



BELUGA BAY

TECHNICAL DESCRIPTION

GENERAL DESCRIPTION

The design site is located in Budapest, District XIII, surrounded by Népfürdő Street, Bodor Street, Jakab József Street, and Dagály Promenade (parcel number: 25872/3), with the physical address at 1138 Budapest, Bodor Street 7.

The surrounding area is characterized by a metropolitan urban environment with a mixture of free-standing and terraced buildings of 1 to 3-6-8 floors, serving various purposes, with predominantly new developments along Jakab József Street. The planned building will have a flat-roof design and will blend in with the surrounding area both in terms of appearance and materials.

SITE, BUILDING DESCRIPTION, AND ACCESSIBILITY

The planned building will include 5 shops with separate entrances and associated parking on the ground floor, distinct from the residential areas. The upper floors will house apartments, with a basement (P2, P1), ground floor (gf), 3rd, 6th, and 8th floors. The underground parking garage will be located on one side of the ground floor and in the two basement levels, with access via a car ramp inside the building.

Vehicular access around the building is possible from Népfürdő Street and Bodor Street. The ground floor parking entrance is from Népfürdő Street. The public parking spaces on the ground floor serve the shops, while the parking and storage areas for the apartments are located in the two basement levels. The building is accessible on foot both from Dagály Promenade and Bodor Street. Only pedestrians and cyclists are allowed on the Dagály Promenade side. The staircases inside the building are interconnected.

BUILDING AND ITS FUNCTIONAL DESCRIPTION

The building features 3 staircases and 2+2+1 elevators, divided into parts A, B, and C. Part A is located next to Népfürdő Street, with P2, P1, ground floor (gf), and 8 floors. Part B is situated towards Jakab József Street, with P2, P1, ground floor (gf), and 6 floors. Part C is located between the A and B blocks, facing Bodor Street, with P2, P1, ground floor (gf), and 3 floors. The main entrances to parts A and B are accessed on foot from Dagály Promenade, while part C can be approached from Bodor Street.

On the upper floors (1st–8th), a total of 314 apartments will be created, with 57, 61, 47, 44, 39, 7, and 8 apartments on each floor. The apartments on the upper floors will have balconies or terraces, some facing the streets and others facing the courtyard. The apartments on the 4th to 6th floors, with a Danube view, will showcase the spatial design and technical features of the penthouse apartments.



As an exceptional feature within its surroundings, a SPA and wellness area will be created on the 1st floor, facing the inner courtyard. This facility will be exclusively for the comfort of the building's residents.

PARKING SPACES AND STORAGE DESCRIPTION

The building offers a total of 318 parking spaces spread over two levels (P2-P1), with 160 spaces on P2 and 158 spaces on P1. These are available in three sizes (reduced, standard, premium). We also provide the option for electric vehicle charging installations, which can be requested with an additional payment obligation, subject to personal arrangement and beyond the purchase price. On the ground floor, there are parking spaces open to the public, which are not available for sale to the residents. The ceiling height in the parking areas, including the aisles and parking spaces, is generally at least 220 cm or higher. Exceptions to this height can be found in the following parking spaces:

- Minimum ceiling height of 200 cm: P2-045, P2-044, P2-051, P2-050, P2-118, P2-117, P2-124, P2-123
- Minimum ceiling height of 210 cm: P1-122, P1-121, P1-116, P1-115, P1-051, P1-050, P1-043, P1-042

Additionally, we offer storage spaces on the P2-6 floors, totaling 156 units with various sizes (68, 61, 3, 4, 4, 4, 4, 4, 4) to meet all storage needs. The storage rooms are finished with cold flooring. The ceiling height in the storage units varies, and in some cases, mechanical or air conditioning ducts may pass through them.

WASTE STORAGE

The collection of household municipal and selective waste from the planned apartments will take place in waste storage rooms located beside staircases "A" and "B" on the P1 basement level. The retail units on the ground floor will have their own daily waste storage rooms, with waste being transported to the waste storage room next to the freight elevator. The waste storage rooms on the basement and ground floors will be equipped with washable flooring and non-slip surfaces. The rooms will feature wall-mounted sinks and floor drains to facilitate water access and cleaning. The necessary ventilation will be provided through a mechanical system, leading to the roof. Natural ventilation in the ground-floor waste storage will be provided through an operable window located on the southern facade.

BUILDING STRUCTURES, MATERIAL DESCRIPTION

FOUNDATION:

A waterproof slab foundation will be constructed under the building, from which the rising framework structure will be protruded. The wall structures and pillars will be placed on the waterproof slab foundation. Around the basement block, a diaphragm wall will be built using reinforced concrete to ensure proper waterproofing. The rough, wet surface of the diaphragm wall will be enclosed with a lining wall to separate it from the parking and storage areas.



STRUCTURAL ELEMENTS:

The load-bearing elements of the rising structures consist of 25-30 cm thick monolithic reinforced concrete walls. From the 3rd floor upwards, 20 cm thick precast reinforced concrete walls and a monolithic reinforced concrete column frame are used. The building's external space boundaries are defined by precast partition walls, which are also used as space-dividing structures between the apartments and corridors, as well as between the apartments, meeting the necessary soundproofing requirements at the appropriate locations. On the 7th and 8th floors, infill walls are made of 25 cm thick Xella Silka HM 250 wall structures or equivalent masonry.

The building's bracing is provided by reinforced concrete wall structures placed on each floor, according to the structural design plans. The floors are made of 25 cm thick monolithic reinforced concrete or precast reinforced concrete sandwich panel structures with monolithic reinforced concrete beams, following the structural design plans. Above the external windows, shutter boxes can be integrated into the masonry with plasterable front panels, while lintels are installed above the windows in the internal masonry walls. The balconies are constructed with precast reinforced concrete structures, with thermal insulation around the balcony slabs to ensure the proper thermal performance of the apartments. The building's roof slab, like the intermediate floors, is made of precast reinforced concrete sandwich panels, designed as both extensive and intensive green roofs. The flat roof will be covered with PVC waterproofing membrane, and its load will be supported by the green roof layers. Intensive green roofs will be installed up to the 6th-floor roof slab. Rainwater drainage from the green roofs will be managed by an internal water drainage system.

INTER-FLOOR COMMUNICATION

The building will feature three staircases, each designed with prefabricated reinforced concrete stairs according to the structural design plans, incorporating the appropriate acoustic expansion joints.

Each staircase is equipped with an elevator to ensure barrier-free access. In the A and B sections of the building, two elevators will be installed, while the C section will have one elevator. Each elevator operates between the lowest and highest levels of its respective section.

INFILL AND PARTITION WALLS

The internal partition walls will be constructed from 10 cm thick aerated concrete blocks. For areas with elevated acoustic requirements, the walls will be made from 25 cm and 10 cm thick SILKA soundproof blocks, or materials with equivalent technical specifications.



THERMAL INSULATION

The building's facade walls will be covered with 15 cm thick exterior thermal insulation. On the plinth section (at least up to 30 cm above the finished ground level), AUSTROTHERM XPS TOP P GK thermal insulation will be applied. For the intermediate floors, 6 cm thick ÖKOCELL CSEND lightweight concrete sound insulation will be used as a floating layer to reduce impact noise. The roof will feature 14-32 cm thick Bach PIR thermal insulation, cut to wedges. Rock wool insulation will be used in the necessary places to comply with fire safety regulations.

The vapor barrier beneath the thermal insulation will be provided by one layer of bitumen membrane.

The thermal insulations may be substituted with materials that are technically equivalent to the products listed above.

OPENINGS AND WINDOWS

The planned external balcony doors and windows on floors 1-6 will have triple-glazed, warm-edge, center-sealed, plastic window frames, with RAL 7039 quartz gray film on the outside, according to the architectural plans. Inside the apartments, window sills will be fitted with plastic window stools, while the external window sills will be aluminum, painted in the same color as the window frames. Above the facade windows of the apartments, a built-in roller shutter box will be installed. The apartments will be equipped with a unified aluminum roller shutter in RAL 7039 color, matching the window's external color, as well as roll-up or pleated mosquito nets (depending on the type of window). The apartment entrance doors opening from the internal corridors will be security doors with MABISZ certification, offering high-level protection, multi-point locking, and metal cladding, with a fire resistance of at least EI30 as specified in the fire protection plans. The entrance doors for apartments opening from the external corridors and belonging to the C staircase will be insulated plastic doors, with external RAL 7039 Quartzgrau film, matching the other facade windows. The internal doors of the apartments will be uniformly made in sizes 75/210 cm, 90/210 cm, and 100/210 cm based on the floor plans. They will be installed with hollow-core fillers and painted white or with CPL film on the outer surface. On the top floors (7th and 8th floors), the technical characteristics of the doors may differ, featuring higher technical specifications.

RAILINGS

On the building's facade, a modern, linear, bottom-mounted glass railing will be installed, made from double-layer laminated safety glass, in accordance with the relevant standards.

In the stairwell, a delicate steel protective railing will be installed, with an aesthetic surface treatment.



WATERPROOFING

The precipitation protection on the ceiling structures is provided by PVC membrane roofing, while the roof structure and the parapets are covered with PVC sheets, along with the supporting structures. On the ceiling above the P1 basement level, bituminous precipitation waterproofing is provided. The groundwater protection is provided by the waterproof concrete slab foundation. A waterproof membrane will be installed under the stairwells and lift blocks before the foundation slab reinforcement is placed. The ground moisture protection for the superstructure is provided by a single layer of bitumen waterproofing.

The balconies, flat roofs, rooftop terraces, and the top floor slab are covered with a 2 mm thick PVC membrane.

In wet rooms, the floor structure is made with waterproofing under the tiles, extending up to the required height in compliance with the standards.

FINISHES

The building's facade is mainly finished with high-quality plaster, and perforated steel sheet cladding is featured on the ground floor part of the facade. In some areas of the building, bonded decorative cladding is applied. The external side of the balconies is finished with a linear, bottom-mounted glass railing. The underside and sides of the balcony slabs are generally finished with dryvit surfaces, while the walking surfaces are covered with WPC cladding, applied consistently throughout the building according to architectural plans. A minimum of 2.20-meter-high structures will be installed to separate the balconies, preventing sightlines and passage.

The interior walls and ceilings are painted with dispersion paint after being smoothed. In wet rooms, ceramic tile cladding extends to the ceiling. The common areas' finishes are designed based on interior design plans and applied uniformly throughout the building.

INTERIOR DESIGN OF APARTMENTS

In the entry area and the living-dining-kitchen space, aquastop, 33 wear-resistant laminated flooring will be installed with color-matching skirting boards. Rooms: In the rooms, a minimum of 32 wear-resistant laminated flooring will be installed with color-matching skirting boards. Wet rooms: In the bathrooms and WC areas, high-quality wall tiles and floor tiles will be installed. The tile layout will always be done according to the customer coordination regulations.



SHADING STRUCTURES

The purchase price of the apartments includes built-in motorized shutters, which are integrated into the smart home system. This allows remote control via the display placed in the living room and through a mobile phone application, with internet access.

BUILDING MECHANICAL SYSTEMS

The building is designed for mixed use, consisting of 314 apartments and 5 retail spaces, with a garage on one side of the ground floor and two basement levels. The building's mechanical room is located on the P2 basement level, and the heat pumps that provide the building's energy supply are placed on the roof of the 7th floor. Noise reduction for the equipment is achieved with an aluminum-framed, aluminum louvered soundproof wall (e.g., Syba Acoustic 150S or an equivalent). The outdoor and indoor units are connected through a central mechanical shaft independent of the apartments, via a vertical piping network that includes all the necessary fittings for drainage, maintenance, and uninterrupted operation. The building will have a two-pipe mechanical system, allowing the house to operate in either heating or cooling mode. Domestic hot water production is continuously provided. The generated hot water is stored in insulated tanks. The volume of produced hot water is sufficient to meet the entire building's needs even during prolonged cold weather. The domestic hot water network will be equipped with a circulation system, which is operated by a circulation pump located in the mechanical room.

HEATING-COOLING SYSTEM

Special attention was given to environmental protection and the efficient use of renewable energy sources during the design of the building, keeping in mind the comfort of future residents and the low utility costs. Therefore, a heat pump system will be installed to meet the heating and domestic hot water needs of the building.

Ceiling heating-cooling with an active concrete system will be installed on the residential floors. Floor heating will be provided in wet rooms, and the bathroom heating will be supplemented with a towel radiator, which will be equipped with an electric heating element. During the cooling period, the floor heating system is automatically excluded, so the loops embedded in the floor will only serve the heating function.

From the user side, the system can be controlled via the controller integrated into the smart home system. Each apartment will have the option for room-by-room control. The thermostats can be pre-programmed, and their control is accessible remotely with internet access. The thermostats are equipped with factory-installed dew point sensors, allowing them to disable the cooling function in the rooms based on humidity and indoor temperature to prevent condensation on the ceiling.



A mixed cooling loop system will be installed in the apartments. The cold water arriving from the mechanical room will first be heated to the appropriate temperature by a mixing valve before being directed into the cooling pipes. This design allows the system to optimize its operation based on the specific characteristics of the apartment, even under extreme conditions (e.g., heatwaves, high humidity, etc.).

In the living room-dining room-kitchen area, provisions for a fan coil system will be made by installing the necessary electrical and mechanical connections. This allows for the future addition of a fan coil unit to complement the apartment's heating-cooling system if desired.

Due to the ceiling heating-cooling system, pipes run throughout the entire ceiling of the apartment, except for the wet rooms. Therefore, when drilling or securing items to the ceiling, coordination and the use of a thermal camera are required.

To ensure accurate metering for each apartment, dedicated cold/hot water and heat meters will be installed. These meters will be placed in separate cabinets in the internal corridors. The meters can be read digitally and totaled, ensuring simple and quick reading.

PLANNED HEAT-TRANSFER DEVICES

Heated floors will be installed in the wet rooms. Heated and cooled ceilings will be installed in the rooms and living room, and each room will have its own regulation. The ceiling heating and cooling panels will be placed directly onto the formwork, below the rebar, ensuring quick heat transfer. In the bathrooms, additional heating will be provided through towel dryers, equipped with electric heating elements. In the living room-dining room-kitchen area, provisions for electrical and mechanical connections will be made to allow future installation of a fan coil unit.

VENTILATION

INTERIOR ROOMS

Bathrooms and WC rooms without openable windows will be equipped with local exhaust systems (individual wall-mounted exhaust fans), which are operated by a common switch with the light. These exhaust fans will also have a humidity sensor, allowing them to turn on automatically when needed to ensure proper air exchange in the apartment. The built-in wall or suspended ceiling fans will have a built-in backdraft damper.

Other rooms without openable windows, such as walk-in closets or utility rooms, will also be equipped with ceiling-mounted exhaust fans. The built-in wall or suspended ceiling fans will have a built-in backdraft damper.

In the WC, in addition to the ceiling exhaust, extraction will also be provided through the toilet bowl.



KITCHEN VENTILATION SYSTEM

A ventilation hood will be installed above the kitchen stoves, with the used air being expelled through a duct system to the roof. The hoods must be equipped with a built-in fan. A check valve will be installed at the connection point to the vertical duct in the kitchen exhaust system. During the kitchen installation, attention must be paid to the performance of the ventilation system depending on the distance to the connection point. Only a kitchen exhaust system with a rubber-sealed check valve can be installed! A kitchen exhaust fan can remove a maximum of 200 m³/h of air. Replacement air for the exhaust will be supplied through air inlets, such as Aereco air vents, which are soundproof, moisture-sensitive, lockable, and can be installed in the window or door frames. The placement of the air inlets must be designed so that the airflow is evenly distributed throughout the rooms in the apartments. The sizing of the air inlets (AERECO) installed in the window or door frames is done according to the manufacturer's program.

SANITARY FIXTURES, FITTINGS:

1. Built-in tankless, wall-hung, rimless toilet with exhaust through the toilet bowl.
2. Stainless steel sink faucet.
3. Stainless steel hand wash faucet.
4. Stainless steel shower faucet.
5. Ceramic wash basin, hand wash basin.
6. Ergonomic bathtub, 170x70 or 160x70 in size, according to architectural plans.
7. Shower cabin with a built-in shower tray, generally with a curb design.

AERECO AIR INLET ELEMENTS

In the apartments, hygrosensitive air inlets are installed on the façade openings, which regulate the airflow according to the relative humidity of the indoor air, ensuring ventilation after activities with high moisture load.

The hygrosensitive air inlet units are equipped with built-in humidity sensors that automatically open and close the air-permeable damper based on changes in indoor humidity, responding to the currently detected (generated) moisture level.

The standard version, which can be installed in the windows of living rooms, includes a locking latch that allows the damper to be closed or set to a minimum position in extreme weather conditions (severe cold, storm-force winds). To maintain proper indoor air circulation, it is recommended to close the air inlet only in exceptional cases.



Supplementary cooling and humidity control system installation

In our Beluga Bay project, we have developed a comprehensive comfort and air handling strategy. We consider it important to focus on this because our upgraded air handling system is able to provide a high level of comfort to residents even under increasingly frequent extreme weather conditions in recent years (with daytime temperatures consistently above 30°C and nighttime temperatures often exceeding 20°C).

As a result, we have implemented the following technical modifications in the apartments with enhanced technical specifications: alongside the mixed-circuit cooling system, wall-mounted fan coil units are installed in the living areas. This new setup can deliver greater cooling capacity in a shorter time and also dehumidifies the air, helping to control humidity levels under the increasingly typical extreme weather conditions.

Air inlets are installed in every room with windows or doors, ensuring continuous and automatic air exchange throughout the apartments. This solution offers numerous comfort benefits and also enables individual temperature control according to each resident's personal thermal comfort preferences.

The installation of supplementary fan coil units will take place in the following apartments:

1. floor

A-L101, A-L102, A-L103, A-L104, A-L105, A-L106, A-L107, A-L108

2. floor

A-L201, A-L202, A-L203, A-L204, A-L205, A-L206, A-L207, A-L208

3. floor

A-L301, A-L302, A-L303, A-L305, A-L306, A-L307, A-L308

4. floor

A-L401, A-L402, A-L403, A-L404, A-L405, A-L406, A-L407, A-L408, A-L409, A-L410,
B-L409

5. floor

A-L501, A-L502, A-L503, A-L504, A-L505, A-L506, A-L507, A-L508, B-L507, B-L508

6. floor

A-L601, A-L602, A-L603, A-L604, A-L605, A-L606, B-L605, B-L606



ELECTRICITY

The main distribution board is located in the electrical room. The apartments, offices, common areas, storage rooms, machinery room, and fire protection systems will all be equipped with separate consumption meters. The heat pumps operate from a network with a separate H-tariff meter to ensure energy efficiency. The staircase and floor corridors' lighting consists of modern, energy-efficient LED light fixtures controlled by motion sensors.

LIGHTING, CONNECTIONS

Entrance Hall: One central light fixture will be installed with a single-pole switch.

Living Room-Dining Room-Kitchen: Each of these areas will have a central light fixture connection. In the kitchen, in addition to the upper light fixture, there will also be a connection for task lighting – a socket will be installed.

Room: Each room will have one central light fixture with a single-pole switch.

Bathroom: In the bathrooms, one central light fixture and one wall light will be installed; in WC rooms, depending on the size, either a central light fixture or a wall light will be installed. In wet rooms, an exhaust fan controlled by a time-program switch will be installed.

Each apartment will be equipped with a video intercom system, which, in addition to two-way communication, will allow for the operation of the building's electric door lock from inside the apartment.

The building's television system will be set up for cable TV reception, with one connection point per room in each apartment.

FURTHER ELECTRICAL FIXTURES LIST

Entrance Hall: The endpoint of the alarm system conduit, as well as at least one socket, will be installed. A connection will also be provided for the service provider's modem. If possible, built-in wardrobes will be created in the entrance hall, with the option for wardrobe lighting.

Bedroom: Two sockets will be installed on each side of the bed, plus one socket below the light switch, as well as TV and internet connections with two additional sockets. Depending on the room size, an additional 1-2 sockets may be installed, along with the option for wardrobe lighting.

Living Room-Dining Room: TV and internet connections will be created with two additional sockets. The room will have at least two more sockets, and the option for wardrobe lighting will also be provided.



Kitchen: Swing connections will be provided for the dishwasher, oven, microwave, and refrigerator to allow for easier rearrangement, along with one additional connection. The electric stove will be directly connected by an electrician. A power outlet for small kitchen appliances will be installed, which can be flexibly adjusted by the residents according to the individual kitchen layout after the handover. This is not a fixed outlet above the counter.

Bathroom: One socket will be installed for the towel warmer, two sockets for the washing machine and dryer, and an additional two sockets near the sink, at a height of 1.5 meters.

Balcony: Depending on the size, one or more indoor-controlled outdoor lights will be installed, along with at least one external socket.

Without specific height data, the general height for sockets is 40 cm, and the switch axis height is 120 cm from the floor level.

Energy certificate classification of the building: Based on the overall energy characteristics, the building meets the requirements for nearly zero-energy buildings, with an A+ rating.

SMART HOME SYSTEM

The apartments feature the SmartPierre smart home system, which allows for the regulation of ceiling cooling-heating and underfloor heating for each apartment. Additionally, for some apartments, fan coil control is possible. This can be managed either through the Pierre Room Control display or remotely via a mobile app, with room-by-room control.

The system includes data from the meters assigned to the apartment, allowing for the tracking of daily consumption. The consumption for the past year can also be viewed.

The displays are integrated with the intercom system, which controls the opening of the common stairwell entrance doors during intercom calls, magnetic card or pin-code door opening, and remote access via mobile phone.

EXPANSION OPTIONS

As per the original design, each apartment's living room will be equipped with a Helsinki 6" display, and RIO 4" displays will be installed in the rooms. Upon request, the displays can be replaced with larger models.

The smart home system offers the opportunity to implement custom client requirements, including controlling lighting, integrating intrusion detection systems (for certain systems), and incorporating smart devices.



APARTMENTS WITH ENHANCED TECHNICAL CONTENT

On levels 4-6 of the building, we have defined an enhanced technical specification, which applies to the following apartments:

4. floor: A-L401, A-L403, A-L404, A-L405, A-L406, A-L407, A-L408, A-L409, A-L410, B-L409

5. floor: A-L501, A-L502, A-L503, A-L504, A-L505, A-L506, A-L507, A-L508, B-L507, B-L508

6. floor: A-L601, A-L602, A-L603, A-L604, A-L605, A-L606, B-L605, B-L606

COOLING-HEATING SYSTEM

On the residential floors of the building, a ceiling cooling-heating system will be installed with an active concrete system, and there will be an option for additional wall-mounted fan-coils. The underfloor heating will be built similarly to the apartments on the general levels.

WINDOWS AND DOORS

The planned external balcony doors and windows will feature triple-glazed, plastic frames, with anthracite foil on the outside. The windows and doors separating the living-dining-kitchen areas will, if possible, be replaced with lift-and-slide structures.

BALCONIES

For the balconies, the apartment (balcony) will be prepared for the installation of an outdoor shower, jacuzzi, and sauna, based on the specific layout of the apartment. This preparation will make it possible to install these elements during construction or later. Detailed technical specifications will need to be discussed for each apartment, as there may be variations depending on the size of the balcony.

SANITARYWARE AND FIXTURES

1. Built-in tank, wall-mounted, rimless toilet with extraction through the toilet bowl.
2. Built-in tank, wall-mounted, rimless bidet, depending on the floor plan layout. Due to the size of the bathrooms, the equipment may vary in some apartments.
3. Stainless steel sink faucet
4. Stainless steel hand wash faucet
5. Concealed iBox shower faucet with rain showerhead, with pipes routed inside the wall
6. Ceramic sink, hand wash basin
7. Ergonomic bathtub, 170x70 cm in size
8. Shower cabin + tray

In the bathrooms, showers and bathtubs will be constructed according to the architectural plans.



WARRANTY

We offer a full 3-year warranty and a 10-year guarantee on the property, as stipulated by applicable laws.

iDOM Házépítő Kft. reserves the right to deviate from this Technical Description during the execution phase, using other materials and products of equal quality instead of those specified in the description.

For the construction of the condominium, we use only first-class materials and accept only first-class work from the contractor.

CONTACT DETAILS DURING CONSTRUCTION

Central sales: +36 30 082 0187

This technical description is valid from 06.01.2025. We reserve the right to modify the technical content.