



Buildings, apartments and landscaping

Project by **VASTINT**



Magdelēnas kvartāls

The first residential buildings in Magdelēnas kvartāls, at 17A Antonijas Street, are two six-floor buildings with a total of 116 apartments ranging from 46 m² to 130 m², including seven unique Live-Work apartments where work units are located on the first floor, and the apartments on the second. In one of the buildings, three separate commercial units are located. Below a green garden between the two buildings, a closed-type car park for 73 cars is located, as well as 114 auxiliary rooms for apartment owners' needs, and six individual garages. Ceiling height in apartments: 2.95 m in residential premises, and 2.70 m in bathroom facilities.

Author of the buildings and interior of premises: Gatis Didrihsons, Didrihsons Arhitekti Ltd. General contractor: Merks Ltd.

DEVELOPER

Vastint Latvia is part of the Vastint Group, an international real estate organization with over 25 years of experience. Projects implemented in Latvia: Albert Hotel, office building at 1 Zaļā Street, and residential building Futuris. The company is currently working on the Magdelēnas kvartāls, Business Garden Riga office park, and the first buildings of the Lindenholm residential project.

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RESIDENTIAL BUILDING

FOUNDATIONS

Reinforced concrete pile foundations with depth of up to 25 m. Thermally insulated foundation plate and thermally insulated plinth ensures improved energy efficiency and prevents the risk of condensate and mould generating on building structures.

FLOOR SLABS

All floor slabs between floors are cast reinforced concrete slabs supplemented with acoustic insulation and a concrete screed layer that yields very good sound insulation properties. Acoustic parameters of slabs notably exceed the determined regulatory values (RV): airborne sound insulation $R'w \geq 62$ dB (RV is 55 dB; the larger the figure, the better the insulation) whereas impact sound insulation $L'_{n,w} \leq 42$ dB (RV is 53 dB; the smaller the figure, the less noise is transported).

ROOF

Roofing material: RUUKKI (Finland) 0.6 mm standing seam sheets with PURAL coating laid on BAUER (Germany) condensate membranes that protect roof structures from condensate; this results in longer lifetime of structures and improved energy efficiency. Attic roof is insulated with cellulose wool with the thickness of 350mm. The so-called cold attic is built above the top floor (6th floor) apartments. The cold attic is a ventilated premise that prevents transfer of heat from the roof to apartments during summer, and reduces heat losses during winter because the cold attic floor (6th floor slab) is thermally insulated with cellulose wool (350 mm thick). Roofs are equipped with all the necessary additional elements: RUUKKI rainwater drains, snow barriers, roof hatches and maintenance footbridges. Roofing and equipment is provided by one manufacturer thus ensuring great compatibility between all elements.

FACADES

External walls of buildings are made of AEROC blocks and cast reinforced concrete, thermally insulated with rock wool (thickness: 200 mm). U-value for external walls is 0.16 W/m²K (RV is 0.18 W/m²K; the smaller the value, the smaller the heat losses).

CERESIT facade plaster system is used for decorative finishing. RIEDER (Austria) reinforced concrete panels are used for finishing the first floor thus providing the facade with mechanical durability as well as a modern and elegant appearance.

WALLS

The walls between the apartments are cast reinforced concrete. To increase the sound isolation, part of the walls are cladded with gypsum boards from the one side thus ensuring very good acoustic properties: $R'w = 59$ dB (RV = 55 dB; the larger the figure, the better the insulation).

Partition walls in apartments were built entirely applying KNAUF systems: steel framework filled with acoustic insulation and cladded with two layers of gypsum boards. Special Knauf Blue gypsum boards were used in bathrooms as they provide increased humidity resistance and impact resistance. In apartment partition walls, airborne sound insulation $R'w = 50$ dB (RV = 46 dB; the larger the figure, the better the sound insulation).

In care for inhabitants' comfort, and to ensure a better micro-climate, special Knauf Ecosse mineral wool was used for acoustic insulation in both buildings. As opposed to other types of mineral wool, Knauf Ecosse does not contain formaldehydes and other petroleum products.

STAIRCASES

Staircase floors on the ground floor and staircase landings feature MAPEI Ultratop Loft cement-based decorative coating whereas staircase landings by apartment entrances are tiled using AGROB BUCHTAL (Germany) and CIR (Italy) tiles thus providing highly durable and easy-to-maintain flooring. Wall finishing in staircases: puttied, painted concrete. Stair flights and landings are made of precast concrete. All staircase elements are separated acoustically from apartment floors/walls thus preventing impact noise entering the apartments from the staircase. Additionally, in order to increase acoustic comfort, staircase ceilings by apartment entrances are cladded with special noise-absorbent perforated gypsum boards.

WINDOWS

All apartment windows have wooden IV-78 mm profile frames, impregnated and painted using REMMERS (Germany) system paint coatings. REMMERS is one of the leading wood protecting and finishing materials manufacturers in Europe, notable for the longevity of its products, durability of paint, and continuous protection of wooden materials. Windows and balcony doors are three-glass units with thermal partitions (4/16/4/14/6, in which smaller numbers indicate glass thickness and bigger numbers indicate distances between glass panels), air gaps between glass panels are filled with argon gas resulting in great thermal properties and excellent noise dampening parameters. U-value for windows is 1.0 W/m²K (RV 1.3 W/m²K; the smaller the value, the smaller the heat losses).

Window airborne sound insulation is $R'w = 36$ dB; this is a very high indicator which is sufficient for use even in buildings located next to streets with high traffic intensity. Internal window sills are made of humidity-resistant MDF painted in white

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colour; inside the premises, the sills have rounded corners to ensure comfort and safety for inhabitants. In order to increase the building's energy efficiency and to decrease heating costs as well as to improve comfort in indoor premises through eliminating undesirable airflows, instead of being mounted into masonry or concrete walls, all the building's windows are mounted in the thermal insulation layer using GREENTEQ Clima Conformal System (Germany), a special window mounting system. This window-mounting solution is both more energy efficient and more visually appealing since windows are closer to the facade plane. SIGA (Switzerland) vapour and wind insulation tape was also used for mounting windows. VELUX (Denmark) roof windows were installed in the inclined roof planes at a height that enables one to look outside comfortably, and for the sills to be sufficiently high so that it is not necessary to install additional safety rails for opening windows.

Auxiliary premises on the first floor of one building feature LAMBERTS LINIT (UK) ruffle textured U-channel glass blocks that provide an additional level of comfort ensuring sufficient amounts of daylight while being non-transparent from public space.

Staircases of the second building feature a special visual accent in the shape of impressive 10 m² large skylight windows with SCHUCO (Germany) aluminium profiles.

ENTRANCE DOORS

Entrance doors in the buildings have SCHUCO (Germany) aluminium profiles supplemented with transparent laminated glazing. This type of a solution is durable, safe and aesthetically appealing. Doors are equipped with self-closing mech-

anisms and intercom systems. One can get into the building either by entering a code, or using a chip or a key. Entrance doors, similarly to building windows, were mounted into the thermal insulation layer thus shaping a uniform and harmonious visual image.

BALCONIES AND TERRACES

Buildings boast spacious balconies and terraces up to 23 m². All balconies are made of precast reinforced concrete, and they are mounted to slabs using HALFEN HIT-HP-MV (Germany) special load-bearing details that separate thermal bridges thus ensuring that the outside cold and moisture do not affect the floor by balconies.

Metallic rails (rising from the plank flooring) are 1.10 m high and are shaped so that they meet the strictest safety requirements for adults and children. Both Latvian and German construction standards were taken into account during design and manufacturing of handrails. For example, the distance between bar centres ≤ 120 mm, and handrails have no horizontal bars (except for the handle) so children cannot use handrails for climbing on them.

Balcony and terrace floors are made of oiled Siberian larch planks that are especially resistant against weather effects (heat / cold, humidity / drought). If terrace and balcony flooring is maintained properly (incl. replenishing oil at least once in two years), its service life will exceed 40 years.

PARKING LOT

A closed type of parking lot covered with a roof garden is located between the two buildings. Structural solution of the

parking lot and roof garden: cast reinforced concrete piles, grillage, columns and slabs that provide great strength indicators as a single structure thus exceeding required load criteria. While making structural calculations for the roof garden, even such hypothetical assumptions as the roof garden being fully saturated with water were taken into account.

In order to fully exclude groundwater leaking into the parking lot and capillary moistening of structures, class W8 concrete (i.e. a special type of concrete with increased water resistance) was used for all foundational and floor elements.

ECOBETON EVERCRETE VETROFLUID (Norway), a special protective coating concrete, was used for flooring in the parking lot in order to protect concrete also against undesired impact of salt. The parking lot floor has no inclinations; however, it features a special sewage collector for maintenance needs. It is equipped with sand and oil separators thus ensuring the necessary purification of sewage waters and preventing contamination from potentially spreading further.

In order to provide pure and fresh air in the parking lot for inhabitants' comfort, three openings of 2 m² were built in the parking lot's slabs that are intended for supply of fresh air as well as natural discharge of smoke. A fuel gas extraction system is built in the entire parking lot, and it is equipped with CO₂ and NO_x (most common and dangerous substances in car fuel gas) sensors. As soon as one of the sensors identifies an increased proportion of fuel gas, the fuel gas extraction system launches automatically. If the concentration of fuel gas in the air exceeds the regulatory amounts in the parking lot, special notification signal-lamps will turn on by its entrances.

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The minimum provided temperature in the parking lot is +5 °C. Thermally insulated parking lot walls as well as HÖRMANN (Germany) insulated high-speed entrance gates are in place to ensure this temperature.

INDIVIDUAL GARAGES

Six individual garage-type parking spaces were set up in one of the buildings. Each garage has its own vehicular entrance at street level equipped with remote control operated HÖRMANN (Germany) gates. An individual power outlet is also planned in each garage thus providing EV charging options.

STORAGE PREMISES

Lockable auxiliary premises are built on the first floors of residential buildings, enabling the inhabitants to use additional storage space. The area of these premises ranges between 2.6 m² and 4.9 m². The premises have concrete floors, masonry walls and lockable wooden bar doors. Natural ventilation is provided in all auxiliary premise blocks.

COMMON PREMISES FOR STROLLERS

For inhabitants' comfort, common premises with the area of approximately 9 m² are located by the main entrance of each staircase. These premises are intended for short-term parking of children's strollers or bicycles used on a daily basis. These common premises are equipped with lockable metallic doors.

WASTE COLLECTION PREMISES

Three centralized waste collection premises are located in the residential buildings. They are positioned so that they are conveniently accessible from all staircases. Fresh air supply from the outside and a separate natural ventilation air duct is

installed for waste collection premises; a sewage collection trap is located in the centre of the premise.

ELEVATOR

KONE EcoSpace (Finland) elevators were used in all staircases thus ensuring inhabitants with convenient, prompt, safe and silent access to all building floors. The load-carrying capacity of elevators is 1000 kg, or approximately 13 passengers. The maximum lifting speed of elevators is 1m/s. KONE EcoSpace elevator model stands out with the reliability and durability of the applied technologies.

In care of environmental access for people with special needs or parents with children in strollers, the first floor and the courtyard is connected to a platform lift KONE Motala™ 2000, with load-carrying capacity of 500 kg.

WATER SUPPLY AND SEWERAGE

Building water supply is provided from the municipal water supply network. For inhabitants' comfort, additional pressure-increasing pumps were set up in the water supply unit. These pumps will ensure unaltered water pressure on all building floors, regardless of the number of simultaneous users. In order to ensure high drinking water quality as well as aesthetic and technical durability of plumbing equipment, the water supply unit is equipped with a mechanical particle filter for purifying water, and a glass sand filter for de-ironing water.

Hot- and cold-water meters are installed in the apartments. For inhabitants' comfort, the housing manager will be able to read these and other utility meters remotely.

UPONOR Uni Pipe PLUS (Finland) multi-layer pipes were used for the drinking water system; they do not impact water quality and they are resistant against corrosion. Düker (Germany) cast iron pipes were used for building the sewage system to ensure the compliance with highest acoustic requirements.

HEATING SUPPLY

Heating is supplied to the buildings via a connection to centralized heat supply networks of JSC Rigas Siltums. Each building features its own heating unit, equipped with heating and hot water consumption meters. This enables to perform separate monitoring of thermal energy consumption, and start/end heating seasons independently. Individual meters in each apartment ensure accurate tracking of thermal energy consumption.

Radiators in apartments are equipped with thermostats to enable one to regulate temperature in each room separately. All radiators in apartments and common premises are of COR-DIVARI ARDESIA (Italy) make: they elegantly supplement the interior of premises and provide efficient heat output.

Electric floor heating systems built in bathrooms feature the capacity of 150 W/m² while DEVIREG 530 thermostats with temperature sensors in the floor ensure prompt, comfortable and economic floor heating. All bathrooms also feature TERMA WARP T (Poland) electric towel dryers.

POWER SUPPLY

The building's power supply is provided from the newly constructed JSC Sadales Tikls transformer substation located at 4C Strēlnieku Street. All apartments are provided with three-phase

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20 A power supply with individual electricity meters (accessible from common premises). The apartments have concurring electric power of 13kW which is sufficient to run several household appliances simultaneously without the risk of power overload.

In the event of centralized power supply outage, UPS batteries located in each building will ensure autonomous operation of safety systems (evacuation lighting, smoke protection and fire detection and alarm systems) for 30 minutes.

VENTILATION

Natural ventilation is provided in staircases and common premises in one; a mechanical ventilation system was built for the staircases in the second building. Separate ventilation channels with exhausts on the roof were built for all elevator shafts thus ensuring constant air exchange in the elevator shaft.

To ensure fresh air supply in all rooms of the apartments, FRESH 100 Thermo dB (Sweden) air supply valves were built in external walls. These valves are equipped with thermostats, dust and insect filters as well as special acoustic isolation thus enabling inhabitants to enjoy fresh air in indoor premises without worrying about street noise, dust or insects getting into their apartments. Air supply valves can be closed manually in case of necessity, and they are also equipped with thermostats that close the valves automatically if outdoor temperature drops below -10 °C thus decreasing heat losses during the cold

months of the year. 'Winter ventilation' function provided in window fittings (i.e. locking windows into a slightly open position) can also be used for ventilating apartments.

All bathrooms are equipped with mechanical exhaust systems using SOLER&PALAU SILENT-200 DESIGN (Spain) ventilators with decreased noise levels. Each bathroom air duct has only one connection (i.e. bathrooms are not interconnected with air ducts); such a solution enables to completely avoid undesired bathroom noise or odours entering the apartments.

Each apartment kitchen has a separate air duct that can be connected to a stove hood. To decrease the risk of fire spreading via utility shafts, and to meet the building's fire safety requirements, all air ducts at shaft wall crossings are equipped with pre-tensioned fire safe valves that block air ducts when they reach a certain temperature.

LAN

Apartments feature electronic communications system networks using CAT5e UTP cables with ready-to-use connection points for licensed service providers. An optical data network is set up in the buildings.

All apartments also have low voltage distribution cabinets equipped with a socket, and they are located next to each apartment's power distribution equipment. Such a solution

enables to locate and connect WiFi routers right in low voltage distribution so that wireless internet can be set up in apartments without using additional wiring or visible equipment. Additional connections to the data network (network sockets) are provided in apartments' hallway closets, living rooms and master bedrooms.

SECURITY

The buildings are equipped with COMMAX (Korea) voice and video intercoms. Apartments are equipped with autonomous smoke detectors. In turn, common premises have a centralized automatic fire detection and alarm system fitted with an autonomous power source (batteries) which ensures the system with 30 hours of operation time in standby mode, and 30 minutes of operation time in alarm mode. Emergency lighting with autonomous power supply is provided in escape routes.

All buildings' staircases are equipped with the so-called overpressure systems that create increased air pressure in staircases in case of fire thus preventing smoke from spreading in escape routes. Overpressure systems have autonomous power supply thus providing the system with 30 minutes of operation time in the event of a power outage. Such a solution ensures safe evacuation of inhabitants from all apartments.

APARTMENTS

APARTMENT DOORS

Apartment entrances feature wooden doors supplied by LĪVA AB NORD (Latvia), painted orange with MDF coating. Doors have BMH (Germany) locks and Süd-Metall (Germany) door handles. Doors and ironmongery ensure 30 minutes of fire resistance; sound insulation level is 36dB. It is possible to mount a second door in the door opening on the inside in order to meet even higher acoustic requirements.

Inner apartment doors are made of wood and supplied by LĪVA AB NORD (Latvia), painted white with MDF coating. Doors have SSF (Germany) locks and Süd-Metall (Germany) door handles. They were shaped as massive doors to ensure better sound insulation between rooms.

All inner apartment doors were built without thresholds, i.e., flooring is not separated between rooms, so it is in one level and interconnected with invisible expansion joints. Both outer and inner apartment doors are 2.30 m high (standard door height is 2.10 m), thus creating an especially elegant interior vibe.

Both outer and inner apartment doors, as well as door frames, were profiled especially for the Magdelēnas kvartāls project thus attributing special uniqueness to apartments.

FLOOR, SKIRTING

Three-layer oak parquet, industrially coated with natural and abrasion-resistant bioTec oil/wax, made by Germany's leading parquet maker HARO – a family business managed already in the fifth generation with more than 150 years' experience in the field – was laid in apartments. The top-layer thickness of parquet planks is 3.5 mm; this ensures that planks can be sanded up to several times in case of necessity. Instead of being laid

as 'floating floor', parquet planks were glued to the levelling concrete layer thus providing stable and solid flooring solution that decreases noise spreading in the apartment, and enables one to avoid undesired expansion joints at door openings.

Bathrooms feature ceramic tiles made by EQUIPE (Spain); electric in-floor heating is laid underneath them.

Skirting: 150 mm high, painted MDF skirting profiled especially for the Magdelēnas kvartāls project. Floor skirting in bathrooms was adjusted to wall tile height (75 mm), thus creating a harmonious transition from profiled floor skirting to tile seams.

WALLS

All bathroom walls that may be subjected to increased humidity impact are covered with CVA (Spain) Blanco Liso Brillo ceramic tiles laid in brick pattern characteristic of Art Nouveau style. The rest of wall finishing, depending on substructure, are puttied, painted gypsum or cladded concrete, or cladded masonry, thus giving a wide range of options for mounting furniture and other interior elements.

CEILINGS

Bathrooms as well as separate entrance halls and auxiliary rooms have suspended ceilings of puttied, painted gypsum board; clear ceiling height: 2.70 m.

Living rooms and bedrooms feature plastered, painted ceilings with clear ceiling height of 2.95 m. Such a solution creates the sense of spaciousness and freedom, and attributes varied solution options for ceilings and lighting.

SANITARY EQUIPMENT

Bathrooms feature ergonomic and elegant KALDEWEI (Germany) bath and shower trays installed in the same level as tile floors. Showers are equipped with individually manufactured sliding glass walls; the top glass layer has been treated to obtain an especially compact and smooth surface for easier everyday maintenance. All sinks, showers and baths have GROHE (Germany) water mixers that stand out with elegantly ascetic design, and significant long-term durability.

All bathrooms feature LAUFEN (Switzerland) water closets equipped with 'soft-close' toilet seats, and they are attached to GROHE (Germany) built-in WC flush tanks. Some bathrooms feature LAUFEN (Switzerland) bidets.

All bathrooms have LAUFEN (Switzerland) washbasins. Bathrooms feature individually designed furniture with white artificial stone surfacing and oak veneer facades.

In one of the bathrooms of each apartment (or, in separate cases, in special auxiliary rooms) utility outlets were prepared for connecting washing machines.

POWER SOCKETS, SWITCHES

SIEMENS Delta (Germany) sockets and switches were used in the apartments. Sockets and switches used in bathrooms feature a higher humidity resistance class IP44. Separate connections (one- and three-phase) are planned in kitchens for powering kitchen appliances. Such a solution gives all inhabitants freedom of choice for individually designed kitchen furniture according to their desires and needs.

APARTMENTS

LIGHTING

Electric wires are prepared in apartment ceilings for connecting lighting fixtures. Positioning of switches is thoroughly considered, providing switches in several places in order to turn on/off lights from several locations in the apartment.

C4 (Spain) LED ceiling luminaires were built in bathrooms, and AQUAFORM (Poland) mirror lighting was installed in WCs and bathrooms with showers. ASTRO LIGHTING (UK) wall luminaires were installed in bathrooms by mirrors.

All balconies feature BOLUCE (Italy) wall luminaires intended for outdoor use (with indoor light switches located by balcony doors), and humidity-resistant sockets suitable for outdoor use that can be used for stand lamps on summer evenings, or for Christmas decorations during winter.

WORK PREMISES IN THE LIVE-WORK UNITS

WALLS

Concrete, masonry and gypsum board walls with no finishing, for the restrooms – putted, painted gypsum boards.

FLOORS

Concrete with surface hardener, especially shaped 20 mm lower so that wooden plank or tile flooring can be installed. In the restrooms EQUIPE (Spain) ceramic tiles are used.

CEILINGS

Concrete ceilings with no finishing, in the restrooms – putted, painted gypsum boards.

RADIATORS

CORDIVARI ARDESIA (Italy) design radiators.

SANITARY EQUIPMENT

LAUFEN (Switzerland) water closets equipped with soft-close toilet seats, and LAUFEN washbasins. GROHE (Germany) water mixers.

WINDOWS, DOORS

SHUCO (Germany) aluminium profile doors and windows with colourless laminated glass units. All commercial premises feature one set of doors intended to function as 'active' door, and they are equipped with pull handles from the outside. Other doors can be opened with handles from the inside thus enabling to connect indoor and outdoor space. Active doors are also equipped with ASSA ABLOY locks and cylinders.

LANDSCAPING AROUND THE BUILDING

COURTYARD

A spacious roof garden with the area of approx. 2000 m² is located between the buildings, and it features a children's play area, sports area as well as pedestrian footpaths and benches throughout the garden. The children's play area consists of a sandbox, various spring swings, and other play elements suitable for children of various ages. With respect towards the inhabitants' privacy, access to the roof garden is provided from each staircase, and through lockable gates from Antonijas Street.

The garden is unique as it is a home to over 1170 types of plants and 6749 types of various wintergreens combined of various deciduous and coniferous arboreal plants, climbers, seasonally changing wintergreens and bulbous plants. Greenery, including high (5–8 m) trees and climbers, shapes the garden's spatial

structure, improve its micro-climate and enable one to enjoy the presence of nature in the very heart of the city.

An intense green garden essentially also means smaller efforts on the part of inhabitants as the garden 'maintains itself' by accumulating rainwater in the drainage system during rainy weather and using it to humidify the soil during dryer weather.

ZINCO (Germany) green roof system, combined with BAUDER (Germany) root resistant capping sheets, are the foundation of a durable solution. For additional safety, CONTROLIT (Latvia) electrical conduction layer is laid under the green roof; in the event of damage in waterproofing it will enable to accurately determine the location of damage.

SURROUNDING TERRITORY

In the territory, road traffic is planned only up to the vehicular entrance into the parking lot; the rest of the quarter's public area is mainly intended for pedestrians, providing access only to emergency and delivery vehicles.

Cobblestone-paved pedestrian and access roads are shaped in one level, without curb stones. Such a solution is not only safer and more convenient for bicyclists, it also is especially suitable for families with small children. Streets inside the quarter feature an abundance of greenery with benches, bicycle racks, lanterns and waste bins located in the territory for the comfort and recreation of inhabitants and guests.