ARCHITECTURAL DESIGN CONTEST

FOR THE DEVELOPMENT OF THE SITE OF THE SHOPPING AND LEISURE CENTRE PANORAMA

EXPLANATORY MEMORANDUM

SLOGAN CODE

JJAMMIB7

DATE

19.4.2024

1. URBAN CONCEPT

1.1.1. The aim of the design from an urban planning perspective is to complete the missing urban structure and to contribute to completing the character of the area.

The proposal respects the existing layout of the area and relates seamlessly to the surrounding streets and pedestrian routes. The position and height of the individual buildings respect the detailed plan for the northern part of Žvérynas.

The entrances to the garages of the proposed buildings are from the existing roads. The position of the entrance to the underground garage of the Panorama Shopping Centre and the delivery yard remains unchanged by the proposals.

Within the public areas, the redesign of Stirnų St. between Buildings A & B is considered to have the character of a lively, pedestrian friendly street, with smaller shops and cafes, which it is safe and convenient to walk through quickly, but also provides a pleasant relaxed space to stop and relax during the day.

Plot D is designed to have the atmosphere of a public park. A gathering area with the possibility of organising public activities is also envisaged. The aim is to reduce the hard surfaces to the minimum and maximise the opportunity for bio-diversity and blue-green infrastructure.

1.1.2. ARCHITECTURAL CONCEPT

1.1.3. Each of the three new buildings individually explores the potential of their programme and their urban context, but as a whole they work together to create clear identity for the development. The proportions and structural systems are chosen to reflect the scale of the sites and to optimise the efficiency for each function.

1.1.4. Building C offers a unique opportunity to explore the combination of functions into a unified superstructure with workplace and residential homes coexisting within a flexible framework offering future adaptability to evolve over time. The tagline “OFFICE / HOME OFFICE” OR “O-HO” summarises the

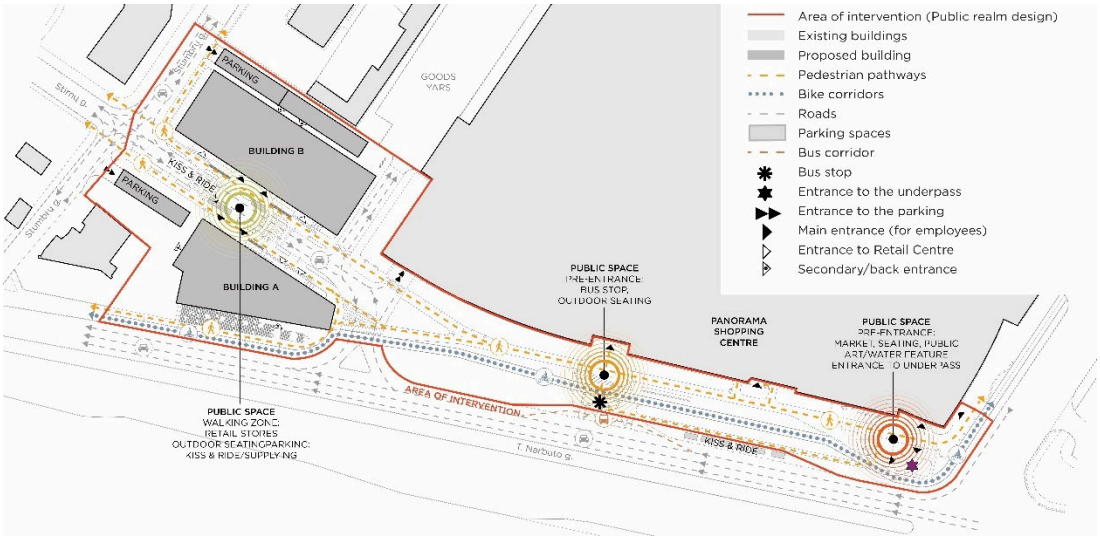
2. PROPOSED SOLUTION FOR THE TENDER SITE/PLOT (INCL. PLOT D)

2.1.1. CONCEPT

We see the public space as an integral part and representation of the newly proposed buildings A and B and the existing shopping centre. The landscaping has been designed to be visually attractive as well as provide opportunities along the route for social interaction. The main design theme is to ensure seamless connectivity of the new and existing buildings via the public space. This linear park essentially runs from the corner of the shopping centre, across to Stirnu St. Together with the greenery, this area is unified by a series of atypical furniture clusters, a coordinated paving layout, an art installation, as well as other carefully considered architectural features. The public space also includes
a gathering point for social, commercial and cultural activities organised by the shopping centre.
The combination of functions across the Panorama owned site effectively brings together a large number of amenities within easy reach creating a 15 minute neighbourhood, where all the essentials for a good quality of life a located within a short walk.

2.1.2. FUNCTIONAL & CIRCULATION LAYOUT

The design of the public realm takes into account all existing pedestrian, bicycle and vehicular routes. The proposals respect the routes of existing footpaths and roads in the wider area. The existing routes are adapted where necessary to ensure that movement through the site is safe and natural. We have strived to encourage connections between important nodes such as the entrances to the shopping centre, the area between buildings A and B, the bus stop and the entrance to the underpass. A new cycle lane has been included within the park zone and joins the existing cycle route network across the site.

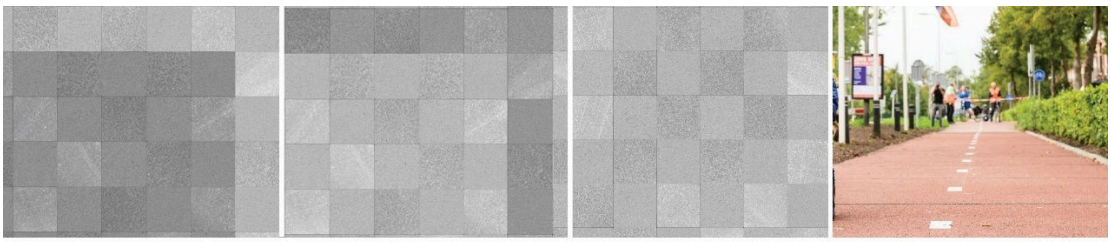


The proposal also addresses the public space outside the owner's territory. This area comprises public space adjacent to the proposed area or adjoining the proposed buildings. The public space in this part is based on the existing condition, without distinct boundaries between green areas, sidewalks, and roads. As part of the proposal, new paving, urban furniture, and potentially trees within existing green areas are added. The aim of the proposal is to enhance and unify the surrounding public space with the proposed area.

In Stirnų St. between Buildings A & B the speed limit is reduced to 30/20km/h. There is a area between the entrances of the proposed buildings which has the character of a pedestrian zone or shared surface. The road is defined pavers and is separated from the pavement by trees and green areas.

2.1.3. PAVEMENT CONCEPT

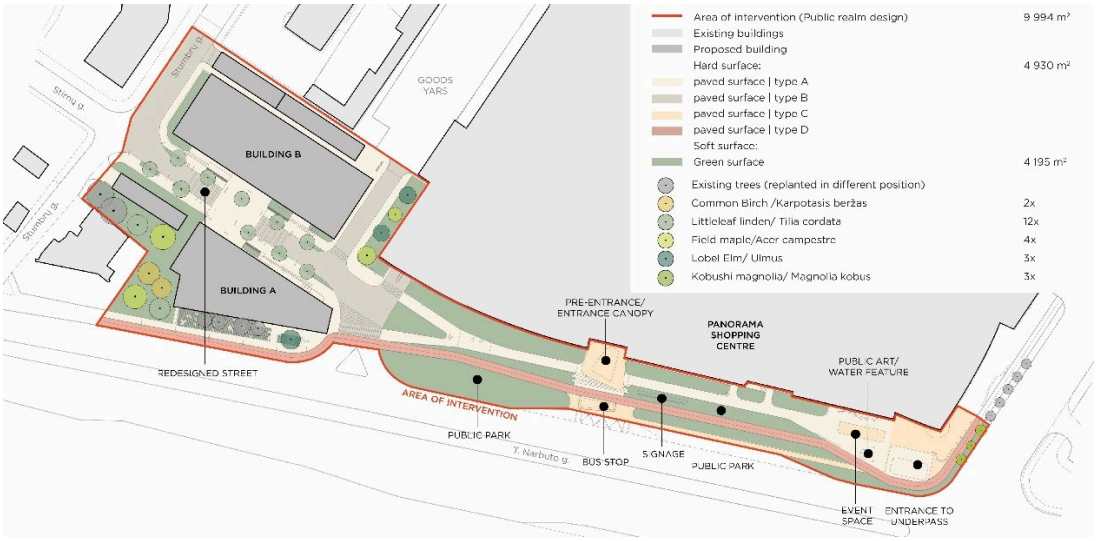
The aim of the design is to unify the public space within the designated area. This goal is achieved by using paving of the same format and material. The pavers are made of concrete with additives of various colours to create a wide range of grey shades. Different patterns are formed by combining these tiles, each indicating the purpose of the respective area. The slabs are in a format of 400x400 mm. The design supports the character of the street with this distinctive paving.



2.1.4. PROPOSED SOLUTIONS FOR THE ARRANGEMENT OF PLANTATIONS AND PLANTING GROUPS

Our aim is to minimise the paved areas in relation to the existing site plan and increasing the coefficient of green areas. On plot D we propose planting taller shrubs and plants to form an acoustic barrier between the pavement and the busy road. We have deliberately not used tree planting, so as not to create a visual barrier and obscure the frontage of the shopping centre.
In Stirnų St. between Buildings A and B, we also put an emphasise on the amount of greenery, whether in the form of urban gardens, green walls or denser tree planting.

DIAGRAM OF THE PLOT D AND PUBLIC SPACE AROUND BUILDING A & B



Note: Green surface area includes greenery on the roofs of Buildings A & B.

TREES

Trees planting is planned between Buildings A and B and along the cycle path in the western part of plot D. In total, 11 new trees are planned. The selection of species was made with consideration of the climatic conditions of the site and tree species already present in the area, and the overall aesthetics and shape of the tree to fit into the urban setting. The trees are smaller and medium-sized in stature and crown size. For mature trees, the crowns are of sufficient height so that they do not create a visual barrier at street level. Species such as Common birch, Littleleaf linden, Field maple, Lobel elm, and Kobushi magnolia were chosen. Existing trees in front of Building A will be transplanted to a distance from the property boundary to avoid constraining the proposed development.
All greenery and trees located on the building parcels will be removed and replaced by an equal number of trees in the newly designed street.

PLANTATION

On the green areas, a diverse vegetation cover will be planted, complemented by plants of medium and taller height. Plants will be selected based on the climatic conditions of the site while also being resilient in urban environments. On plot D, we propose infiltration ponds, so specific plants tolerant to increased moisture will be chosen for these areas. The exact selection of plants will be addressed in the following stages of the project.

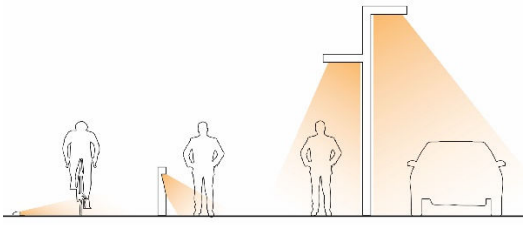
REFERENCES

AREA SCHEDULE OF GREENERY

			Total
area of intervention	Tender site/plot Plot D	16,055 sqm 4,836 sqm	20,891 sqm
hard surface	roads pathways	7,174 sqm 3,704 sqm	10,878 sqm
soft surface	Greenery on ground Greenery on construction	3,562 sqm 373 sqm	3,935 sqm
greenery on roofs	buildng A buildng B buildng C	171 sqm 396 sqm 1789 sqm	2,356 sqm
newly plantaged trees			11x

2.1.5. LIGHTING SOLUTIONS

The public lighting strategy proposes three scenarios for illuminating public spaces. Our design aims to ensure that these areas are adequately lit when needed, while also striving to minimise light pollution. For this reason, the lights are lower in intensity than typical urban lighting, but more numerous. Our design proposal encourages the use of orange coloured light, which disturbs less during the night, has a lesser negative impact on the circadian rhythm (due to the absence of blue light), furthermore it does not attract insects and similar pests.



2.1.6. SMALL ARCHITECTURE SOLUTIONS PROZMNU

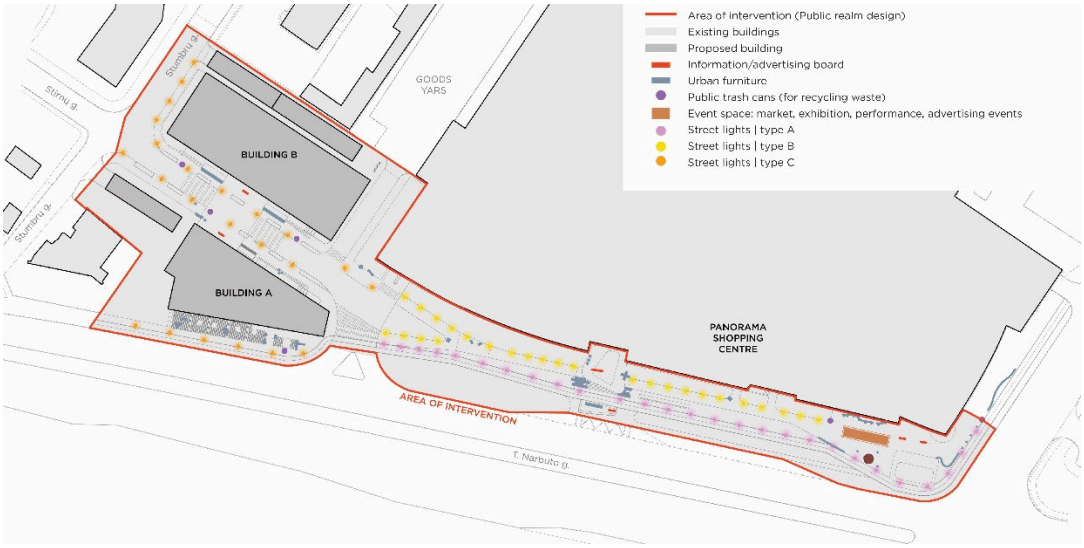
The public realm is equipped with a range of urban seating types and information panels. The seating clusters are designed for maximum convenience and as zones to encourage reflection & contemplation. Seating clusters are arranged in front of the shopping centre entrances and in the space between Buildings A&B. A zone for public artwork has been reserved, adjacent to the main entrance of the Panorama Shopping Centre. The artwork serves as a landmark and is therefore prominently sited at the corner of the site boundary, close to the main entrance and access to the

pedestrian underpass. Digital screens combining information, orientation with promotional functionality are positioned next to the main entrance of the shopping centre.
In addition, signage in front of Buildings A&B will present office tenant logos and branding for the purpose of visitor orientation.

The proposal also addresses the new appearance of the existing exit from the underpass. Although the modification of the exit is beyond the scope of the assignment, we are convinced that the redesign of the exit would significantly contribute to improving the space in front of the entrance to the shopping centre and support the importance of the corner of the designated area, enhancing its utilization and revitalizing the public space in front of Panorama. The exit is designed so that the staircase faces the entrance to the shopping center. We want the exit to appear grand and be maximally illuminated by natural light. An elevator is also part of the exit structure.

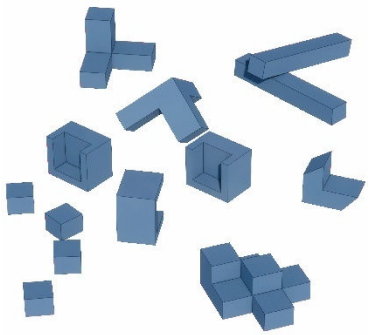
The design of the public space includes the design of an outdoor shelter that protects the public area in front of the pre-entrance to the shopping centre. Whilst any design of this type is beyond the requirements of the brief, we see the shelter as a potential feature that will greatly enhance the area in front of the entrance and support its significance.

DIAGRAM



URBAN FURNITURE

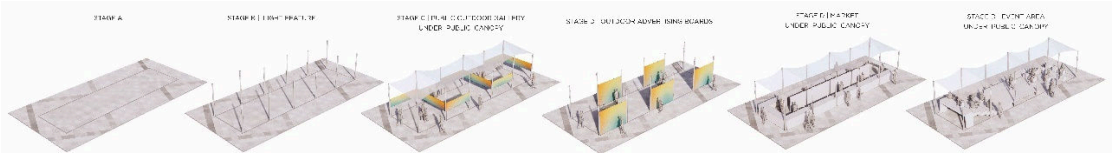
As part of the public realm design, we have introduced a series of objects, distinguished by their unique shapes and colours. The purpose is to create installations that blend aesthetics of sculptural art with a practical functionality, for the public – providing places for relaxation, while also offering opportunities for interaction, such as climbing. Each object is unique in appearance and orientation, contributing to the diversity and liveliness of the public space. The stimulating visual appearance of these objects, is intended to enrich the city environment and serve as a connecting element that unites the entire area of the proposed public space.



EVENT PLACE

In front of the Main Entrance to the shopping centre, we have designated an area measuring 3x8 meters for hosting various public events such as seasonal markets, advertising campaigns, exhibitions, performances, and other social gatherings. For these purposes, we have designed a removable structure of columns anchored into the ground in a grid of 3x3 meters. Each column node can function as p ublic lighting. A tensile roof can be stretched between the poles to provide protection over the designated area. The following diagrams illustrate the potential uses of this space.

DIAGRAM



2.1.7. PROPOSED GREEN/SUSTAINABLE SOLUTIONS

Sustainable design principles have been used to develop a robust drainage network to serve the entire public area. Elements such as soakaways & retention ponds recover rainwater which can be filtered and re-used to contribute to the enhanced the visual appearance of green zones within the public realm. The primary goal is to keep water in the locality and to reinforce the resilience of the urban environment to help it mitigate increasingly adverse weather events due to climate change. An enhanced visual appeal is a secondary benefit, which can support a greater coefficient of planting throughout the year. The planting can help provide shade and cooling during the summer months and assist with releasing oxygen to purify the local environment. Green roofs are incorporated with the aim of promoting biodiversity across the entire scheme.
The external landscaping is designed to achieve **bio-diversity net gain** across the whole site by adding green surfaces, trees and green roofs.

20 minute neighbourhoods – all amenities in walkable distance

2.1.8. CONFORMITY OF THE TENDER SITE/PLOT AND ITS APPROACHES TO THE PRINCIPLES OF UNIVERSAL DESIGN

The design of the public space is based on the principles of the creation of the public space of the city of Vilnius set out in the Street Design Manual such as: protection of existing trees, replacement of trees cut down as a result of construction, use of trees and shrubs to screen the road from the pavement, safe pedestrian crossing, sufficiently lit paths and gathering areas, activation of the public space. The design also recognizes the importance of pedestrian routes and bicycle routes which the design encourages and prioritizes over individual traffic. "Walking comes first." Promoting pedestrian routes and a pleasant public realm environment is one of the primary goals of the entire design. The public realm is designed to be barrier-free and allow pedestrians to move safely and naturally through the area.

3. DESCRIPTION OF THE SUBJECT TENDER – THE BUILDNG TO BE DESIGNED

3.1. BUILDING A

3.1.1. PROPOSED FUNCTIONAL LAYOUT

The floorplate reflects the constraints of the site and the core has been positioned to the west side of the building to maximise the efficiency and functionality of the resulting triangular office spaces. The expectation is for largely open plan office space with approximately 10% of meeting rooms. The overall occupancy is anticipated at of 10m2 per person, which takes into consideration the increased demand for social and break-out spaces, but also the trend for home working that allows the office space to be allocated in a flexible manner via a workplace App.

The building covers 6 levels with the main office reception and commercial spaces occupying on the ground floor, together with technical spaces for the HVAC systems and back-of-house areas. A roof top terrace accessible from the main core is available for the use of all tenants. In common with the architectural language established in Building C, an open staircase is positioned on the south facade to provide a secondary means of escape. This position also helps to reduce solar gain from the south where adequate natural light is available from the north in this narrow section of the floorplate.

The office floorplate is logically divisible into two main tenancies, further sub-division will create inefficiencies and the need for additional access corridors to the WC blocks. However, smaller units are technically feasible.

The Ground Floor commercial space can be leased as a single space, or again sub-divided into smaller units between 50 - 100 sqm, including separate entrances from the pedestrian zone. The set back corner at ground level offers a sheltered entrance for a flagship retailer of for café seating.

3.1.2. CIRCULATION

The pedestrian circulation around the building and the traffic connection are shown in the Situation Diagram and are proposed to minimise the cross-over of foot and vehicle traffic to ensure a safe environment. The building entrance is located on the ground floor directly opposite to the entrance to Building B creating a focal point in the wider streetscape. The ground floor reception provides access to the back-of-house areas and technical spaces, as well as to the main vertical core of the building.

Vertical circulation is provided by the side-core located towards the west façade of the building and contains the accommodation stairs and lifts. This location is the deepest part of the plan and the spaces around the core can be successful used for WC blocks, meeting rooms, social areas and private offices. The core also provides access to the roof terrace for use by all tenants.

3.1.3. PROPOSED MATERIALITY

The material solution for the facades is proposed as a naturally ventilated modular system finished with ceramic / terracotta cladding on the upper levels and on the lower floors a glass fibre reinforced pre-cast concrete column cladding combined with lightweight aluminium detailing. The materials are chosen for long life and durability with the aim for reducing lifecycle embodied carbon emissions and the need for intensive interim maintenance.

The office spaces are proposed to be “self-finished” with minimal additional decorative cladding, plastering or painting. Where CLT is deployed in the core this will be exposed and treated to ensure durability, but not clad. Office partitions will be modular and designed for disassembly so they can be further deployed for subsequent tenants in the building, reducing the phenomenon of the “disposable fit-out”, which is a significant contributor to construction waste. Similarly, for the raised floor system, that will be specified for high durability, adaptability and long life. The ceilings are designed to be open and the HVAC systems specified accordingly to provide acoustic comfort in the interior. The objective is to reduce the quantity of materials used in an effort to be deliver “sufficiency” and a low embodied carbon building.

3.1.4. PROPOSED GREEN/SUSTAINABLE SOLUTIONS

Building A has the potential for the above ground construction to be built in mass timber, using a LVL (Laminated Veneer Lumber) frame and CLT (Cross Laminated Timber) floors and bracing walls. This approach would reduce the lifecycle carbon (over 60 years) by at least 30%. Alternatively, a timber/concrete hybrid floor slab solution can be implemented, bring advantages in the durability and acoustic characteristics of the building.

The building grid is an efficient 8.0 x 8.0m which works well in both concrete and timber construction systems. The notional façade module is 4m which assumes a low proportion of small cellular offices in line with growing trends. Each 4m façade module is equipped with an openable panel to allow natural ventilation of the office spaces in the interim seasons, helping also to reduce the mechanical cooling load.

Roof drainage connected to the site wide rainwater retention system reduces loads on the public system and provides for irrigation of the green landscaped areas in the adjacent site area D to the south of Panorama Shopping Centre. Mono or bi-facial PV panels on the bio-solar roof provide a source of on-site renewable

energy. Heating and cooling via air (or ground)-source heat pumps mean the building is free of local emissions and electrical power will be contracted with a renewable energy provider. Efficient VRV based HVAC system will allow for the balancing of heating and cooling needs within the building, helping to reduce energy demands.

An automated lighting system will balance the internal artificial lighting against the available daylight to optimise energy use and internal conditions for users. This can be locally overridden, but is automatically reset each day. Daylight harvesting systems with high-end lighting control devices for the optimization of energy consumption.

3.1.5. PROPOSED CONCEPTUAL ENGINEERING SOLUTIONS

In addition to the to the potential for deploying a mass timber construction system, the building will incorporate highly efficient HVAC systems based on air to water heat pumps feeding a VRV system for heating and cooling the office and commercial spaces. Roof top mono or bi-facial PV panels are set within the green roof will provide a proportion of on-site renewable energy, that can be deployed directly to off-set energy demands or will be used to charge on-site batteries to serve for EV charging, or common area and street lighting.

3.1.6. PROPOSED KEY STRUCTURAL SOLUTIONS (KEY STRUCTURAL SCHEME)

Option 1. Optimized reinforced concrete structural frame with in-situ core and floor slabs below and above ground based on an 8.0 x 8.0m grid. This works for the parking and the offices where we do not anticipate the intensive sub-division into cellular offices. This 4m facade module reduces the amount of aluminium in the façade.

Option 2. The compact grid and size of Building A also lends itself very well to be constructed using a mass timber LVL (Laminated Veneer Lumber) frame with CLT (Cross Laminated Timber) core and internal bracing walls. WC cores will be realised with joists and plywood to mitigate the effects of water damage from leaks in the wet areas. Alternatively, a timber-hybrid construction utilising timber columns and beams with CLT floor panels with concrete topping to help reduce noise transfer and defections.

3.1.7. PROPOSED MAJOR ENGINEERING SOLUTION

The building will incorporate highly efficient HVAC systems based on air to water heat pumps feeding a VRV system for heating and cooling the office and commercial spaces. The objective is to ensure the lowest Energy Usage Intensity of the building and to provide a healthy work environment.

3.1.8. PROPOSED MAJOR FIRE SAFETY SOLUTION

The building has a compact floor plate with access to two means of escape. Fire safety systems, including detection, signalisation and suppression will be implemented in line with local norms. The strict use of non-flammable materials in the façade and fire-stopping of ventilated facades will reduce the possible external spread of fire between floors.

3.1.9. COMPLIANCE OF THE BUILDING TO THE UNIVERSAL DESIGN PRINCIPLES

The design of Building A respects the guidance provided by the City of Vilnius in terms of complementing the existing urban structure and using a modern architectural expression. The materiality reflects the use of locally available construction products and the colour scheme carefully moderates between the Panorama Shopping Centre and the existing residential buildings in the wider area. Likewise, the adjacent streetscape and planting are proposed in line with the design principles for Vilnius and we believe this is a highly appropriate approach to regenerating the city.

3.2. BUILDING B

3.2.1. PROPOSED FUNCTIONAL LAYOUT

The floorplate reflects the constraints of the site and the core has been positioned to the north side of the building to maximise the efficiency and functionality of the resulting rectangular office spaces. The expectation is for largely open plan office space with approximately 10% of meeting rooms. The overall occupancy is anticipated at of 10m2 per person, which takes into consideration the increased demand for social and break-

out spaces, but also the trend for home working that allows the office space to be allocated in a flexible manner via a workplace App.

The building covers 7 levels with the main office reception and commercial spaces occupying the ground floor, together with technical spaces for the HVAC systems and back-of-house areas. A roof top terrace accessible from the main core is available for the use of all tenants.

The typical office floorplate of 1,350m2 can be simply sub-divided into 4 units of between 296 and 380m2, but these units can be combined according to the tenants' requirements. The Ground Floor commercial space can be leased as a single space, or again sub-divided into smaller units, including separate entrances from the pavement.

Basement parking is available for 79 standard cars. The parking is partly arranged on ramped surface in order to allow the basement to extend under the existing service access route to the delivery yard of Panorama Shopping Centre. This allows a single basement without the need for further excavation and cost. The parking requirement for the building is 141 pp the local code (including the reduction coefficient for the location), this means there is an 62 pp shortfall, which will be accommodated in the existing basement of the shopping centre. With the options for cycling, public transportation and car-share, the need for high levels of parking in office buildings is falling. Together with working from home we believe the need for parking in city locations can be reduced. In London, new office buildings have little or no car parking, permitting reduced below ground structures which significantly reduces the embodied carbon related to concrete sub-structures.

There are accessible roof terraces on the 7th level and on the roof. The north facing roof terraces reflects the localised height constraint relating to the daylight requirements of the villa located to the north of Building B.

3.2.2. CIRCULATION

The pedestrian circulation around the building and the traffic connection are shown in the Situation Diagram and are proposed to minimise the cross-over of foot and vehicle traffic to ensure a safe environment. The building entrance is located on the ground floor directly opposite to the entrance to Building B creating a focal point in the wider streetscape. The ground floor reception provides access to the back-of-house areas and technical spaces, as well as to the main vertical core of the building.

Vertical circulation is provided by the central-core located towards the north façade of the building and contains the accommodation stairs and lifts. This location is on the north façade ensuring that the main street elevation is animated with occupied spaces and not a blank area of façade. The WC blocks will be located in the deepest part of the office floorplates allowing each tenancy to have their own facilities. Two lifts within the main core also provide access to the roof level terrace for use by all tenants. The westernmost lift (MRL, motor room-less lift) is truncated at level 6 to respect the masterplan constraint reflecting the requirement for daylight to the adjacent residential villa.

3.2.3. PROPOSED MATERIALITY

The material solution for the facades is proposed as a naturally ventilated modular system finished with ceramic / terracotta cladding on the upper levels and on the lower floors a glass fibre reinforced pre-cast concrete column cladding combined with lightweight aluminium detailing. The materials are chosen for long life and durability with the aim for reducing lifecycle embodied carbon emissions and the need for intensive interim maintenance.

The office spaces are proposed to be "self-finished" with minimal additional decorative cladding, plastering or painting. Office partitions will be modular and designed for disassembly so they can be further deployed for subsequent tenants in the building, reducing the phenomenon of the "disposable fit-out", which is a significant contributor to construction waste. Similarly, for the raised floor system, that will be specified for high durability, adaptability and long life. The ceilings are designed to be open and the HVAC systems specified accordingly to provide acoustic comfort in the interior. The objective is to reduce the quantity of materials used in an effort to be deliver **"sufficiency"** and a low embodied carbon building.

3.2.4. PROPOSED GREEN/SUSTAINABLE SOLUTIONS

For building B, we propose the utilization of environmentally friendly fixtures with low water consumption. We will incorporate modern technologies and low-flow systems that minimize water usage in everyday operations.

Building A has the potential for the above ground construction to be built in mass timber, using a LVL (Laminated Veneer Lumber) frame and CLT (Cross Laminated Timber) floors and bracing walls. This approach would reduce the lifecycle carbon (over 60 years) by at least 30%. Alternatively, a timber/concrete hybrid floor slab solution can be implemented, bring advantages in the durability and acoustic characteristics of the building.

The building grid is an efficient 8.0 x 8.0m which works well in both concrete and timber construction systems. The notional façade module is 4m which assumes a low proportion of small cellular offices in line with growing trends. Each 4m façade module is equipped with an openable panel to allow natural ventilation of the office spaces in the interim seasons, helping also to reduce the mechanical cooling load.

Roof drainage connected to the site wide rainwater retention system reduces loads on the public system and provides for irrigation of the green landscaped areas in the adjacent site area D to the south of Panorama Shopping Centre. Mono or bi-facial PV panels on the bio-solar roof provide a source of on-site renewable energy. Heating and cooling via air (or ground)-source heat pumps mean the building is free of local emissions and electrical power will be contracted with a renewable energy provider. Efficient VRV based HVAC system will allow for the balancing of heating and cooling needs within the building, helping to reduce energy demands.

An automated lighting system will balance the internal artificial lighting against the available daylight to optimise energy use and internal conditions for users. This can be locally overridden, but is automatically reset each day. Daylight harvesting systems with high-end lighting control devices for the optimization of energy consumption.

3.2.5. PROPOSED CONCEPTUAL ENGINEERING SOLUTIONS

The building will incorporate highly efficient HVAC systems based on air to water heat pumps feeding a VRV system for heating and cooling the office and commercial spaces. Roof top bi-facial PV panels set within the green roof will provide a proportion of on-site renewable energy, that can be deployed directly to off-set energy demands or will be used to charge on-site batteries to serve for EV charging, or common area and street lighting.

3.2.6. PROPOSED KEY STRUCTURAL SOLUTIONS (KEY STRUCTURAL SCHEME)

Optimized reinforced concrete structural frame with in-situ core and floor slabs below and above ground based on an 8.0 x 8.0m grid. This works for the parking and the offices where we do not anticipate the intensive sub-division into cellular offices. This 4m facade module reduces the amount of recycled aluminium in the façade system, helping to minimise the embodied carbon.

3.2.7. PROPOSED MAJOR ENGINEERING SOLUTION

The building will incorporate highly efficient HVAC systems based on air to water heat pumps feeding a VRV system for heating and cooling the office and commercial spaces. The objective is to ensure the lowest Energy Usage Intensity of the building and to provide a healthy work environment.

3.2.8. PROPOSED MAJOR FIRE SAFETY SOLUTION

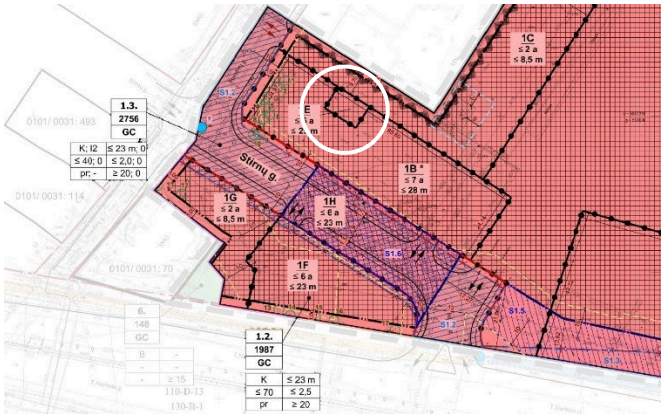
The building has a compact floor plate with access to a scissor staircase providing two separate means of escape from the office spaces via the central core to the north facade. The basement has one staircase in the main core and a separate stair leading to the ground level to the north of the building. Fire safety systems, including detection, signalisation and suppression will be implemented in line with local norms. The strict use of non-flammable materials in the façade and fire-stopping of ventilated facades will reduce the possible external spread of fire between floors.

3.2.9. COMPLIANCE OF THE BUILDING TO THE UNIVERSAL DESIGN PRINCIPLES

The design of Building B respects the guidance provided by the City of Vilnius in terms of complementing the existing urban structure and using a modern architectural expression. The materiality reflects the use of locally

available construction products and the colour scheme carefully moderates between the Panorama Shopping Centre and the existing residential buildings in the wider area. Likewise, the adjacent streetscape and planting are proposed in line with the design principles for Vilnius and we believe this is a highly appropriate approach to regenerating the city.

We further note that the building respects the height limits stated in the masterplan and the daylight requirement for the villa located to the north of Building B has been met by reducing the core dimensions and creating an additional roof terrace on level 7.



Position of terrace on level 7 of Building B

3.3. BUILDING C

3.3.1. PROPOSED FUNCTIONAL LAYOUT

Building C is proposed with a strong architectural and structural concept demonstrating a number of key sustainability innovations. The building combines office and residential functions into a superstructure frame of reinforced concrete, that is designed to encapsulate the whole site and provide a framework, into which the individual functions are inserted using mass timber construction systems.

This mixed-use concept is represented by the moto **“OFFICE / HOME OFFICE”**, or **“O-HO”** for short.

The major structural frame is conceived as a permanent, long-lasting superstructure with a design lifespan of at least 200 years. This ensures that the lifecycle embodied carbon within this element of the building is allocated to a long timeframe, mitigating the short-term build / demolish cycle that dominates development in the first quarter of the 21st century.

Office car parking with a total capacity of 161 spaces is planned on two underground floors. The potential shortfall against the local codes could be accommodated within the Panorama Shopping Centre parking basement. No permanent parking has been allocated to the short-term residential accommodation in line with typical Build to Rent developments, although an allowance for disabled drivers should be considered within the office parking areas. It is recommended that residents driving requirements of met by car-share platform, with a number of parking bays allocated on the adjoining streets, or within the shopping centre for this purpose.

The primary access to the offices is from, facing the existing business park. On entering, and behind the main reception, lies the generous atrium, open over all floors that contains the cruciform of the building superstructure creating a unique identity and an impressive sculptural feature. The atrium is enclosed at roof level by ETFE pillows to provide even daylighting and a good quality internal environment. Social amenities and support spaces, such as a canteen, a cafe, a rest area, toilets and 2 communication cores open onto the main atrium.

Flexibly divisible office spaces are designed on the other floors. The size of the office units is notionally from 300 to 550 m2, but these can be combined to create a large floorplate of 1,750m2. The plan offers a combination of spatial typologies from 7.5m deep single-aspect offices, shallow plan 12m deep dual-aspect space, and 24m deep three-tract office space with internal meeting rooms, social facilities and breakout areas.

All of these format's appeal to different tenant types and workplace operations within larger organisations and provide very flexible space for a wide range of users.

The residential units are developed from an efficient 4m planning module and are realised in CLT panels manufactured off-site and assembled in place, to form compact homes of between 35m2 and 43m2. The flexibility of the constructional system allows for the free creation of shared community spaces within the framework, including kitchens and dining spaces, common rooms and other leisure amenities. External spaces can be created by omitting modules and these can be interlinked via staircases to form a network of green spaces accessible from all levels. The opportunity for combining units allows the creation of two-bedroom accommodation of about 70m2.

A total of 79 residential units are include in the proposed configuration, but with the flexible superstructure concept, the residential function can be extended to the west and east side of the building to reflect changes in demand.

The lowest level residential units on the east side of the site have the opportunity for small external gardens, located above the car park ramp to Panorama. All other units offer balconies to ensure access to outside space to support the wellbeing of residents. Adjacent to the residential units, storage spaces occupy the inner tract, where daylighting is not available.

Building C straddles the existing transformer station and we propose to activate the space above the transformer as a leisure or sport zone. The roof of the building houses a common, wet-facing terrace accessible for all tenants. The roof space has the potential to provide event spaces, community gardens and outdoor working "rooms" during fine weather.

The movement of people in the office area is ensured by 2 main communication cores, which are complemented by an additional external fire escape stair on the east facade.

In the residential part of the building, 2 communication cores are designed, which are interconnected by a corridor. From the corridor, access to the community terraces is provided for all tenants.

3.3.2. PROPOSED MATERIALITY

For the offices the façade is predominantly fully glazed within a powder-coated (recycled) aluminium frame system. The facades include a hardwood timber screen of vertical lamellas arranged to reduce solar gains. External parametrically controlled blinds will further mitigate heat gains and glare, and also provide privacy, as necessary. The cores will be clad in a ventilated modular, timber composite faced system with a bold colour scheme to emphasise their function.

The residential units are clad in a ventilated heat-treated timber cladding system. The timber will naturally patinate over time, but is durable and when it eventually needs replacing the material is designed for easy disassembly and can be re-purposed or recycled to minimise lifecycle carbon emissions.

All materials are chosen for long life and durability with the aim for reducing lifecycle embodied carbon emissions and the need for intensive interim maintenance.

The office spaces are proposed to be "self-finished" with minimal additional decorative cladding, plastering or painting. Office partitions will be modular and designed for disassembly so they can be further deployed for subsequent tenants in the building, reducing the phenomenon of the "disposable fit-out", which is a significant contributor to construction waste. Similarly, for the raised floor system, that will be specified for high durability, adaptability and long life. The ceilings are designed to be open and the HVAC systems specified accordingly to provide acoustic comfort in the interior. The objective is to reduce the quantity of materials used in an effort to be deliver **"sufficiency"** and a low embodied carbon building.

3.3.3. PROPOSED GREEN/SUSTAINABLE SOLUTIONS

Building C is designed to include a long lifespan concrete superstructure and large proportion of mass timber sub-structure, to deliver a low carbon building over an extended lifecycle. The building fabric will aim for high thermal performance, with low air permeability. External shading will reduce overheating in summer and highly

efficient building technical systems will be designed as all-electric and be supplied with power from renewable resources. The aim is to target very lower Energy Usage Intensity

The modular mass timber infill to the superstructure will be formed by a combination of LVL (Laminated Veneer Lumber) frame and CLT (Cross Laminated Timber) floors and bracing walls. This approach would reduce the lifecycle carbon (over 60 years) by at least 30%. Alternatively, a timber/concrete hybrid floor slab solution can be implemented, bring advantages in the durability and acoustic characteristics of the building.

The LVL framework will be fixed to the reinforced concrete slabs of the superstructure and intermediate floors will be made from CLT, or CLT/concrete hybrid desks to provide flexible layouts for the office space and residential sections.

The opportunity to use 3D modules exists, but this approach has a number of disadvantages, which can be overcome using a “flat-packed” approach based on LVL components and CLT panels preformed off-site to exact dimensions and delivered to site efficiently by truck.

The superstructure has an overall notional grid of 12m x 12m. The LVL mass timber column grid for the office areas will be based on a 6m x 6m notional module. The residential units will be constructed using a 4m wide module to define the party walls between units. efficient 8.0 x 8.0m which works well in both concrete and timber construction systems. The notional façade module is 4m which assumes a low proportion of small cellular offices in line with growing trends. Each 4m façade module is equipped with an openable panel to allow natural ventilation of the office spaces in the interim seasons, helping also to reduce the mechanical cooling load.

Roof drainage connected to the site wide rainwater retention system reduces loads on the public system and provides for irrigation of the green landscaped areas in the adjacent site area D to the south of Panorama Shopping Centre. Mono or bi-facial PV panels on the bio-solar roof provide a source of on-site renewable energy. Heating and cooling via air (or ground)-source heat pumps mean the building is free of local emissions and electrical power will be contracted with a renewable energy provider. Efficient VRV based HVAC system will allow for the balancing of heating and cooling needs within the building, helping to reduce energy demands.

An automated lighting system will balance the internal artificial lighting against the available daylight to optimise energy use and internal conditions for users. This can be locally overridden, but is automatically reset each day. Daylight harvesting systems with high-end lighting control devices for the optimization of energy consumption.

3.3.4. PROPOSED CONCEPTUAL ENGINEERING SOLUTIONS

Building C is conceived as an innovative building incorporating a concrete superstructure and mass timber modular solution for the office and residential elements. The concept is designed to provide flexibility over an extended lifecycle and to allow the building to adapt to future changes in the commercial demands, and functional uses. The possibility exists to remove, or re-configure some sections of the building to provide, for example, double-height spaces, such as auditoria, or entertainment venues, or to create external spaces, or wintergardens. The use of LVL mass timber framing allows for adaptation of the main structure and CLT panels will be used for the partitioning and floors.

3.3.5. PROPOSED KEY STRUCTURAL SOLUTIONS (KEY STRUCTURAL SCHEME)

A reinforced concrete superstructure on a notional 12m x 12m grid provides a framework for accommodating the office and residential spaces. This superstructure is conceived to contain modular mass timber constructions for the office and residential functions. The offices are based on 3 levels of 4m of a nominal 4m construction height per 12m super grid, and the residential based on 4 modules of a nominal 3m construction height. The 12m superstructure contains a structural concrete slab at ground floor level (above the parking) and at the first 12m horizontal level, that provide structural stability and also creates a horizontal fire-break within the building volume.

The southern vertical circulation cores are designed to service the 3m floor levels for the residential accommodation located to the south of the building volume to take advantage of the inner block views and the southern aspect away from the main street to the north.

The northwest and south east vertical circulation cores service the 4m floor levels for the office areas. The workplace floors occupy the north east and west sides of the superstructure oriented to the existing business district.

The cores provide lateral bracing and contain the fire escape stairs and MEP risers, leaving the remaining floor plate for flexible subdivision based on the office and residential modules.

We propose to undertake some modification of the existing transformer station external envelope to ensure that the buildings are optimised and that ventilation and access arrangements to the transformers can be achieved from the publicly accessible west and northern sides. This will clearly the subject to the approval of the power utility company but offers many operational and practical benefits for the project and for the power company. The incoming and outgoing cable routes will not be affected by the works, but temporary easements will be required during construction period to permit construction of the development. Furthermore, certain exemptions from protection zones and permanent easements will need to be agreed to ensure the rights of the power company are protected and that the safety of the facility can be ensured. Additional fire-resistant walls inside the office building and additional fire suppression systems inside the transformer housing should be considered to ensure the mutual protection and safety of both buildings.

3.3.6. PROPOSED MAJOR ENGINEERING SOLUTION

The key engineering “motif” for Building C is the idea of the permanent superstructure and the flexible mass-timer modular infill, that can adapt over the long envisage lifespan of the building.

3.3.7. PROPOSED MAJOR FIRE SAFETY SOLUTION

The building has a compact floor plate with access to a scissor staircase providing two separate means of escape from the office spaces via the central core to the north facade. The basement has one staircase in the main core and a separate stair leading to the ground level to the north of the building. Fire safety systems, including detection, signalisation and suppression will be implemented in line with local norms. The strict use of non-flammable materials in the façade and fire-stopping of ventilated facades will reduce the possible external spread of fire between floors.

3.3.8. COMPLIANCE OF THE BUILDING TO THE UNIVERSAL DESIGN PRINCIPLES

The design of Building C respects the guidance provided by the City of Vilnius in terms of complementing the existing urban structure and using a modern architectural expression. The materiality reflects the use of locally available construction products and the colour scheme carefully moderates between the Panorama Shopping Centre and the existing residential and office buildings in the wider area. Likewise, the adjacent streetscape and planting are proposed in line with the design principles for Vilnius and we believe this is a highly appropriate approach to regenerating the city and create a unified urban environment aligned with the with the principles set out in the Plot D proposals.

3.4. TENDER SUBJECTS

3.4.1. PHASING

The buildings A, B and C can be constructed separately, in sequence. We suggest that buildings A and B be constructed in parallel to create a complete street scape in a coordinated manner. The opportunity to construct Building A using a mass timber frame (LVL) and CLT means that construction could be started after the main above ground structural works on Building B and Building A basement are completed due to the speed of erecting mass timber buildings. This means that the façade works and fit-outs can complete in parallel and both buildings can be completed at the same time. The associated landscaping would be undertaken at the appropriate time to link with the landscape in Plot D.

Building C can be undertaken separately before, or after the other phases depending on market demand and other factors, such as supporting infrastructure works, for example, the potential adaptation of the transformer station.

3.4.2. GENERAL CHARACTERISTIC

the general characteristics of the structures of the tender subject to be designed at the

tender site/plot. The following data shall be provided in the table of general building characteristics (N o t e : The calculation of the indicators must take into account the buildings located on the entire plot (part of which is the tender site):

3.4.3. AREA TABLE FOR SITE

The total area of the plot (unique No 4400-5087-0249) on which the existing buildings and structures are located and on which buildings to be designed A, B, C

- The total area of the entire plot – 5,3 ha
- Existing structures on the plot – 33 200 sqm
- Proposed building (A, B, C) footprint total – 6078 sqm
- Individual building footprint:
    - A – 959 m2
    - B – 1,589 m2
    - C – 3,530 m2

3.4.4. THE INTENSITY OF DEVELOPMENT (UI) OF THE PLOT

- **Plot.no**. 1.1 48,295 m2_GC (allowed intensity 2,5)
- Designed GFA / B + C = 11,017 + 13,910 + 5970 m2
- Existing Shopping centre GFA = 65,000 m2
- Total GFA (B+C+Existing bldg.) = 95,897 m2
- Reached intensity **1,98**
- Allowed intensity 2,5

- **Plot.no. 1.2** 1,987 m2 GC (allowed intensity 2,5)
- Designed GFA / A = 5,697 m2
- Reached intensity **2,8**
- Allowed intensity **2,5** (Final intensity shall be balanced between plot 1.1 and 1.2)

3.4.5. THE DENSITY OF DEVELOPMENT (UI) OF THE PLOT

- **Plot.no. 1.1** 48,295 m2_GC (Building B/C)
- Designed footprint B + C = 1,589 + 3,530 m2
- Existing buildings footprint = 33,200 m2
- Total designed footprint (B+C+Existing bldg.) = 38,319 m2
- Reached density **79,3 %**
- Allowed building density (80%)

- **Plot.no. 1.2** 1,987 m2_GC (Building A)
- Designed footprint A = 959 m2
- Reached density **48,3 %**
- Allowed building density (70%)

3.4.6. AREA TABLES FOR BUILDINGS (SEPARATELY)

BUILDING A – OFFICE

- Building volme 21,828 + 6,021 = **27,849 m3**
- Building height 23 m
- Number of floors G + 5 (1 basement)

CONCEPT DESIGN - PANORAMA_ BUILDING A

Floor	Gross Internal Area						GLA (sqm)	GFA (sqm)	Building volumes (m3)
	NET office areas	Common Areas	Commercial Areas	Toilets	Technical Areas	Balcony Terrace	TOTAL GLA	TOTAL GFA	
GF		146	500	20	109		775	902	3608
1	745	24		60			829	959	3644
2	745	24		60			829	959	3644
3	745	24		60			829	959	3644
4	745	24		60			829	959	3644
5	745	24		60			829	959	3644
Roof terrace						356			
TOTAL	3 725	266	500	320	109	356	4 920	5 697	21828

Basements	Parking places	Gross Internal Area					GFA	
		Parking + ramp	Storages	Common Areas	Technical Areas	TOTAL		
B1	36	1 140	112	26	133	1 411	1 572	6021
TOTAL	36	1 140	112	26	133	1 411	1 572	6021

Parking capacity calc.: 75 pp requirements according to regulations 1 pp per 25 sqm of the office space. (Municipal parking reduction index fot the zone - 0.5)The garage parking capacity of 36 pp is based on the concept traffic design. The additional parking balance of 39 pp will be compensated in existing underground parking of the PANORAMA shopping center.

BUILDING B – OFFICE

- Building volme 42,893 + 10,586 = **53,479m3**
- Building height 28 m
- Number of floors G + 6 (1 basement)

CONCEPT DESIGN - PANORAMA_ BUILDING B

Floor	Gross Internal Area						GLA (sqm)	GFA (sqm)	Building volumes (m3)
	NET office areas	Common Areas	Commercial Areas	Toilets	Technical Areas	Balcony Terrace	TOTAL GLA	TOTAL GFA	
GF		216	1 040	30	253		1 539	1 729	7600
1	1 074	85		86			1 245	1 589	6038
2	1 246	67		104			1 417	1 589	6038
3	1 246	67		104			1 417	1 589	6038
4	1 246	67		104			1 417	1 589	6038
5	1 246	67		104			1 417	1 589	6038
6	1 019	84		104		237	1 444	1 343	5103
Roof terrace						440			
TOTAL	7 077	653	1 040	636	253	677	9 896	11 017	42893

Basements	Parking places	Gross Internal Area					GFA	
		Parking + ramp	Storages	Common Areas	Technical Areas	TOTAL		
B1	79	2 310	62	29	179	2 580	2 764	10586
TOTAL	79	2 310	62	29	179	2 580	2 764	10586

Parking capacity calc.: 141 pp requirements according to regulations 1 pp per 25 sqm of the office space. (Municipal parking reduction index fot the zone - 0.5)The garage parking capacity of 79 pp is based on the concept traffic design. The additional parking balance of 62 pp will be compensated in existing underground parking of the PANORAMA shopping center.

BUILDING C – OFFICE COMPONENT

- Building volme 55,640 + 23,280 = **78,920 m3**
- Building height 28 m
- Number of floors G + 5 (2 basements)

CONCEPT DESIGN - PANORAMA_ BUILDING C - OFFICE

Floor	Gross Internal Area						GLA (sqm)	GFA (sqm)	Building volumes (m3)
	NET office areas	Common Areas	Commercial Areas	Toilets	Technical Areas	Balcony Terrace	TOTAL GLA	TOTAL GFA	
GF		1 081	885	57	45		2 068	2 376	9 504
1	1 396	47		105			1 548	1 913	7 652
2	1 396	47		105			1 548	1 913	7 652
3	1 647	47		105		76	1 752	2 156	8 624
4	1 647	47		105			1 799	2 156	8 624
5	1 722	47		105			1 827	2 236	8 944
6	848	38		60		217	908	1 160	4 640
7									
Roof terrace									
TOTAL	8 656	1 354	885	642	45	293	11 450	13 910	55640

Basements	Parking places	Gross Internal Area					GFA	
		Parking + ramp	Storages	Common Areas	Technical Areas	TOTAL		
B1	78	178	83	85	78	1 270	3 328	13 296
B2	83	152	120	48	78		3 328	9 984
TOTAL	161	330	203	133	156	1 270	6 656	23280

Parking capacity calc.: 173 pp requirements according to regulations 1 pp per 25 sqm of the office space. (Municipal parking reduction index fot the zone - 0.5)The garage parking capacity of 161 pp is based on the concept traffic design. The additional parking balance of 16 pp (office 12 + 4 residential) will be compensated in existing underground parking of the PANORAMA shopping center.

BUILDING C – RESIDENTIAL

- Building volme **17,910 m3**
- Building height 28 m
- Number of floors G + 7

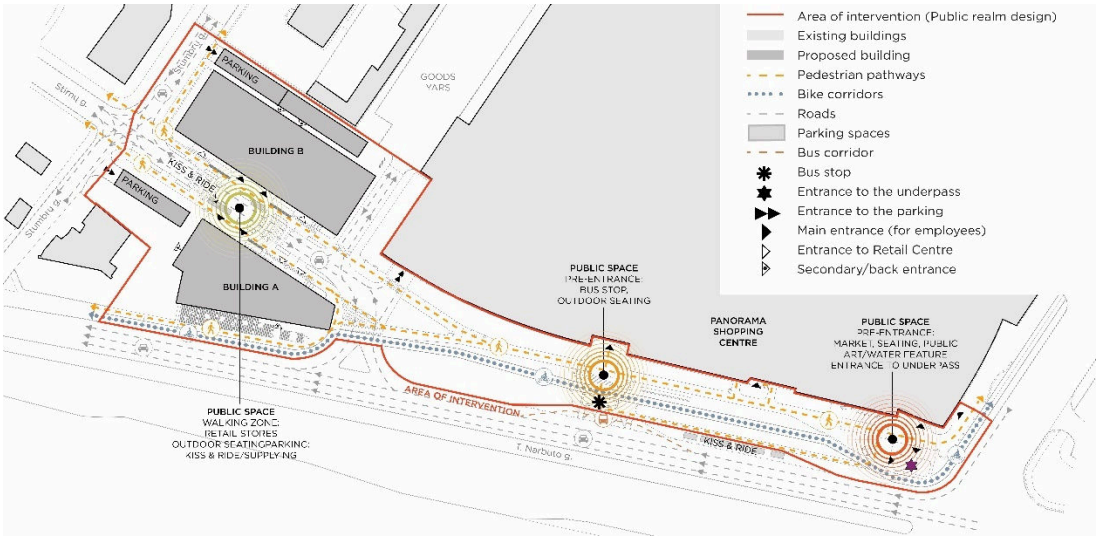
CONCEPT DESIGN - PANORAMA_ BUILDING C - RESIDENTIAL

Floor Above ground	Gross Internal Area					GLA (sqm)	GFA (sqm)	Building volumes (m3)	Residential units
	Residential	Common Areas	Commercial Areas	Balcony Terrace	Storages / Tech. space	TOTAL GLA	TOTAL GFA		
GF	212	93	240	146	101	792	784	2 352	6
1	318	67		24	85	494	719	2 157	9
2	424	67		32	85	608	719	2 157	12
3	318	178		24	85	605	608	1 824	9
4	212	178		16	85	491	498	1 494	6
5	212	178		16	85	491	498	1 494	6
6	318	67		24	85	494	608	1 824	9
7	424	67		32	85	608	719	2 157	12
8	590	64		217	33	904	817	2 451	10
TOTAL	3 028	959	240	531	729	0 5 487	5 970	17910	79

Parking capacity calc.: Calculated parking requirement 5% from the number of residential units- 4 pp. Additional residential parking requirements should be compensated in existing underground parking of the PANORAMA shopping center.

3.4.7. AREA TABLE (DALŠÍ)

The total area and functional areas of the part of the tender site/plot to be designed D;



3.4.8. AREA TABLE (GREEN AREAS)

Areas of plantations and green areas

			Total
area of intervention	Tender site/plot Plot D	16,055 sqm 4,836 sqm	20,891 sqm
hard surface	roads pathways	7,174 sqm 3,704 sqm	10,878 sqm
soft surface	Greenery on ground Greenery on construction	3,562 sqm 373 sqm	3,935 sqm
greenery on roofs	buildng A buildng B buildng C	171 sqm 396 sqm 1789 sqm	2,356 sqm
newly plantaged trees			11x

3.4.9. COSTS

for the calculation of the cost of the implementation (construction) of the estimated design concept (design tender, i.e. the subject tender), the tenderer is free to choose a reasonable calculation methodology, e.g. to provide the calculation of the cost (price) in aggregated figures, indicating and briefly describing/explaining the chosen calculation methodology;

Building / Plot	**TOTAL EUR**
Building A	**11,651,500 EUR**
Building B	**21,932,660 EUR**
Building C	**40,101,593 EUR**
Plot D	**3,868,000 EUR**
TOTAL Building A+B+C+Plot D	**77,553,753 EUR**

3.4.10. COST

For the cost breakdown refer to Appendix A.