

# Wastewater Treatment





# Group of companies «TOPOL-ECO»

1

GC «TOPOL-ECO» is the largest producer on the market of treatment facilities in Russia.

2

«TOPOL-ECO» is a Russian company, which produces goods in Russia and uses Russian materials in combination with innovative technologies and modern equipment.

3

«TOPOL-ECO» has business reputation proved by time and confirmed by recommendations.

# Potential

Our company implements any task set by the customer - from project development up to putting the plant into operation. GC «TOPOL-ECO» has its own:

- Production department which produces goods made from polypropylene;
- Project and engineering departments;
- Large-scale production with modern material and technical base;
- Technical control department ;
- Department of construction and installation works and exploitation;
- Logistics department.



# Polypropylene products plant

## Coextruded line

Productivity 22800kg per day



## Extrusion line

Productivity 10800kg per day



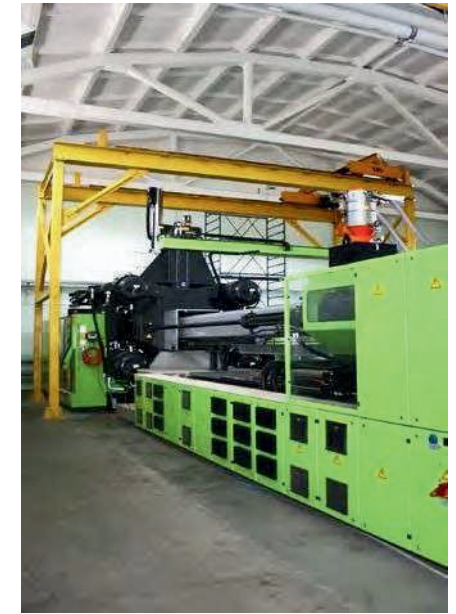
## Rod-shaped line

Productivity 360kg per day



## INJECTION MOLDING LINE

productivity 1 piece in 6 minutes



# Polypropylene pipes production

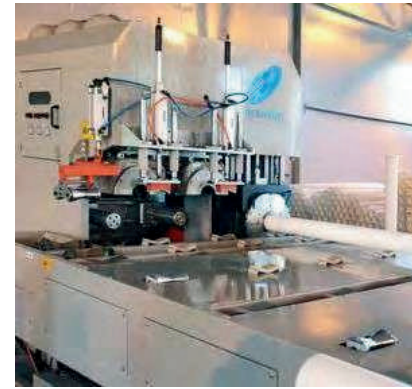
Production of polypropylene pipes with diameters from 16 to 200 mm for hot and cold water supply, internal and external sewage.



Production line of sewer and delivery pipes with a diameter of 16, 20, 25, 32, 40, 50, 63 and 75 mm. Productivity of this line is 800-1000 kg per day.



Production line of pipes with a diameter of 90, 110, 160 and 200mm. It is also possible to make a profile pipe with sizes of 60x60 and 80x100 with thickness of a wall 5 and 7 mm. Productivity of this line is 2500 kg per day.



Automatic line for the production of bells for pipes of different sizes.



Manual bell-making machine.

# Production

Nowadays «TOPOL-ECO» is the largest producer of wastewater treatment plants:

- Area of production department – more than 11 000 m<sup>2</sup>;
- Area of warehouses of raw materials and final goods – more than 1 5000 m<sup>2</sup>;
- Quantity of departments – 8;
- Number of workers – more than 650 people;
- Modern machines and equipment from leading world manufacturers;
- The volume of production – 3 000 units per month in various modifications;
- Technical control department;
- All products are aimed to protect ecology;
- «TOPOL-ECO» company has all approval documents and meets Russian and international quality standards.



# Products GC «TOPOL-ECO»

**Individual wastewater treatment plants:**  
TOPAS-S, TOPAS, TOPAERO

**Integrated wastewater treatment plants:**  
TOPGLOBAL, TOPAERO-M, TOPAERO-M/E

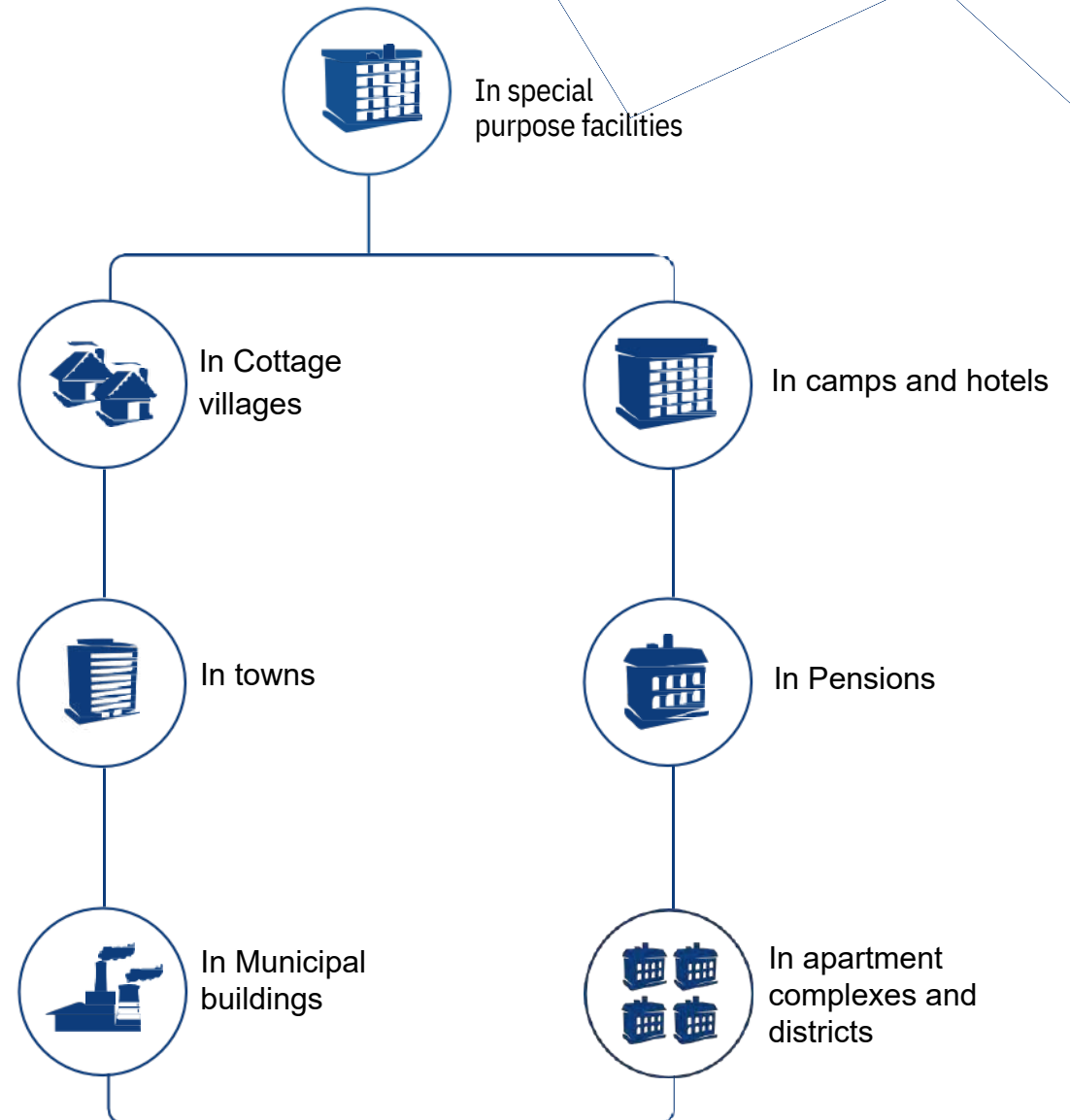
**Specialized wastewater treatment plants:**  
TOPLOS-CM, Wastewater pumping station, TOPRAIN, CYCLONE, Contact tank with chemical plant, Plant with ultra-violet decontamination, Fat separator "TOPPOLIUM", TOPLOS-AQUA

**Additional equipment:**  
Cellar PP, Caisson, Rectangular and cylinder tanks, GSM module, Alarm system, Decorative stone

**Equipment for galvanic production:**  
Galvanic lines, Galvanic baths and bells, Exhaust and supply ventilation systems, Ventilation hoods, Laboratory furniture









# Field of application

Group of Companies «TOPOL-ECO» is a professional in the field of wastewater treatment. We know how to organize wastewater treatment competently and without excess difficulties.



# Complex approach is our main advantage

ANY PROBLEMS OF WASTEWATER TREATMENT ARE SOLVED BY OUR COMPANY QUICKLY AND PROFESSIONALLY:

-  We process basic data;
-  We project;
-  We prepare accompanying and approval documents;
-  We produce equipment;
-  We make installation and construction works;
-  We make commissioning works;
-  We provide technical support;
-  We provide designers with any necessary information.



***YOU CAN RELY ON US!***  
***«TOPOL-ECO» HAS BUSINESS REPUTATION PROVED BY TIME  
AND CONFIRMED BY RECOMMENDATIONS.***

# Our clients



# Volume of production

DURING EXISTENCE OF THE COMPANY :



More than  
**200 000**

units of our products

More than  
**2 000 000**

people use our  
products

More than  
**160**

big unique projects

More than  
**90**

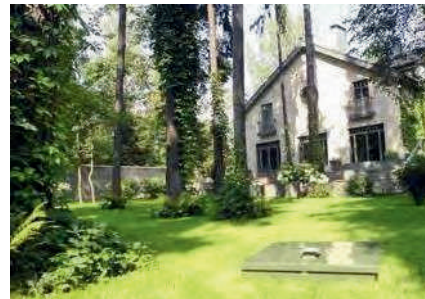
government companies  
make orders in our company

# Individual wastewater treatment plants

Individual wastewater treatment plants consist of the plants of deep biological purification TOPAS, TOPAS-S and TOPAERO. These plants are intended for wastewater treatment in country houses, cottages, small groups of houses and hotels. TOPAS, TOPAS-S and TOPAERO plants are based on advanced biological water purification. There is no unpleasant smell, no need for calling of the sewage truck, no need in filling of bacteria, while using these plants. These plants also have the following advantages:



The case of the plant is made of high-quality polypropylene. Material's service life is more than 50 years.



High quality of installation. Quality control system of materials, components and finished products.



Working in the mode of uneven drains without losing the quality of wastewater treatment.



Compressor and pump are equipment capable of working in different volt-age ranges.

# Advantages of individual wastewater plants of GC «TOPOL-ECO»

1

Possibility of phased implementation of the project and of commissioning

2

High quality of assembly

9

Minimum building costs

3

Compact area of building

8

Easy and reliable maintenance

4

Minimum amount of left sludge and its aerobic stabilization

7

Multistage quality control system of used materials, components and manufactured products.

6

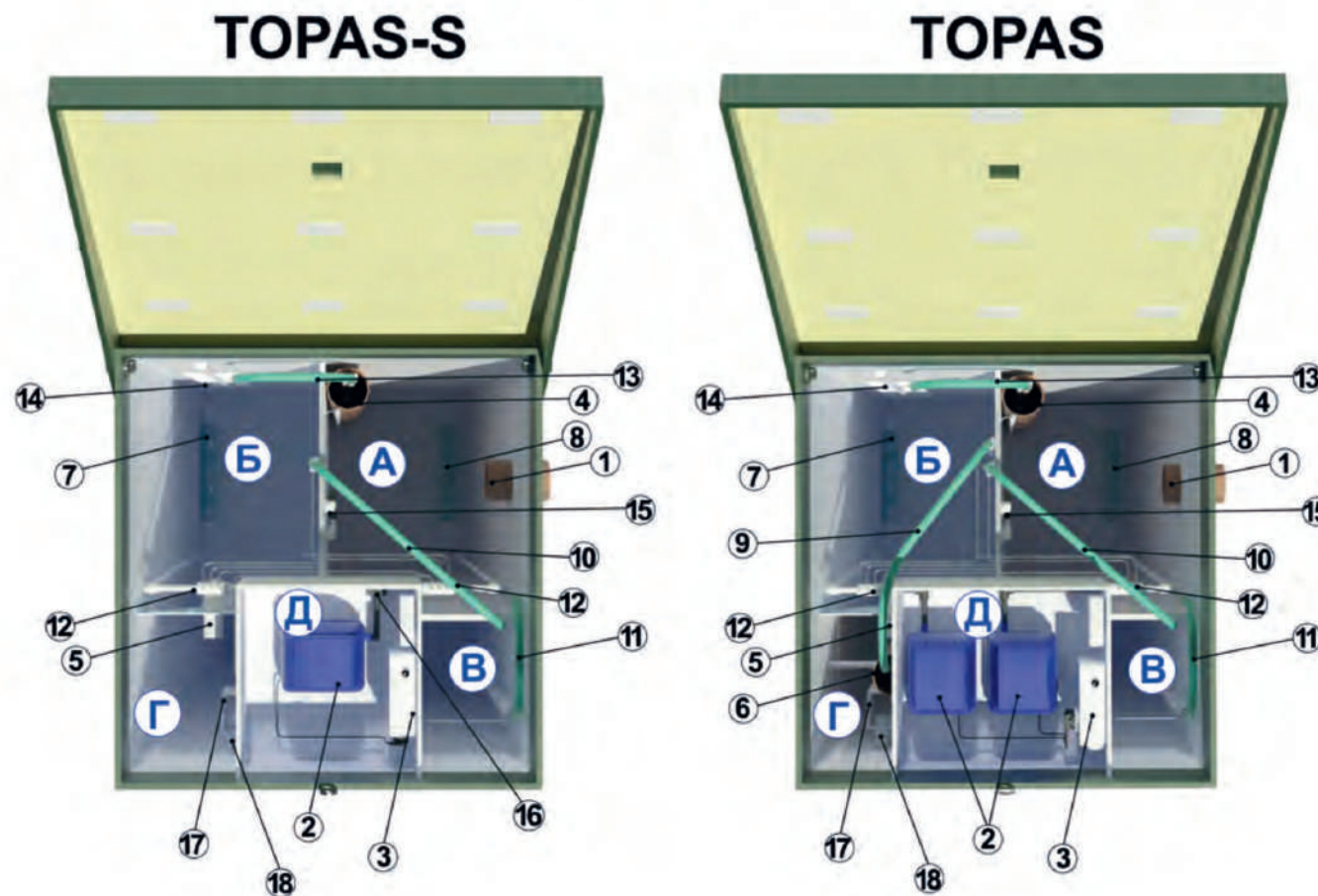
Long service life (for more than 50 years) due to absolute sealing and polypropylene corrosion resistance

5

Low power consumption



# Inner structure of «TOPAS» and «TOPAS-S»



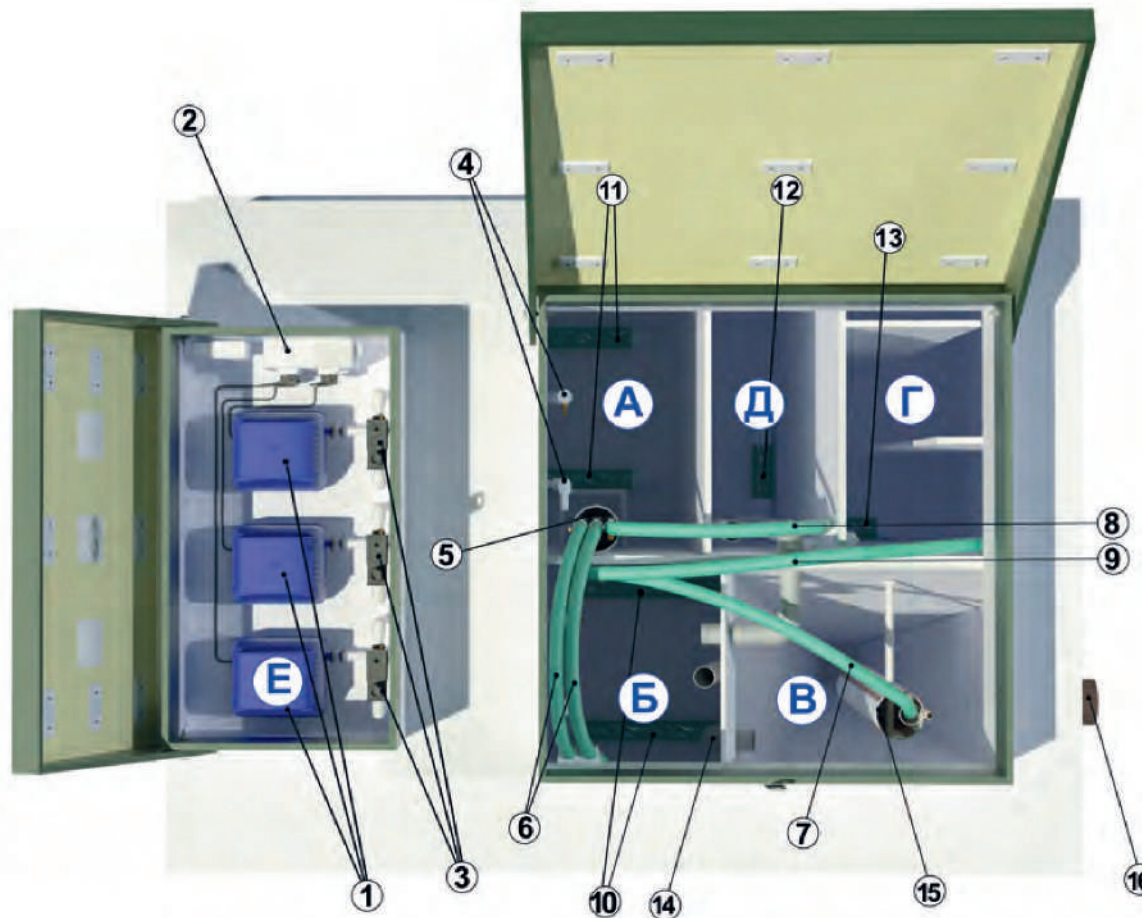
## Section names

- A Sludge tank
- B Aeration tank
- C Sludge stabilizer tank
- D Secondary clarifier
- E Compressor section

## Structure of wastewater treatment plant

- 1 Inlet pipe
- 2 Air compressors
- 3 Control unit
- 4 Coarse filter
- 5 Grease remover pump
- 6 Secondary clarifier stabilizer
- 7 Aerator of aeration tank
- 8 Aerator of sludge tank
- 9 Circulation pump
- 10 Aeration tank pump
- 11 Sludge pump
- 12 Air distributors
- 13 Main pump
- 14 Collector for non-recyclable elements
- 15 Floating switch
- 16 Solenoid valve
- 17 Fine filter
- 18 Outlet pipe

# Inner structure of «TOPAERO»



## Section names

- A. Sludge tank
- B. Aeration tank
- C. Secondary clarifier
- D. Sludge stabilizer tank (or corridor-type clarifier)
- E. Emergency release tank
- F. Compressor section

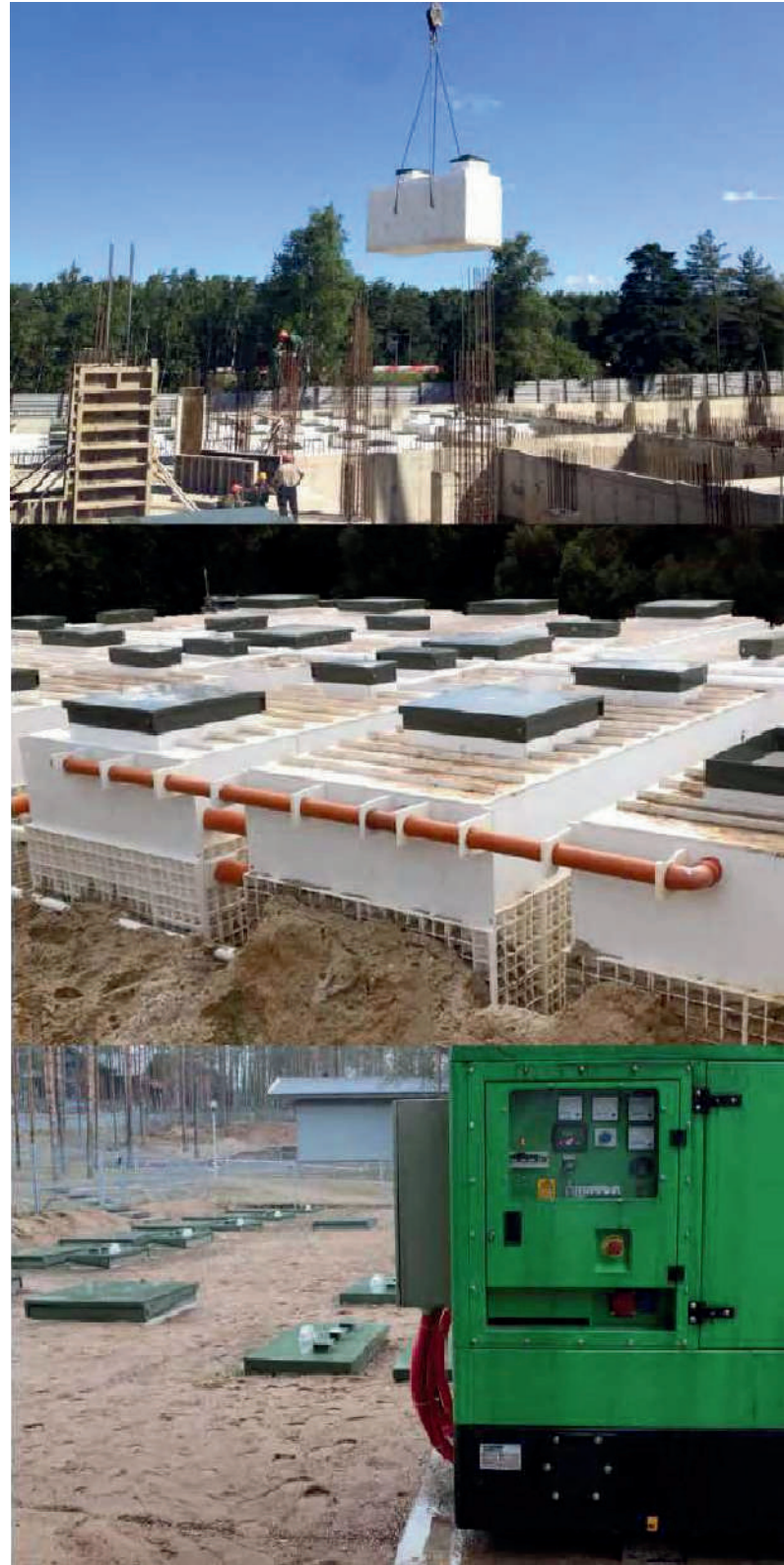
## Structure of wastewater treatment plant

- 1. Air compressors
- 2. Control unit
- 3. Solenoid valves
- 4. Air distributors
- 5. Coarse filter
- 6. Main pump
- 7. Circulation pump
- 8. Emergency tank pump
- 9. Aeration tank pump
- 10. Aerator of aeration tank
- 11. Aerator of sludge tank
- 12. Aerator of emergency release tank
- 13. Aerator of sludge stabilizer tank
- 14. Grease remover pump
- 15. Secondary clarifier stabilizer
- 16. Treated water outlet

# Integrated wastewater treatment plants

«TOPOL-ECO» company offers integrated wastewater treatment plants, which are made from module blocks. There are the following advantages:

- These autonomous sewerage systems can be put into operation in several stages;
- It allows to avoid noncurrent investments and allocating funding for the construction of treatment facilities for the duration of the project development;
- It is possible to increase capacity of wastewater treatment plant due to the modular completion with minimal capital investments.



# Complex Wastewater Treatment Plant «TOPAERO-M»

Factory-assembled modular-block wastewater treatment plants are designed for treatment of domestic and similar industrial sewage to the norms of discharging into fishery water bodies.

This complex is a two-phase anoxic-aerobic system with an automatic concentration maintaining of activated sludge in aeration tank and long-term stability of excess sludge.

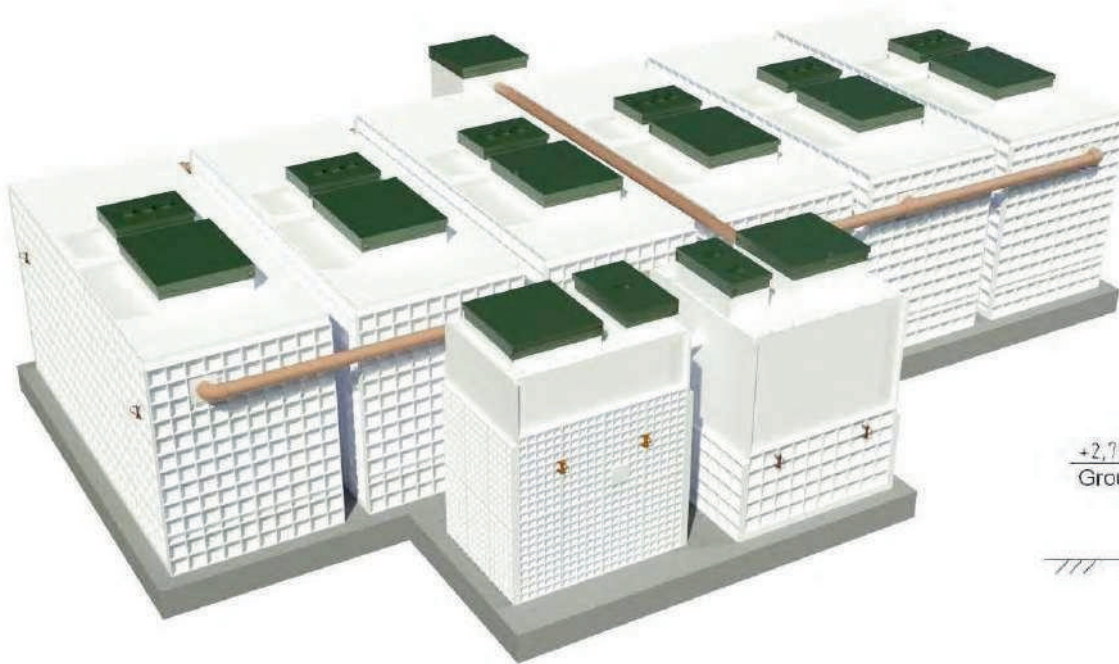
**The present engineering solution is covered by patents of OOO PO «TOPOL-ECO».**

Leningrad Region, v. Mednoye Ozero,  
project realization of «TOPAERO-M» 156 m<sup>3</sup>/day.

Complex output is from 36 to 300 m<sup>3</sup>/day, launch step from 12 (16) m<sup>3</sup>/day

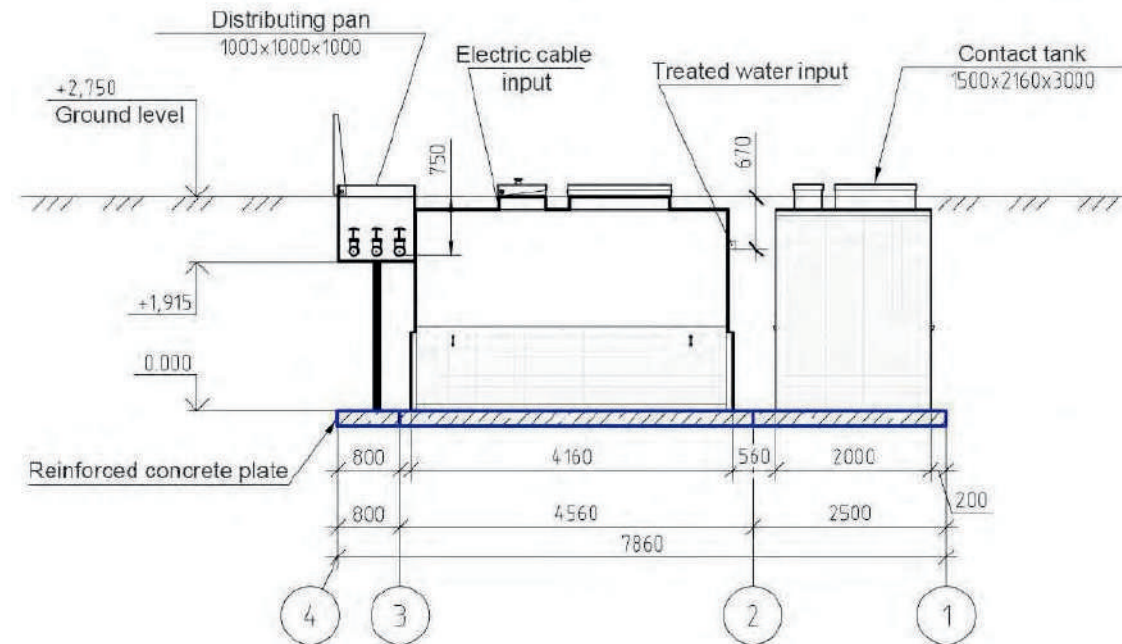


# Structure of wastewater treatment plant «TOPAERO-M» with daily volume of 100 m<sup>3</sup>/day



Assembling parts of every wastewater treatment plant vary depending on:

- chemical composition of the inflow water;
- sewage flow rate per hour of maximum water consumption and daily flow;
- requirements to treated wastewater.



Modular-block complex of a partial factory assembling is made out of polypropylene. The complex includes parts for mechanical and biological treatment, post-treatment and disinfection.

# Complex wastewater treatment «TOPAERO-M/E» from 25 m<sup>3</sup>/day

«TOPAERO-M/E» is a factory-assembled modular-block wastewater treatment plant and is designed for the treatment of domestic sewage and consists of sequentially bounded blocks. The blocks can be buried or placed on the ground.

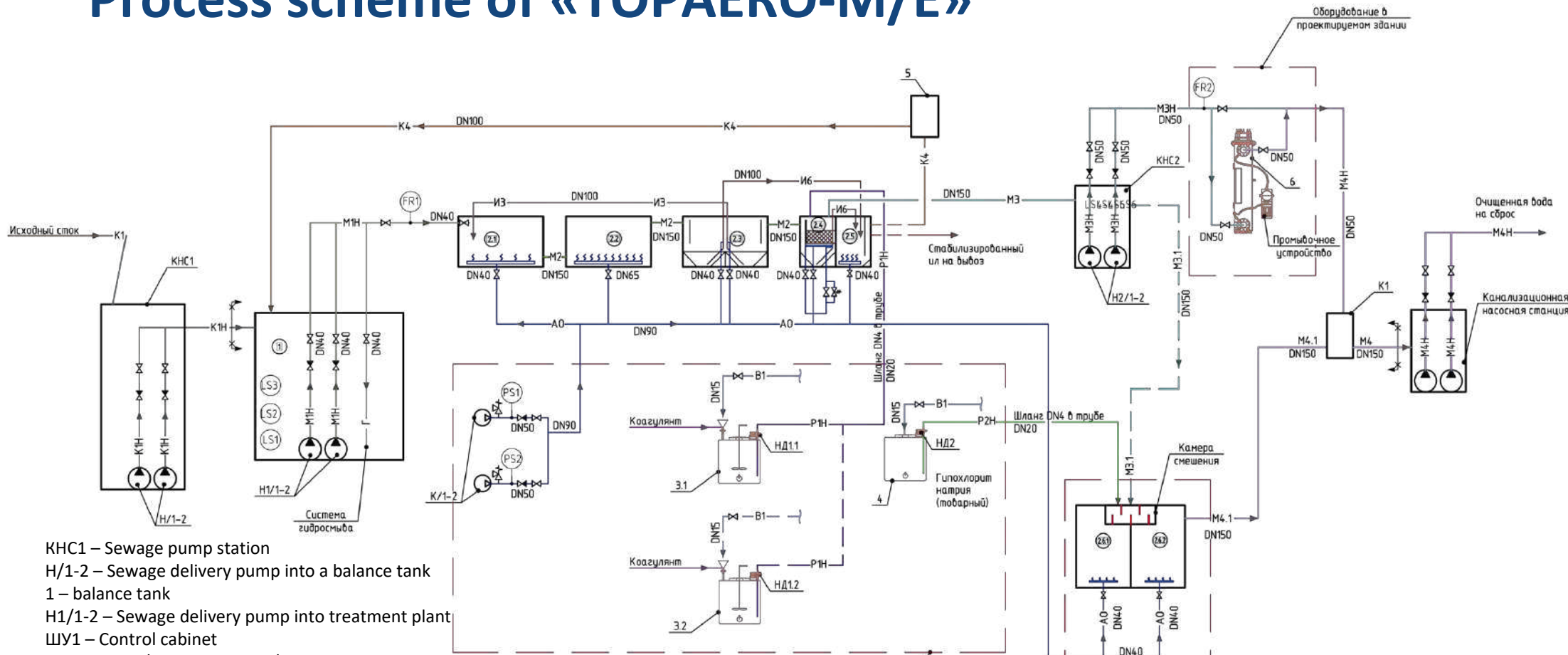
Compact construction provides a small placement area.

«TOPAERO-M/E» is designed for wastewater treatment in cottage villages, camps, town settlements or for industrial structures.



Complex wastewater treatment plant «TOPAERO-M/E»  
with daily volume of 1000 m<sup>3</sup>/day

# Process scheme of «ТОПАЭРО-М/Е»



KHC1 – Sewage pump station  
 H1/1-2 – Sewage delivery pump into a balance tank  
 1 – balance tank  
 H1/1-2 – Sewage delivery pump into treatment plant  
 ШУ1 – Control cabinet  
 ТОПАЭРО М/Е – TOPAERO M/E Wastewater treatment plant consisting of:

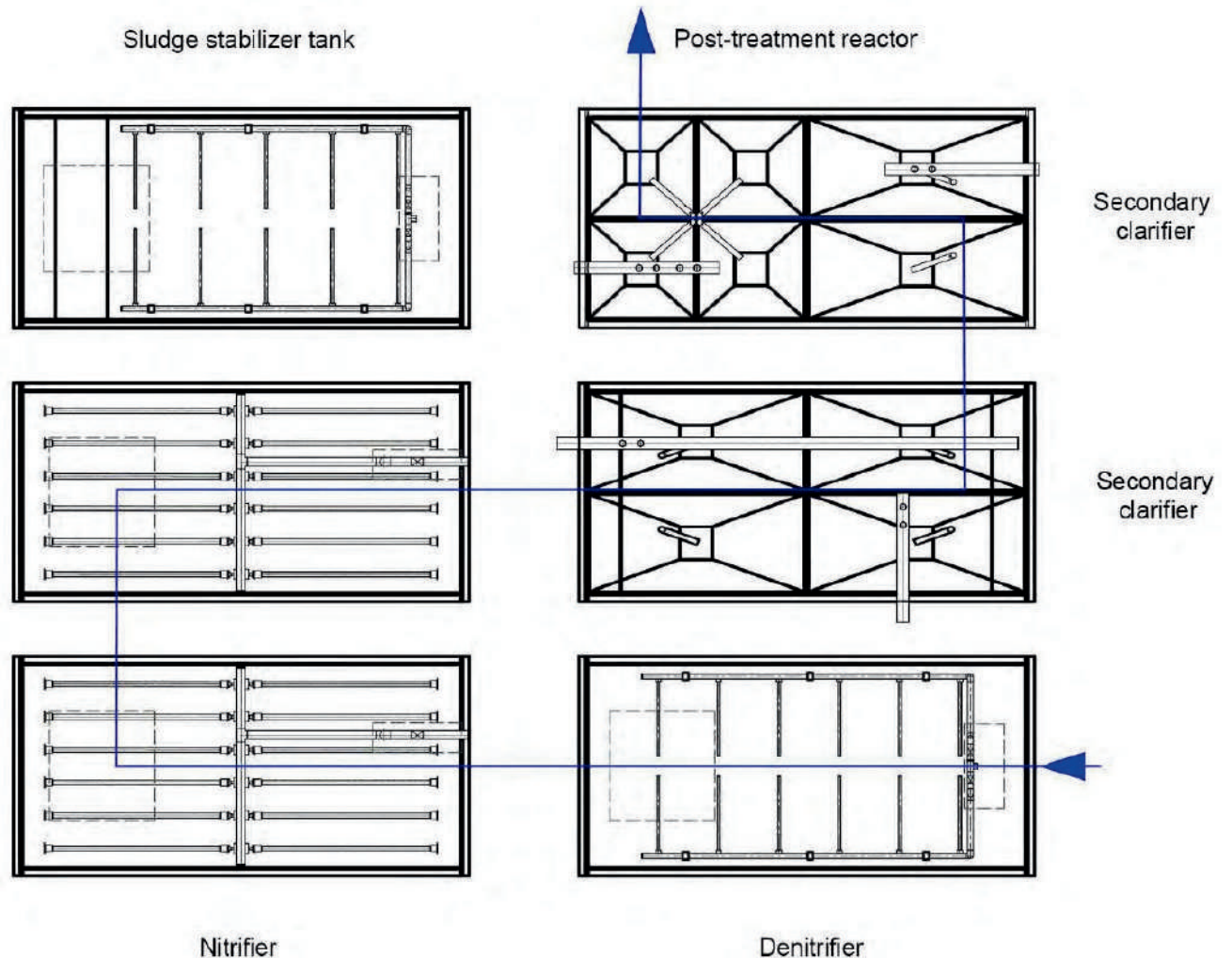
1. Denitrifier
2. Nitrifier
3. Secondary clarifier
- 4./2.5 Post-treatment reactor/Sludge stabilizer tank
- 2.6 Contact tank
- K/1-2 Air blower
- 3/1-2 Coagulant dosing system
- HD1/1-2 Dispensing-pump

4. Hypochlorite dosing system
- HD2 Dispensing pump
- FR1 Flowmeter
- FR2 Flowmeter
5. Turning well
- K1 Inspection well
6. Disinfection unit
- KHC2 Sewage pump station Nr.2
- H2/1-2 Treated water delivery pump for disinfection

# The construction of the biological treatment «TOPAERO-M/E» consists of several blocks:

Wastewater treatment plants "TOPAERO-M/E" consist of few interrelated blocks. Unlike "TOPAERO-M" every block of "TOPAERO-M/E" represents a single technological step.

It helps creating a smaller building area, reduce the number of blocks and so the equipment costs.



© 2002 - 2018 TOPOL•ECO | Wastewater treatment 2018. All rights reserved.

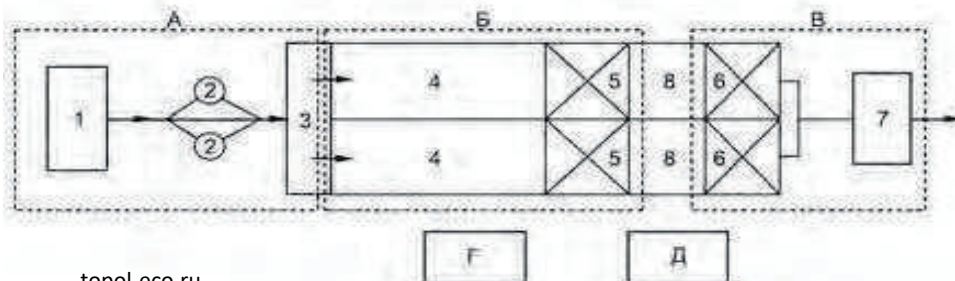
# Complex «TOPGLOBAL»

Complex "TOPGLOBAL" is installed when, due to technological and engineering reasons, it is impossible to use the plant made from polypropylene. "TOPGLOBAL" plants' capacity is over 600 m<sup>3</sup> per day. These plants are designed individually according to customer's specifications, norms and standards. "TOPGLOBAL" is used to create local sewage system for towns with population of up to 50 000 residents.



This wastewater treatment plant looks like building, which is standing alone, with sizes depending on volumes of inlet wastewaters. The buildings can be designed in various architectural styles according to customer's needs taking into account all engineering specifications.

## Scheme of wastewater treatment plant



### A Mechanical treatment

- 1 Bar screen building
- 2 Sand catchers
- 3 Sewageregulator

### Б Biological treatment

- 4 Aerotank
- 5 Secondary clarifier

### В Final purification and disinfection

- 6 Final purification
- 7 Disinfection

### Г Compressor building

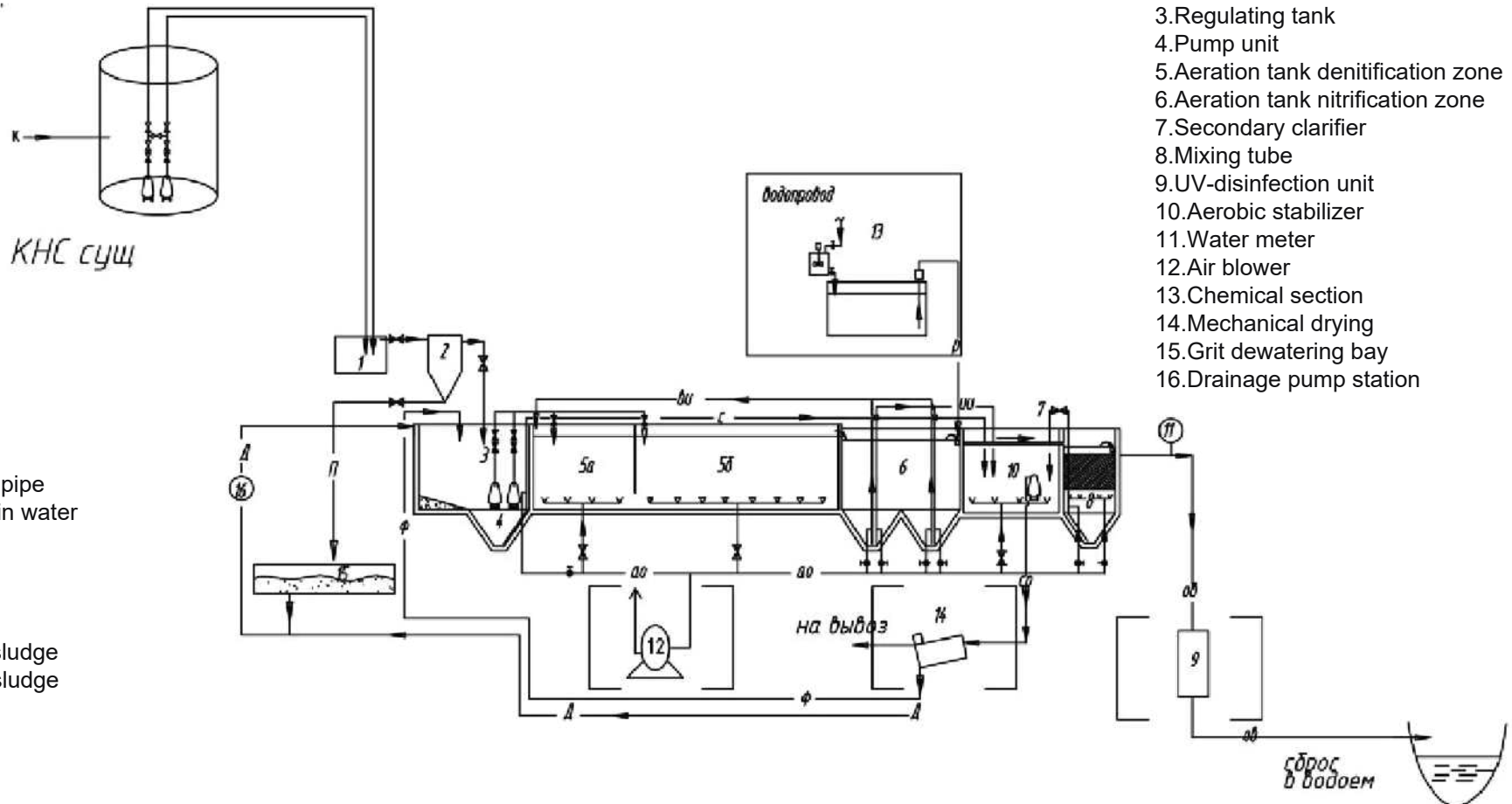
### Д Sludge treatment complex

- 8 Sludgestabilizer

# Complex «TOPGLOBAL»

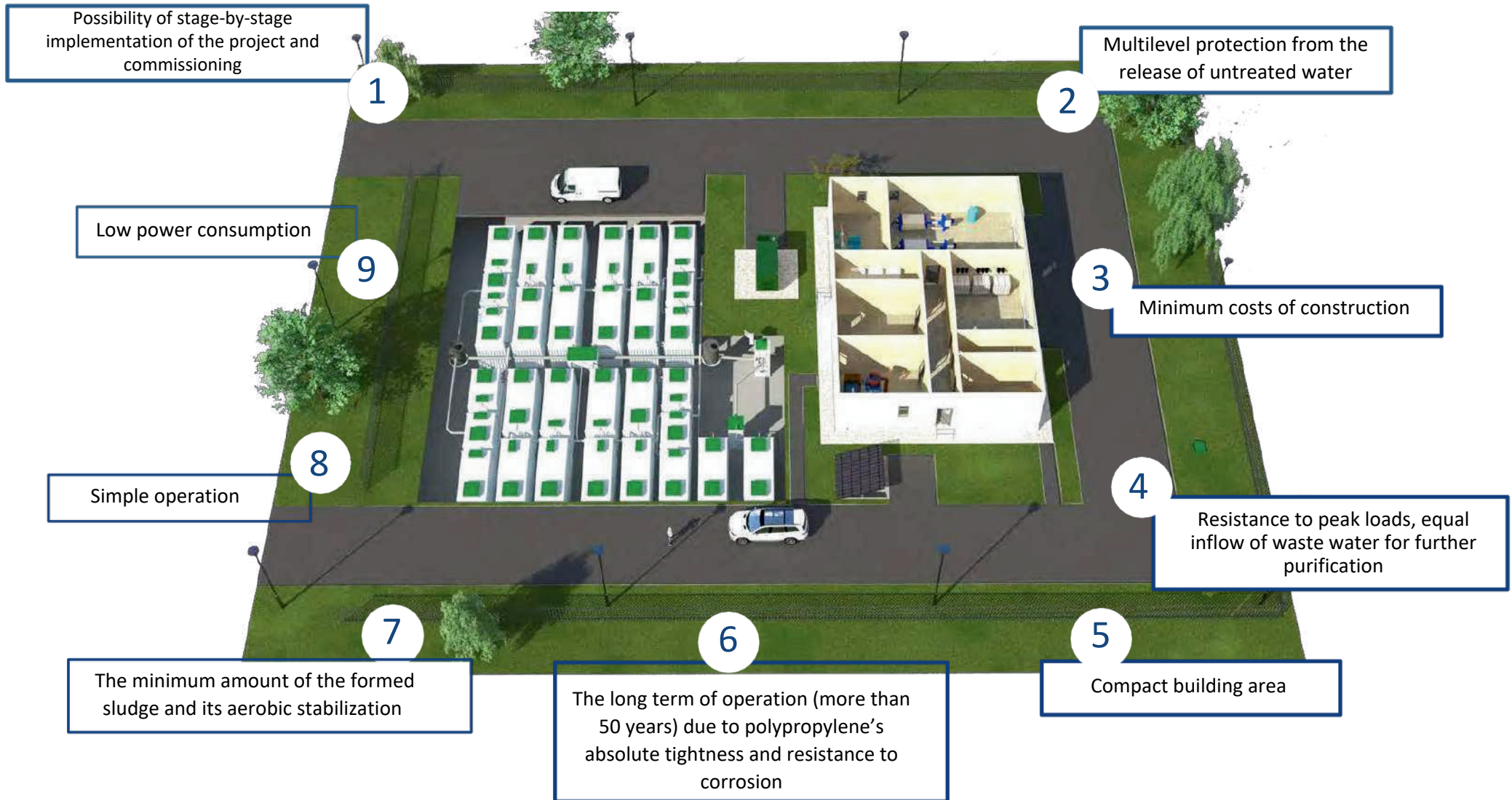
In aeration tank wastewater gets a total biological treatment with nitrogen compounds removal. Secondary clarifier is used for separation of treated water and activated sludge. The separated sludge returns to beginning of the aeration tank and when the amount of sludge in the tank is big enough, some of it goes to stabilizer tank. Post-treatment is done with bioreactors. After that the water is disinfected and discharged. Stabilized sludge gets thick and removed to the sludge bank or to the sludge treatment and drying zone.

1. Receive tank
2. Sand catcher
3. Regulating tank
4. Pump unit
5. Aeration tank denitification zone
6. Aeration tank nitrification zone
7. Secondary clarifier
8. Mixing tube
9. UV-disinfection unit
10. Aerobic stabilizer
11. Water meter
12. Air blower
13. Chemical section
14. Mechanical drying
15. Grit dewatering bay
16. Drainage pump station

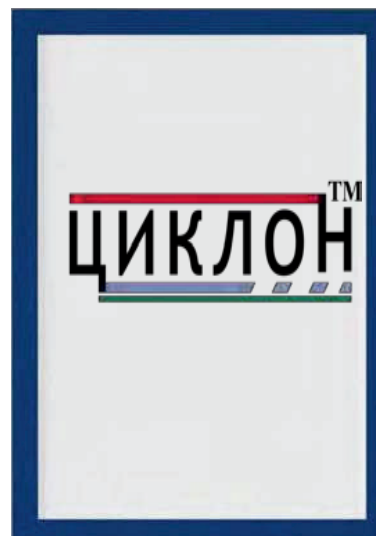
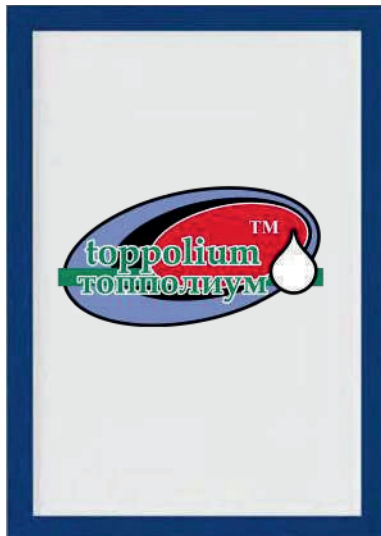


- к- gravity sewer
- со- stabilized sludge pipe
- д- gravity pipe of drain water
- с- raw sludge pipe
- ао- air line pipe
- ов- grey water pipe
- ф- effluent
- ви- activated return sludge
- ии- waste activated sludge
- и- reagent pipe
- п- sand pipe

# Integrated Wastewater Treatment Plants GC «TOPOL-ECO»



# Specialized wastewater treatment plants



# Container modular wastewater treatment plants

Container modular wastewater treatment plant is used for household wastewater and industrial wastewater (similar in composition with household) purification from mechanical, organic and mineral impurities using combined technologies of cleaning and tertiary wastewater treatment (mechanical, biochemical, physicochemical) up to the standards of treated water discharge into reservoirs of fishery. This technical solution allows using household wastewater treatment plants in the conditions of Far North and seismically active zones. And in those places where construction of stationary wastewater treatment plants is complicated or is unprofitable due to economic reasons (for example, wastewater treatment plants for field camps, for temporary refugee camps).



**TOPLOS-KM**

Productivity: from 100 m<sup>3</sup> per day



**TOPLOS-K**

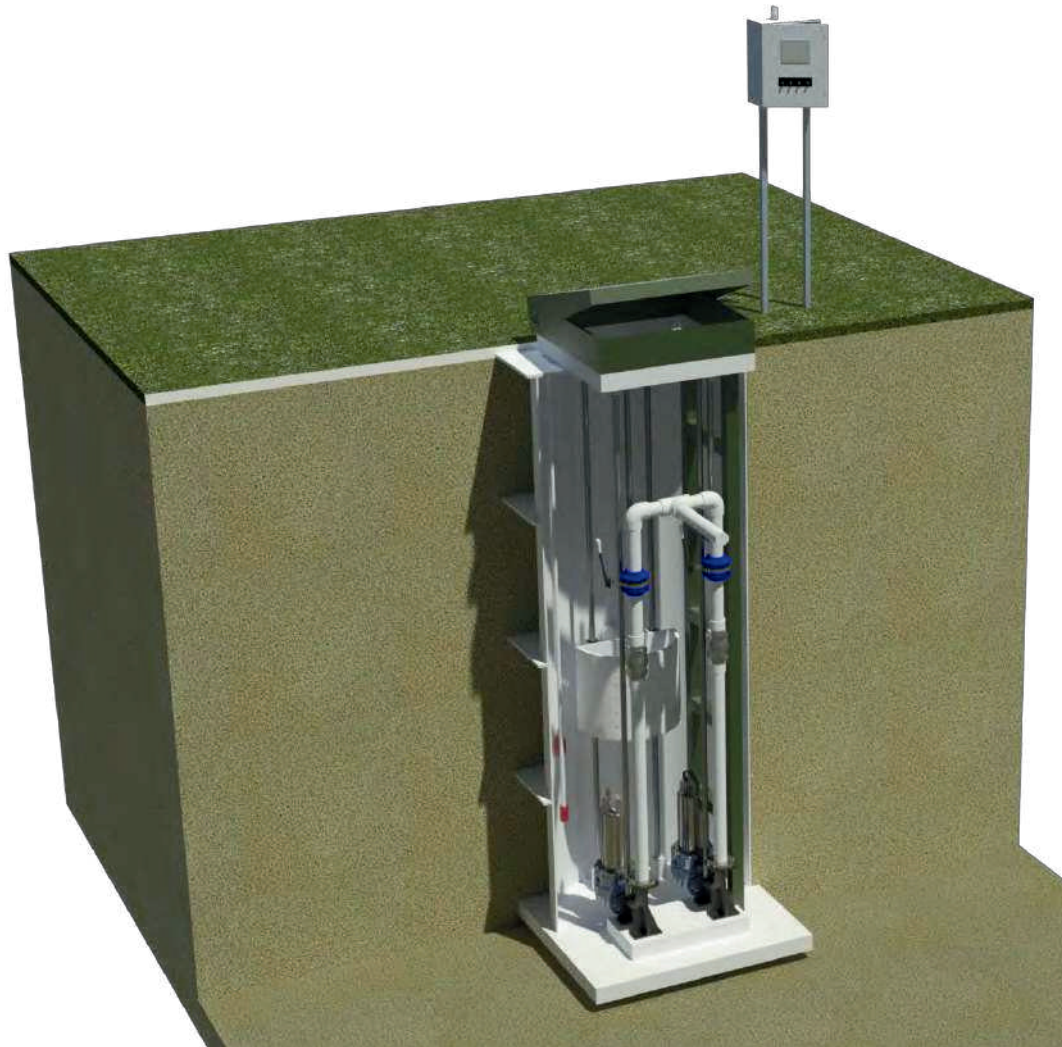
Productivity: from 12 m<sup>3</sup> per day



**TOPLOS-KM/E**

Productivity: from 200 m<sup>3</sup> per day

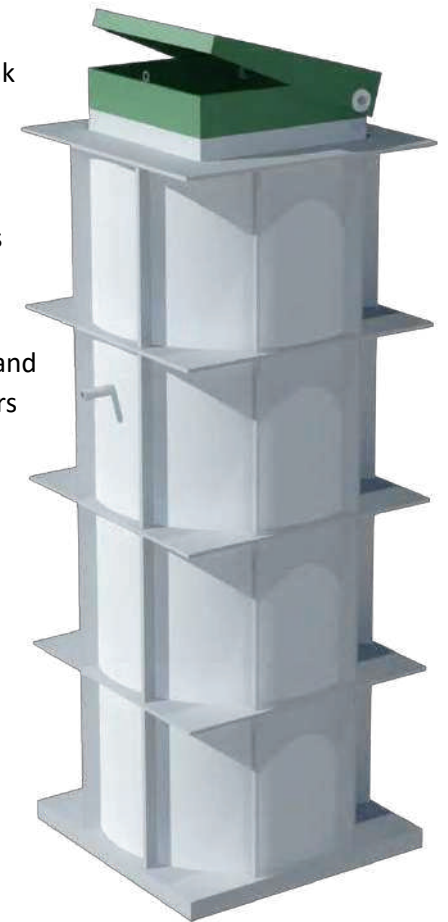
# Wastewater pumping station



Wastewater pumping station is a tank equipped with well pumps and technological hatch.

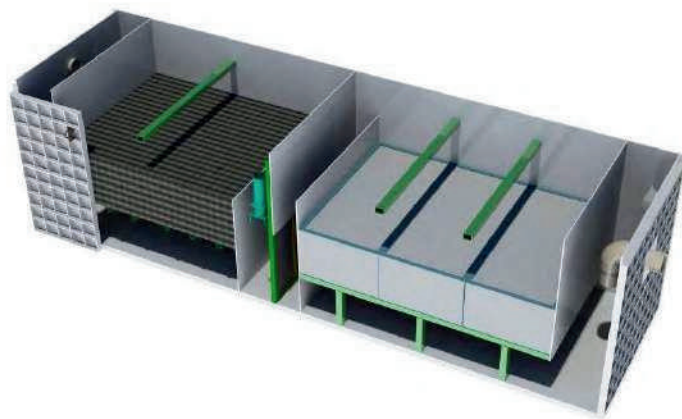
The tank has a cylindrical form and is made from poly-propylene.

This plant is intended for collection and further transportation of wastewaters by means of well pumps.



# Storm water drainage «TOPRAIN»

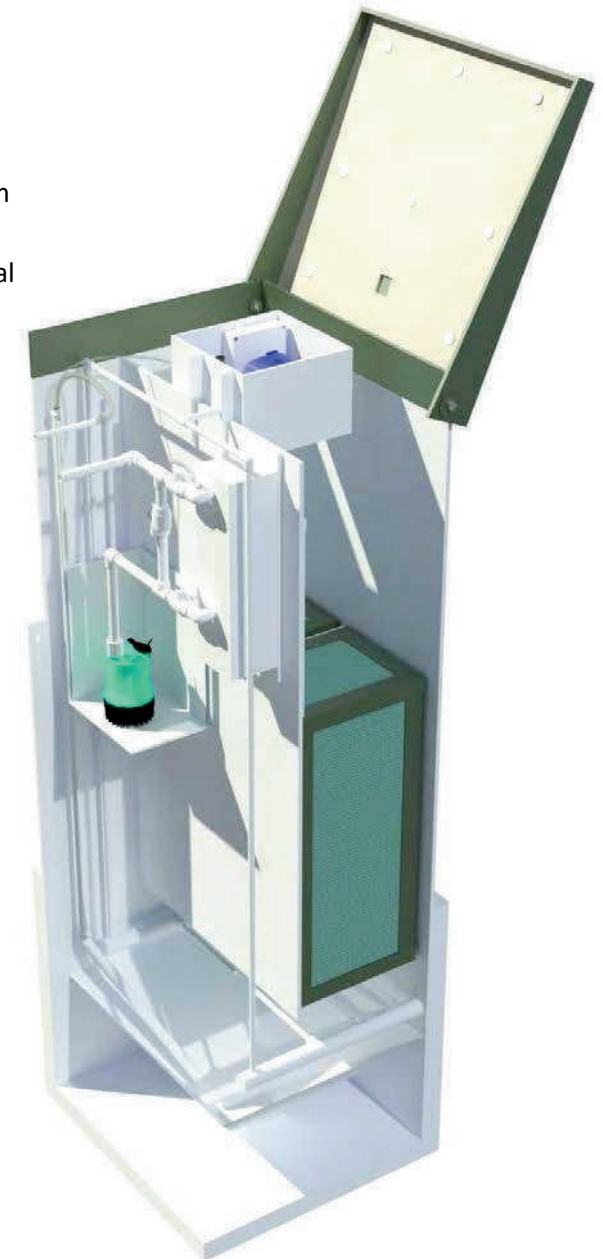
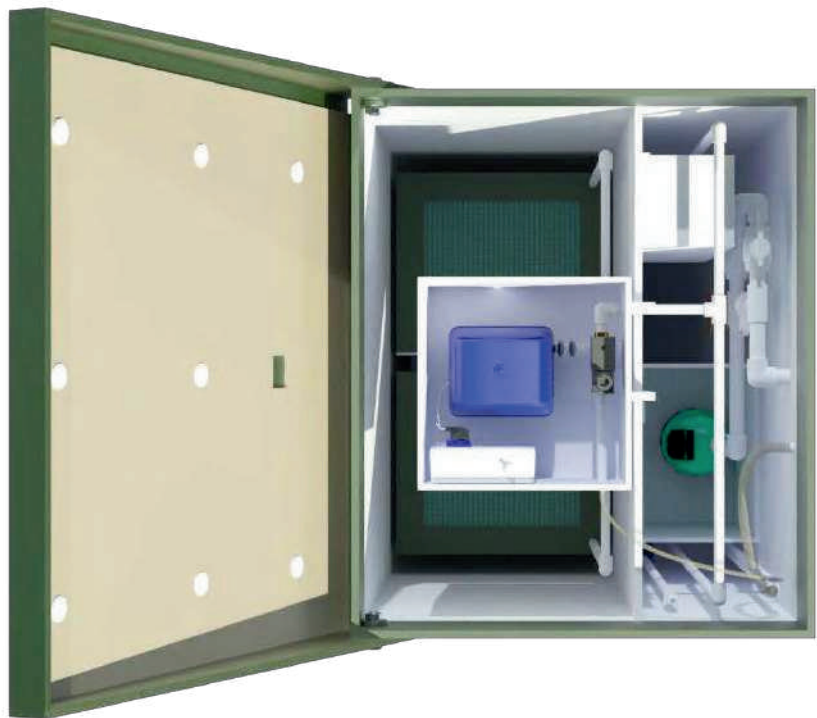
«TOPRAIN» is designed for treatment of rainwater and water from melted snow from gas station territories, parking areas and adjacent territories. It is possible to install the "TOPRAIN" plant close to collecting well if the territory served by plant is small. If the territory is big, there might be a possible need in an accumulating tank with pumps for equal pumping and purifying surface waters and thawed waters.



# Tertiary wastewater treatment plant «TOPLOS-CYCLONE»

«TOPLOS-CYCLONE» is a tertiary wastewater treatment plant. It serves for tertiary wastewater treatment from residual con-taminations with the help of biocenosis fixed to inert support.

This equipment is used in addition to a wastewater treatment plant and represents the final stage of biological purification. Its capacity depends on the capacity of wastewater treatment plant.



# Contact tank with chemical plant

## APPLICATION

The contact tank is used for sewage water decontamination (tank A) and for removal of phosphates (tank B). Contact tank with chemical plant is installed after tertiary wastewater treatment plant «CYCLONE».

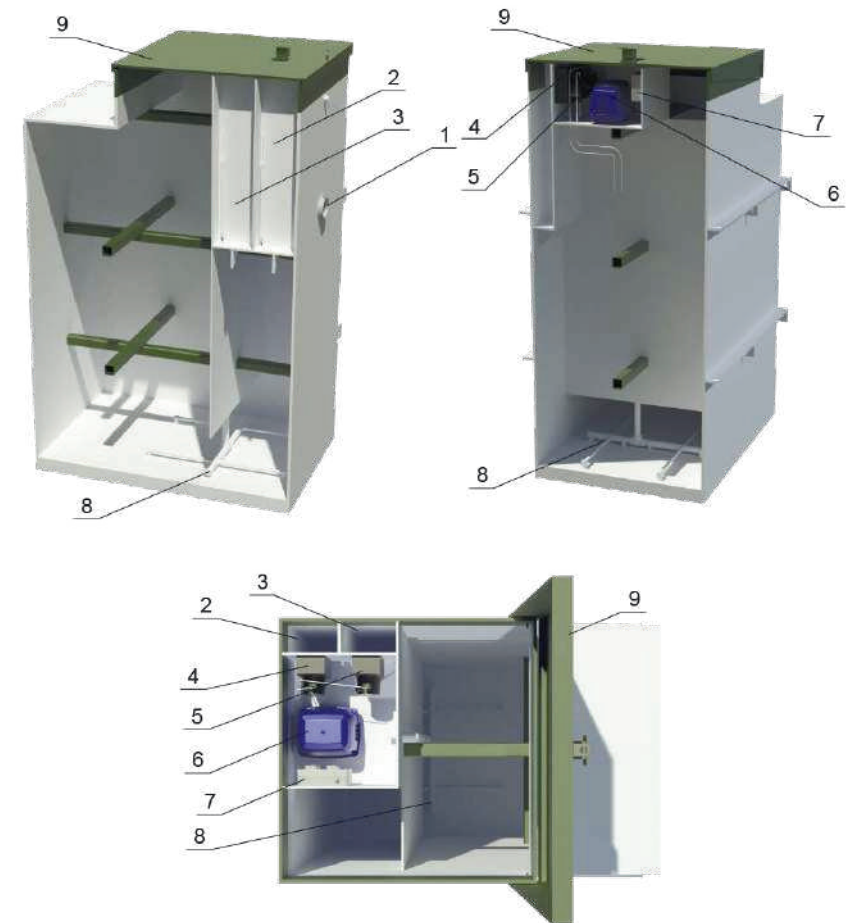
## MODE OF OPERATION

Contact tank represents a rectangular tank where water flow moves in vertical direction.

Waste water comes to the tank, the dosing pump adds disinfecting reagent.

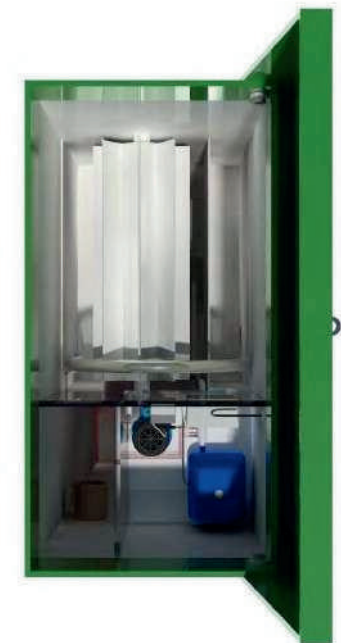
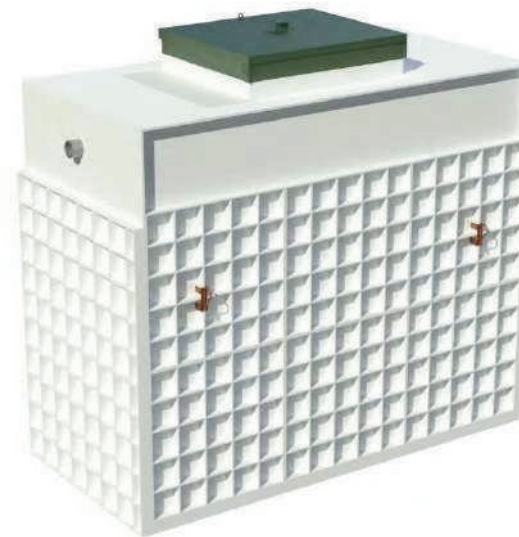
(sodium hypochlorite). Air distribution is made for mixture of water and reagent. After going under the semisubmersible partition, the mixture of sewage water and reagent rises up and is being removed.

Chemical plant, which is inside the body of the contact tank, with the dosing pump adds reagent “Aqua-aurat” into the tertiary WWTP “Cyclone” at the moment when the wastewater comes from WWTP.



# Industrial and surface wastewaters purification module «TOPLOS-FL»

«TOPLOS-FL» is a construction which is used for water purification of industrial and surface wastewaters from organic substance (biochemical oxygen demand, fats, oil, synthetic surface active substance) and solid suspensions by flotation. Flotation is one of the stages of technological process of wastewater treatment which is usually followed after preliminary mechanical treatment. Flotator can be used in one or several technological steps. According to this technology, flotation is realized by dispersing air through porous material.



Model raw: from TOPLOS-FL-1 up to TOPLOS-FL-15

Productivity: from 1 up to 15 m<sup>3</sup> per hour

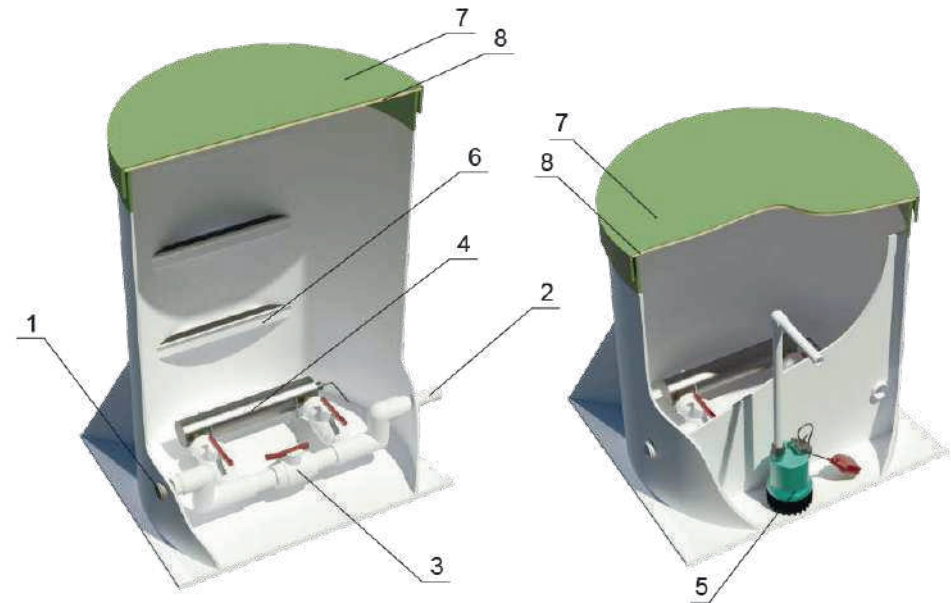
# Plant with ultra-violet decontamination

## APPLICATION.

This plant is intended for decontamination of waste water after wastewater treatment plants. This equipment is an optimal solution in cases when it is required to provide effective wastewater decontamination before its drainage into the pond, reservoir. This plant can be installed after wastewater treatment plant or after tertiary wastewater treatment plant «CYCLONE».

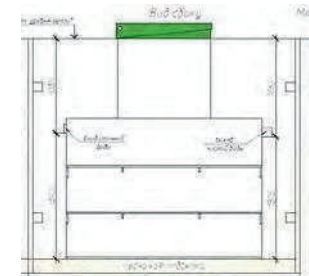
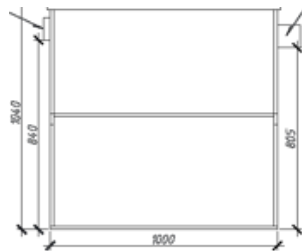
## MODE OF OPERATION.

This plant is a cylindrical tank with an UV equipment inside for disinfecting the purified wastewater. Purified wastewater comes into this plant, it goes through UV lamp where it is being disinfected. After it water can be collected in a special section with the pump and be removed in the process of its accumulation. The body of this plant is made of strong material – polypropylene and it allows to refuse concreting of walls.



# Fat separator «TOPPOLIUM»

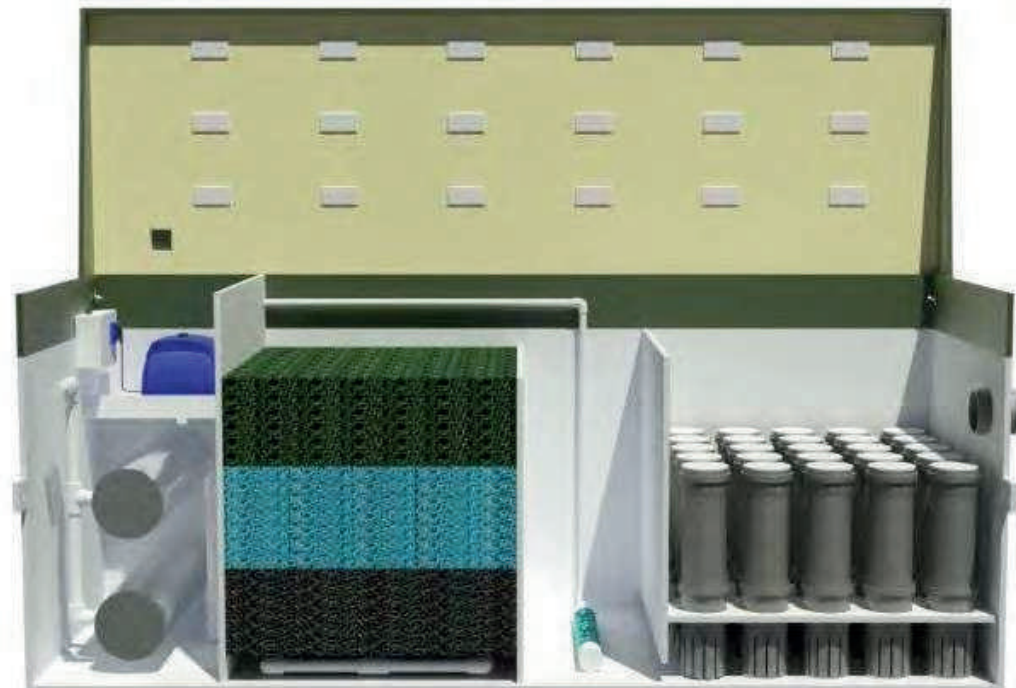
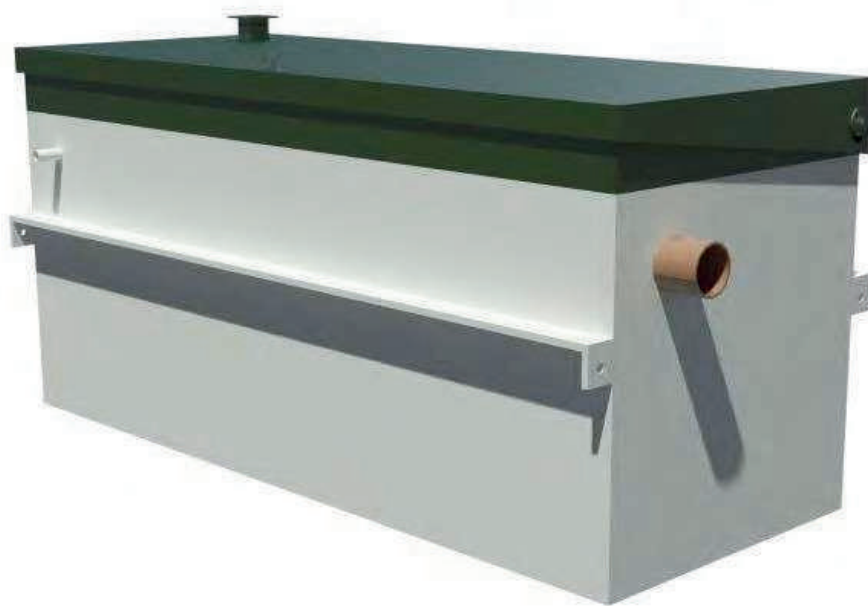
Fat separator «TOPPOLIUM» OTP series from 1 up to 5 are designed for catching and removing fats and oils from wastewater and for their partial oxidation. This fat separator makes an appeal to the owners of restaurants, cafes, canteens, different food shops etc. Fat separator «TOPPOLIUM» can be combined with local wastewater treatment plans as well as with centralized sewage systems.



# Water purification module for artificial reservoirs «TOPLOS-AQUA»

«TOPLOS- AQUA» is a construction which is used for water purification from ponds and other artificial reservoirs from excess amount of organic substance (organic carbon, ammonium, nitrate) with following return of water back to reservoir. Moreover, water is being disinfected from cyanobacteria and other bacteria and mushrooms.








The principle of operation is based on combined technology, which represents a combination of ultraviolet radiation treatment, mechanical treatment (filtration and sedimentation), biological treatment (aerobic and anaerobic) and physicochemical tertiary treatment from suspensions and ammonium using zeolite resin charge.



# Advantages of PP Cellar model of GC «TOPOL-ECO»

The PP cellar model is an ecologically safe factory assembled hermetic construction designed for a year-round and comfortable storage of food products: vegetables, pickled and other homemade food products.

Material used for cellar production - sheets of a food-grade non-rusting and not rotting polypropylene of own production. It can be equipped with automatic lifts

- 
***Longoperating life.***  
 Lifetime of the propylene product is more than 50 years.
- 
***Perfect quality.***  
 All details are factory made with proven technology with professional equipment under control throughout all manufacture phases.
- 
***Reliable and leak-free.***  
 Strengthened box design made of polypropylene details 80 mm thick and sealing gland.
- 
***Ecological.***  
 Special physical and chemical characteristics of food-grade polypropylene and natural ventilation system provide ecological food storage and eliminate the risk of fungus mold rising on the inner side of the cellar.
- 
***Additional frost protection.***  
 Cellar box heat insulation
- 
***Installation features.***  
 Installing in any kind of grounds by specialists; installing includes a full range of services, such as reinforced concrete foundation and “lifting up” protection.
- 
***Safe and easy operation.***  
 Comfortable and safe ladder with anti-slip elements; Humidity and dust protection of the electrical system. Smooth surface of the inner side of the box and the polypropylene ceiling make it easy to keep the construction clean.

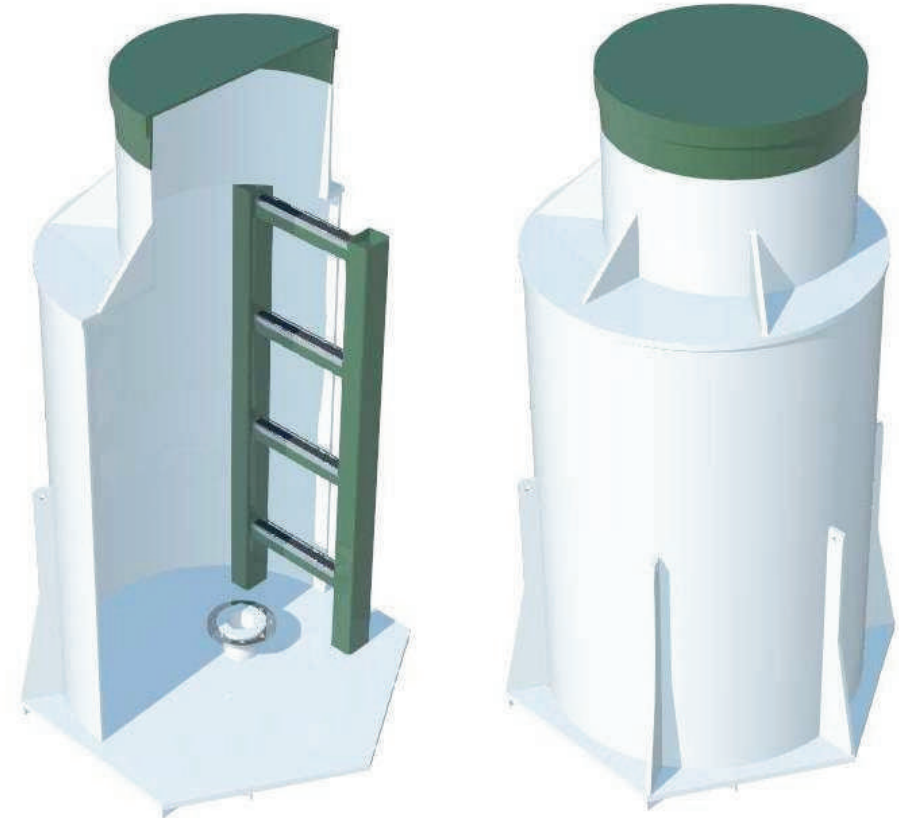


# CAISSON

TOPOL-ECO caisson K-series can be used at any level of groundwater and is designed to provide protection against freezing, flooding by ground, atmospheric and flood waters of the water supply system wells for residential buildings, cottages, summer cottages and other low-rise buildings. It is used for comfortable placement, maintenance and repair of related equipment for the arrangement of wells and water supply systems at home, and also eliminates unwanted vibrations and noise during its operation.

---

Model range: From TOPOL-ECO CAISSON K-1 to TOPOL-ECO CAISSON K-4 Long

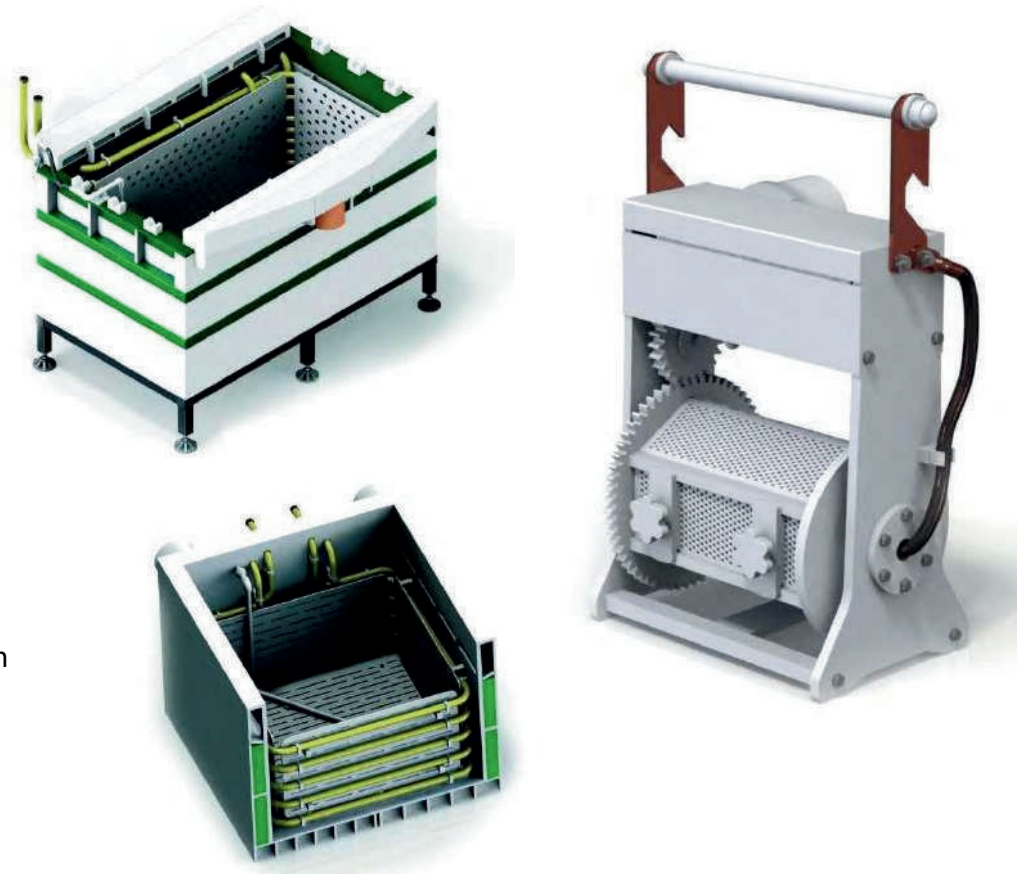


# Equipment for galvanic production

Modern galvanic equipment of «TOPOL-ECO» designed taking into account current needs of different industry areas, is used for any chemical-galvanized coatings.

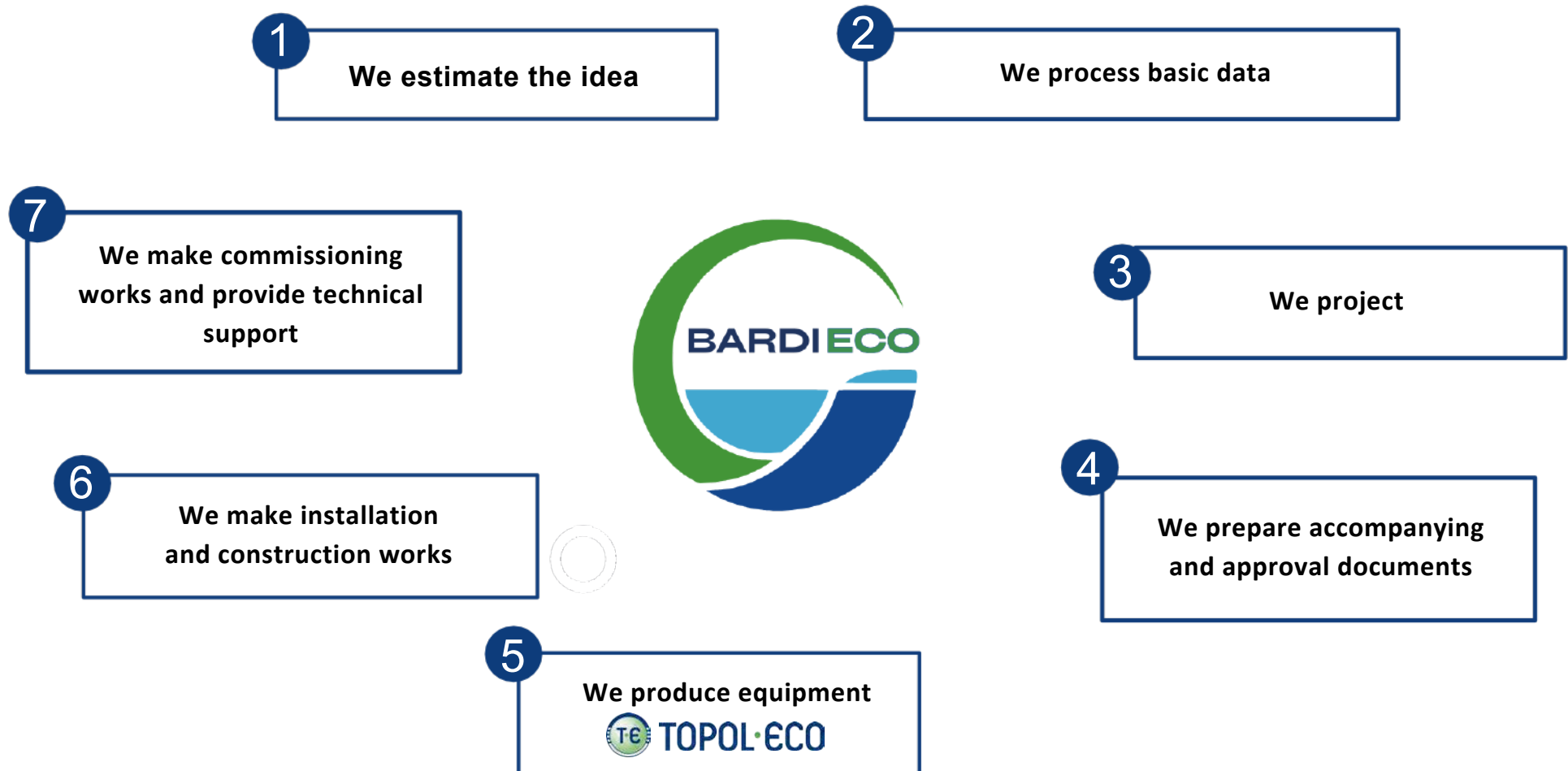
## Types of equipment and services:

- Galvanic barrels
- Galvanic baths and cells
- Barrels and baths components
- Electro flotation units and wastewater treatment equipment
- Plenum and exhaust system
- Steelwork
- Galvanic bell
- Automatic control system of electroplating industry
- Electrical equipment (heat sources, rectifiers and heaters)
- Coils (heat exchangers) for heating and cooling of electrolytes
- Laboratory furniture
- Galvanic lines
- Engineering and development of electroplating industry process design
- Selection, engineering and delivery of equipment items
- Manufacture of tanks and reactors for preparation and storage of acid and alkaline solutions.



# Services

All tasks of wastewater treatment are solved by our company quickly and professionally:



# Reconstruction of wastewater treatment plants

## MAIN GOAL OF RECONSTRUCTION:

- ✔ To bring the performance of wastewater treatment plants into compliance;
- ✔ To improve the quality of wastewater treatment up to the required standards;
- ✔ To automate technological process of cleaning;
- ✔ To minimize exploitation costs;
- ✔ To ensure reliable operation of the treatment plant with its subsequent exploitation.

## MAIN STAGES OF RECONSTRUCTION:

- ✔ Complex inspection of the existing treatment plants;
- ✔ Development of documentation on reconstruction or modernization of the object;
- ✔ Optimization of technological processes;
- ✔ Production and delivery of the necessary equipment;
- ✔ Carrying out installation and commissioning works;
- ✔ Automatization of technological processes;
- ✔ Obtaining the positive conclusions on input of the reconstructed treatment plants into operation;
- ✔ Warranty and post-warranty service.

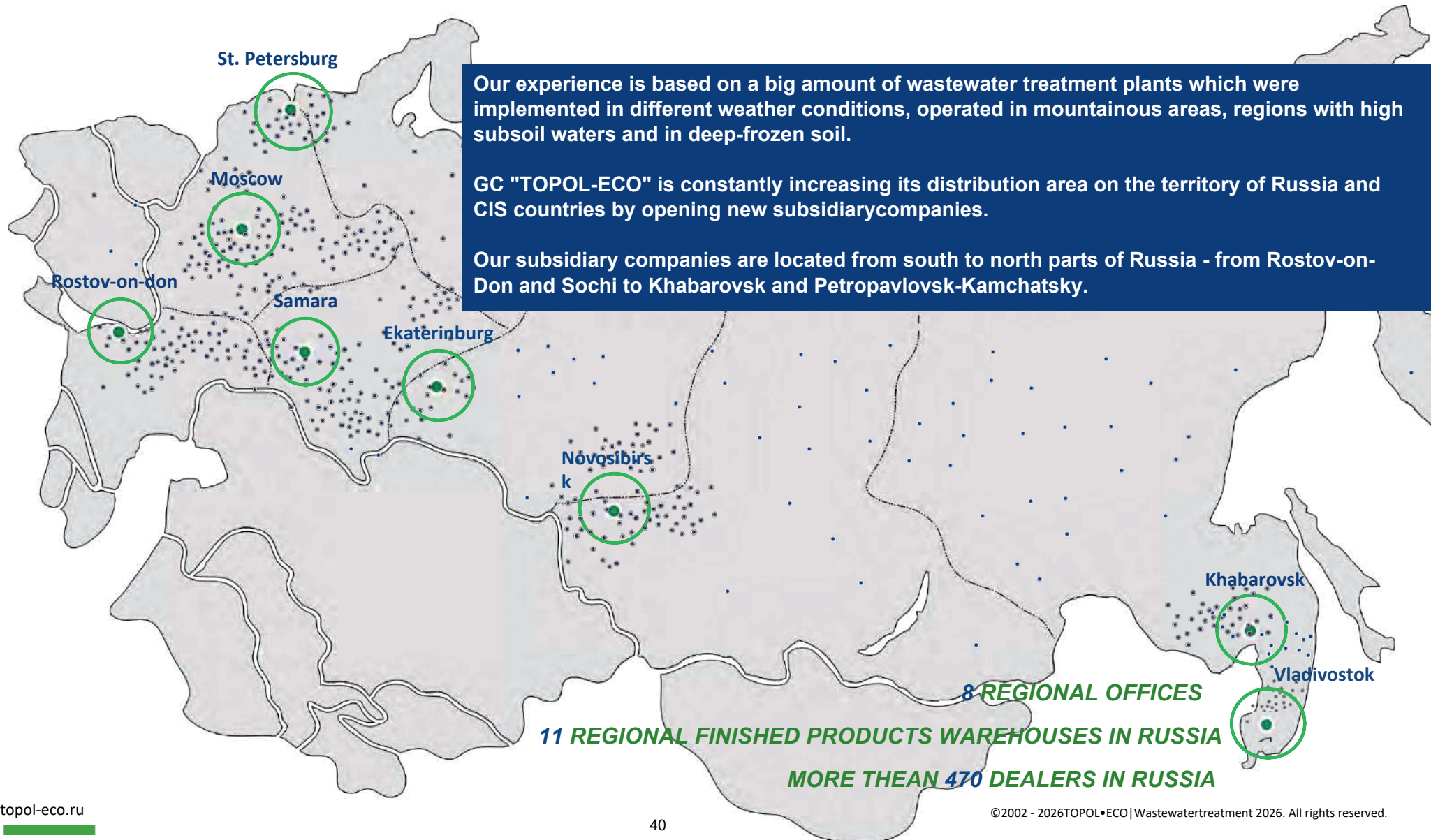


**Before reconstruction**



**After reconstruction**

# Experience and geography



# Our clients

Our clients are state and government institutions, private and state companies, individual entrepreneurs and individuals.

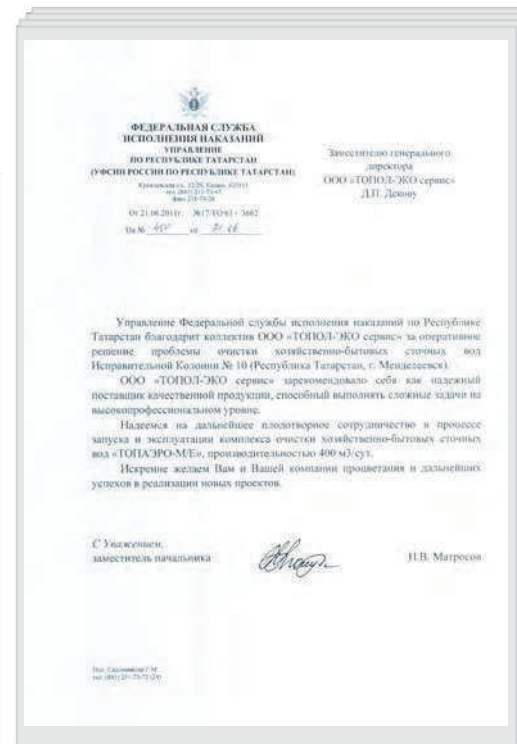
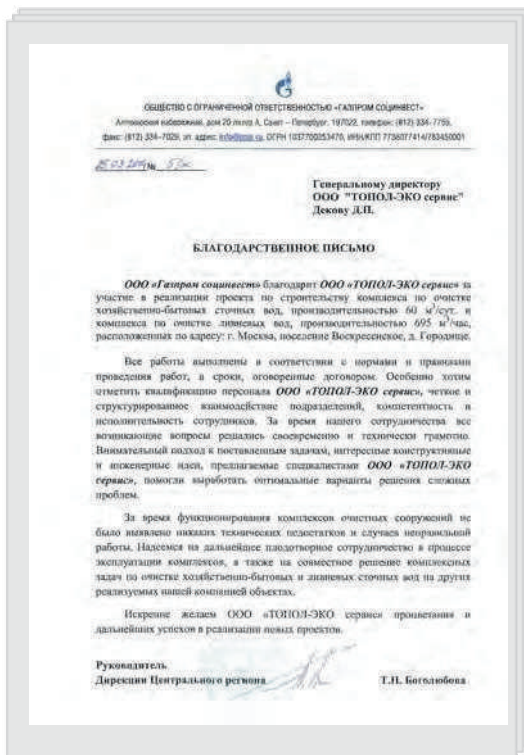
Among them are:

## ADMINISTRATIONS: of the Moscow region (and others)



# Thanksgiving letters


We are against prooflessness! See what customers really think.





**INNOVATIVE TECHNOLOGIES  
AND DEVELOPMENTS IN  
WASTEWATER TREATMENT**



 bardieco

## Contact information

### «BARDI-ECO» ARMENIA

3906 Dilijan, Kalinini St., 108

Tel.: +374 99 778 446

E-mail: [topasdilijan@gmail.com](mailto:topasdilijan@gmail.com)

### The central office of the GC «TOPOL-ECO»

127549 Moscow, 10-1, Bibirevskaya str. room 14-22

tel.: +7 (495) 789-69-37; 789-84-37 e-mail:

[info@topol-eco.ru](mailto:info@topol-eco.ru)



[topol-eco.ru](http://topol-eco.ru)

© 2002 - 2026 TOPOL-ECO | Wastewater treatment 2026. All rights reserved.