



# Telecom Towers







# Redefining Connectivity

As an operator or B2B company, you know how important network coverage is to your business. That's why we're offering a reliable and affordable solution to improve your coverage - our telecom towers.

Our towers are built to the highest standards, ensuring maximum signal strength, reduced downtime, and improved reliability. With a range of tower options available, we can tailor our services to meet your specific needs.

At NETIS, we serve to meet the growing demand for tower infrastructure in Africa. We are constantly striving to innovate by providing the latest technologies with high connectivity, flexibility, and environmental solutions for tomorrow's communication.

In terms of accomplishments, NETIS Group today is celebrating 16 glorious years of growth that have been supported by lots of challenges and great learnings.

By 2023, we've reached +3100 collaborators. Moving forward, NETIS Group has maintained +26900 sites, constructed +3800 telecom sites, sold +800 telecom towers, installed +7500 KM of cables, and inspected 900 sites.

Moreover, we are honored that our customer portfolio includes renowned clients such as: GVA, ATC, HUAWAI, HELIOS TOWERS and many more partners as we always ensure to offer a good quality of products and services.

# Self support or Guyed Rooftop towers

## Technical Features

- Heights: Typically, up to 30 meters.
- Weights: Lightweight design, ranging from few kilograms to few tons.
- Materials: Steel or aluminum, with some designs using composite or hybrid materials.

## Key Features

- Lightweight and compact design.
- Easy installation and maintenance.
- Suitable for a range of antenna types and heights.
- Reduced environmental impact

# Self support & Guyed Grienfield Towers

## Technical Features

- Heights: Can range from 10 meters to over 200 meters.
- Weights: Self-support towers can weigh from a few tons to over 200 tons, while guyed towers may weigh less but require additional support cables.
- Materials: Steel or concrete, with some designs using hybrid materials.

## Key Features

- High strength-to-weight and stability ratio.
- Suitable for extreme weather conditions.
- Can accommodate a range of antenna types and heights.

# Quick Build site "QBS"

## Technical Features

- Heights: Customizable design options to meet specific needs, with heights ranging from a few meters to over 70 meters.
- Weights: Customizable design options to meet specific needs, with weight varying depending on height and design.
- Materials: Customizable design options to meet specific needs, with steel and aluminum being common materials.

## Key Features

- Fast and efficient tower deployment, minimizing downtime and maximizing network coverage.
- Customizable design options to meet specific needs.
- Suitable for a range of applications and environments.



# Concrete less (zero concrete) towers

## Technical Features

- Heights: Customizable design options to meet specific needs, with heights ranging from a few meters to over 70 meters.
- Weights: Customizable design options to meet specific needs, with weight varying depending on height and design.
- Materials: Innovative design that uses alternative materials such as steel, composite materials, or hybrid structures.

## Key Features

- Innovative design that uses alternative materials such as steel, composite materials, or hybrid structures.
- Customizable design options to meet specific needs.
- Can accommodate a range of antenna types and heights



# Lattice and Pole towers

## Technical Features

- Heights: Can range from 10 meters to over 200 meters.
- Weights: Self-support towers can weigh from a few tons to over 200 tons, while guyed towers may weigh less but require additional support cables.
- Materials: Steel & concrete, with some designs using hybrid materials.

## Key Features

- High strength and durability.
- Suitable for a range of applications and environments.
- Can accommodate a range of antenna types and heights.

# Camouflage & Paysage towers

## Technical Features

- Heights: Can range from 10 meters to over 60 meters.
- Weights: Camouflage and Paysage towers can weigh from a few tons to over 20 tons.
- Materials: Steel & concrete, with some designs using hybrid materials.

## Key Features

- High strength-to-weight and stability ratio.
- Suitable for extreme weather conditions.
- Can accommodate a range of antenna types and heights.

# Steel & Aluminum towers

## Technical Features

- Heights: Can range from 10 meters to over 200 meters.
- Weights: Can vary widely depending on height and design, ranging from a few hundred kilograms to over 200 tons.
- Materials: Steel or aluminum, with some designs using composite or hybrid materials.

## Key Features

- High strength and durability.
- Low maintenance requirements.
- Can accommodate a range of antenna types and heights.

# All Heights, All Antennas loading

## Technical Features

- Heights: Can range from 10 meters to over 200 meters.
- Weights: Can vary widely depending on height and design, ranging from a few hundred kilograms to over 200 tons.
- Materials: Steel or aluminum, with some designs using composite or hybrid materials.

## Key Features

- Versatile tower solutions that can accommodate a range of antenna types and heights.
- Customizable design options to meet specific needs.
- Suitable for a range of applications and environments.



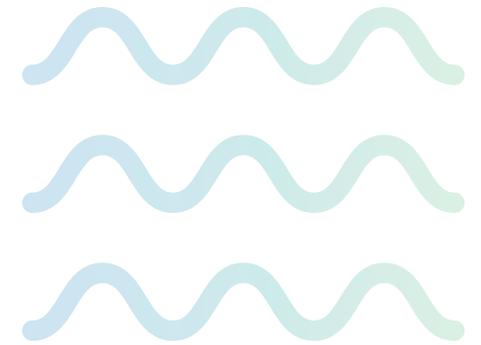
A close-up photograph of a metal tower structure, showing a complex lattice of beams and joints. Several black cables are bundled together and run across the top of the frame. The structure is painted a light tan or beige color. The background is a clear, light blue sky. On the left side, there are decorative wavy lines in shades of teal and blue, extending from the bottom of the image towards the center. On the right side, there are larger, solid teal shapes that resemble stylized waves or abstract forms.

# Customized Towers

At NETIS, we understand that every customer has unique needs and requirements when it comes to Telecom solutions. That's why we offer customized towers that are tailored to each customer's specific needs.

Our team of experienced engineers and designers work closely with mobile network operators, internet service provider, government agencies and more ... to understand the need and preferences of each customer, and then develop a tower design that meets those requirements. We use advanced software and modeling tools to create detailed designs and simulations, ensuring that the final product meets all necessary safety and performance standards.

Our customizable tower solutions include a wide range of options, including tower height, diameter, material, and configuration. We can also integrate various features such as ladders, platforms, and safety systems to meet specific operational requirements



# Towers Reinforcement & Inspection

At NETIS, we offer comprehensive services for Towers Reinforcement and Inspection to ensure the safety and reliability of telecom towers.

Our experienced team uses cutting-edge technology and equipment to conduct thorough inspections and assessments of tower structures, identifying any potential issues or areas of concern. We provide detailed reports and recommendations for reinforcement and maintenance, helping our customers to ensure the longevity and stability of their towers.



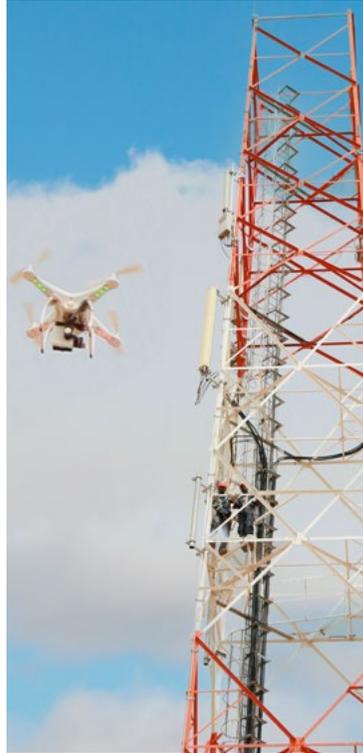
### Tower Erection

Our tower erection process includes a thorough site analysis, advanced equipment such as cranes and rigging systems, and proper installation and securing of all tower components to ensure safe and efficient tower erection for reliable communication services



### Tower Modification

We conduct a comprehensive analysis of existing tower structures and use advanced equipment to modify towers safely and efficiently in compliance with industry standards.



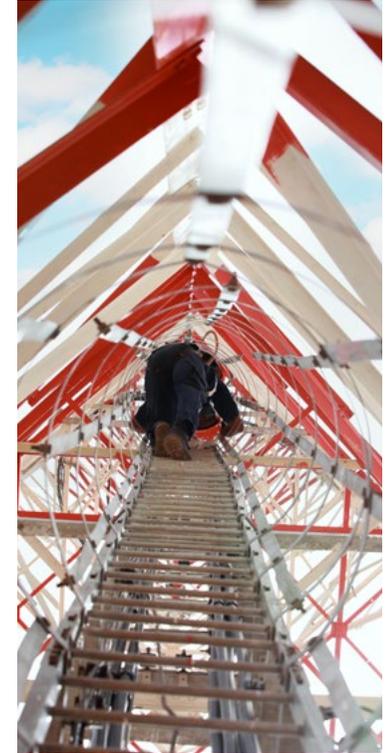
### Verticality and Mapping

We use cutting-edge drone technology to ensure accurate positioning alignment of telecom towers, providing customized solutions that meet our customers unique requirements.



### Tower Maintenance

Our team provides comprehensive maintenance services using advanced technology and equipment to keep telecom towers in optimal condition, including regular inspections, repairs, and equipment installation



### Stay Tensioning

We use advanced equipment such as hydraulic tensioning equipment and precision measuring tools to properly tension stays, ensuring the stability and safety of telecom towers in compliance with industry standards





# NETIS Engineering Solutions

For maximum performance, we make sure to follow numerous steps to ensure a good deployment of towers

At NETIS, each tower construction begins with a study first to understand the customer's needs, then moves on to design, where we use advanced tools and AI software to conceive the tower design and conception. Then, to ensure that the design meets the customer's needs, we plan prototype tests in-house before moving on to the physical deployment of the tower.

## 1 Customized Tower Construction Survey

At NETIS, every tower construction project begins with a preliminary survey to define the customer's needs and technical specifications. We assess the suitability of the location by evaluating ground, soil conditions, and accessibility. Surveys are also conducted to determine power and connectivity availability, as well as any local regulations or permits required for tower installation. We keep in touch with the customer throughout the process to ensure we're on the right track. An environmental impact assessment may also be necessary to identify any potential ecological concerns.

## 2 Advanced 3D Design Tools & Equipment Upgrades

At NETIS, we are committed to delivering the best possible telecom towers to our customers. Once the need is clear and well-defined, we move on to the design phase, collaborating internally with our tower designers and architects. Using advanced software and AI tools, we bring 3D towers to life and develop a real vision of the product.

Optimizing the towers is a real challenge for us, but we always strive to maintain the best quality. In general, there are several ways we optimize our telecom towers, including:



Our focus on tower design and optimization ensures that our towers are operating at their best and delivering the highest quality service to our customers.

### **3 Combining quality, reliability, and cost-effective solutions**

At NETIS, we create successful and sustainable telecom towers by considering critical factors such as height, location, structural integrity, and environmental responsibility during our tower conception process. We provide cost-effective solutions to our customers by using renewable energy sources, energy-efficient equipment, drones for tower inspection, remote monitoring and management systems. We also ensure quality and reliability by implementing regular maintenance, proper installation, high-quality equipment & materials, backup power sources and redundancy measures. NETIS delivers innovative solutions that meet the needs of our customers while being environmentally responsible.

### **4 Ensuring high-quality prototype testing**

After the 3D design has been finalized, we make a prototype, a first version of the product, to make sure that the product features have been respected and that we are in line with what the customer wanted. Meetings are then scheduled with the customer to see if there are any modifications or changes to be made or details to be added before deploying the towers.

### **5 Rapid-Deployment**

After validating the prototype with the customer, we move on to the deployment stage. This phase consists of setting up the tower by taking into consideration numerous factors including the safety of our technicians and compliance with NETIS standards and norms. This last step is generally complicated, since we're trying to put into reality what we've conceived beforehand to make sure we're respecting the created design.

### **6 Maintenance and Installation**

We offer customized maintenance contracts for each customer based on their site's requirements to keep their towers performing efficiently. Our planned maintenance ensures that critical components receive regular inspection, testing, and maintenance. To avoid equipment malfunction, we measure and record input, output, battery voltages, we review the equipment alarm history and verify proper operation of remote status panel.





# Standards At the Heart Of NETIS

Before deploying any product, NETIS Group takes into consideration the respect of American & European standards in terms of structural designs.

Our engineers and architects make plans and calculations to ensure that our buildings and structures we deploy for our clients are safe, stable, and able to withstand the loads and forces they will be subjected to such as natural disasters.

The latest American and European standards related to structural design are “Telecommunication Industry Association” and “European Norm”, respectively. These standards provide us guidelines and requirements for designing our structures that meet safety and performance norms.







