Hydrotechnical projects often have environmental implications. It is crucial to mitigate negative impacts on ecosystems and biodiversity. Incorporating eco-friendly practices, such as habitat restoration and sustainable water management, ensures a harmonious coexistence between hydrotechnical structures and the environment [2].

The integration of emerging technologies can significantly enhance safety in hydrotechnical structures. Monitoring systems, advanced materials, and data analytics contribute to real-time risk assessment and early detection of potential issues, allowing for timely intervention.

Safety in hydrotechnical structures requires collaboration among various stakeholders, including government agencies, engineers, and local communities. Public engagement initiatives foster a culture of safety awareness and enable collective efforts to address potential risks.

Analyzing historical incidents related to hydrotechnical structures provides valuable insights into improving safety practices. By learning from past failures, the industry can implement measures to prevent similar incidents and continuously enhance safety protocols.

Ensuring the safety of hydrotechnical structures is a shared responsibility that requires a holistic approach. By prioritizing compliance with regulations, embracing technological innovations, and learning from past incidents, the industry can create a safer environment for both the infrastructure and the communities it serves. Continuous vigilance, collaboration, and innovation are key to mitigating potential hazards and ensuring the long-term sustainability of hydrotechnical projects [1,2,3].

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LATTICE MASTS AND TOWERS - DESIGN FEATURES

With the development of cellular communications, there is a need for reliable high-rise equipment supports.The classic variant of supports are lattice towers and masts. Towers are high-rise structures rigidly fixed in the base. The main difference between a mast and a tower is the presence of ties that provide stability. [1]

A tower and a mast consist of sections having a lattice structure. The main elements of masts and towers are belts, struts, struts and diaphragms. This system is adopted similarly to trusses. A girdle is a longitudinal element of the structure that takes the main part of the load. The strut is the horizontal element of the lattice and the strut is the inclined element. The frame is made of pipes or angles. Tubes have higher aerodynamic characteristics than profiles, but are more complex and expensive to manufacture.

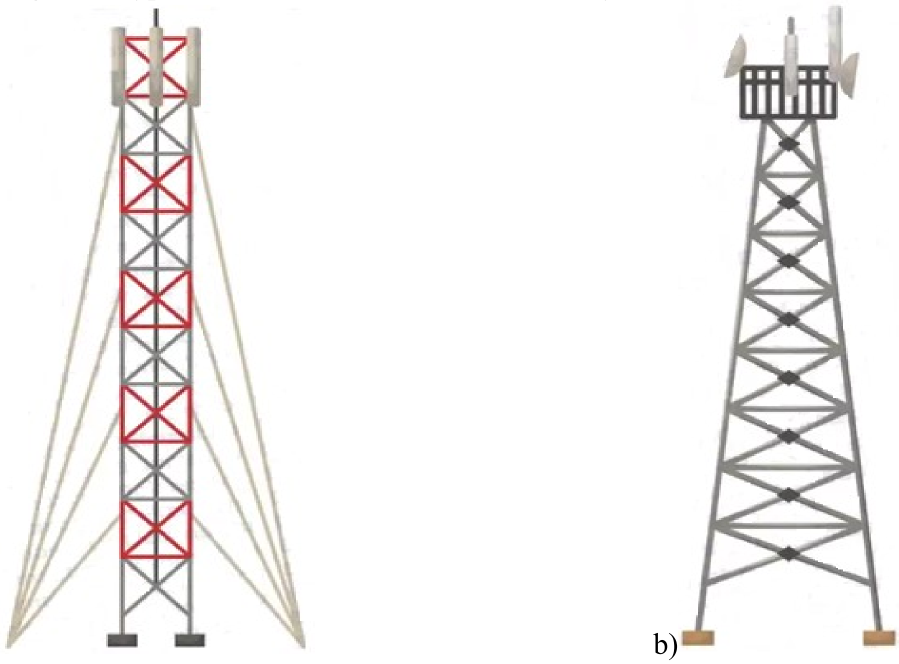
Towers can be classified in three ways:

1. By the number of faces (type of cross-section):	2. By configuration:	3. By lattice pattern:
- trihedral;	- with fractures	-triangular lattice;
- tetrahedral;	- without fractures.	-rhombic lattice
- polyhedral.		

If the number of faces is increased, the metal consumption increases. To ensure stability and more uniform distribution of forces in the girders, towers are designed widened at the bottom. Three-sided towers are used for small heights and insignificant loads. For taller structures with significant loads, multifaceted towers are used. The most rational are tetrahedral pyramidal towers [2].

Similarly to towers, masts are classified:
- by the number of faces (type of cross-section);
- by the lattice scheme.

Fig. 1 shows general types of towers and masts (distinction by external features).



a) b)

Figure 1. Appearance of towers and masts.
a) mast b) tower

Thus, the main difference between towers and masts is the way of providing stability:

for towers - the stability is provided only by the structural elements of the trunk (towers are mainly widened downwards); for masts - stability is ensured by ties (masts are mostly of the same cross-sectional height).

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