



PHILOSOPHERS

R E S I D E N C E

PROJECT TECHNICAL
DESCRIPTION

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The Philosophers Residence project is located on 4200 square meters of improved land. The Project constitutes of two 22 and 23-story apartment buildings interconnected with an underground parking lot for 121 car places. There are 114 apartments in the Project with one to four bedrooms. Apartment areas: 37 m² to 164 m² with a possibility to consolidate. All apartments have balconies with the width not less than 1.80 m, large light windows and low sills with gorgeous view. The ceiling height is 2.91 m up to the 10th floor, 3.11 m – on higher floors and 3.20 m – in penthouses. In designing the Philosophers Residence, the parameters were established, which exceed the certain ones specified by Building codes of the European Union and comply with the requirements of reliability and comfort. It allows us to qualify the Philosophers Residence as a Premium class project. Due to the design concept, the load bearing capacity has been significantly improved, and the stiffness strengthened. As a result, in the event of destruction of even 30% of supporting structures, the building will continue staying. Also, in case of increased wind loads, the owners of higher floors will not feel discomfort. In common hallways with ceilings of 12m high there will be a huge library, concierge desk and place for meeting guests. Entrance doors to the apartments are made by special order: they are fireproof (Ei30), ash veneered, with great sound insulation and stainless steel accessories made in Germany.

FLOOR COVERING

in the hallways and stairs decoration is made of stone mass tile by the leading Italian manufacturer, the service life of such flooring is 200 years.

The residents will be delivered to the apartments by a spacious, quiet, ultrafast artist built elevator, specially designed for the Philosophers Residence, with a ceiling height of 2.40 meters in the cabin.

LIGHTING:

Designer lighting fixtures and recessed LED tape around the perimeter in the ceiling niche with motion sensors.

Forced ventilation

Full security for residents is guaranteed by video surveillance cameras, intercoms, smart access cards, automatic barriers, which are opened by the remote control. The closed underground parking is equipped with natural ventilation and sprinkler fire extinguishing system.

BALCONIES:

Enclosing structures with a filling of laminated glass and railings made of aluminum, which significantly increases the safety of the structure. Floor covering is made of composite boards. Lighting is provided on the balconies.



We treated the choice of window systems especially carefully. It was important for us to provide the best sound insulation, thermal insulation and performance characteristics - protecting windows from atmospheric precipitation and aggressive external environment, especially on the upper floors. Therefore, we chose wooden windows with aluminum lining on the outside, double-glazing with thermal conductivity 0.5, wooden profile 92 mm, and aluminum 1.4mm. Having elaborated the entire system: the wall make-up, windows, fastenings, we obtained the coefficient of thermal conductivity of the complete window system - 0.78, thus the Philosophy Residence has the most effective system that allows minimizing utility costs and providing a comfortable living environment.

WINDOWS

in the Philosophers Residence are not only economical and meet the highest quality standards, corresponding to the energy efficiency class A + or A ++, they are also beautiful and eco-friendly. Only environmentally friendly wood and paint are used in the manufacture, which ensures the safety of residents and the environment. For impregnation of wood, formaldehydes, lead carbonates or other harmful materials are not used. Security from the outside is achieved through special installation technology.



GAMA94 S4000

It is the most energy efficient model. These are the windows with the thickest frame profiles of all produced – the wooden profile of 92 mm. It is forged outside with aluminum which protects the window against weather impact. These windows provide the best protection from adverse environmental effects. Double-glazing is up to 56 mm.

*THE FOLLOWING MATERIALS ARE USED
Wood type: thorny pine tree, non-thorny pine tree, meranti, larch, eucalyptus, oak-tree, etc.*

Painting: Teknos (Finland)

Aluminum profiles: Gutmann (Germany)

Forging: Roto (Germany), G.U. (Germany)

Glass: Saint-Gobain (France)

Laying: Schlegel Q-Lon (Germany)

Handles: Hoppe Atlanta (Germany)

Fixture: 7 fixation points through perimeter

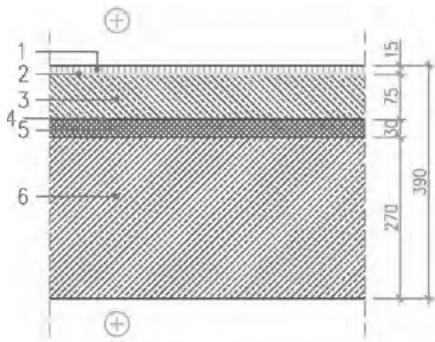
Sealing: SCHLEGEL, foam rubber

Sealing contours: 2

Glazing: double-glazing, 4-14Ar-4-14Ar-4 (two glasses have selective coating, the gaps are filled with argon, aluminum separating frames), for low sills – 4/4/4-16Ar-6-16Ar-4/4/2.

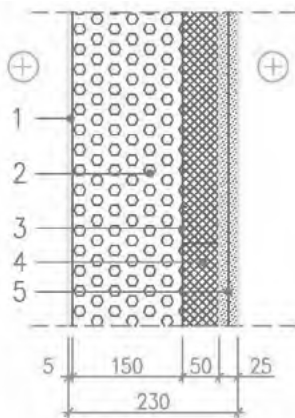
Windowsills and parapets are aluminum. Monolithic reinforced concrete intermediate floors, inter-apartment and interior walls provide excellent sound insulation.

INTERMEDIATE FLOOR MAKE-UP:

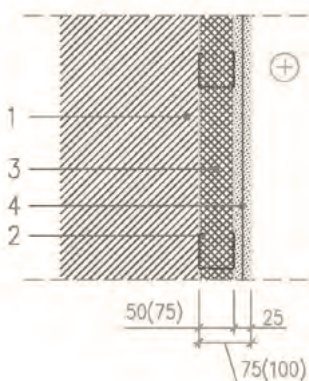


- Three-layered oak parquet or stone mass tiles - 13 mm
- Corrosion-proof insulation layer - 2 mm
- Concrete with dispersed reinforcement - 75 mm
- Polyethylene film
- Stone wool PAROC SSBI or equivalent - 150 mm
- Reinforced concrete floor slab - 270 mm

INTER-APARTMENT WALL MAKE-UPS:



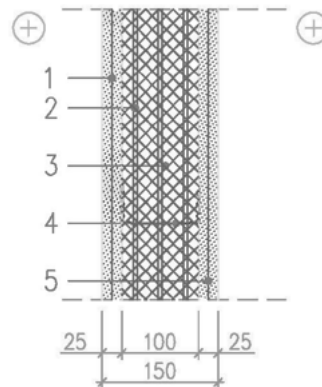
- Plaster
- Expanded clay blocks 3MPa - 150 mm
- CW-profile 50X50X0.6
- Sound insulation: stone wool PAROC extra or equivalent - 50 mm
- Plasterboard 2XI2.5 mm



- Basic wall construction
- CD-profile 60X50X0.6 mm

- Sound insulation: stone wool PAROK extra or equivalent - 50 mm
- Plasterboard 2XI2.5 mm

INTERIOR WALL MAKE-UP



- Plasterboard 2XI2.5 mm
- UW-profile 100X40X0.6
- CW-profile 100X50X0.6
- Sound insulation: stone wool PAROC extra or equivalent - 100 mm
- Plasterboard 2XI2.5 mm
- In all sanitary facilities, the frame layer is plasterboard and the upper layer is waterproof plasterboard.

We believe, the undoubted advantage of the Project is the scene from the windows. Therefore, in apartments next to the panoramic windows the convectors are installed, thus nothing would interfere with contemplation. At places where there is no need for convectors the radiators are mounted. Convectors and radiators are produced by JAGA. We also suggest using the microclimate management and control system in the apartments. The buildings are connected to municipal systems Rīgas Siltums and Rīgas Ūdens.

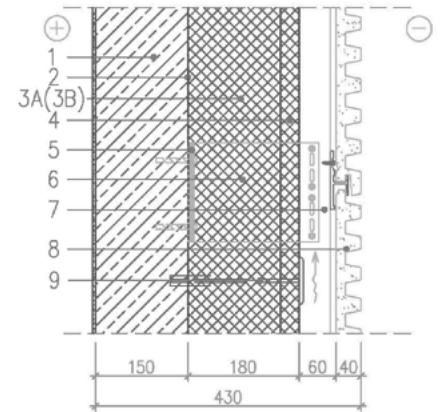
FASAD OF THE PHILOSOPHERS RESIDENCE

Ventilated facade with an embossed ceramic tile AGROB BUCHTAL by the German innovative company Deutche Steinzeug significantly improves the visual characteristics, corresponding to luxury buildings and creates additional benefits.

WALL MAKE-UP:

The coefficient of thermal conductivity is 0.7.

1. Monolithic reinforced concrete wall, putty and painted - 150 mm
2. Baumit WDVS Kleber solution or analogue.
- 3A. Thermal insulation: stone wool PAROC



- WAS35 or equivalent - 150 mm
- 3B. At the columns - 250 mm
- 4. Thermal insulation: stone wool POROK BAS35T or equivalent - 30 mm
- 5. Insulation for metal brackets
- 6. Metal frame bracket
- 7. T profile/air layer of the metal frame
- 8. Ceramic finishing tiles - 40 mm
- 9. Rock wool fastener

A combination of three factors: aesthetics, economy and environmental resistance is the foundation for the growing popularity of hinged ventilated ceramic facades from Europe. The main reason for the technical superiority of ventilated facade systems is the separation of the functions of thermal insulation and protection from atmospheric influences. In this sense, the ceramic system of hinged ventilated facades is the second to none: since the plates are frost-resistant, light-resistant and do not fade, their service life is practically unlimited. HN coating with self-cleaning effect reduces the cost and labour of cleaning to a minimum.

OVERVIEW OF ADVANTAGES

Thanks to the air layer between the external facade cladding (ceramics) which protects from snow and rain and thermal insulation (mineral wool), the systems of hinged ventilated facades improve the microclimate in the premises, reduce the cost of heating and save natural resources. In addition, there are a number of additional advantages:

- **Healthy indoor microclimate:** too humid air promotes the formation of mold, which can cause malaise. The hinged ventilated facade used in the Philosophers Residence, exerts a vapor diffusion resistance that weakens in a direction from the inside out. This allows you to remove moisture through the ventilation space, which is formed during the construction or use of the building. As a result, a healthy and

pleasant microclimate is maintained that contributes to improvement of life quality of people who live or work indoors.

- **Warm in winter - cool in summer:** since the design of hinged ventilated ceramic facades allows you to use thermal insulation of any desired thickness, it is easy to achieve heat transfer coefficients that meet the requirements for houses with low energy consumption. This not only reduces the cost of heating in winter and reduces the emissions of climate-damaging CO₂, but in summer the premises also retain a pleasant temperature.

- **Protection from rain and snow:** ceramic plates are not affected not only by frost or heat, but also by rain, snow, ultraviolet radiation and airborne harmful substances. Therefore, the systems of hinged ventilated facades not only protect the building from the effects of weather and environment, but also provide ventilation and dryness of the thermal insulation layer. Even an oblique shower falling into the seams does not harm insulation in any way, as water flows down the back side of the plate.

- **Fire protection, noise insulation and lightning protection:** hinged ventilated facades not only reduce heat losses, but also protect the premises inside buildings from external noise interference. Besides, the structure is completely made of non-combustible materials, which guarantees a highly effective fire protection. The system protects people during thunderstorms as the aluminium sub-structure serves as a lightning rod and is an electromagnetic shield that protects the electronics inside the building.

- **Cost-effectiveness, durability, quality:** ceramic facade systems are economically viable. They are made of wear-resistant material with almost unlimited lifespan. In addition, the unique HT coating with the effect of self-cleaning reduces the cost of maintenance. The high quality of the products "made in Germany" speaks for itself.

LIGHT ACTIVITY

Approximately one third of all energy in the world is spent on building and maintaining buildings. In addition, there is a growing number of new requirements for developers, planners and construction contractors regarding such aspects as building for a healthy lifestyle or the environmental and economic impact of a building. Each building contributes to the individuality of the urban microclimate. Each building material affects the successful implementation of requirements for environmental sustainability in the design and operation of the building.

Therefore, the chosen ceramic tiles have HT coating - to obtain significant economic and environmental benefits without compromising the classical advantages of facade ceramics.

At high temperatures, titanium dioxide (TiO₂) is embedded in the surface of the ceramic, which then cannot be dissolved or removed. As a non-consumable catalyst for almost the entire service life, titanium dioxide triggers a light-activated reaction (photocatalysis) between oxygen and moisture in the air. As a result, we obtain activated oxygen and a hydrophilic, wettable surface of the ceramic.

ACTIVATED OXYGEN EXERCISES TWO IMPORTANT FUNCTIONS:

1. It destroys microorganisms, for example fungi, algae, mosses or microbes directly on the surface of the ceramic and prevents their growth. This prevents the growth of algae and moss on the facade and avoids laborious and costly cleaning work. During the life cycle of a building, this significantly reduces the maintenance cost.

2. The concentration of harmful substances in the air, for example, nitrogen oxides emitted by transport or industrial enterprises, is significantly reduced. HT improves the air around the building on an ongoing basis.

RAIN CLEANS UP

The hydrophilic surface of the facade ceramics of the Philosophers Residence promotes the fact that raindrops do not just roll down, but stretch into a thin film and wash off mud. Thus, an effective self-cleaning effect is created, which prevents dirt adhering. This also prevents costs for cleaning agents and premature tile replacement.

Active support in any weather - the sun and rain take the responsibility for effective, free and environmentally friendly cleaning! HT keeps the facades clean.

CERAMICS WITH HT COATING: THE PRINCIPLE OF ACTION

Self-cleaning effect

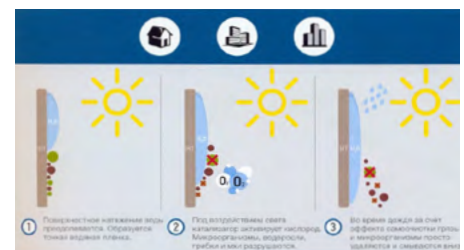
1. Surface tension of water is overcome. A thin water film forms.
2. Under the influence of light, the catalyst activates oxygen. Microorganisms, algae, fungi and mosses are destroyed.
3. During rain, due to self-cleaning effect, dirt and microorganisms are simply removed and washed down.

CLEANING WITHOUT PROBLEMS



With glazed ceramics, graffiti is removed without problems. Since the surface is not sensitive to the impact of effective cleaning agents, the dirt is washed off easily and without a trace, and the surface returns to its original state. Then the action of the HT coating is again activated by daylight.

SPLITTING OF HARMFUL SUBSTANCES



1. Molecules of harmful substances, for example, nitrogen oxides, fall on the surface of the ceramic.
2. Under the influence of light, activated oxygen splits the catalyst with harmful substances into harmless compounds.
3. These harmless compounds are released into the air.

1000 m of facade ceramics with HT coating clean the air as effectively as a small deciduous forest.