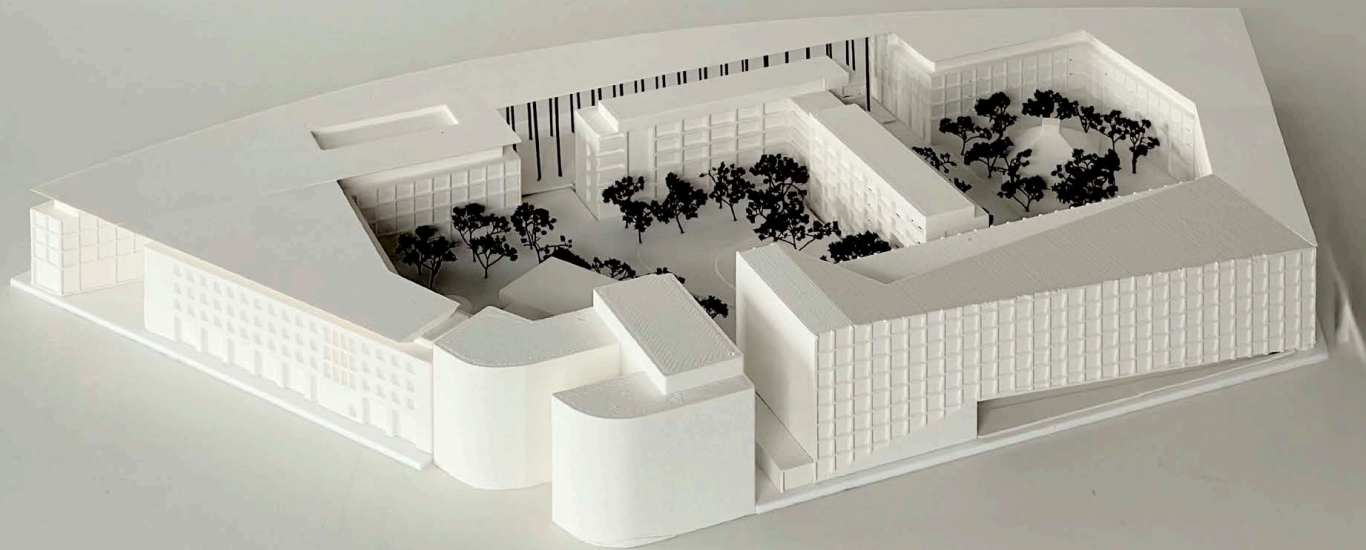


INTERNATIONAL ARCHITECTURAL DESIGN COMPETITION FOR THE MINISTRIES QUARTER IN VILNIUS



“People make the city – make the city for people”

“A vibrant environment is formed by its quality, which is dependent of the location, it’s history, landscape, and traffic conditions, as well as of its architectonic environment and vital, transformable functions based on them. That is to say, high quality architecture or location alone do not guarantee vibrant environment, instead, both are required, as well as a built environment that allows continuous functional change”.



DESCRIPTION OF THE PROJECT

Strategy

The competition proposal opens a future opportunity to build a joint campus for six ministries in the centre of Vilnius, in a place of great landscape and urban landscape importance, at the crossroads of several modes of transport. Continuity, flexibility and identity are the keywords of the proposal, and the sum of these elements is a sustainable, long-lasting building strategy. It means a pervasive approach to urban fabric and buildings, right down to the details.

Continuity is the strategic guiding principle for the development of the Competitive Area at its different levels. The district acts as a link between Vilnius' old city centre and the riverside. The role of the new administrative district is to allow and attract access to the district from both the city and the riverside. Continuity also means the ability of buildings to respond to changes over time. The plan respects the history of the competition area and its buildings, it draws strength from the architecture of Vilnius' old town, and it creates a vision for the future in terms of a sustainable, modern way of building.



Flexibility means designing the quarter structure and individual buildings to serve the needs of the ministries in a changing world. The technical and architectural concept of the quarter and the buildings has been developed in such a way that the structures, building services or floor heights allow the buildings to be converted to other uses in the future. In the 1st phase, this flexibility will be primarily about allowing changes in the internal functioning of the Ministries.

Identity is part of the architectural and urban design concept. Only an entity with a strong identity can be sufficiently attractive to bring together city dwellers and create a desirable, attractive working environment. Identity is a particularly important factor in the case of a starter quarter and building. Identity is a sign and symbol of the Lithuanian state's policy of equality and openness.

Urban design Concept

Traffic as a part of the Urban design Concept

Light traffic

The starting point for the organisation of pedestrian traffic is easy accessibility. The competition area is not divided into disconnected blocks crossed by streets, but into solid quarters, both closed and open. The key words are protection, security but also openness and easy access to the quarter structure. The structure of the quarter attracts and guides pedestrians and especially cyclists into the perimeter of the quarter from all main directions of light traffic. An impressive gate at the corner of Lukisky St and Mecetes St directs light traffic first to the east-facing courtyard and then towards the riverfront open spaces. This gateway also leads to the open main lobby of



the Ministry building. Another, equally important, is the second main entrance on Lukiskiu Street, where a cut in the wall line directs pedestrians from both the old town and the south to the main lobby of the Ministry, from where movement can continue through the west-facing courtyard towards the riverside activities. Naturally, the same thinking works in reverse: on the riverfront side, a handsome, protective and inviting canopy leads to the quarter's courtyards and on towards the Old Town.

The busy Gostauto street is a challenge for road safety. Instead of providing a light traffic connection between the new administrative quarter and the river at street level, this proposal proposes a solution that goes under the street for safety reasons. This will improve safety on the route to the river bank. This solution also concerns cyclists.

Public transport

The bus station is located along Gostauto Street. From the station there is lift and stair access to a small service building on the riverside and a tunnel under the street.

Vehicle traffic

Private passenger and customer traffic is directed to the underground parking from Mecetes Street. There are around 350 parking spaces. The solution is designed to highlight the growing role of pedestrian and bicycle traffic and public transport as part of future urban life.

Official state traffic

The operation of the Ministry's official state vehicles has been separated to Lukiskiu Street. For safety reasons, official state vehicles will have a controlled and closed area. Official state cars will also have the possibility to move within the quarter.



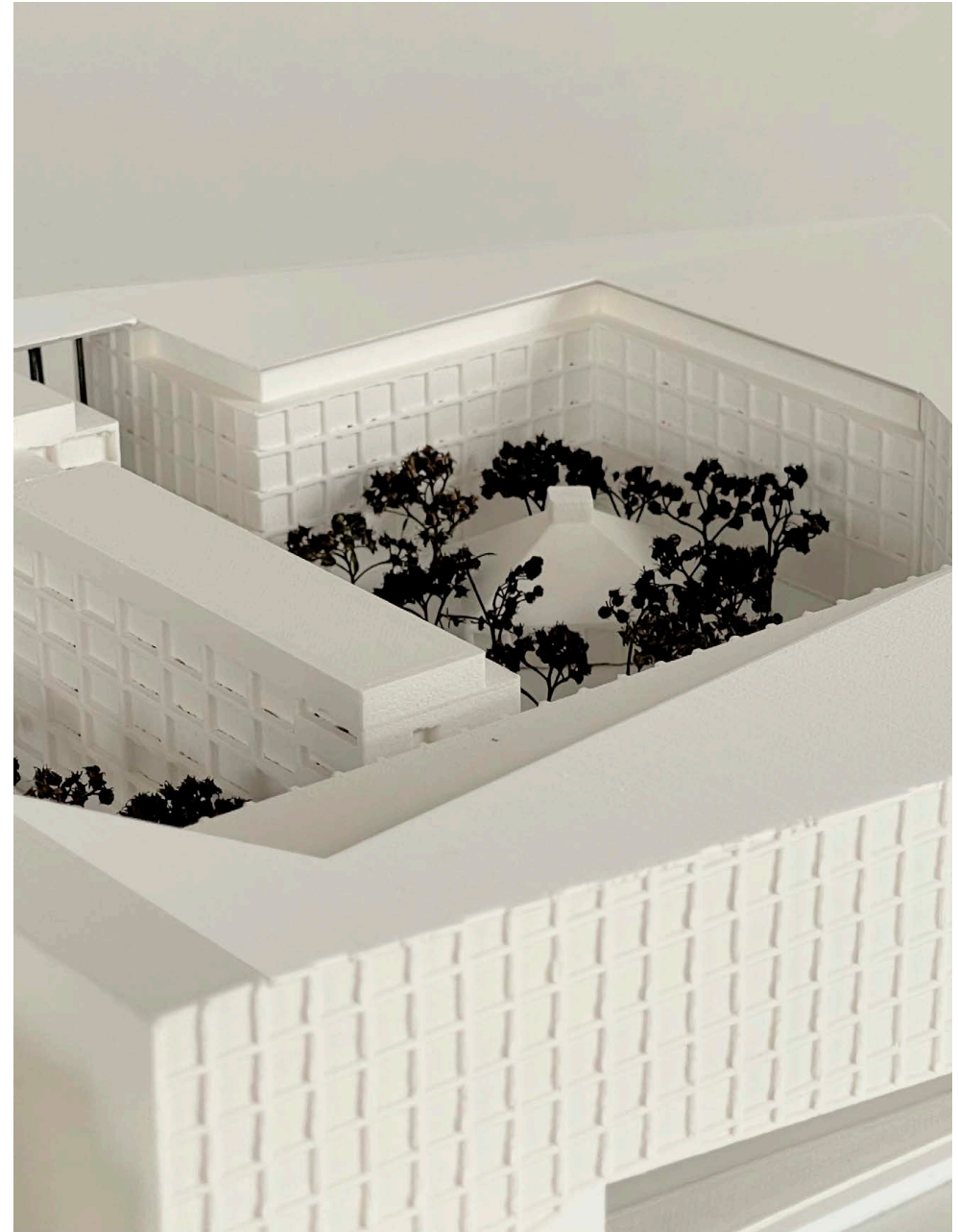
Service traffic

The maintenance of the Ministry building is located in the same area as the access for official state vehicles, but separated from them. The main service is the kitchen and the building's general and waste management. At one end of the building there is an unloading area with a lift for a service vehicle to service the staff recreation and welfare facilities. Emergency vehicles will have unobstructed access to all exits on the quarter. Emergency vehicles will have adequate clearance and operating lanes of sufficient height.

Spatial Urban Design Concept

Quarter structure and urban landscape

The competition area has been treated as a single intact quarter. It is integrated into the urban landscape of Vilnius by maintaining the moderate silhouette of the old city. The quarter contains buildings or parts of buildings to be preserved – layering, history and future are part of the urban design concept. New architecture will accompany the urban character of the buildings to be retained. As a whole, the urban parts of the competition area reflect the presence of the old city. Facing the river and the opposite bank, the quarter area forms a new facade of the city, which is visible from a distance and emphasises the symbolic importance of the administrative district. The most impressive elements of the quarter, the entrance gates, are strategically placed at the most central points of the competition area, at the corner of Lukiskiu and Mesetas streets and on the side of Gostauto street. The concept and architecture of the building on the Old Town side (competition 1st phase) refers to the Old Town, the architecture of the business district on the opposite



side of the Gostauto river. Both gates are not only impressive landmarks but also public spaces protected from the weather. The main entrance on Lukiskiu Street is a key element: it leads to the core area, the open main lobby of the Ministry. The quarter structure, urban design and architecture of the competition area are a mixture of solemn dignity and at the same time easy accessibility for everyday life.

Public space

Public space is a reflection between indoor and outdoor spaces, and their natural accessibility. The internal atmosphere of the district is distinctly public, open to the public. Ground floor open spaces, shops, restaurants, exhibition spaces open onto the courtyards and street space of the quarters. The idea behind the two strong gateways planted in the urban landscape is to attract and direct flows of people to the courtyards of the quarters, sheltered from traffic noise and weather.

Within each quarter, there are two distinct, shared courtyard spaces. The route through the east-facing courtyard, leading to the riverside, is primarily intended for cyclists. A kindergarten is located in the central area of the courtyard. Around this pavilion-like building, a regular courtyard plan with wooden rows and different types of paving has been articulated. The ground floors of the buildings surrounding the courtyard (2nd phase) contain commercial premises, shops, cafés, etc.



The space to the west can be described as an administrative plaza, which is organically connected to the ground floor of the Ministry building (1st phase). The trees in this courtyard will be preserved and the courtyard space will be treated with different types of paving, new tree planting and furniture. The two courtyards are linked by a historic Tatar cemetery. Its approximate form, taken from the competition programme, is drawn fragmentarily in the courtyard plan. Its shape is also drawn into the geometry of the Ministry building (1st phase).

Architectural Concept

The new Ministries Quarter will not only be a new working environment for ministries, but also a meeting place for citizens. The architectural solutions have been developed with this in mind.

Urban design concept and architectural concept are closely linked. The overall architectural concept is derived from the urban design solution: architecturally, the competition area is an intact and coherent whole, with details that highlight the facades of both the buildings to be retained and the new ones. The existing structures of the buildings have been retained and reused, the existing buildings have been extended and a completely new first phase building has been proposed. The floor plans are essential for the long-term use of the quarter: the working environment is in a constant state of change, including digitalisation and increasing teleworking. The principles of national security are also constantly changing. A functional working environment needs the opportunity to transform and this can only happen if the design of building layouts takes into account the possibility of creating a wide range of working environments.



The articulation of the facades emphasises the overall idea of the quarter, its coherence, while at the same time the character of the ground floors is tuned through open-air public or leisure activities.

The architecture, visible in the cityscape, has been created to stand the test of time, avoiding the cultivation of overly topical themes.

Functional planning of the buildings

The proposal provides a model for a modern working environment, taking into account all stages of construction. It is an example of an efficient and comfortable solution that supports modern office work. The working environment is no longer just a series of isolated, traditional offices or open-plan office space, but increasingly needs to provide a framework for varied and diverse work. A good working environment must support work that requires concentration, allowing for work-shop meetings, teamwork, flexible break-out areas or private calls by staff. The dimensions of both the Phase 1 and Phase 2 building frames allow for such a working environment.



The Phase I functional sequence is as follows.

The ground floor of the building is divided into a closed part and a part open to the public. The enclosed part is located at the western end of Lukiskiu Street, where the operation of official vehicles in the classified area takes place. Staff, including ministers, use these entrances. The security-controlled lifts are of course also accessible from open spaces, through security gates.

The main lobby of the first phase is the core of the quarter. It is also a transport stop between the riverside and the city. The space will offer restaurant services, exhibitions, open information space for citizens. The lobby area has a canteen/kitchenette. The materials used in the lobby are soft and emphasize the role of the courtyards as part of the overall architecture. Particular attention will be paid to acoustics. The wall surfaces are made of wood with good acoustic properties, as are the ceilings. The flooring will be treated with cobble stone to match the exterior. The main lobby will open into the second open floor below in an airy manner.

The space below the ground floor is reserved for multi-purpose seminar rooms, an auditorium and exhibition spaces. This floor also houses the preparation kitchen, with lift access to the ministers' offices and supporting workspaces.

The 1st floor contains offices for the ministries' officials, as do the 5th and 6th floors. The ministry offices are located on the 2nd, 3rd, and 4th floors, including the ministers' offices and assistants' offices. There is direct lift and stair access to these areas via the secure and controlled ground floor.



The roof terrace is shared by the ministries and has service access (lift) from the preparation kitchen. There is also kitchen access to the ministerial offices.

There are around 350 underground parking spaces, accessed from Mecetes Street.

Materiality of the buildings

The initial building will be constructed, as far as possible, in accordance with the Lithuanian fire safety legislation, in wood. The grid of the building is dimensioned according to the load-bearing capacity of the wooden columns and beams. The intermediate floors will be of beam and column construction. The building will be equipped with an automatic fire extinguishing system and will be divided according to the fire compartmentation regulations for wooden buildings. This means a maximum of floor-by-floor partitioning. Wood is currently the only green transition material that achieves a near-zero carbon footprint. We are living in a time of green transition, and practically all European Union countries have or are in the process of constructing public buildings made of wood. It is time for Lithuania and Vilnius to take the first step towards a green urban and building culture.

A significant urban and architectural element is the detail of the sloping entrance gate, the structural realisation of which with timber structures is the easiest to achieve. The sloping wall surface will be built on floor-to-ceiling timber trusses and supported at the top by the adjacent narrower wing building.



Integration of sustainable solutions and conceptual engineering solutions, overview

The plan as a whole supports a sustainable design strategy.

The buildings or parts of buildings in the competition area are proposed to be retained as part of the quarter as a whole, emphasising the temporal layering. This includes the use and extension of building frames. The carbon footprint of a new building is 50% higher per square metre than if the frame of an old building is used. The extent to which buildings can be renovated and how much they can be used in the second phase of the project needs further investigation. The competition programme does not provide sufficient information on the current condition of the buildings. However, it can be estimated that their use is possible. This will have to be considered and clarified during the implementation of phase 2 of the project.

The 1st phase will be based on the use of wooden structures. This means a very low carbon footprint.

The design of both construction phases is based on a “monolithic” solution. The physical dimensions of the buildings, internal connections, floor heights, etc., allow for a very long-term transformation of activities.

The courtyard areas have been designed to preserve the existing trees and lawns. Unfortunately, the condition of the trees in the area is poor, but every effort will be made to preserve them and to replant them during the construction work.



The plan favours the use of public transport. Easy access for cyclists to the area has also been improved, for example by a link between the riverside and the competition area. There are around 1000 bicycle parking spaces in the courtyards.

The technical systems of the buildings are based on modern technology, including the use of solar energy (roof-mounted solar panels and collectors and geothermal heating).

If implemented as a whole in accordance with the principles set out in the competition proposal, the scheme will lead to the achievement of EU sustainable development standards and objectives.

Sustainable development is more than a series of technical solutions. Sustainable construction is the emphasis on the continuity of urban culture, the layering of the urban fabric. The plan includes forward-looking new construction and an already built Vilnius. The richness and diversity of architecture is a value to be cherished in terms of environmental experience.

Sustainability

Description of the feasibility, developability and flexibility of the plan

The building will be certified for sustainability.

Circular economy priorities 2-4 (rethink, re-use, reduce, recycle) will be used as guidelines for the development. The project optimizes the public use of the central location, its sustainable transport connections and infrastructure and triggers reconsideration of the adjusting area on the



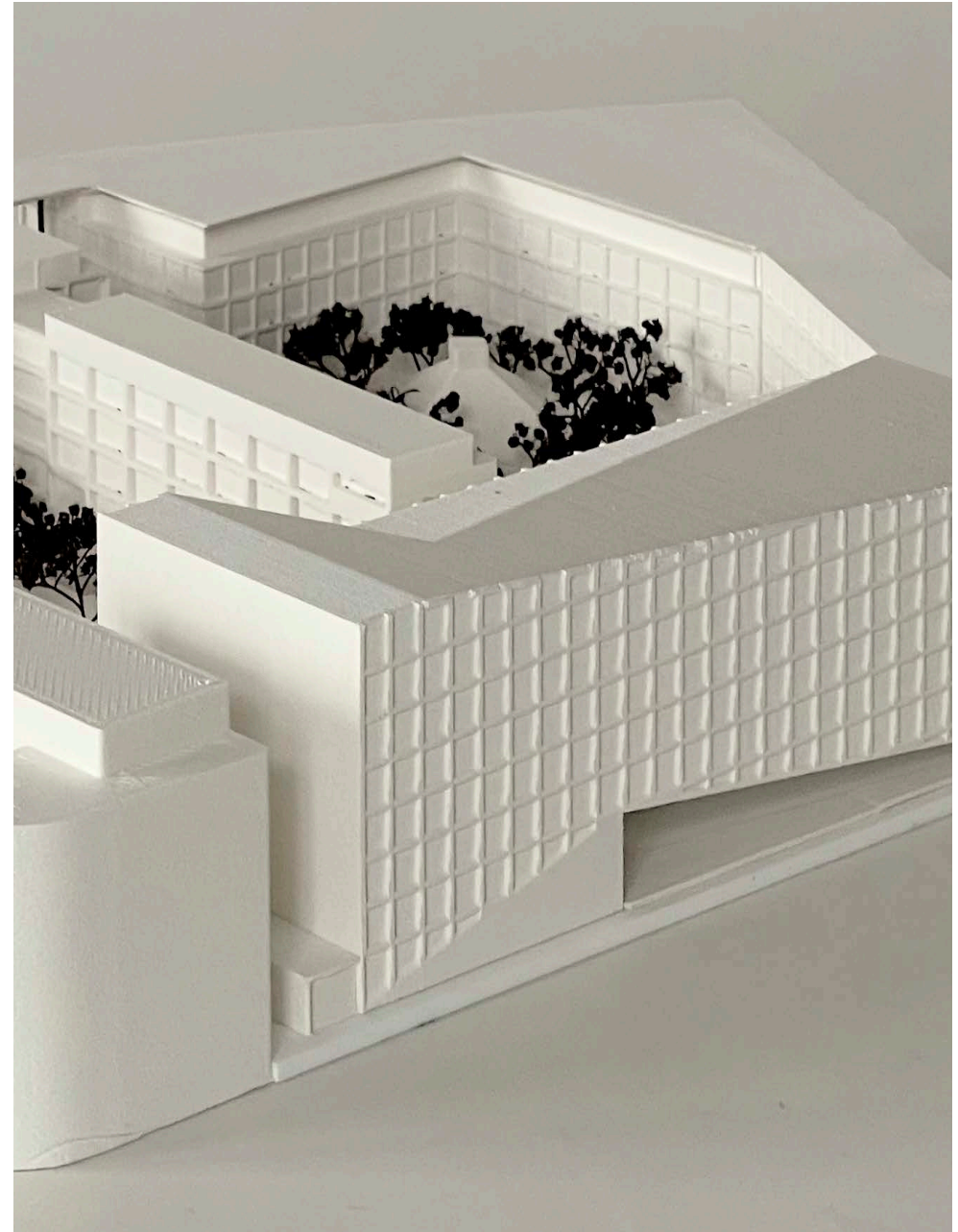
sustainable development terms. Existing structures are widely reused in the project, and on more technical level effective use of building materials and components is considered. Rethinking includes developing flexible and adaptable spaces based on simple and production friendly structural systems partially and in the future familiar to the Lithuanian building industry.

Technical solutions selected for this project are either off-the-shelf solutions or believed to reach their maturity well before the start of this project. Preliminary estimations have been prepared to ensure the energy system feasibility and emission saving potential of the solutions.

Beside timber technology (1st phase) structural parts produced using novel technologies, such as “low carbon” concrete mixes, and / or materials susceptible to volatile ambient conditions, such as timber, will be provided with a maintenance manual, describing methodology of predictive maintenance, refurbishment and, indicatively, repair, ensuring high level of performance during their design lifecycle.

Environmental friendliness and suitability of building materials, use of wood and other ecological materials, use of circular economy in material choices.

The development is addressed as a holistic entity set up to meet the carbon reduction in line with The Carbon-neutral Europe 2035, and to further the adaptability and resilience of the individual elements.



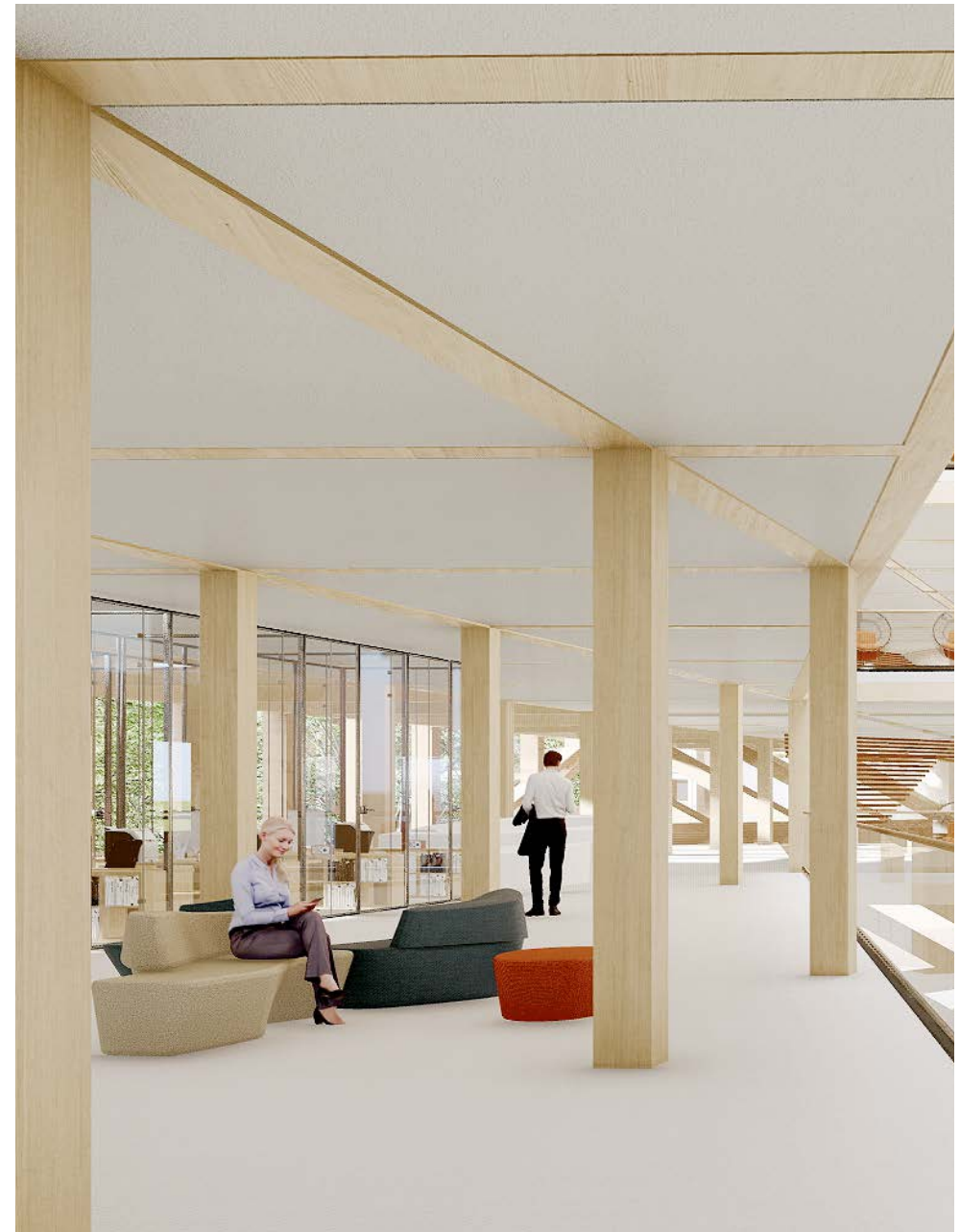
The first phase of the project will be based on timber technology and on use of wooden materials considering the Lithuanian standards which do not allow timber frame in a public building today. But the authors of this entry assume that the processes to bring the Lithuanian standards to meet Carbon-neutral Europe 2035 are under process in Lithuania.

Design for flexibility and lifecycle design solutions.

Several overarching principles will be utilized to ensure, that the structures are able to flexibly respond to the future demands of the users and that consumption of building materials during construction, maintenance and renovation remains low.

The floor heights will be defined so that the intended use of the buildings may be adjusted in the life cycle of the buildings. This will be executed by using over 3.7 m as the floor height (the first phase).

Technical spaces will be designed to enable easy maintenance and possible system replacements and expansions. HVAC system flexibility will be ensured with an organized design approach, where the possible future needs are mapped, and the primary fixed systems are sized to account for these needs. The effects of climate change will be accounted for in the system sizing. This approach negates the need for replacements before large scale building space renovations.



Where possible, architectural concretes that utilize recycled fillers (historical brick, glass, recycled concrete) will be used in non-loadbearing applications and especially in the second construction phase. The façades will be covered by thin natural stone (the façade's frame of the first phase construction is wooden – or recycle concrete in the case that Lithuanian standards do not allow use of wood as a building's frame material).

Non-structural elements may be considered for the flexible use with the shorter lifecycle when they are produced from locally sourced materials, such as recycled and small-diameter timber, recycled concrete or stone blocks, recycle bricks, and other recycled aggregates.

A lifespan goal for all short lifespan HVAC equipment of 25 years and adjustability will be used as a selection criterion. With this selection criterion the equipment won't need large scale replacements before other larger scale space renovations.

A number of replaceable secondary structural parts may be designed for the minimum durability time of 50 years, defined based on building lifecycle of 100 years. Such parts may be reassessed for the continued use in the end of their design lifecycle.

Building parts designed for 25+ years in use will be considered from the standpoints of enhanced repairability and future modification needs.



Carbon balance of the plan for new construction

As seen from the results of new research, embodied carbon can be significantly reduced in the building frame by using either timber structures, low-carbon concrete products or a hybrid solution, as well as optimizing the structural design and the material masses. “Low carbon” prefabricated concrete elements and steel products (will be used in the second phase) provide tenable emission reduction possibilities. In turn, the carbon footprint of conventional prefabricated timber-based solutions used in calculations is to a large extent defined by conventional complementary layers and components necessitated e.g. by acoustic and fire regulations. Therefore, also for timber systems carbon footprint can be further optimized with the climate-aware development of these complementary components and respective databases. Timber products procured from local and sustainable sources ensure the preservation of national carbon sinks, with tenable carbon handprint benefits. Additionally, various other construction materials such as the ones used in insulation and earthworks can be replaced with low-carbon alternatives. Use of prefabricated elements will not only decrease the duration of the construction site, but also improve material quality and building conditions, as well as work safety. The site operations could be carried out in a sustainable way by maximizing the utilization of renewable electricity, heating, and fuels and by optimizing the site logistics, in addition to energy efficient use of site offices, tools and vehicles.



Energy efficiency of buildings & energy design

The new buildings (the 1st phase and the extensions of the 2nd phase) will achieve the highest energy rating class with energy efficiency measures. These comprise HVAC and structural energy efficiency design principles.

The energy efficiency of the existing buildings will be improved to comply with lower class limits. The energy efficiency of their HVAC systems will be improved to match that of a new building.

Solutions for renewable energy production, opportunities for regional energy production

The properties in the competition area will form a decentralized energy community. With an energy community the design area will function as one energy entity and this will open new possibilities to minimize heat losses, recirculate energy flows, reduce peak power from the grids and distribute renewable energy between the buildings more efficiently.

The entity produces, distributes, sells, purchases, and stores electricity, heating, and cooling energy. Electricity can be generated by solar panels both inside and outside the competition area.

VILNIUS MINISTRIES QUARTER

GENERAL DETAILS FOR LAND PLOTS AND BUILDINGS

Territory outside plot borders 1920 m²

	Land plot No 1 / G12	Land plot No 2 / G9	Land plot No 3 / G11
Development intensity	2,8	2,0	1,4
Development density	77%	64%	55%

Lukiškių street 9 Building

Number of floors	5-7
Building height	30,5 m
Built-on (coverage area)	5430 m ²
Above ground volume	144000 m ³
Underground volume	44000 m ³

Phase I (1st level of detail) 22000 m²

Spaces without access control

Common areas	880 m ² (20%)
Synergistic commercial functions of common areas	3520 m ² (80%)
Parking lot, number of parking spaces (underground and on the ground)	362 parking places

Spaces with access control

Meeting and coworking spaces for all ministries	880 m ² (5%)
Offices of the ministers and their teams (for each of the 6 ministers)	530 m ² (3%)
Workspaces for ministerial staff	13200 m ² (75%)
Functional backroom spaces	2990 m ² (17%)

A. Goštauto street 12 Building (G12)

Number of floors	5
Building height	25 m
Built-on (coverage area)	6190 m ²
Above ground volume	155000 m ³
Underground volume	existing

Phase II (2nd level of detail)

Total built-on area of all ground floors after reconstruction of land plot G12 22500 m²

A. Goštauto street 9 Building (G9)

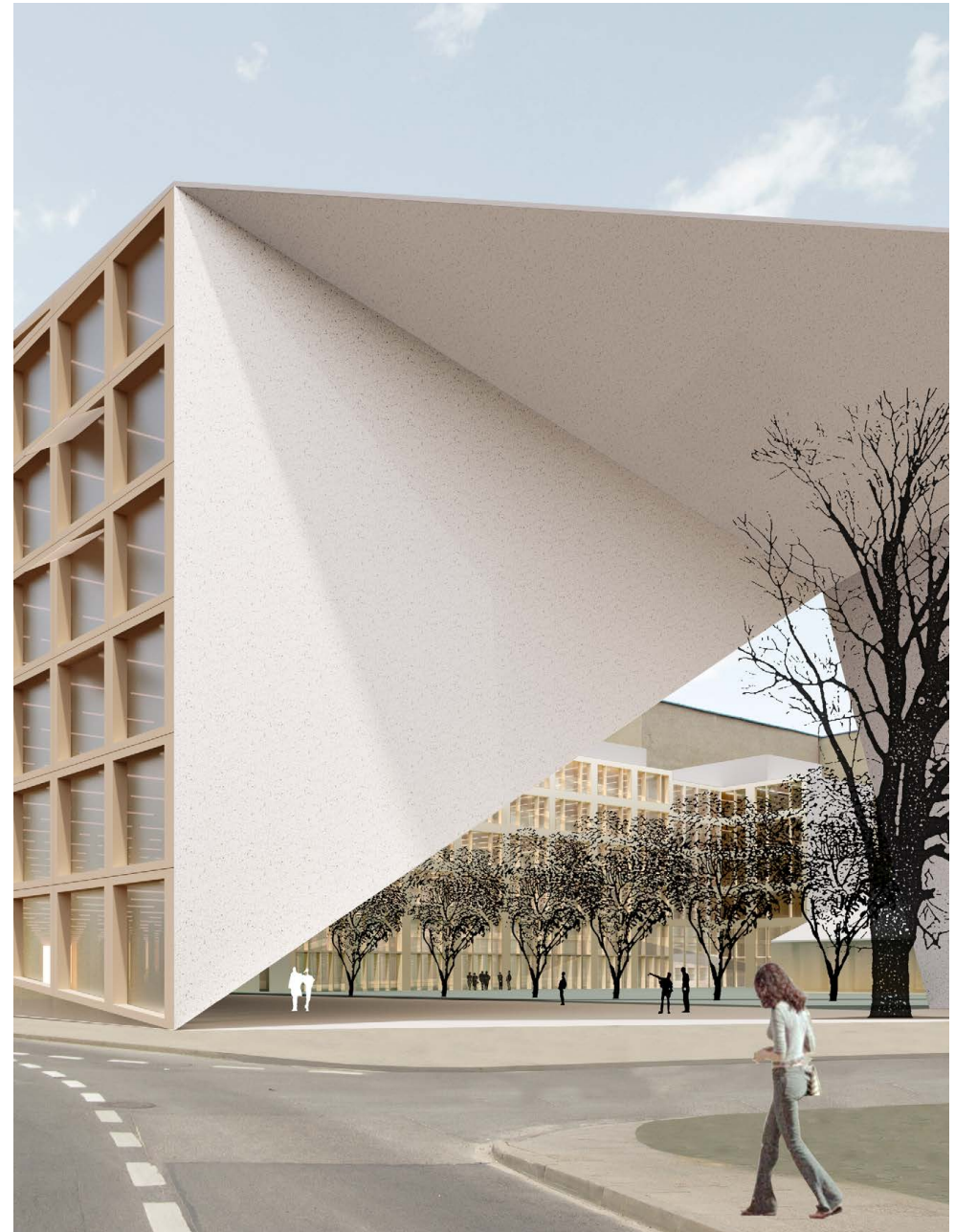
Number of floors	5
Building height	25 m
Built-on (coverage area)	2870 m ²
Above ground volume	72000 m ³
Underground volume	existing

Phase II (2nd level of detail)

Total built-on area of all ground floors after reconstruction of land plot G9 9000 m²

Plant-based solutions for urban environment

The competition area's green structures will be designed to be sustainable, durable, and high quality. The aim is to respond to the challenges the climate change presents and to ensure the long-life cycle of the outdoor spaces. The use of greenery, especially the current and new planted trees not only create a favorable microclimate, but also answers to the Vilnius's goals in combating and adapting to climate change. Unfortunately, the existing trees are old with a bad shape meaning that almost all the trees presented in the site plan are to be planted. Considering that the yards will be in an active daily use, considering safety, access by emerging vehicles the yards have been covered by pavements (of recycle bricks, concrete etc.), too. However, the aim is to mitigate the problems caused by extreme weather events; park-like solutions reduce the heat island effect caused by dense construction, and green surfaces amongst paved surfaces contribute to stormwater management. Planted areas and green roofs can cool the climate, increase comfort, and shade, and manage rainwater naturally.



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