



Energy efficiency OOO (limited liability company)

EFFECTIVE DESIGN SOLUTIONS IN THE SPHERE OF SHIPBUILDING

About us

- **Our organization was founded by group of specialists in 2015. Specializes both in designing of passenger ships and in the execution of the state defense order under the supervision of 258 VP, implementing elaboration of all necessary research & development, operational and other technical documentation for the construction of surface ships and vessels according to the classes of ETUC 1905, 1910, 1925, 1940, 1950 and others.**
- **To solve the main problems, the company uses advanced Shipbuilding ARPAs.**

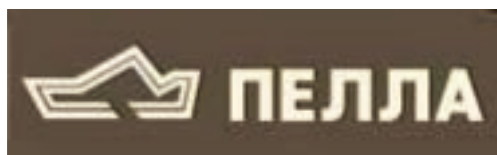


Customers

- Nowadays Energy efficiency OOO (limited liability company) has experience of interaction in the creation of well-known projects with CMDБ Almaz JSC, CDB Iceberg Open Joint Stock Company, CB Vympel JSC, Zelenodolsk Design Bureau JSC and numerous shipyards.



ПАТЭС
РОСАТОМ



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Certificates



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Letters of gratitude



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Our projects

■ A crab vessel of the project EFFO1

GENERAL CHARACTERISTICS:

- Length 55,0 m
- Breadth 12,5 m
- Draft 5,0 m
- Displacement 2000,0 tons
- Speed 12,0 knots
- Life crab capacity 120,0 tons
- Ship's company 25 people
- Sea endurance 40 days
- Main engine 1,6 MW
- Auxiliary diesel generator x2 each is 600,0 kW
- Ice class ICE2

ADVANTAGES:

- Improved habitability, the crew is accommodated in single and two-bed cabins with personal bathrooms
- Huge RWS-tanks capacity(120 tons of live crab) in comparison with analogous vessels
- Improved seaworthiness. The outline of the hull and the ratio of length and width allow vessel to bear sea waves better



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Our projects

■ A crab-processor of the project EFFO2

GENERAL CHARACTERISTICS:

- General characteristics:
- Length 55,0 m
- Breadth 12,5 m
- Draft 5,0 m
- Displacement 2000,0 tons
- Speed 12 knots
- Frozen products capacity 300 tons
- Ship's company 35 people
- Sea endurance 40 days
- Main engine 1,6 MW
- Auxiliary diesel generator x2 each is 600,0 kW
- Ice class ICE2

ADVANTAGES:

- Improved habitability, the crew is accommodated in single and two-bed cabins with personal bathrooms
- The capacity of the freezer hold has been increased (up to 300 tons of frozen products) in comparison with analogous vessels
- Improved seaworthiness. The outline of the hull and the ratio of length and width allow vessel to bear sea waves better



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Our projects

■ The Trawler of the EFFO3 project

GENERAL CHARACTERISTICS:

- Length 55,0 m
- Breadth 12,5 m
- Draft 5,0 m
- Displacement 2000,0 tons
- Speed 12 knots
- Frozen products capacity 300 tons
- Ship's company 35 people
- Sea endurance 40 days
- Main engine 2,5 MW
- Auxiliary diesel generator x2 each is 600,0 kW
- Ice class ICE2

ADVANTAGES:

- Improved habitability, the crew is accommodated in single and two-bed cabins with personal bathrooms
The capacity of the freezer hold has been increased (up to 300 tons of frozen products) in comparison with analogous vessels
- Improved seaworthiness. The outline of the hull and the ratio of length and width allow vessel to bear sea waves better



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Our projects

■ Passenger vessel of the EFFO4 project

GENERAL CHARACTERISTICS:

- Length 25,14 m
- Breadth 6,6 m
- Draft 1,65 m
- Freeboard 3,0 m
- Speed around 10 knots
- Ship's company 3 people
- Reserve autonomy 3 days
- Main engine 2 x 280 kW
- Auxiliary diesel generator 2 x 50 50 kW

ADVANTAGES:

- Low complexity and cost of development, construction (up to 500 mil) and exploitation
- Passenger capacity is more than 50 people
- The project has an ice class KM Ice 3 [1] R3-RSN (KM ЛУЗ [1] III СП)
- Domestic production of equipment
- The possibility of disembarking passengers on an unequipped shore
- The possibility of accommodation a zodiac-type boat on a board
- The possibility of redesigning to accomplish cargo and passenger and a number of other technical tasks

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Our projects

■ Cargo ship of the EFFO5 project

GENERAL CHARACTERISTICS:

- Length 25,14 m
- Breadth 6,6 m
- Draft 1,65 m
- Freeboard 3,0 m
- Speed around 10-12 knots
- Ship's company 3 people
- Reserve autonomy 3 days
- Main engine 2 x 280 kW
- Auxiliary diesel generator 2 x 50 kW

ADVANTAGES:

- Low complexity and cost of development, construction (up to 500 mil) and exploitation
- The project has an ice class KM Ice 3 [1] R3-RSN (KM ЛУЗ [1] III СП)
- Domestic production of equipment
- The possibility of disembarking passengers on an unequipped shore
- The possibility of accommodation a zodiac-type boat on a board
- The possibility of redesigning to accomplish cargo and passenger and a number of other technical tasks



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Our projects



■ Customs ship of the EFFO6 project

GENERAL CHARACTERISTICS:

- Maximum length of the hull 23,00 m
- Maximum breadth of the hull 5,79 m
- Draft 1,8 m
- Top speed 20 knots
- Cruise speed 12 knots
- Endurance distance 300
- Displacement 50 tons
- Ship's company 6 people
+ 8 specialized personnel
- Autonomy 5 days
- Navigation area R2
- Coastal areas of the seas, straits, etc. with distance of at least 50 miles from the place of refuge

ADVANTAGES:

- Comfortable accommodation of all special/ dedicated staff

Our projects

■ Project EFF65 Medium-sized freezer rawler of 65 m length

MAIN FEATURES:

- Length 65 m
- Width 14 m
- 3.8 m in length - 12.8 m in height
- - 12.8 m in length
- 2,952.0 t displacement
- Speed 13.5 knots
- Capacity of live crab 570,0 t
- Crew of 39
- 40 day autonomy
- Main engine 3.5 MW
- Backup DG 800 kW
- ICE2 ice class

ADVANTAGES:

- Inhabitable, crew accommodation in 1.2 cabin with ensuite facilities
- Improved seaworthiness thanks to the hull shape
- Large frozen cargo capacity (up to 570 tons)

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Our projects

■ Project EFF07 Transfer (launching) floating dock

MAIN DIMENSIONS:

- The overall length of the floating dock is 140 m.
- The overall width of the dock is 41 m.
- The width of the slipway-deck of the floating dock is 30 m.
- Load capacity 10000 t.

DECK EQUIPMENT

- Gantry cargo cranes 18 m / 10t.
- Mooring spires 80 kN 8 pieces.
- Mooring winches 150 kN 4 pieces.

Purpose of the vessel:

- launching of ships and vessels;
- lifting ships and vessels from the water and transferring them to slipways;
- provision of dock repairs of ships and vessels.

Special conditions in the areas of operation:

Water temperature from 0°C to +30°C.

The air temperature is from -25°C to +34°C.

Humidity 85%

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Participation in projects

“Evgeny Georiglejan” 02670

- Oceanic Research Vessel ИОС 02670
- Baltic shipbuilding plant “Yantar” (Kaliningrad)
- Construction began on March 19, 2016 by order of the Ministry of Defense of the Russian Federation

Executed work:

- Development of schematics for the installation of electrical equipment and laying cables with their fasteners



“Karakurt” 22800

- It is a small displacement small-size missile ship of the near sea area
- It is set for action on the high seas. That is why It is planned that it will complement the small rocket ships of the project 21631 “Buyan-M”
- The first two ships of the project Shipbuilding Plant Pella”

Executed work:

- Development of schematics for the installation of electrical equipment and laying cables with their fasteners
- Development of foundation schematics
- Technical support of the construction of the vessel 22300 within the framework of the development of the planning and technical documentation of PJSC “ASZ»



Participation in projects

Ice-resistant self-propelled platform “North Pole”

- Ice-resistant self-propelled platform “North Pole” ISP vessel of the 0093 project was launched in 2020 with the aim of creating a permanent drifting station on its basis. Completion of construction is scheduled for 2022 The hull of the vessel has an ovoid shape. This will minimize the impact of ice on the platform; rare steel will provide the endurance of the hull.

Executed work:

- Development of schematics for the installation of electrical equipment and laying cables with their fasteners
- Technical support of the construction of the vessel

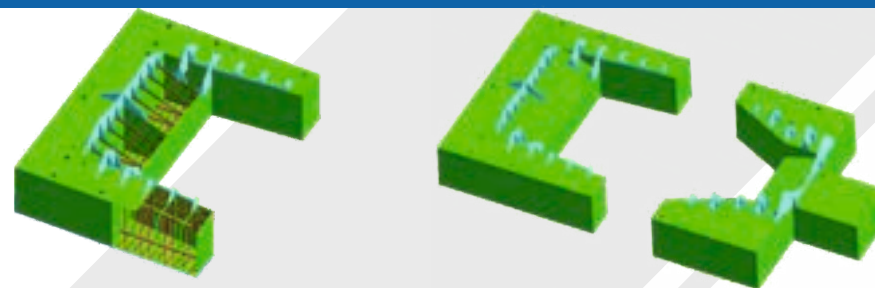


Ship-lifting pontoons of project 00360P

- Pontoons of the project 00360P are designed to enable the transfer of an emergency rescue vessel of the project MPSV06 from Komsomolsk-on-Amur to a delivery base in Vladivostok. They provide in the pontoon vessel system landing on a flat keel and towing with an overall draft of no more than 4 m.

Was developed the working design-driven and detailed engineering documentation, which includes:

- Outflow calculations
- Calculations of general and local endurance
- Drawings of hull structures
- Lofting documents
- Drawings of systems and devices



Participation in projects

The project ST-192

- A series of 10 large-tonnage trawlers for pollock and herring fishing by pelagic trawl in the Bering and Okhotsk Seas
The processing of the haul can be done on board
Final products — decapitated and eviscerated fish, fillet, minced surimi, fish oil, fish feed flour

Executed work:

- Technical support of the construction of the vessel



Nevsky type, the P-32A project

- Nevsky type vessels are a series of self-propelled river scows and dry-cargo ships, originally designed to operate in the north-western region (Gulf of Finland—the Neva River and Lake Onega/Ladoga Lake—Neva River) for the transportation of sand and gravel mixture, with loading and unloading using hydraulic mechanization and grapples

Executed work:

- Work on the development and coordination with the FAA "Russian River Register" of projects for the conversion of self-propelled scows Nevsky-13; Nevsky-20; Nevsky-23; Nevsky-24; Nevsky-27; Nevsky-31; Nevsky-33; Nevsky-35; Nevsky-39 for the purpose of transporting cargo with a small remote loading volume..



Participation in projects

Icebreaker “Viktor Chernomyrdin”

- The icebreaker project 22600 is designed for wiring and towing ships in ice up to 2 m thick, as well as for implementation of rescue operations and underwater technical work. Can be used as a fire vessel. It is planned that it will become the largest and most powerful of the non-nuclear icebreakers in the world

Executed work:

- Development of a technical project for retrofitting the icebreaker “Viktor Chernomyrdin”, with subsequent approval by the FAA “ Russian Maritime Register of Shipping”



“Lightning” 12 41

- The project of large missile boats built at the USSR in 1966 - 1979 and supplied both to the USSR Navy and for export to the fleet of friendly states of the USSR. As part of the USSR Navy, they were operated on the Baltic, Black Sea, and Pacific fleets.

Executed work:

- Development of schematics for the installation of electrical equipment and laying cables with their fasteners
- Development of statements



Participation in projects

“Firefly” 10 410

- Patrol ships of Project 100410 – a series of Soviet and Russian border patrol ships;
Designed by CMDB Almaz JSC;
Produced by JSC company Almaz

Executed work:

- Adjustment of drawings for the installation of electrical equipment and laying cables from their fasteners
- Development of foundation drawings



Universal patrol ship of the Arctic zone 23550

- Developed by specialists of CMDB Almaz JSC.
A fundamentally new project of ships combining the quality of an icebreaker, a tugboat and a patrol ship.
It can be used in any navigation zones, from Arctic to tropical.
It can overcome ice up to 1.5 meters thick

Executed work:

- Development of schematics for the installation of electrical equipment and laying cables with their fasteners
- Development of foundation drawings
- Development of 3D models and drawings of general ship systems



Participation in projects

Icebreaker LK-60Я project 22220

- Designed by the Iceberg Central Design Bureau
A new type of Russian nuclear icebreakers
Due to the use of modern precipitation, icebreakers of this project are able to work equally efficiently both in deep and in shallow water

Executed work:

- Adjustment of drawings for the installation of electrical equipment and laying cables with their fasteners
- Correction of hull drawings
Adjusting of the 3D model
- Work in a technical support group



Project KMT01, KMT02

- The purpose is the trawling of bottom fish species, the production of products in the sea: decapitated and eviscerated fish, fillets, caviar and liver of cod, fishmeal and fish oil
The versatility of the project makes it possible to install a series of different modifications of fishing and processing equipment on ships.
This will allow them to be used for catching not only bottom fish, but also pelagic fish species, shrimp and other biological resources.

Executed work:

- Adjustment of drawings for the installation of electrical equipment and laying cables with their fasteners
- Correction of drawings of general ship systems
- Work in a technical support group



Participation in projects

Project 23120 “Elbrus”

- The logistics support vessel is designed for loading, storage, transportation and transfer of dry cargo to shore and various ships, as well as for towing support, assistance to the crews of ships and vessels in distress. The vessel has a high ice class ARS4, which gives it the opportunity to sail in the Arctic latitudes

Executed work:

- Adjustment of drawings for the installation of electrical equipment and laying cables with their fasteners
- Work in a technical support group



Projects Hb900, RSD59, 70046

Together with colleagues from ICS JSC, was done the modernization and implementation of a video surveillance system for these projects, which includes:

- The calculation of currents K.3
- Calculation of the capacity of an emergency short-term energy source
- calculation of voltage losses in cable networks and cable cross-sectional area, selection of protective equipment
- calculation of voltage dips
- Calculation of antennas parameters
- Calculation of the required capacity of the ship's power plant, reserve parameters
- Charging network
- Electrical connection diagram
- The scheme of laying trunk cable routes



Participation in projects

Project 20385 corvette of the “Rattling” type

- The multi-purpose corvettes of this project are designed to detect and destroy enemy submarines and surface ships, ensure amphibious landings, as well as solve various tasks in the nearest sea zone

Executed work:

- Adjustment of drawings for the installation of electrical equipment and laying cables with their fasteners
- Adjusting of the 3D model



Power supply vessel (PSV)

- The vessel of project 24870 is a development of project 20870 “Akademik Lomonosov”, taking into account changes caused by other operating conditions and ensuring self-propelling.

In the course of the work , as a co-executor of the draft project , we're done:

- General design and endurance calculations
- Structural drawings of the hull
- Insulation and coating schemes
- Schematic diagrams of wind turbine systems
- Block diagram of electric propulsion



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