

00XVLN

OPEN ARCHITECTURAL PROJECT COMPETITION FOR THE ARRIVALS TERMINAL OF VILNIUS AIRPORT



INDEX

- 01 - Urban design idea for the Competition area (level of detail 2)
- 02 - Architectural idea (level of detail 1)
- 03 - User experience (level of detail 1)
- 04 - Description of the Project's Phasing and functioning of the territory until the next Phases are implemented
- 05 - Describe and present the solutions as they meet the Competition conditions
- 06 - Functional planning of buildings
- 07 - The materiality of buildings
- 08 - Integrating sustainable solutions and conceptual engineering solutions
- 09 - Planning public spaces as they comply with the Competition conditions and universal design principles
- 10 - Schemes, solutions and descriptions for different modes of transport, cycling and pedestrian flows
- 11 - Substantial structural decisions for the design and reconstruction of buildings



Urban design idea for the Competition area (level of detail 2)

The long-term strategic goals of Vilnius Airport are outlined in its Master Plan vision, emphasizing expansion, increased passenger capacity, and alignment with evolving aviation industry trends. Our urban design concept supports the Master Plan’s vision by integrating future traffic projections, territorial planning guidelines, phased development strategies, sustainability principles, and long-term financial viability.

The proposal presents innovative architectural solutions that meet modern aviation demands while reflecting Lithuanian culture and contemporary design. Adhering to the highest sustainability and passenger-centered experience standards, the project acknowledges the global trend of airports, bus terminals, and railway stations serving as symbolic gateways—shaping first and last impressions for travellers. To ensure strong urban and spatial coherence, the following key principles guided the design.

Urban Integration.

The massing of the new Terminal 5 is designed to create a symmetrical counterpart to Terminal 4, visually rebalancing the airport complex with order and clear identity. For passengers arriving by bus, taxi, or private vehicle, it harmonizes the composition, positioning the historic Terminal 1 at the center, flanked by two modern expansions that share a cohesive architectural language. The distinctive design of T5 is also defining the roof of the new Airport Plaza and contribute to the modernisation of the heritage building image perceivable from approaching the airport complex.

The project complies with the competition’s Technical Specifications and local planning regulations. The new buildings harmonize with the area’s existing typology, height, and scale, balancing a distinctive architectural identity with contextual coherence. Carefully selected building volumes, facades, and materials contribute to a modern, sustainable, and user-friendly environment.

Designed as an intermodal hub, the complex ensures seamless connectivity between trains, buses, taxis, private and rental cars, and bicycles with a clear identity. Dedicated lanes for different vehicle types minimize congestion and enhance efficiency. Planned transport connections, including new streets, railways, and a viaduct, were considered in the traffic flow design, and one of the key elements is the planned underground Rail Baltica station, which will directly connect to the centre of the Airport Plaza.

High-voltage transformer stations are maintained in their current location until phase 3 included, and then integrated into a proposed four-story parking facility in phase 4, with dedicated staff parking and convenient external access.

Connectivity and Accessibility.

The project prioritizes seamless integration with surrounding areas through pedestrian-friendly streets, walkways, and bike paths, aligning with Vilnius’s Sustainable Urban Mobility Plan. Accessibility is ensured for all users, including pedestrians, cyclists, and individuals with disabilities. Given Vilnius Airport’s role as a major transportation hub, smooth transitions between various transport modes were a key focus in the proposal.

Social and Environmental Considerations.

Located within an industrial and service zone, the design emphasizes human-centered planning, incorporating green public spaces and adaptable multi-use areas, and enhancing worker comfort, environmental sustainability, and community engagement.

Vilnius Airport is envisioned as an attractive and representative area of the city, incorporating traditional materials, preserving cultural heritage, and integrating authentic local elements. Landscaping prioritizes water-absorbing surfaces and green spaces while avoiding dense tree clusters



Simmetry of the composition



Arriving passengers view



North-West bird-eye view of Terminal 5

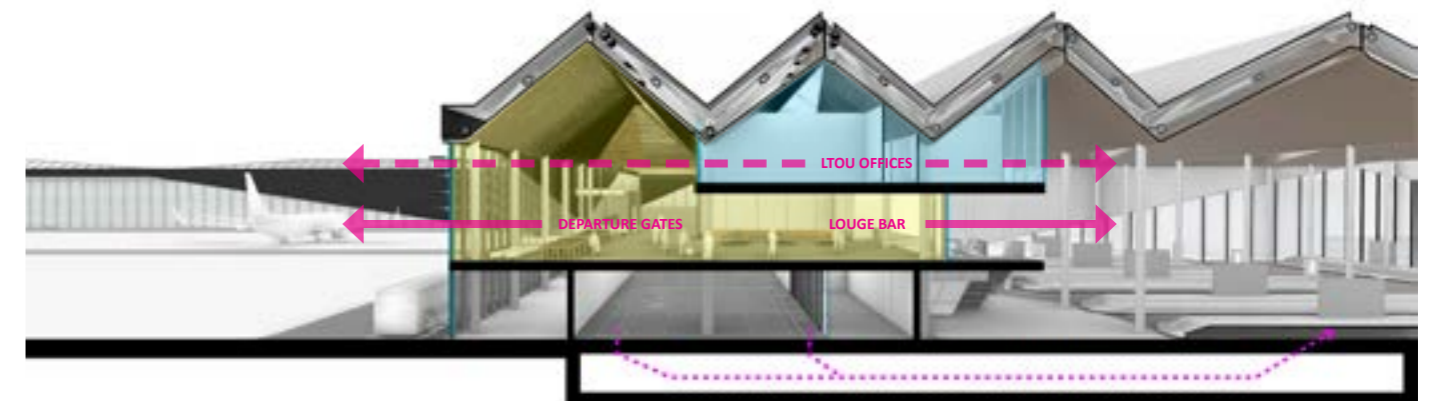
for aviation safety. Mature trees are preserved where possible, providing shade and shelter in public areas. Stormwater management features include permeable pavements and rain gardens.

Functional Zoning and Development Phases.

It is paramount to the success of the project that the clear identity of the terminal results complete in each of its intermediate phases. The functional zoning strategy ensures smooth transitions between project phases while minimizing demolitions and rework. Apart from selected areas of Terminal 5, most architectural elements introduced in Phase 1 remain unchanged through Phases 3 and 4, supporting an efficient and sustainable expansion. The iconic design and identity of the new Terminal and of the overall airport is always preserved and visible at every phase, thanks to a design that has embedded the development phases from its conception

Visual Connections.

The design enhances spatial relationships to facilitate movement, improve wayfinding, and strengthen the area’s identity. A new visual axis connects Rodūnia Street with the planned arrivals terminal, serving as a focal point. Another key axis runs along the linear parking area bordering the arrivals terminal. This corridor will be enhanced with tree-lined lanes, pedestrian walkways, and active public spaces, incorporating pocket parks, interactive elements, and temporary installations. Clear signage and visual cues further support intuitive navigation.



Enhanced visual connections from gates and offices

02 - Architectural idea (level of detail 1)

The main architectural concept of the Vilnius Airport project is to seamlessly blend Lithuania's cultural identity with contemporary design, offering a welcoming experience to arriving passengers and providing a clear new identity to the overall airport complex. The geometry of the T5 volume massing draws inspiration from the sharp edges of the T4 departure terminal, presenting a refined evolution in form. This progression is particularly evident in the design of the rooftop, where rhomboid and triangular shapes become the fundamental modules of the skylights. These geometric elements not only allow natural light to penetrate the interior spaces but also express the underlying structural rhythm, establishing a cohesive narrative that extends across T5, T6, T7, and the plaza and modernize the heritage building images at approach.

The modular system, characterized by the repetition of rhomboid patterns, becomes a unifying language throughout the terminal complex. The consistent use of these elements ties together the entire airport, transforming it into an integrated and forward-thinking architectural ensemble. The terminals and the plaza form a harmonious whole, connecting the existing T4 terminal and the heritage T1 building. This design strategy creates a cutting-edge airport capable of accommodating with flexibility both current demands and future expansions, while paying homage to Lithuania's cultural heritage.

The inspiration for the modular geometry originates from traditional Lithuanian motifs, particularly the rhombus, which holds a significant place in Baltic folklore. By incorporating this shape into the design of the terminal, the architecture bridges past and present, weaving cultural symbolism into a modern context.

Additionally, the design draws parallels with Lithuanian straw gardens, a traditional art form recognized by UNESCO in 2023 as part of the nation's intangible cultural heritage. These intricate structures, based on rhombus forms, are reinterpreted within the terminal's architecture and the structural system defining the proposal. The spatial experience inside the terminal evokes the sensation of being within a straw garden, with the roof structure and interior geometry reflecting the delicate and interconnected nature of this art form.

Through this synthesis of geometric precision, cultural references, and modularity, the design not only enhances passenger experience but also serves as a contemporary tribute to Lithuania's rich traditions. The result is an architectural language that is both timeless and innovative—rooted in local heritage yet looking confidently towards the future.



03 - User experience (level of detail 1)

Airports are symbolic gateways to cultures, people and economies. Public places where people start their journey to explore the world, go out for business, arrive from an exciting holiday or simply return home safely.

The new arrivals terminal at Vilnius International Airport will play an important role in the passenger’s journey. Terminal 5 will be the first impression for tourists travelling to Vilnius and will be welcoming, not only because of the great experience, but also because of the smooth and intuitive arrival process, contributing to position Vilnius Airport in the competitive international market. The passenger terminal building is also the workplace for a large number of staff. The new terminal also provides healthy, efficient and safe working environment for all staff, meeting the requirements of the technical specifications and providing a pleasant experience, with daylight and views to the landside and apron.

Passenger journey.

Simplicity, intuitiveness, and seamless wayfinding are central to passenger flow in the new terminal building. The goal is to create a warm and welcoming arrival experience for travellers coming to Vilnius while ensuring a smooth transfer process for those with connecting flights.

Natural light and views towards the outside environment will guide passengers throughout their journey, helping them to navigate between the different spaces effortlessly. Upon reaching the baggage reclaim area, arriving passengers will have a clear overview of the space, allowing them to easily locate their baggage on the carousels or find their way to the exit. Arriving at Vilnius International Airport will be a quick and efficient process, minimizing long walks and queues. Additionally, the infrastructure is designed to ensure that Passengers with Reduced Mobility (PRM) and those with strollers can follow the same intuitive route as other travellers. Strategically placed, properly sized elevators will be clearly visible along the passenger flow, ensuring a smooth and accessible experience for all.

Arrivals Schengen.

Passengers deboarding from a contact stand, either from Terminal 2-3 or the new south concourse, enter Terminal 5 on Level 2 via the combined departure and arrival concourse. In the center of Terminal 5, passengers pass through a one-way filter and enter a space where they can orient themselves, overlooking the baggage reclaim hall and the external areas. Lifts, escalators, and stairs bring passengers down, where they can either claim their bags from one of the belts or proceed directly to the exit. Schengen passengers arriving by bus are dropped off directly in front of the baggage reclaim entrance on the north side. They pass through a one-way filter into the reclaim hall, merging with other Schengen arrivals, or they can use dedicated stairs/lifts for transfer. Schengen passengers do not need to declare goods and can exit through the customs green channel, heading to the arrivals hall. From there, they can meet their welcomers, enjoy the commercial area, do some shopping, or head straight downstairs to the planned underground Rail Baltica station.

Arrivals Non-Schengen.

Non-Schengen passengers arrive at Terminal 3. After immigration, they follow the arrivals corridor to enter the reclaim hall from the north side. This route has been simplified and optimized by removing the existing stairs, providing a more direct and intuitive path to baggage reclaim. After passing through a one-way filter, Non-Schengen passengers merge with the arriving Schengen passengers in the reclaim hall, where they can either claim their bags or exit directly through customs. Non-Schengen passengers with goods to declare report to the customs red channel desk, which is equipped with screening and unpacking facilities. Passengers who do not have goods to declare can exit through the customs green channel into the arrivals hall, where they can meet their welcomers, enjoy the commercial area, or leave the terminal building.

Departures.

All departing passengers enter at T4, proceed through security screening and follow their way to their gates. Non-Schengen passengers depart from T 2-3, while Schengen passengers can also depart from the bus lounges in Terminal 5 or the future Schengen concourse in the south.

Coming from Terminal 2, passengers flow into the T5 departure concourse on level 2, with an open bus lounge facing the apron and some retail and a café with a terrace overlooking the reclaim hall. Passengers either follow their way to the southern pier or depart from the bus lounge. The lounge is about 450 sqm, providing waiting space for two code C flights. Additional seating is available in the opposite F&B. Two VT points lead to bus parking positions on level 1, allowing for boarding of two flights simultaneously.

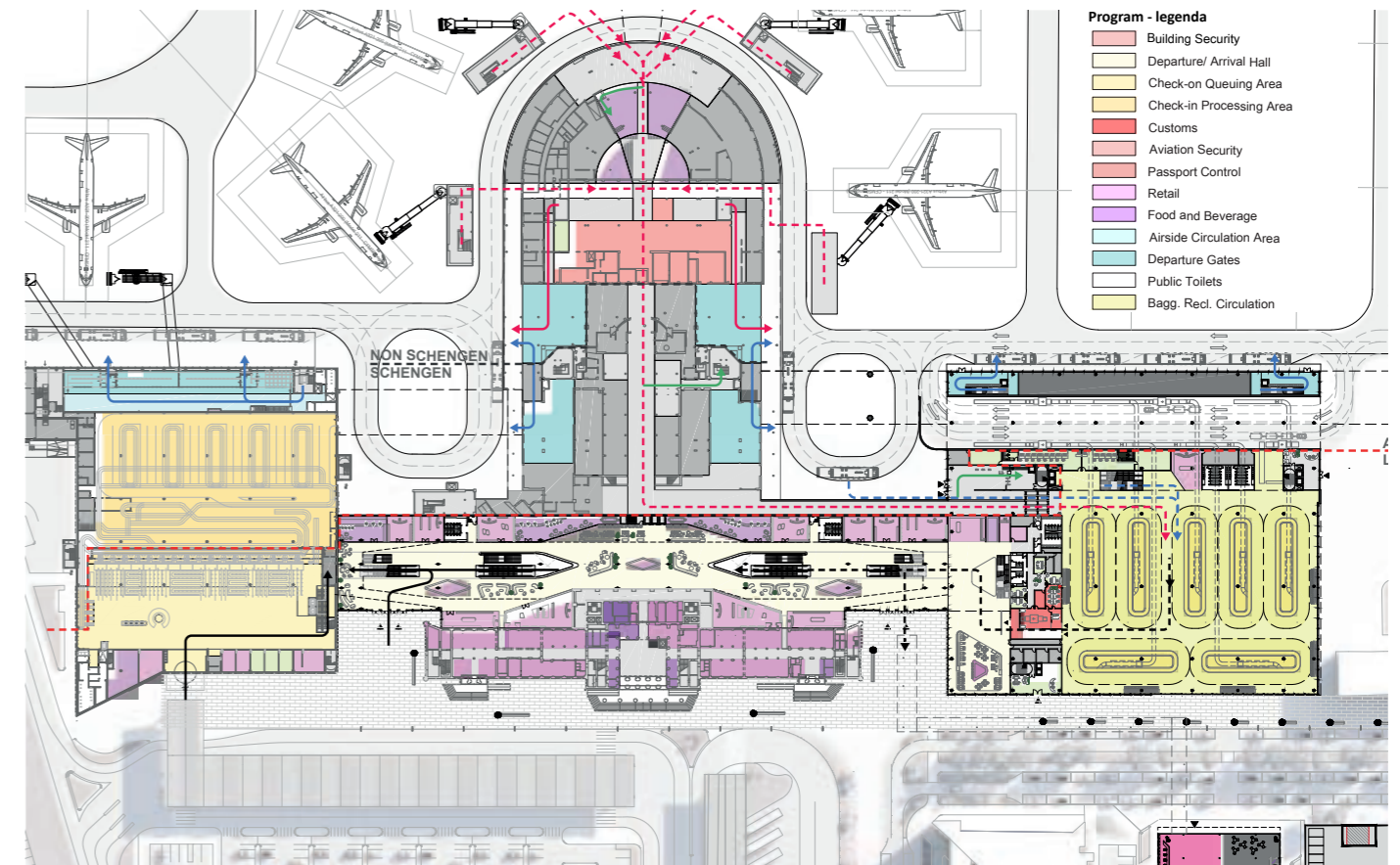
Transfers.

Terminal 5 facilitates transfers (S-S and S-NS). On the airside, passengers arriving from Schengen flights are already security-screened and can directly proceed to the departure gate for their connecting flight. Non-Schengen passengers, however, must go to Terminal 3, where they will pass through emigrations and enter the duty-free and Non-Schengen departure areas. For Schengen passengers arriving by bus on Level 1, a basic transfer point is provided, including transfer kiosks and a help desk. This desk may be staffed or function as a helpline, similar to the one in Terminal 3. Passengers proceed through automated board-

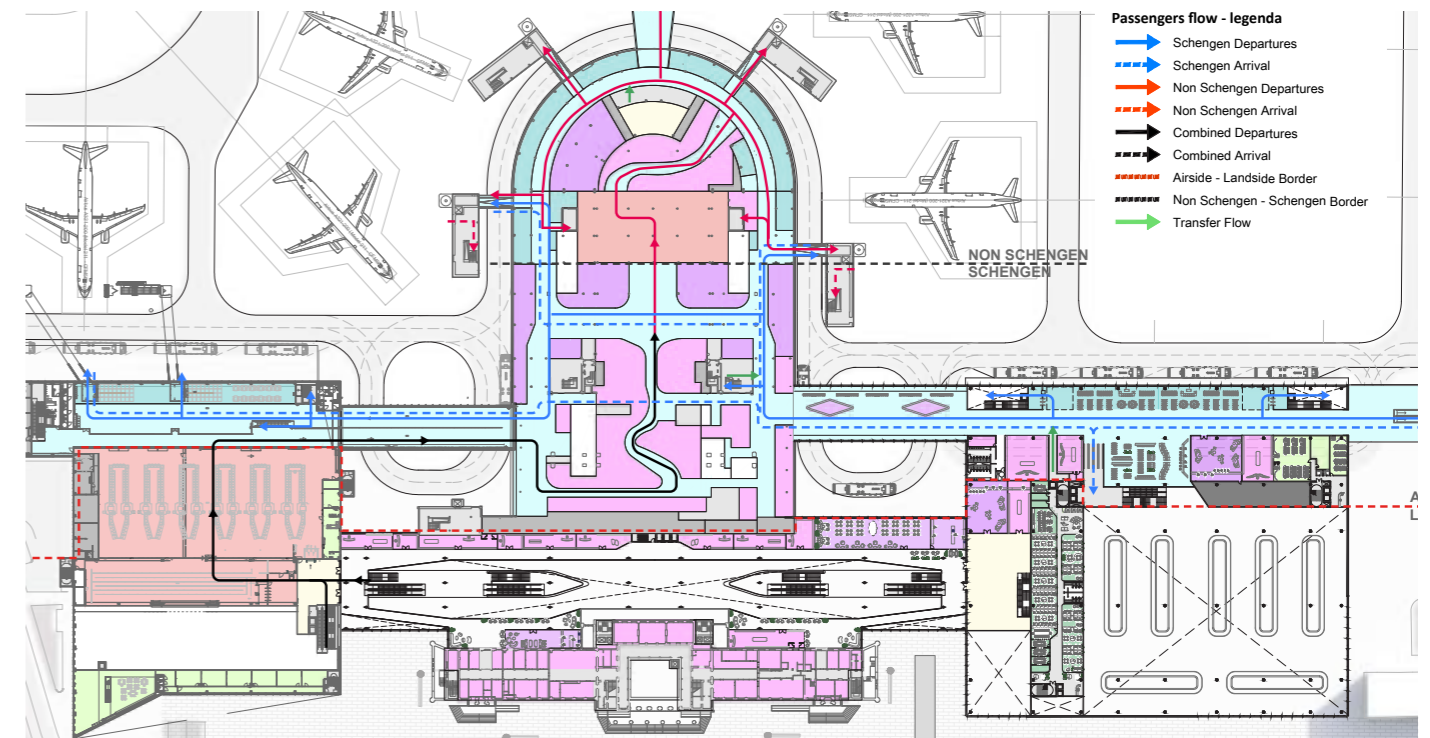
ing card control and take the dedicated VT to Level 2, where they merge with departing Schengen passengers.

The working place.

All office spaces are located on the upper levels of the Terminal 5 building and are organized into two independently accessible blocks. The LTOU office compound (2350sqm) is situated on Level 3 and is structured around a central spine of shared spaces, including lounge areas and meeting rooms. Workspaces are arranged in two parallel strips: one facing the departure gates area with views of the apron, and the other overlooking the baggage reclaim hall. The entrance lobby is positioned at the southeast corner of Terminal 5 on the ground floor, with dedicated vertical transport connecting the offices on Level 3 to the training facilities (367sqm) on Level 2. The rental offices, 2800sqm to be developed in Phase 3, will have an independent entrance lobby located on the west façade, next to the taxi drop-off area. These offices will be spread across two floors along the northern façade of Terminal 5, offering dynamic



Phase 4 - Level 1 plan



Phase 4 - Level 2 plan

04 - Description of the Project's Phasing and functioning of the territory until the next Phases are implemented

The layout of the various buildings and external areas has been carefully developed to align with the project's phasing requirements. Passenger circulation within the Arrival Terminal has been designed to ensure maximum flexibility, intuitive wayfinding, and seamless connections with different modes of transport, all while preventing any interference or obstructions during the construction phases. The airport will remain fully operational throughout the construction of the Airport Plaza in Phase 2, the demolition of the Air Traffic Control (ATC) tower, and the expansion of Terminal 5.

Terminal 5.

Phase 1 - The layout of the baggage reclaim hall is organised in such way, that the required phasing can easily be accommodated. The terminal is developed around the existing control tower and functions as an independent building, with the Arrival Hall on 2 floors organized along western facade and exit directly towards the square and the taxi drop-off, in order to allow an easy access and manouvering for vehicles accessing phase 2 construction site and avoid passengers having to walk through a construction area while exiting the Terminal.

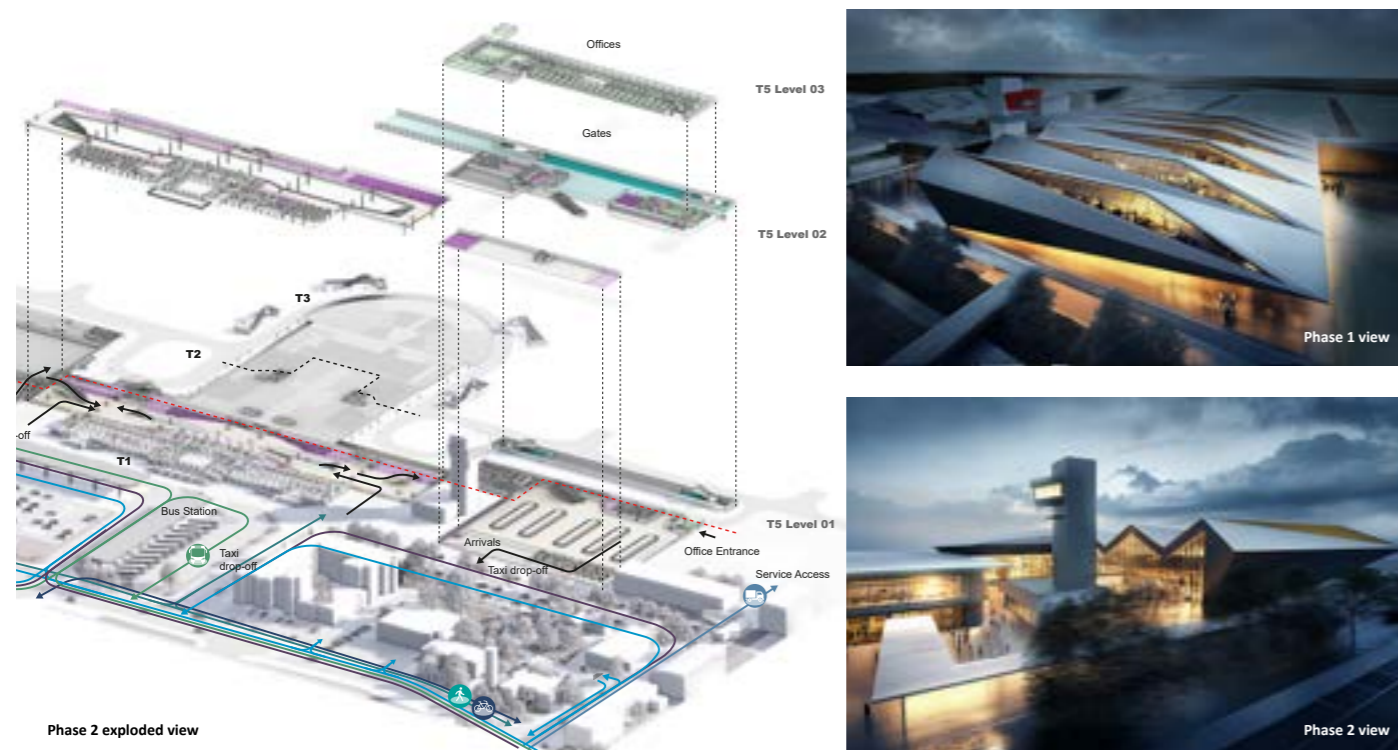
In phase 1 the reclaim hall accommodates five carousels, with a presentation length of 70 meter each. The space between the belts meets the client's requirements, and columns are strategically placed inside the belts, leaving the space in between unobstructed. The reclaim belts will be fed from below as mentioned in Annex 1 of the technical specifications. On either side of the reclaim hall, there is space for trolley stacking and some seating for passengers waiting for their luggage to arrive. The arrivals hall and customs facilities are located on the west side. The entrance / exits of the arrivals hall are facing the west.

Phase 3 - Once the Air Traffic Control (ATC) tower is demolished and phase 3 completed, the layout of the Arrival Hall changes. 2 additional carousels are added against western facade, and the Arrival Hall on 2 floors with F&B and the custom facilities are moved against north facade and directly linked to the commercial plaza, creating a unique experience and a sense of place for passengers arriving in Vilnius. Once the tower is dismantled - without obstructing the passenger flows- the new arrivals hall, customs filter and additional passenger and support facilities can be built, without hindering the operations. Once the layout is completed all passengers exiting the Terminal are directed towards the Airport Plaza from where they can either exit or transfer to the underground train station.

Airport Plaza.

Phase 2 - After the demolition of the existing taxi drop-off road and roofs, construction of the Airport Plaza can commence without disrupting the operations of Terminal 5. The Airport Plaza will serve as the new focal point of the entire airport, featuring approximately 2,500 sqm of retail, restaurants, and commercial spaces spread across two floors. It will also provide a seamless fast-track connection to the future underground Rail Baltica Station.

All visitors, as well as departing and arriving passengers, will pass through the Plaza, experiencing a shopping mall-like atmosphere with enhanced visual connectivity between all levels. During the day, natural light will filter in from above through four generously sized rooftop skylights, illuminating the space and extending down to the underground station via a large central opening that



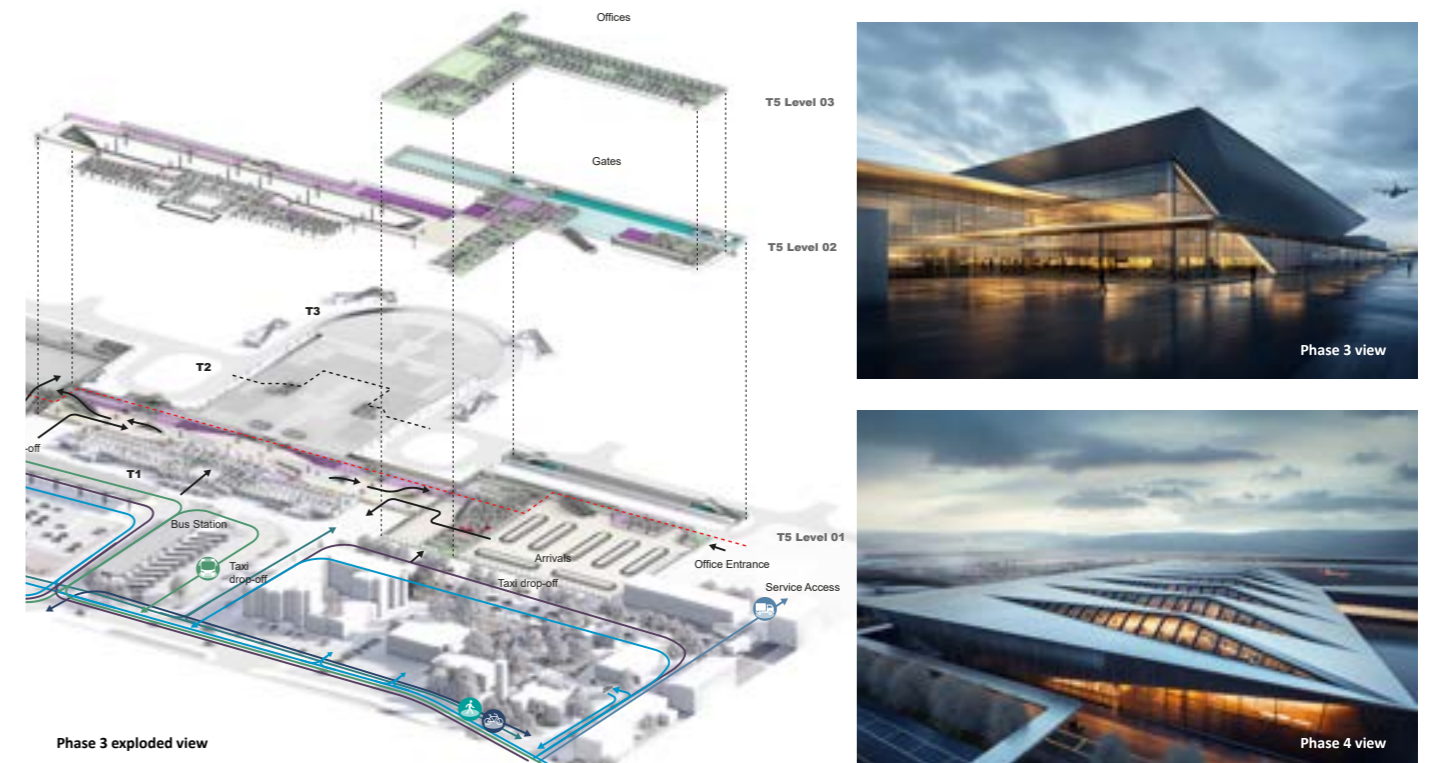
houses staircases and escalators.

The ground floor layout has been optimized to prioritize passenger circulation between Terminals 4 and 5 and the Rail Baltica station. At the same time, the passenger experience will be enriched by about 1,400 sqm of restaurants and retail spaces along the east internal façade. The shopping experience continues on the upper level, where commercial balconies offer an additional 1,100 sqm of retail and dining spaces. These balconies are directly connected to Terminal 4 for departing passengers and also to the upper level of Terminal 5's arrival hall. In the future, this seamless connection between terminals and commercial spaces could extend to the upper level of the Terminal 1 building, once it is repurposed into a commercial hub, forming a dynamic retail loop with engaging cross-views between all buildings. At level 2, a rooftop bar with a spacious terrace will offer passengers and visitors a stunning view of the apron, making it an attractive destination, especially during the summer months.

Future extension

Phase 4 - The future development of Terminals 6 and 7 is planned as a natural extension of Terminal 5 with a strong focus on optimizing passenger flow and enhancing the overall travel experience. Natural light will filter through rooftop skylights, creating a bright and welcoming atmosphere. The passenger experience will be further enriched by strong visual connectivity with other terminals and the apron, reinforcing a seamless and intuitive journey throughout the airport.

In phase 4 also a 150key hotel featuring a courtyard and ground floor facilities plus a multi-storey carpark with space for 589 cars and hosting the high voltage station and a bike park for 150 bikes will be implemented.



05 - Describe and present the solutions as they meet the Competition conditions

Integration with existing buildings.

Terminal 5 is carefully planned to create a harmonious and functional environment for both passengers and airport staff. The new terminal area integrates with the existing terminal configuration in a natural way, functionally as well as architecturally.

Integration, intuitiveness, efficiency and safety are key to the design. Passenger flows are seamlessly linked to the existing terminals, providing a natural journey to either transfer to another flight or to the reclaim hall and landside exit. Back of house areas and baggage handling systems are designed to support the passenger process and provide a safe and pleasant work environment for staff.

Flexibility and adaptability.

The layout is made in such a way that the reclaim and related support can easily be expanded, to adapt to future demands if needed. In principle, extra belts, including support and offload areas, can be added on the southside, without obstructing the primary passenger processes.

All reclaim belts are sized based on the client's requirements. In phase 1, five belts are provided, with a presentation length of 70 meters each. In phase 3, it is proposed to add two additional 70 meter belts.

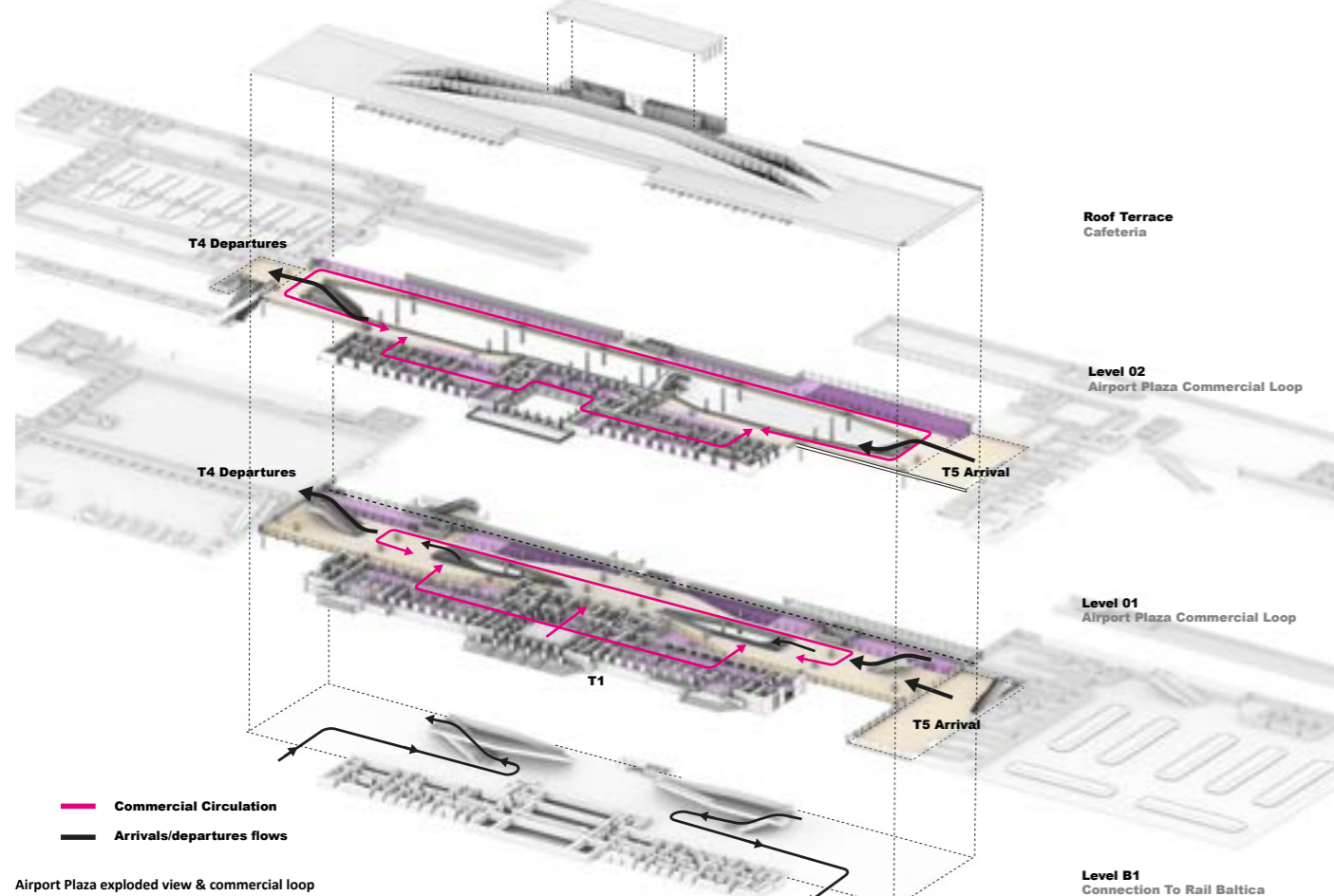
Inclusive design.

The building follows the principles of inclusive design, meaning that all facilities are accessible by all users, regardless of age, ability and socio-economic status. The infrastructure is designed in such way, that Passengers with Reduced Mobility (PRM) or passengers with strollers principally follow the same journey as regular passengers. Lifts are properly sized and directly visible from the flow, enabling a smooth flow for all passengers. Obviously, passenger amenities, staff and support facilities follow the same principles.

Scheme of restrictions.

The design fully complies with the scheme of restrictions as stated in Annex 3 of the Technical Specifications:

- The new Terminal 5 stays within the boundaries as indicated in the drawing.
- The proposed improvements all follow the principles of the scheme of restrictions. The proposed bus injection point, and the suggested extra driving lane in the baggage offload area stay within the building parameter. Driving routes on airside remain the same and in principal stay at the same location, without any impact on airside roads.
- Building heights follow the principles as provided in the Technical Requirements and as such, do not impact the Obstacle Limitation Surfaces (OLS).



Airport Plaza exploded view & commercial loop

Table of premises

ANNEX 2 TABLE OF PREMISES - ARRIVAL TERMINAL							
Nr.	Phase	Premises	*Number of rooms (units x m ²)	Area (sqm)	Workplaces	Floor	Location
Baggage unloading							
1	PH3	Baggage unloading (outdoor area)	1	1668		1	Controlled area
Baggage reclaim							
2	PH3	Baggage reclaim area	1	4683	-	1	Controlled area
3	PH3	Sanitary facilities	2	134	-	1	Controlled area
4	PH3	Ground Handling Staff premises 1	1	150	5	1	Controlled area
5	PH3	Ground Handling Staff premises 2	1	150	9	1	Controlled area
6	PH3	Arrival shop (dry pads)	1	100	1276	1	Controlled area
7	PH3	Support Facilities - BOH	2	305	-	1-2	Controlled area
8	PH3	Circulation	-	561	-	1-2	Controlled area
9	PH3	Vertical Transportation	-	101	-	1-2	Controlled area
TOTAL INDOOR AREA				6184			
Customs							
10	PH3	Executive offices	1	166	6	1	Controlled area
11	PH3	Executive offices	1	45	3	1	Controlled area
12	PH3	Clothing and work equipment room	1	15	-	1	Controlled area
13	PH3	Storage room for detained goods	1	10	-	1	Controlled area
14	PH3	Server room	1	12	-	1	Controlled area
15	PH3	Personal examination room	1	15	-	1	Controlled area
16	PH3	Meeting room	1	15	-	1	Controlled area
17	PH3	Staff lounge	1	30	-	1	Controlled area
18	PH3	Dressing rooms with showers and toilets	2x20	50	-	1	Controlled area
19	PH3	Circulation	-	45	-	1	Controlled area
TOTAL INDOOR AREA				403			
Public arrival hall							
20	PH3	Arrival hall	1	1276	-	1-2	Uncontrolled area
21	PH3	Convenient/everyday store	1	55	-	1	Uncontrolled area
22	PH3	Cafe/restaurant	1	175	-	2	Uncontrolled area
23	PH3	Info Centre	1	12	-	1	Uncontrolled area
24	PH3	Crew shop	1	102	-	2	Uncontrolled area
25	PH3	Baggage screening and screen for easy visual change and small storage space	-	-	-	1	Uncontrolled area
26	PH3	Several ancillary rooms for LTQI and other uses	4	82	-	1	Uncontrolled area
27	PH3	Currency exchange	1	10	-	1	Uncontrolled area
28	PH3	Coffee, beverage, food, ATM, flower, etc. machines	1	15	-	1	Uncontrolled area
29	PH3	Sanitary facilities	2	65	-	1	Uncontrolled area
30	PH3	Vertical Transportation	-	90	-	1	Uncontrolled area
TOTAL INDOOR AREA				1882			
Departure/arrival gates							
31	PH3	Waiting areas and gates	2x355	710	-	2	Controlled area
32	PH3	Cafe/restaurant	1	185	-	2	Controlled area
33	PH3	Eclectic lounge	1	27	-	2	Controlled area
34	PH3	Sanitary facilities	1	107	-	2	Controlled area
35	PH3	Retail	1	280	-	2	Controlled area
36	PH3	Vertical Transportation	-	124	-	1-2	Controlled area
37	PH3	Airside Circulation	-	1164	-	2	Controlled area
38	PH3	B.O.H.	1	456	-	1	Controlled area
TOTAL INDOOR AREA				3053			
LTQI Office							
39	PH3-3	Closed executive offices	19x12	218	19	3	Uncontrolled area
40	PH1-3	Closed offices	38x24	912	114	3	Uncontrolled area
41	PH1-3	Micro-meeting room (1-2 people)	10 x 3	30	22	3	Uncontrolled area
42	PH1-3	Small meeting room (4 people)	12 x 8	96	4	3	Uncontrolled area
43	PH1-3	Average meeting room (6-8 people)	7 x 12	84	42	3	Uncontrolled area
44	PH1-3	Large meeting room (12 people)	1 x 23	23	12	3	Uncontrolled area
45	PH1-3	Extra-large meeting room (16 people)	1	32	16	3	Uncontrolled area
46	PH1-3	Meeting room (operations room)	1	82	53	3	Uncontrolled area
47	PH1-3	Curves	1	7	-	3	Uncontrolled area
48	PH1-3	Coffee corner/fit (kitchenette)	4 x 17	68	-	3	Uncontrolled area
49	PH1-3	Printing/copying	3 x 2.5	8	-	3	Uncontrolled area
50	PH1-3	Dressing room	3 x 6	18	-	3	Uncontrolled area
51	PH1-3	Server room, switch room, tech rooms	1x18	18	-	3	Uncontrolled area
52	PH1-3	Common lounge areas	-	77	-	3	Uncontrolled area
53	PH1-3	Administrator workspace	1x51	51	1	3	Uncontrolled area
54	PH1-3	Circulation	-	270	-	3	Uncontrolled area
55	PH1-3	Vertical transport & entrance lobby	-	133	-	3-3	Uncontrolled area
TOTAL INDOOR AREA				2159			
56	PH1-3	Roof terrace with smoking area	1	217	-	3	Uncontrolled area
Training facilities							
57	PH1-3	Training room	2 x 60	120	24	2	Uncontrolled area
58	PH1-3	Ancillary rooms	1	48	-	2	Uncontrolled area
59	PH1-3	Training room 2	1	90	12	2	Uncontrolled area
60	PH1-3	Bathrooms	2	7.5	-	2	Uncontrolled area
61	PH1-3	Circulation	-	57	-	2	Uncontrolled area
62	PH1-3	Vertical transport & entrance lobby	-	32	-	2	Uncontrolled area
TOTAL INDOOR AREA				355			
Separate office for rent '1'							
63	PH3	Closed offices (1 workplace)	1	12	2	3	Uncontrolled area
64	PH3	Closed offices (1 workplace)	2 x 12	24	4	3	Uncontrolled area
65	PH3	Closed offices (2 workplaces)	2 x 16	32	4	3	Uncontrolled area
66	PH3	Closed classrooms (3 workplaces)	1 x 22	22	4	3	Uncontrolled area
67	PH3	Open workspace (from 5 workpla- ces)	-	167	14	3	Uncontrolled area
68	PH3	Administrator's workplace	1	12	1	3	Uncontrolled area
69	PH3	Micro-meeting room (1-2 people)	2 x 2.5	5	2	3	Uncontrolled area
70	PH3	Average meeting room (6-8 people)	1 x 13	13	6	3	Uncontrolled area
71	PH3	Large meeting room (12 people)	1	23	12	3	Uncontrolled area
72	PH3	Printing copying	1	4	-	3	Uncontrolled area
73	PH3	Dressing room	1	7	-	3	Uncontrolled area
74	PH3	Kitchenette	2 x 12.5	25	-	3	Uncontrolled area
75	PH3	Sanitary facilities	-	21	-	3	Uncontrolled area
76	PH3	Server room, switch room, tech rooms	-	4	-	3	Uncontrolled area
77	PH3	Common lounge areas	-	36	-	3	Uncontrolled area
78	PH3	Circulation	-	60	-	3	Uncontrolled area
79	PH3	Vertical transport & entrance lobby	-	25	-	3	Uncontrolled area
TOTAL INDOOR AREA				488			
Separate office for rent in M x 2 units, 250 sqm each							
80	PH3	Closed offices (1 workplace)	1 x 12	12	1	3	Uncontrolled area
81	PH3	Closed offices (2 workplaces)	1 x 15	15	2	3	Uncontrolled area
82	PH3	Open workspace (5 workplaces and more)	-	146	11	3	Uncontrolled area
83	PH3	Administrator's workplace	1	12	1	3	Uncontrolled area
84	PH3	Micro-meeting room (1-2 people)	2 x 2.5	5	2	3	Uncontrolled area
85	PH3	Average meeting room (6-8 people)	1 x 14	14	6	3	Uncontrolled area
86	PH3	Printing copying	1	6	-	3	Uncontrolled area
87	PH3	Dressing room	1	9	-	3	Uncontrolled area
88	PH3	Kitchenette	1	22	-	3	Uncontrolled area
89	PH3	Sanitary facilities	2	21	-	3	Uncontrolled area
90	PH3	Server room, switch room, tech rooms	-	6	-	3	Uncontrolled area
91	PH3	Common lounge areas	-	34	-	3	Uncontrolled area
92	PH3	Circulation	-	61	-	3	Uncontrolled area
93	PH3	Vertical transport & entrance lobby	-	25	-	3	Uncontrolled area
TOTAL INDOOR AREA				402			

ANNEX 2 TABLE OF PREMISES - ARRIVAL TERMINAL							
Nr.	Phase	Premises	*Number of rooms (units x m ²)	Area (sqm)	Workplaces	Floor	Location
Separate office for rent 5 x 2 units, 100 sqm each							
94	PH3	Open workspace (from 5 workpla- ces)	1	95	5	3	Uncontrolled area
95	PH3	Average meeting room (6-8 people)	1	30	6	3	Uncontrolled area
96	PH3	Dressing room	1	8	-	3	Uncontrolled area
97	PH3	Kitchenette	1	16	cp	3	Uncontrolled area
98	PH3	Lobby, common areas	-	32	-	3	Uncontrolled area
99	PH3	Sanitary facilities	-	8	-	3	Uncontrolled area
100	PH3	Server	-	8	-	3	Uncontrolled area
101	PH3	Vertical transport & entrance lobby	-	25	-	3	Uncontrolled area
TOTAL INDOOR AREA				222			
Separate office for rent MIX							
102	PH3	Open workspace (from 5 workpla- ces)	7 x 40	280	76	2	Uncontrolled area
103	PH3	Open workspace (from 5 workpla- ces)	6 x 20	120	30	2	Uncontrolled area
104	PH3	Micro-meeting room (1-2 people)	3 x 2.5	7.5	3	2	Uncontrolled area
105	PH3	Small meeting room (4 people)	1	11	4	2	Uncontrolled area
106	PH3	Average meeting room (6-8 people)	3 x 13	39	24	2	Uncontrolled area
107	PH3	Large meeting room (12 people)	1	25	16	2	Uncontrolled area
108	PH3	Printing copying	1	12	-	2	Uncontrolled area
109	PH3	Clothing shop	1	10	-	2	Uncontrolled area
110	PH3	Kitchenette	3 x 14	53	-	2	Uncontrolled area
111	PH3	Sanitary facilities	-	37	-	2	Uncontrolled area
112	PH3	Server	-	12	-	2	Uncontrolled area
113	PH3	Lobby, common areas, lounge areas	-	117	-	2	Uncontrolled area
114	PH3	Circulation	-	95	-	2	Uncontrolled area
115	PH3	Vertical transport & entrance lobby	-	28	-	2	Uncontrolled area
TOTAL INDOOR AREA				817			
Co-working space							
116	PH3	Closed offices (1 workplace)	6 x 12	72	1	3	Uncontrolled area
117	PH3	Closed offices (2 workplaces)	3 x 15	45	6	3	Uncontrolled area
118	PH3	Closed offices (3 workplaces)	1	26	3	3	Uncontrolled area
119	PH3	Open workspace	1	374	65	3	Uncontrolled area
120	PH3	Micro-meeting room (1-2 people)	3 x 2.5	7.5	3	3	Uncontrolled area
121	PH3	Small meeting room (4 people)	1	8	4	3	Uncontrolled area
122	PH3	Average meeting room (6-8 people)	3 x 13	39	18	3	Uncontrolled area
123	PH3	Large meeting room (12 people)	1	26	12	3	Uncontrolled area
124	PH3	Printing copying	1	4	-	3	Uncontrolled area
125	PH3	Clothing shop	1	9	-	3	Uncontrolled area
126	PH3	Kitchenette	3 x 15	45	-	3	Uncontrolled area
127	PH3	Sanitary facilities	-	38.0	-	3	Uncontrolled area
128	PH3	Server	1	8	-	3	Uncontrolled area
129	PH3	Lobby, common areas, lounge areas	-	223	-	3	Uncontrolled area
130	PH3	Circulation	-	65	-	3	Uncontrolled area
131	PH3	Vertical transport & entrance lobby	-	25	-	3	Uncontrolled area
TOTAL INDOOR AREA				1012			
Plaza							
132	PH2	Premises or pavilions for commercial use (L1)	-	1030	-	1	Uncontrolled area
133	PH2	Premises or pavilions for commercial use (L2)	-	690	-	1	Uncontrolled area
134	PH2	Indoor public spaces for waiting and circulation (L1)					

06 - Functional planning of buildings

The functional planning is based on:

- The functional schemes and flows as presented in Annex 13 of the technical specifications.
- Table of premises as provided in Annex 2 of the technical specifications.
- Principles of the baggage scheme provided in Annex 1 of the technical specifications.
- Terminal planning methodology as described in the IATA ADRM 12th edition.
- Planning parameters and Level of Service (LoS) guidelines as provided Annex 14 of the technical specifications.
- ICAO regulations where applicable.

After studying the technical requirements and considering the intended phasing of the project, the following 4 changes to the layout are proposed to enhance the functional flows and passenger experience.

1 - Optimisation arrival journey.

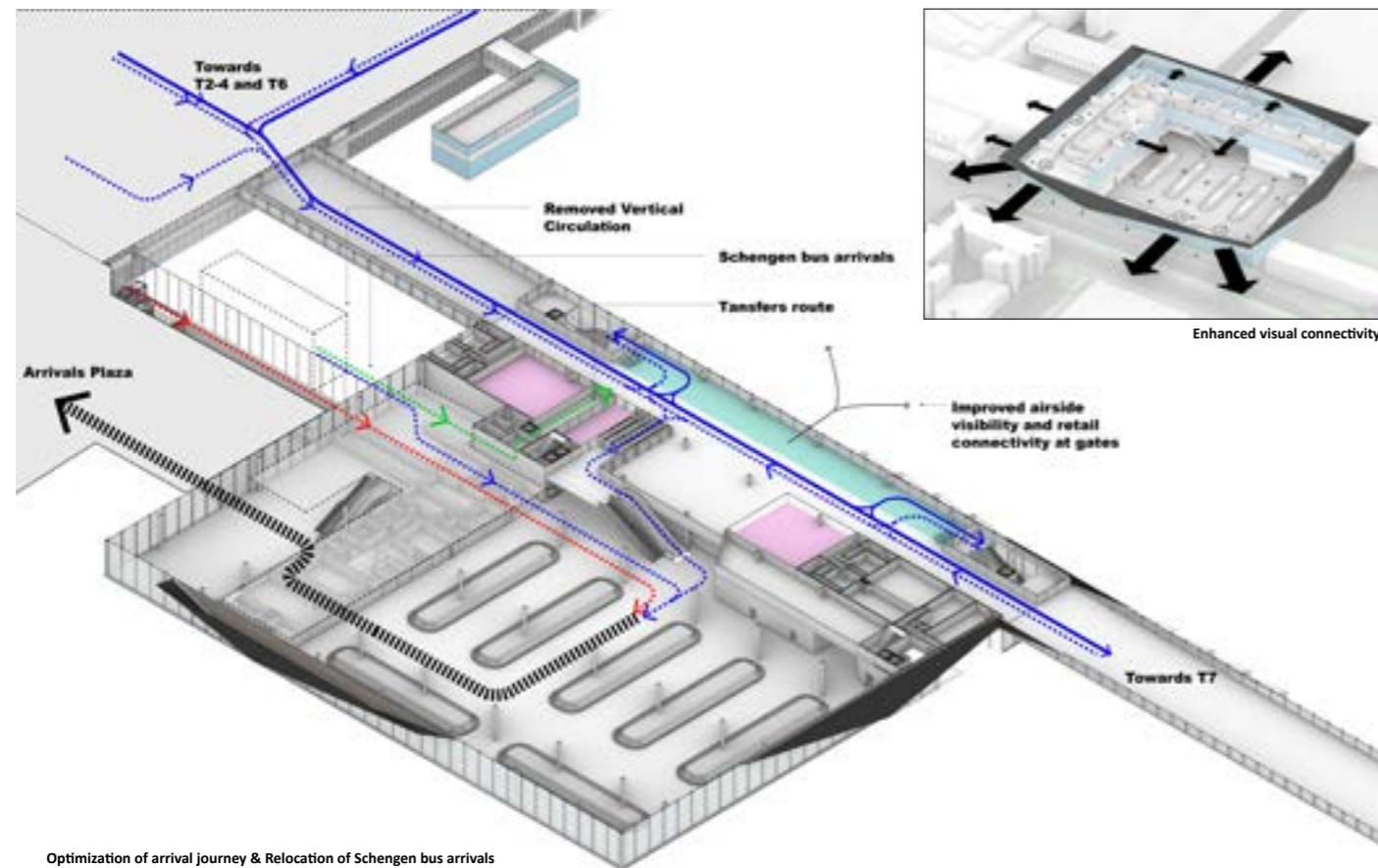
Passengers arriving from Non-Schengen flights come from terminal 2-3 and follow the arrivals corridor on Level 1 to the baggage reclaim hall. In order to smoothen their journey, it is proposed to relocate the existing Vertical Transportation (VT) core (Schengen arrivals), allowing for a more intuitive and direct arrivals corridor for Non-Schengen passengers. As a result, the Schengen arriving passengers stay on level 2. In the new scheme all arriving Schengen passengers go to the same descent point in the centre of the reclaim hall, providing clear wayfinding for passengers from Terminal 2-3 as well as from the future pier expansion. Before going down, passengers have a clear overview of the reclaim hall and intuitively can find their way to the applicable reclaim belt and the reclaim exit.

2 - Relocation of Schengen bus arrivals.

The relocation of the VT core (as mentioned before) creates space for a Schengen bus drop-off point on level 1, right before the entrance to the reclaim hall. At this point passengers can choose whether go to the reclaim hall via a one-way filter, or proceed through automated boarding card control to transfer to another flight (S and NS). A lift and stairs will bring these passengers to level 2, where they merge with the departing Schengen passengers. Transfer facilities, such as kiosks and an information point, are provided for passengers who need a boarding pass or information about their flight.

3 - Relocation Schengen bus lounge.

It is proposed to relocate Schengen bus lounge on level 2. In this way, waiting passengers will have a better experience with views on the apron and a better connection to the circulation and commercial facilities. Also, the journey from Terminal 2-3 to the future Schengen pier will be more interesting, as it goes along the waiting areas and related commercial areas. The space falling free on



Optimization of arrival journey & Relocation of Schengen bus arrivals

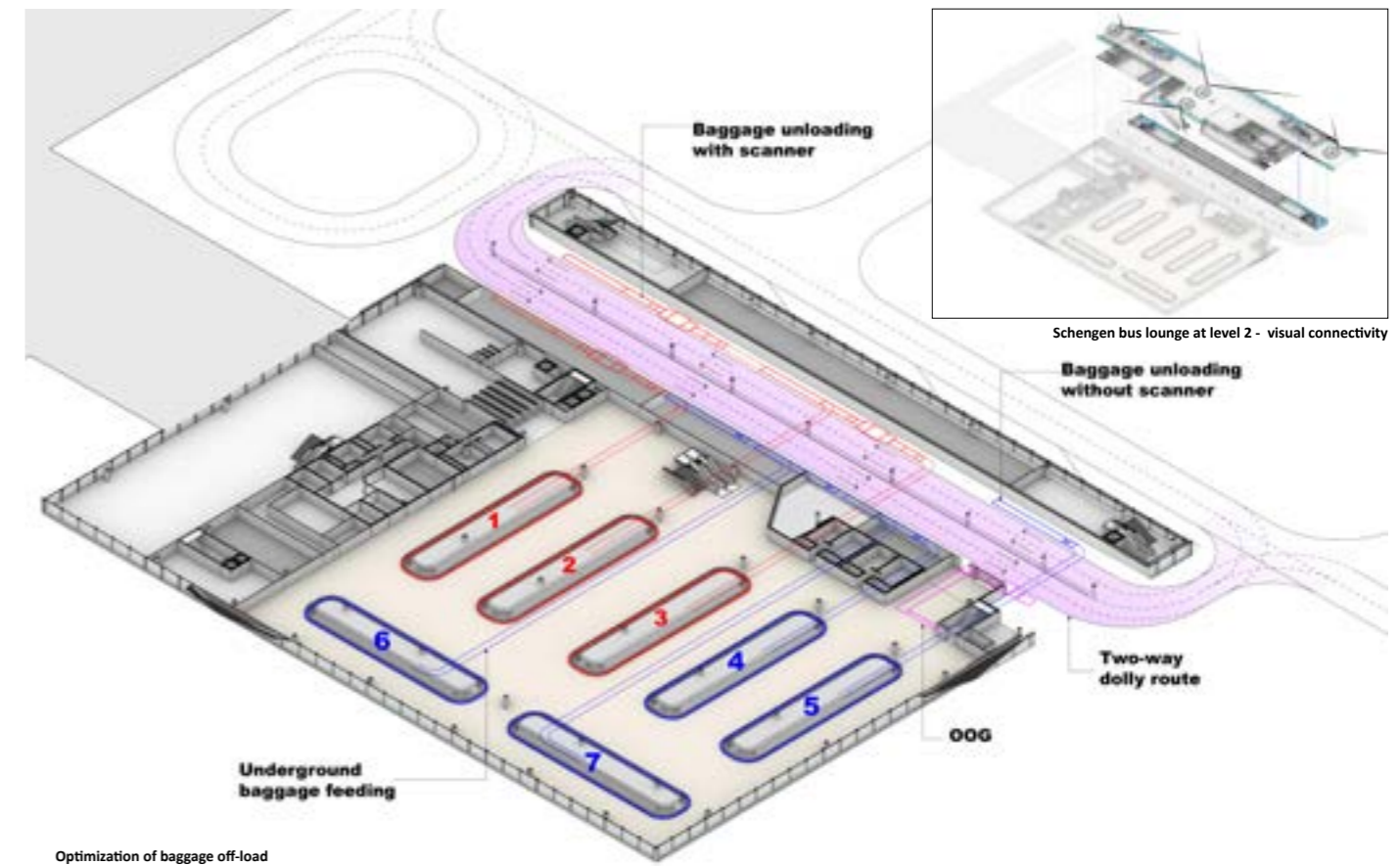


Baggage reclaim hall view

level 1 will be used for support facilities, technical areas and improved off-load facilities.

4 - Optimization of Baggage off-load

To accommodate sufficient offload facilities and customs screening, the offload quays must be on two sides of the road. Because some types of baggage dollies offload from one side only, the dollies preferably drive in two directions. To create more flexibility, reduce dependencies and offer a safe working environment for staff it is proposed to add an extra driving lane, to enable driving in two directions. Because the bus lounges in our design are on level 2, it is possible to accommodate this within the same building footprint. The ground handlers and operational staff can have their support facilities directly connected to their work space on apron level.



Optimization of baggage off-load

Security zoning & border control.

Terminal 5 is designed as an arrival facility for all passengers travelling to Vilnius International Airport. Non-Schengen passengers have to go through Immigrations before entering the reclaim hall, which takes place in Terminal 2-3 (not part of the scope). Because the concourses facilitate the Schengen departure and arrival process, the entire area in scope has the Schengen status. There are three security zones in the area in scope:

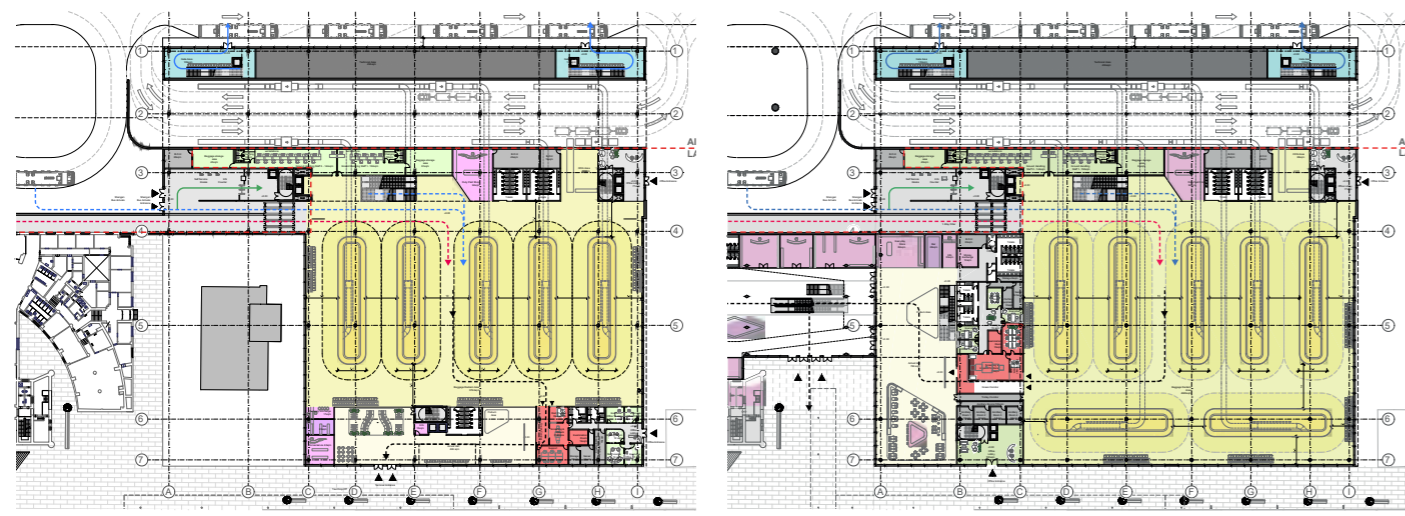
- Uncontrolled area: public area, accessible for all passengers, staff and visitors.
- Controlled area, non-screened: restricted area, accessible for arriving passengers, arriving crew and authorised employees. Persons do not have to be security screened.
- Controlled area, security screened (CP-SRA): security restricted area, airside, accessible for departing passengers authorised employees and departing crew after (aviation) security screening. Arriving passengers from trusted countries can also directly enter this area (one stop security principle).

The diagrams show the organisation of these zones for building parts within the scope of the project. If person leave to a zone with a lower security status, measures are taken to prevent them from going back without the required controls, such as one-way filters or biometric controls. Security screening facilities to enter the controlled area on airside are not part of the scope and are assumed to be in one of the other terminals.

Customs control

Passengers arriving from a Non-Schengen country are subject to customs control. The customs control filter consists of a red and a green channel. Non-Schengen passengers with goods to declare report at the customs red channel desk. The red channel is equipped with screening and unpack facilities. Passengers who don't have goods to declare exit via the customs green channel, moving to the arrivals hall. The customs filter is organised in such way, that passengers from the green channel can easily be diverted to the screening area for random checks if needed.

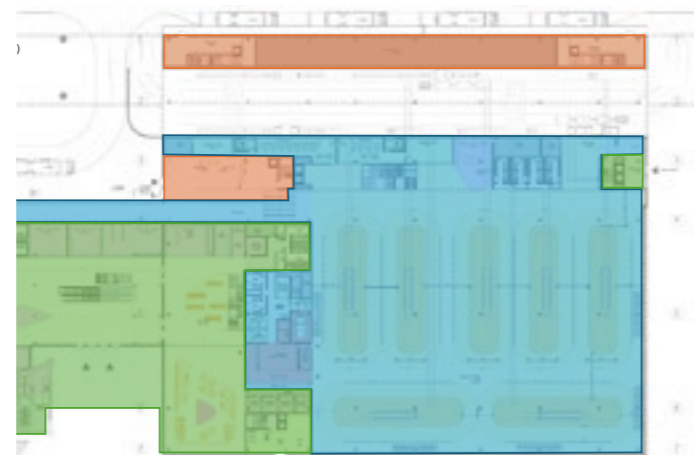
Hold baggage from Non-Schengen flights will all be screened before conveyed to the reclaim belts. Dedicated belts are equipped with in-line screening machines. Bags which need to be further inspected will be tagged. When the passenger with the bag arrives at the customs filter, the bag can be re-screened or opened for inspection.



Terminal level 1 plan - phase 1

Terminal level 1 plan - phase 3

Security - area boundaries



Program legenda

- Building Security
- Departure/ Arrival Hall
- Check-on Queuing Area
- Check-in Processing Area
- Customs
- Aviation Security
- Passport Control
- Retail
- Food and Beverage
- Airside Circulation Area
- Departure Gates
- Public Toilets
- Bagg. Recl. Circulation
- Bagg. Recl. Retrieval Area
- Baggage Handling System
- Airline Lounge or VIP area
- Support Facilities. B.O.H.
- Technical areas
- Vertical Transportation
- Offices LTOU
- Offices Rent
- Hotel

Passengers flow legenda

- Schengen Departures
- Schengen Arrival
- Non Schengen Departures
- Non Schengen Arrival
- Combined Departures
- Combined Arrival
- Airside - Landside Border
- Non Schengen - Schengen Border
- Transfer Flow

Security legenda

- Airside controlled area (CP-SRA)
- Controlled area (SRA)
- Incontrolled area (landside)

07 - The materiality of buildings

The material palette for the Vilnius Airport project is thoughtfully curated to balance durability, functionality, and a warm, welcoming atmosphere. The selection of materials reflects the region's climate while enhancing passenger experience through a seamless blend of natural and contemporary elements.

Interior Materials

The interior design features a light palette offering a clean and neutral backdrop that accentuates the architectural forms. The skylight cladding edges are dressed in metal, framing the inflow of natural light gracefully. In response to Vilnius's weather, the transparent envelope is constructed using triple glazing, ensuring optimal thermal insulation and energy efficiency.

The use of timber for the ceiling adds warmth to the plaza and all terminal areas. In contrast, the ceiling transitions to a white finish above the shops, creating a brighter and more commercial feeling catering for the different commercial fit-out requirements. Metal cladding is applied to the rhomboidal columns, offering a modern aesthetic that complements the timber accents.

The flooring is thoughtfully varied to enhance spatial experience. high durability timber flooring is used in the lounges and retail areas, adding a touch of elegance and comfort. For the majority of the terminal floors, a concrete finish is chosen for its durability and minimalist appeal. The balconies overlooking the plaza and gate areas feature metal edges and glazed balustrades, providing safety without obstructing views, maintaining a sense of openness.

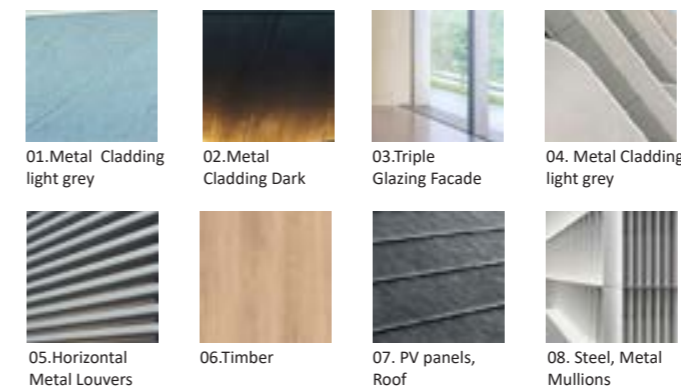
Exterior Materials

The exterior material palette is designed to withstand the local climate while presenting a modern and coherent appearance. The building's envelope is clad in metal panels, with the upper part of the roof finished in light grey and the elevations in dark grey, creating a balanced contrast. Horizontal metal louvers are strategically placed to provide shade during the summer months, enhancing the energy efficiency of the building and enhancing the building design gesture from every side.

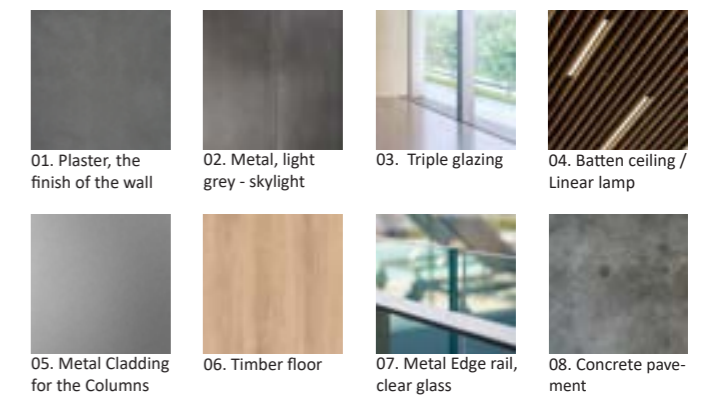
Sustainability is a core consideration in the exterior design, evidenced by the integration of photovoltaic panels on the rooftop. These panels harness solar energy, contributing to the building's overall energy performance. The façades are composed of triple glazing with aluminium mullions, ensuring both thermal insulation and a sleek, contemporary look.

Together, these materials create a cohesive language that blends natural warmth with modern efficiency. The thoughtful application of timber, concrete, metal, and glass not only addresses functional needs but also reflects Lithuania's cultural identity in a contemporary architectural expression. The result is an environment that is both inviting for passengers and resilient to the regional climate, enhancing the overall experience of the Vilnius Airport.

Facade material palette



Interiors material palette



Terminal 5 West view



Departure gates view

09 - Planning public spaces as they comply with the Competition conditions and universal design principles

The design of external areas in front of Vilnius Airport involves integrating natural and built elements to create functional, aesthetically pleasing, and sustainable environments. The design reflects Lithuanian landscapes—fields, flatlands, and wetlands—with natural meadows and grasses and informational signs will provide insights into Vilnius and Lithuania’s history. The design aligns with existing public spaces and complements the architectural concept of nearby buildings.

Sustainability.

Integrating green spaces reduces environmental impact, enhances passenger experience, and supports biodiversity. The concept prioritizes preserving old trees and using vegetation to capture carbon dioxide, filter pollutants, and mitigate noise through green walls. Native plants, requiring minimal maintenance, reduce irrigation needs and support local fauna. Sustainable materials, such as recycled or locally sourced options for benches and bins, minimize the carbon footprint. The design incorporates biodiversity, soil health, water management, and habitat preservation through rain gardens, green walls, and energy-efficient solutions.

Universal Design.

Public spaces ensure accessibility for all, regardless of ability, age, or physical condition. Features include smooth, wide, anti-slip pathways meeting ISO and Lithuanian standards, high-contrast tactile signage with Braille, and benches with varied heights, armrests, and back supports. Playgrounds incorporate sensory-friendly features and inclusive equipment. Sensory-stimulating elements, such as fragrant plants, textured surfaces, and water features, enhance the experience, especially for those with sensory processing challenges. Clear access points accommodate emergency vehicles, and spaces are easily reachable via public transport and marked accessible parking.

Area 2.2 – Bus Station

This area provides a safe, comfortable waiting point. The existing canopy can be preserved without major changes to the overall layout. Wooden benches feature traditional Lithuanian woven belt patterns and the newly planted trees, spaced 15 meters apart, offer shade for waiting passengers. A rain garden filtration system ensures sustainable rainwater management.

Area 1.2 – Terminal Square.

Designed for relaxation, social interaction, and temporary exhibitions, the space includes an artistic installation doubling as a children’s play element. Clear signage ensures easy navigation for passengers and visitors and dark granite elements integrated in the flooring direct pedestrian flow to the different transport hubs. Wooden benches with Lithuanian woven belt engravings, green areas for rainwater absorption, and protective building forms enhance the passenger experience.

Area 1.4 – External areas

This area serves airport users and the neighbouring buildings, ensuring easy access from the T5 exit and includes passive recreation zones, seating areas for socialising, playgrounds for kids. All pedestrian paths are leading to an intimate square at the centre of the green area where the majority of existing trees are preserved and green climbing walls are added to help and mitigate the noise.

Benches vary in design, with long, separate seating near playgrounds and a continuous bench near parking. Concrete pathways incorporate granite inserts and blend into green spaces for rainwater management. Tactile metal elements improve accessibility. The planting scheme mirrors Lithuanian landscapes with meadows and ornamental grasses. Grass areas absorb rainwater, while corten steel borders mimic woven belt patterns. Selected perennials and native plants provide year-round visual appeal and require a low maintenance. Informational panels describe local medicinal plants in select areas.

Rain beds near pathways collect and filter water using salt- and pollution-resistant perennials. The playground reflects Lithuania’s hilly landscape with inclusive features such as wheelchair-accessible slides, tunnels, and trampolines. Energy-efficient LED lighting enhances safety and aesthetics. Materials and elements, including benches and bins, are designed for reuse in later development phases. Perennials and grasses can be relocated to other public spaces, ensuring long-term sustainability.



View of the playground - phase 1/2/3



External areas plan - Phase 1/2/3



Materials palette for external areas



View of the green square - phase 1/2/3



Hardscape/softscape transition at external areas - phase 1/2/3

10 - Schemes, solutions and descriptions for different modes of transport, cycling and pedestrian flows

Traffic flow in front of the newly built T5 terminal is organized in a loop circulation system, in accordance with the scheme proposed in the brief. Vehicles approaching the airport from F. Vaitkaus Street and Vikingų Street are directed into two separate routes: transport for departures heads towards the central building (T1), while transport for arrivals follows Rodūnios Road until the intersection with the internal airport street leading to the airside/landside gate. This section of the traffic loop consists of three separate lanes: one designated for heavy and staff vehicles accessing airport infrastructure, a second allocated to light vehicles (taxis and private cars), and a third reserved for heavy and staff vehicles returning to Rodūnios Road (see diagram below). Subsequently, vehicles move northward along two one-way lanes in front of the T5 terminal. The eastern lane is designated for taxi drop-off and waiting areas, while the western lane is allocated for private vehicle drop-off and waiting areas. After passing the existing Air Inn hotel, the road turns left to merge back onto Rodūnios Road, running parallel to the Phase 2 boundary. This loop traffic circulation system prevents major intersections and traffic congestion at existing junctions. Additionally, it does not interfere with the already established departures traffic scheme.

Southern Street.

The 120-meter-long internal airport street will be reconstructed into a three-lane roadway, with each lane measuring 3.5 meters in width and separated by horizontal markings or potential physical barriers. The southernmost lane is designated for vehicles arriving at the cargo terminal and staff arrivals. The middle lane is reserved for taxis and private cars, including those making a left turn into the multi-story parking building. The northernmost lane is designated for cargo and private vehicles exiting the parking facility. The multi-story parking building (planned in phase 4) is designed to maximize available parking spaces, offering a total of 535 spots across four floors and a rooftop. The layout ensures clear navigation and smooth circular traffic flow within the building. At southern street intersection with Rodūnios Road, a pedestrian crossing with a safety island will be implemented. All existing parking spaces along this street will be removed to maximize the efficient use of available space between the existing buildings. The remaining area between the boundary lines, buildings, and the planned street is designated for pedestrian pathways.

Eastern Streets (Taxi & Private Vehicle Drop-Off)

The eastern section of the street is designated for taxis and includes 15 parking spaces adjacent to the T5 terminal. The street is 3.5 meters wide, with parking spaces measuring 3.0 meters in width and 7.0 meters in length to facilitate safe luggage loading and unloading. Pedestrian crossings are planned at three locations, one of which will be sheltered by a canopy that protects passengers moving from the terminal exit to the planned Phase 4 hotel.

The western section is allocated for private vehicles and includes 27 parking spaces: 15 on the T5 terminal side and 12 on the Phase 4 and Air Inn territory side. The street width is 3.5 meters, with parking spaces designed to be 3.0 meters wide and 7.0 meters long. Several parking slots near the new hotel in Phase 4 can also serve as a kiss-and-ride taxi zone.

Northern Street.

This segment connects the eastern taxi and private vehicle drop-off and pick-up areas with Rodūnios Road, situated on the northern side of the existing Air Inn hotel. The street is 3.5 meters wide and features 7 parking slots designated for the hotel's kiss-and-ride zone. Parking slots will be constructed in Phase 1 on the southern side and in Phase 2 on the northern side. The street operates with one-way traffic and a single lane.

Intercity Bus Station.

Construction of this area is planned for Phase 2. The circulation of coaches remains unchanged from the scheme proposed in the brief. Approaching from the intersection of F. Vaitkaus Street, Vikingų Street, and Rodūnios Road, vehicles proceed eastward towards the central terminal (T1) before executing a double right turn for a U-turn, reorienting westward. After dropping off and picking up passengers, buses reverse out of parking slots and continue westward to exit the airport via Vikingų Street or F. Vaitkaus Street. The existing canopy will remain unchanged, while the current taxi waiting zone will be replaced with a pedestrian path leading to the Plaza entrance/exit, along with a green zone separating the station from the path.

Bicycle Lane Network.

The current bicycle infrastructure terminates at the intersection of F. Vaitkaus Street, Vikingų Street, and Rodūnios Road. This project includes a 3.5-meter-wide shared bicycle and pedestrian path on the eastern side of Rodūnios Road, extending 230 meters to the intersection with the southern internal airport street. Of this, 60 meters will be constructed in Phase 2, and 170 meters in Phase 1.

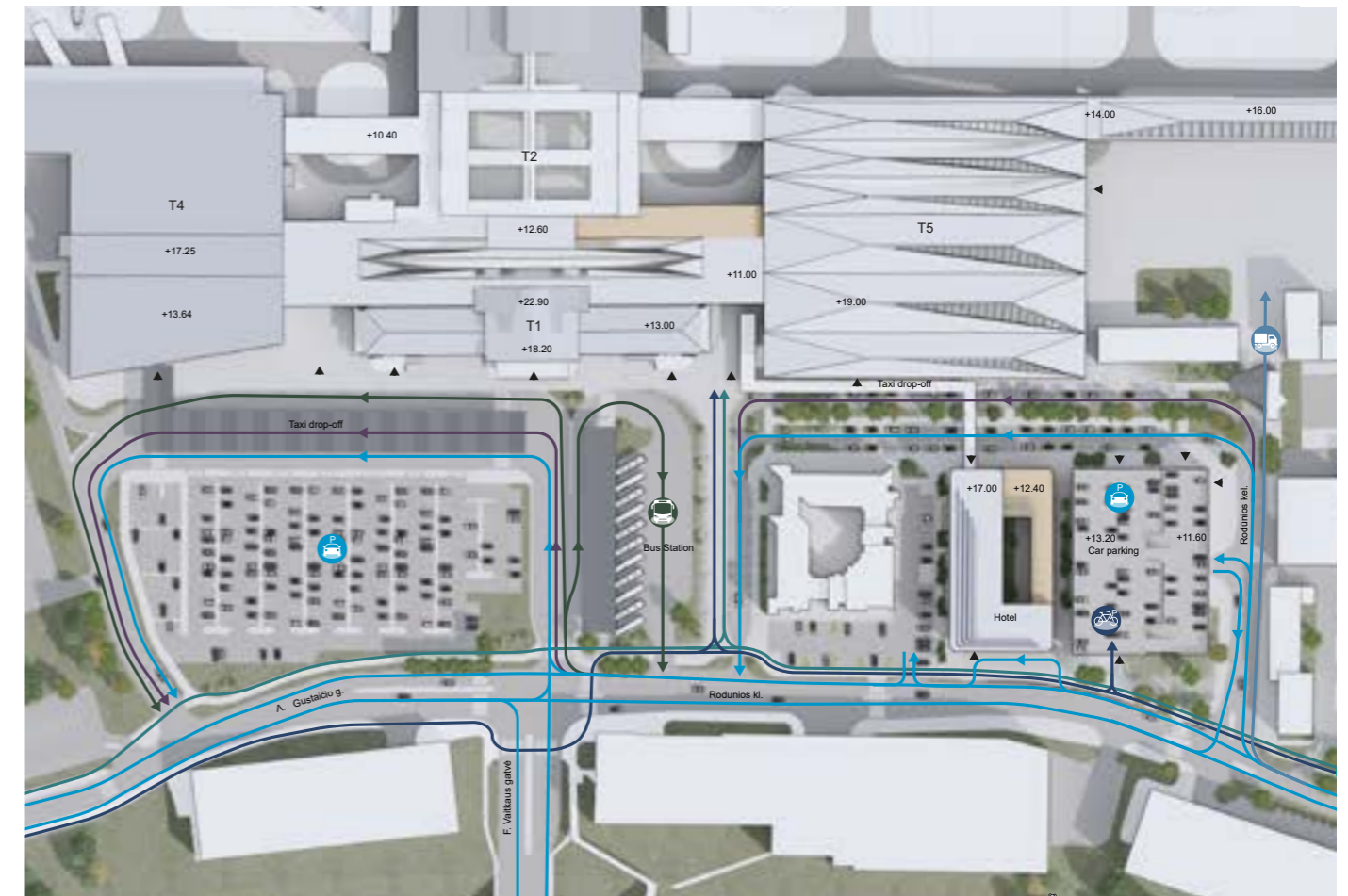
Between the completion of Phase 1 and Phase 2, the existing 60-meter walkway along Rodūnios Road will temporarily accommodate both cyclists and pedestrians. In Phase 4, a bicycle storage facility accommodating approximately 100 bikes (with potential expansion to 200) will be constructed on the ground floor of the multi-level parking facility along Rodūnios Road, seamlessly integrating into the bicycle network.

Phase 4

The current airside/landside gate is positioned at a traffic circulation corner, creating a problematic intersection for light and heavy vehicles traveling in both directions. To improve traffic organization, it is proposed to relocate this gate further south, as illustrated in the diagram below.

With anticipated increases in traffic at the intersection of F. Vaitkaus Street, Vikingų Street, and Rodūnios Road, a potential solution to mitigate congestion and delays is the implementation of a two-lane "turbo" roundabout, as depicted in the diagram below.

In the future, if necessary to further optimize vehicular traffic, a two-level intersection could be introduced for heavy and staff vehicles approaching the airport. This would help reduce traffic intensity at the main intersection and facilitate the separation of light and heavy vehicles. Additionally, as urban areas rely on this intersection for city connectivity, a viaduct is proposed in the scheme below to improve overall traffic flow.



Accessibility and traffic



Potential roundabout in Phase 4 to cater with increased traffic



Potential relocation of airside/landside gate in Phase 4 to avoid queuing of heavy vehicles

11 - Substantial structural decisions for the design and reconstruction of buildings

The structural system of the airport is designed with a strong emphasis on repetition and modularity, utilizing a lightweight steel framework. This approach ensures efficiency, cost-effectiveness, and seamless architectural integration. The roof design incorporates carefully calculated angles and foldings, contributing to a structurally sound and aesthetically cohesive form.

All terminals included within the scope of the competition follow the same—or highly similar—structural system, yet they function independently. This independence facilitates staged construction, integration of movement joints, and adaptability to various phases of development.

By employing a modular system, the structural components can be prefabricated as complete modules or, for example, as individual steel connections. This method not only enhances efficiency but also enables advanced parametric calculations, modelling, manufacturing, and construction processes. The result is a cost-effective, low-carbon approach that increases overall effectiveness. This chapter focuses on the more complex structural elements across all terminals, particularly the roofs and connections to existing buildings. Simpler elements, such as inner floors and walls, are addressed briefly. These will be constructed using conventional systems: steel beams and columns combined with hollow-core slabs where feasible, and in-situ concrete near ground levels as required. The aim is to implement low-carbon construction techniques with short spans, streamlining the building process.

At ground level, the entire structure is supported by piled foundations to ensure stability under both vertical and horizontal loads. Where stability walls or diagonals are necessary, slanted piles will be employed.

Terminal T5.

The structural design of Terminal 5 optimizes column placement to enhance load distribution while minimizing the need for long spans. This strategic approach helps reduce material use and lowers the carbon footprint of the terminal.

The roof structural system is designed to be lightweight, robust, and adaptable throughout the construction phases. It consists of steel elements spanning both longitudinally and transversely, forming a 3D space frame. This system accommodates skylights while maintaining a lean structure. The triangulated framework enhances load transfer efficiency, allowing for hanging installations between the top architectural envelope and the ceiling.

By slightly lifting longitudinal elements and incorporating “high and low points,” the roof achieves vertical triangulation, efficiently transferring loads through tension and compression rather than bending forces.

At the façade corners, cantilevered sections are stabilized in all three directions by tying them longitudinally and transversely to the roof’s space frame. In the opaque sections of the façade, leaning columns further reinforce these cantilevers, resulting in a structurally sound and visually harmonious solution.

The glass façade is designed to function independently from the roof in the vertical direction to control deflection. Its load-bearing system consists of thin mullions, while opaque façade sections discreetly integrate additional vertical supports, including leaning columns that enhance the structural performance of both the façade and the roof.

The construction of Terminal 5 will proceed in phases to ensure uninterrupted airport operations and minimal disruption. The diagram below illustrates the phased integration of Phase 3 into Phase 1 of the Terminal 5 structural system.

The overall stability of T5 relies on stability elements at the south-eastern ends of the terminal, which bear horizontal loads in both longitudinal and transverse directions. These areas, filled with programmatic elements, can incorporate either steel bracing diagonals or concrete walls to transfer loads effectively to the foundation.

A bridge connects T5 to the existing terminal building, employing a simple truss structure. To optimize cost and sustainability, an additional column is strategically placed at midspan, reducing structural complexity and material requirements.

Airport Plaza.

The plaza structure is designed to be completely independent from both the existing airport buildings and Terminal 5. It has its own load-bearing framework, ensuring structural autonomy and flexibility.

The roof follows the same design principles as T5, consisting of steel elements arranged in a 3D space frame. This configuration, with its triangulated and folded geometry, ensures structural efficiency while allowing for skylight openings to enhance natural lighting.

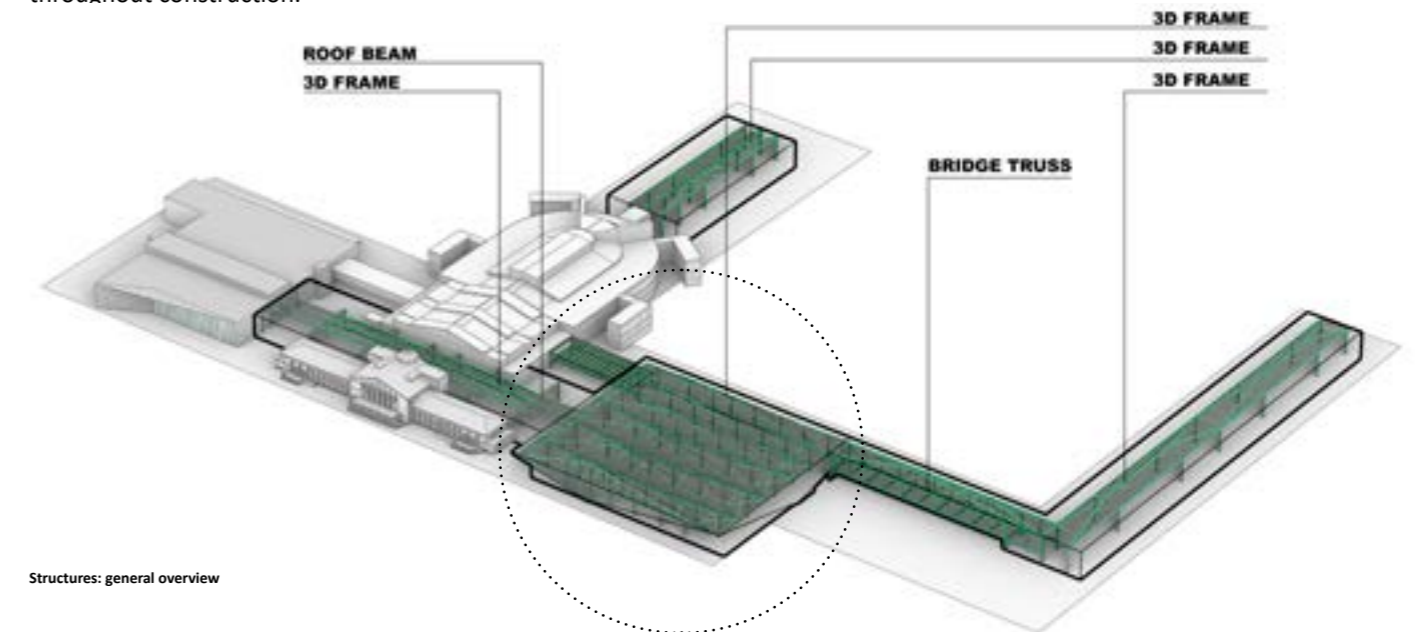
The flat sections of the roof are constructed using a straightforward column-and-beam system. In areas where longer spans are required, prefabricated TT-cassettes will be employed to maintain efficiency and reduce construction time.

Future expansion.

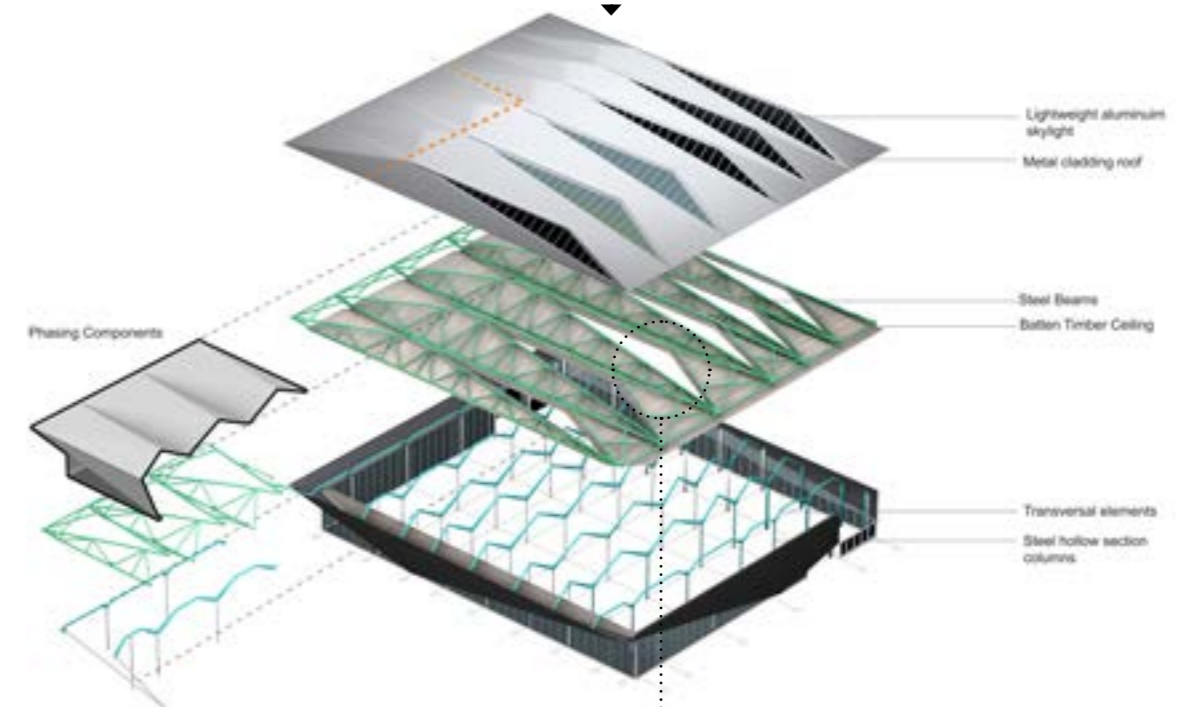
The structural systems of Terminals T6 and T7 mirror those of Terminal 5 and the plaza, utilizing the same 3D space frame steel structure. This consistency streamlines construction, enhances modularity, and ensures uniformity across the airport complex.

In the short direction of these buildings, the façade mullions will provide additional support for the flat roof sections, further optimizing the structural system. By integrating these elements, the design achieves a balance of strength, flexibility, and sustainability, aligning with the overall objectives of the airport expansion.

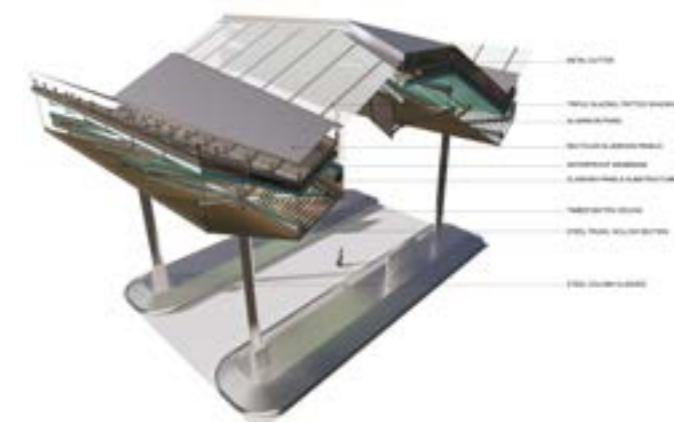
The structural approach adopted for this airport expansion prioritizes modularity, prefabrication, and efficient load transfer to reduce costs, enhance constructability, and minimize environmental impact. With careful planning and a phased implementation strategy, the project ensures a seamless integration of new and existing structures while maintaining operational efficiency throughout construction.



Structures: general overview



Terminal 5 structures - exploded view



Terminal 5 structures - rooftop detail

