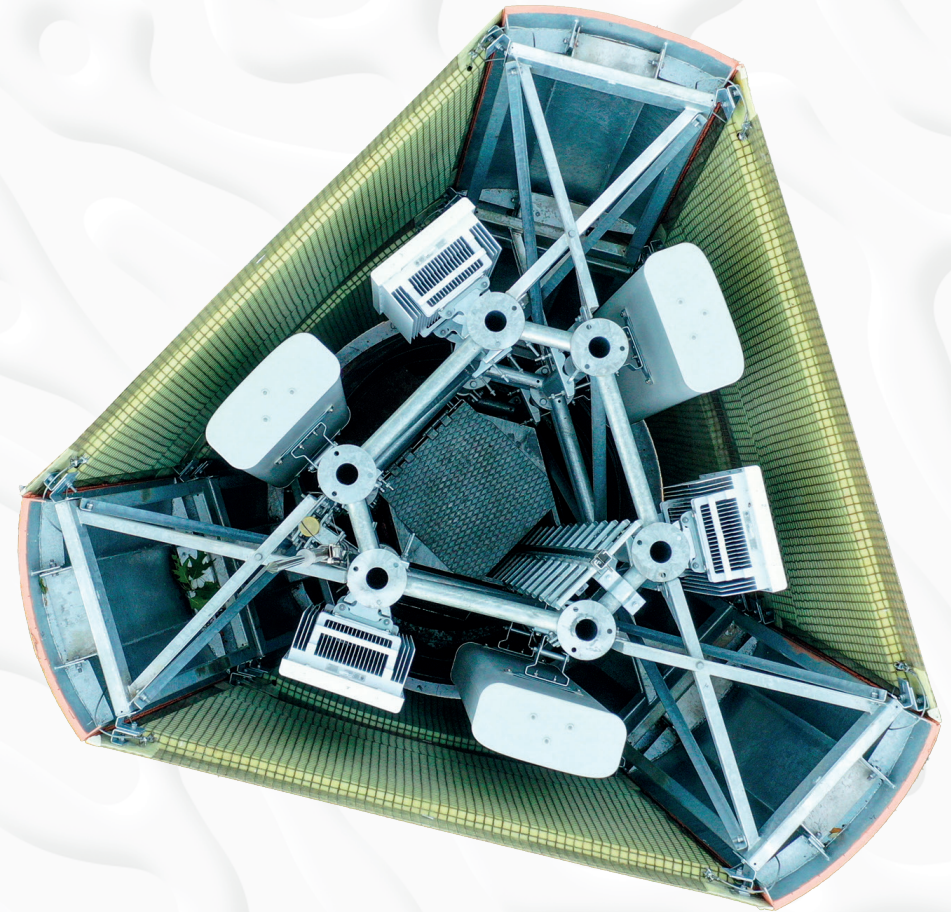
5 GOALS ACHIEVED

A « SIGNATURE » TOWER

- turn antennas invisible
- artistic and bio-integrated architecture
- High quality technology developed with an experts network

Its **customisable design** were studied to elongate the tower while allowing to set up the radio equipments inside.

12 radio boxes, 6 antennas, 3 electric caskets, 1 GPS antenna, 1 lightning rod, interior lighting



- 1. Radio engineering goal**
Today, we offer the **only integrated structure capable of welcoming 4G and 5G technologies without mitigation.** Because the antennas are at the same height, they offer the same radio coverage.

ACHIEVED GOALS

AN INNOVATIVE TOWER

2. Integration goal

The tower **blends in the environment.** its colour were chosen to look like red brick, the main constituent of the surrounding building, and of Every Courcouronnes' architecture : this was a strong request from the Mayor.

3. Ease of assembly goal

The tower was **assembled in a few hours.** One day only was necessary to set up this **15m (50ft) structure comprising 5 modules of 3m (10ft) each,** with simple and traditional methods such as **35T mobile crane.**



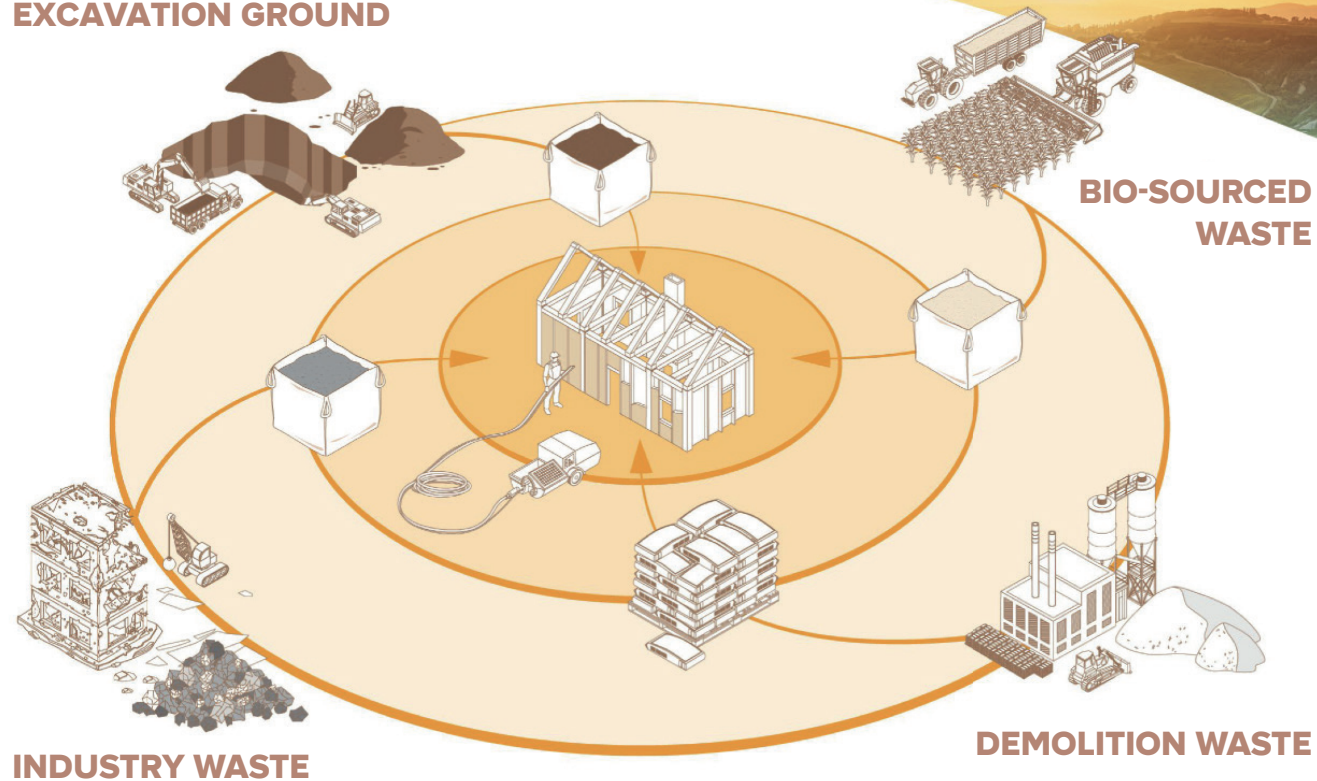
RECYCLING

AN ECO-FRIENDLY SOLUTION

- EARTH
- BIO SOURCED WASTE
- INDUSTRIAL WASTE
- DEMOLITION WASTE

Groupe Saint Gobain developed an innovative and sustainable approach using projected « raw » earth. This technique allows to recycle Building and Public Works and agricultural waste. It can be done on site or in factory.

EXCAVATION GROUND

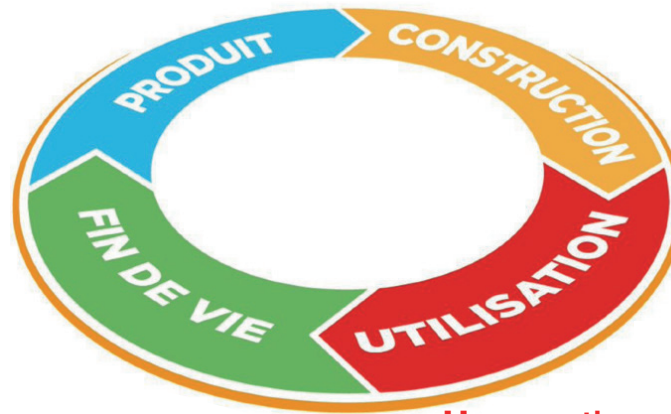


AN ECOLOGICAL APPROACH



Product : using earth as building material enable to save on primary resources consumption as well as their transformation and their shipping.

Building : pre-assembling the supporting structure allows to reduce the time on building site and the impact on the environment.



end of life : This technique enables reconstruction because the supporting structure and coating can be recycled or deconditioned and the filling material can be used again in a similar building structure.



Use : earth properties such as thermal inertia, noise insulation and hygrometric reduction, are enhanced thanks to Saint Gobain's skills. This material will be used to build high performances buildings using less energy, and will guarantee great confort to its users.



ACHIEVED GOALS

GREEN TOWER

4. Environmental goal

After months of studies with an ornithology association from Ile de France, we were able to create nesting boxes for 5 common bird species living in the area and protected for some.

With this research and thanks to landscapers, we chose climbing plants that were able to grow and bloom along the 10m high structure, giving food to the nesting birds.

The climbing plants were shaped as a double helix, after Evry Courcouonnes' Mayor request, to represent the National Center of Human Genomic Research here in Evry, studying DNA.

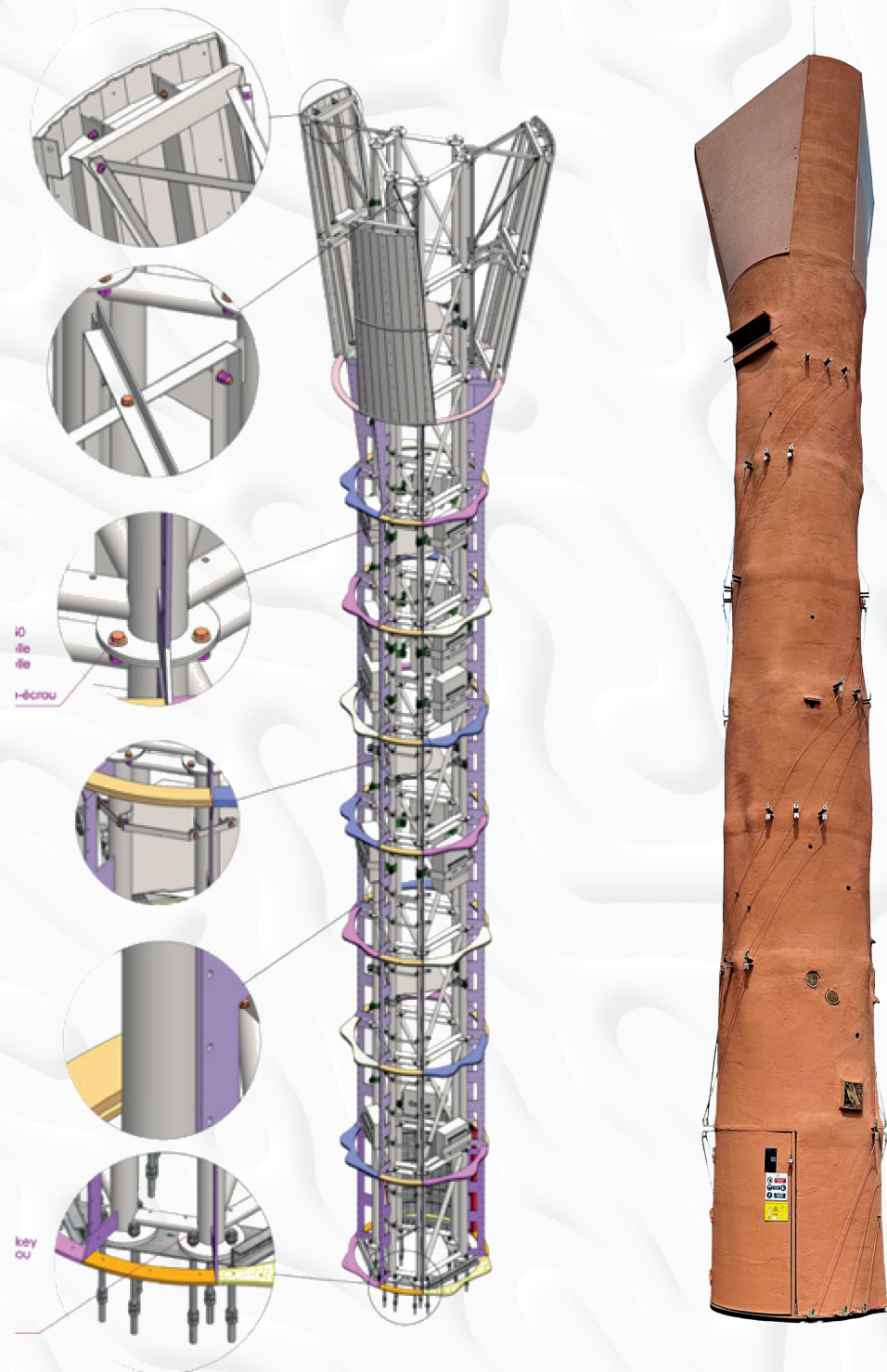


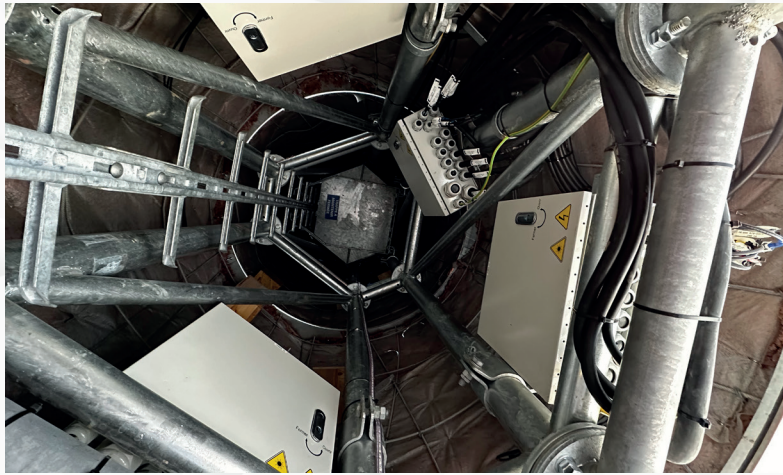
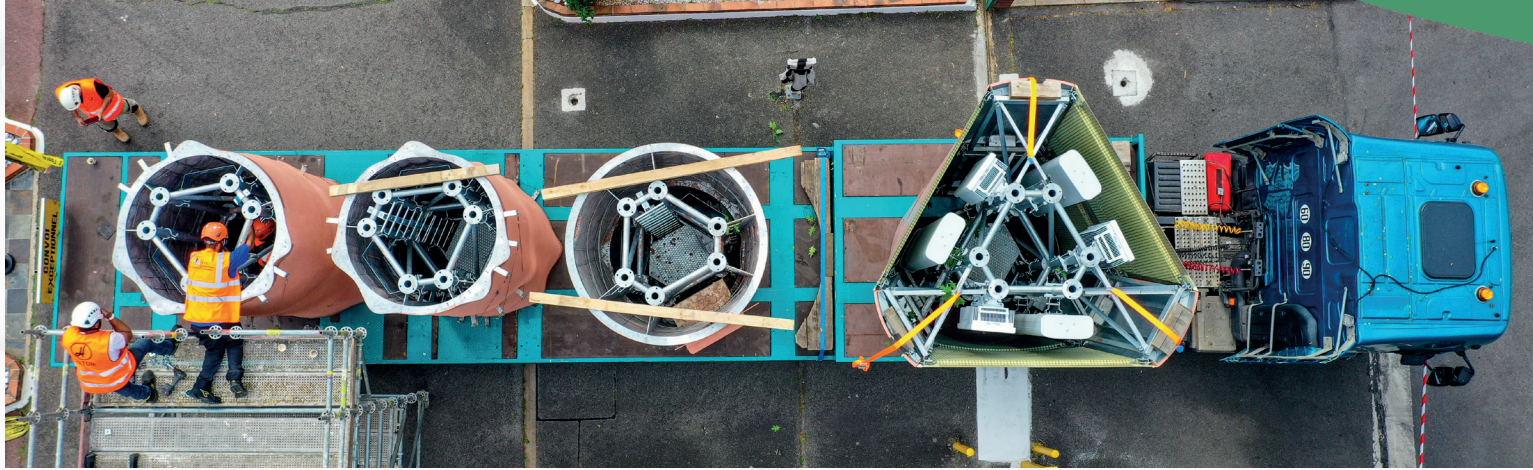
ACHIEVED GOALS

ERGONOMIC TOWER

- 5.** **Simplicity goal**
An **easy to build** and **quickly set-up** tower with traditional lifting means. Thanks to the **small 1,5m (5ft) modules**, shipping is **easier**.

All the technical components can fit in these modules.





A NEW ERA



A new era for telephone operators sites' deployment, by offering a structure capable of fulfilling many objectives. Its design allows bird nest boxes, insect hotels and climbing plants.

This Telecom structure has received the full support of both the Mayor, as well as landlords and local residents.

Acceptance of telecom site installation is thus reinforced:

- Radio engineering satisfied, a plus for mobile operators.**
- A very happy lessor to see his land not visually degraded, and welcoming a structure meeting very specific environmental objectives.**
- The Mayor agrees on the establishment of a telecom site, after validation of a prior request, without fearing a demonstration by local residents.**
- Local residents who were first intrigued, then surprised by this structure, are finally reassured about the integration into their environment.**

With this type of structure, we put a stop to the visual degradation of landscapes and we give the opportunity to integrate projects consistent with the environment and for landscapes to be preserved.

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**Thank
you**

