Rail Baltica

RBDG-MAN-031-0109

Design guidelines

Architectural and landscaping, visual design requirements

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- RBDG-MAN-0310
- RBDG-MAN-031A
- RBDG-MAN-031B
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- RBDG-MAN-031D
- RBDG-MAN-031E

- RBDG-MAN-031F
- RBDG-MAN-031G

1. Introduction

This document defines the requirements for architectural, landscaping and visual design of the infrastructure for the Rail Baltica.

This document describes:

- Architectural and functional requirements for Rail Baltica International stations and Regional passenger train stations and stops;
- Architectural, constructional and functional requirements for various types of bridges, tunnels, noise barriers, fencing, pedestrian overpasses on the railway line;
- Landscaping requirements for surrounding areas of Rail Baltica Regional passenger train stations and stops.
- Visual requirements for elements related to the railway line.
- Signage.

1.1. Main design

Main design in the context of this document is understood as the basic design requirements for all architectural, landscaping and design objects and elements defined in this document.

Main design shall be united in all three Baltic states.

Main design shall meet following principles and characteristics:

- Sustainability,
- Value for money, cost efficiency of life-cycle costs,
- Simple and easy to use,
- Universal design principles applied,
- Easy to maintain.

Main design shall describe unified approach for all Rail Baltica infrastructure objects and apply to:

- Architectural and functional solutions for Rail Baltica international passenger train stations and stops
- Architectural and functional solutions for Rail Baltica railway crossings (pedestrian, animal, vehicle, etc.)
- Architectural and functional solutions for infrastructure objects (fences, noise barriers, bridges , overpasses, tunnels and underpasses)
- Landscaping solutions for surrounding areas along railway line, passenger stations and stops, passages etc.

- Small architectural forms (shelters, benches, recycle bins, etc.)
- Signs (informative direction signs on, to and from passenger platforms, ticket vending machines, bus stops, park + ride facilities, bike + ride facilities, kiss + ride facilities etc.)
- Main color scheme. The main color scheme shall identify the design and appearance of all objects and elements defined in this document.

If the inconsistency or a conflict with the architectural are visual design solutions of a passenger train station's design contest visual or architectural solutions was discovered, then the design shall be made in an integrated manner. In the case, that the integrative approach cannot solve the issue, a request for derogation according to Change management procedure has to be done (RBDG-MAN-011).

1.2. Branding

Branding can be implemented in all the Rail Baltica Elements, where possible. Branding shall describe exact placement of Rail Baltica logo and other visual appearances or patterns to identify Rail Baltica stations and other related infrastructure. Main solutions of use of Rail Baltica logo are described in Rail Baltica Visual Identity Guidebook (http://www.railbaltica.org/about-rail-baltica/visual-guidelines/).

Branding implementations for visual design has been applied to various elements and are ruled by all the Annexes of the RBDG-MAN-031, please refer to RBDG-MAN-031A, RBDG-MAN-031B, RBDG-MAN-031C, RBDG-MAN-031D, RBDG-MAN-031E, RBDG-MAN-031F and RBDG-MAN-031G

2. Architecture

2.1. International passenger stations

2.1.1. Architecture of international passenger stations

These requirements apply to the international stations of: Tallinn Ülemiste (EE), Pärnu (EE), Rīga (LV), Rīga Airport (RIX) (LV), Panevėžys (LT), Kaunas (LT), Vilnius (LT).

The architecture of an international passenger station shall be result of:

- Sketch design competitions
- Other binding documents of surrounding area visual identity in each city where an international railway station is placed
- Requirements from Rail Baltica Design Guidelines RBDG-MAN-026.
- Requirements from Rail Baltica Design Guidelines RBDG-MAN-031, including Annexes.

Regulations of sketch design competition shall contain requirements from and references to Design Guidelines, where relevant.

For the international stations of: Rīga (LV), Rīga Airport (RIX) (LV), Tallinn Ülemiste (EE), Pärnu (EE) which already have accepted architectural solutions, the abovementioned requirements shall be applied as far as they do not contradict with already accepted architectural solutions.

For International passenger stations the requirements of RBDG-MAN-031A and RBDG-MAN-031B should apply for:

- Furniture (recycle bins, benches)
- Lighting approach

The requirements of RBDG-MAN-031A and RBDG-MAN-031B must apply for:

- Signage
- Branding implementation, where applicable.

In international stations which are used also by 1520 mm railway, signage, furniture, lighting and branding requirements apply for Rail Baltica infrastructure.

2.2. Regional passenger train stations and stops

2.2.1. Architecture of regional passenger train stations and stops

Architectural solutions used in designing regional passenger train stations and stops shall be functionally and economically tailored according to needs of regional passenger infrastructure.

Regional passenger train stations and stops shall be built under principles of a low-carbon economy, be self-sustained as possible, to be able to produce energy locally to the maximum extent. Consume energy at a minimum possible and from renewable sources to maximum possible.,

Architecture of regional passenger stations and stops shall be minimalistic and functional yet attractive. The buildings at regional passenger train stations and stops shall be reduced to minimum extent possible. The buildings shall be free standing and modular and shall allow implementation of additional possible functions in the future.

The regional passenger stations and stops area shall include, where relevant, local or regional public transport stop, taxi stop, access ways for pedestrians and bicycle parking.

If the regional passenger stations and stops are combined with other passenger railway systems, interchange between the passenger platforms shall be ensured.

The main elements ruled by RBDG-MAN-031A, RBDG-MAN-031B, RBDG-MAN-031C and RBDG-MAN-031D for developing the regional passenger train stations and stops are:

- Color scheme
- Main architectural solutions
- Layout of station, platforms and surrounding area.
- Branding
- Signage
- Small architectural forms (shelters, recycle bins, benches, etc.)
- Design solutions
- Universal design

Regional passenger stations and stops shall contain functional requirements and placement of:

- Ticket vending machine
- Information displays
- Gate for passenger access
- Passenger platform connection on segregated grade
- Parking place for kiss+ride
- Publicly accessible and Guarded/restricted access parking place for P+R and B+R, bicycle and car electric charging infrastructure
- Underroof restricted access bicycle parking
- Access road to local passenger stop
- Bus stop/station

- Small architectural forms (shelters, recycling bins, benches etc.)

Funcional requirements for Regional Passenger stations and stops are described in RBDG-MAN-031A, RBDG-MAN-031B, RBDG-MAN-031C and RBDG-MAN-031D.

Architecture of regional passenger stations and stops may contain additional solutions to describe linkage to elements of national, regional culture and heritage:

- Embed of national/regional colors (ratio 1:10, to main color scheme);
- Embed of national/regional symbols (if the main architectonical volume and constructional solutions are not changing).

2.2.1.1. *Layout of passenger platforms*

All passenger platforms shall be designed according to Rail Baltica Design Guidelines RBDG-MAN-026 and RBDG-MAN-031B. The platforms shall provide a shelter but shall not be covered within their entire length. The shelter shall provide protection from precipitation and side winds.

On passenger platforms should be placed all needed small architectural forms (shelters, benches, recycle bins, etc.) and information displays.

All platforms shall be planned and constructed with Universal design principles.

2.2.1.2. *Type of station*

Type of regional passenger station and stop (including related urban area) outside the dense city environment shall, but in case of dense city environment (clearly indicating the constraints and providing justification why such solution was chosen) should be chosen according to location of station and estimated passenger amount from the layouts proposed in RBDG-MAN-031B and RBDG-MAN-031D.

Stations are cataloged according to the number of passengers. These typologies define which kind of facilities each type of station will be able to offer. Station design is made with modular principles in order to allow the growth of the smaller types:

TYPE I - INTERNATIONAL STATION / TERMINAL STATION
An International Station is a large station that shall be fully staffed with multiple facilities and for multiple transit services. Located in the centre of the main capitals of the three Baltic States, is an element that changes the city.

TYPE II –LANDMARK REGIONAL STATION
This station is composed by the station building and the platform, minimum facilities and operation rooms. Lower level of staff is required.

TYPE III – BASIC REGIONAL STATION
This station has the station building for waiting spaces but not ticket agents or amenities.

TYPE IV – PLATFORM REGIONAL STATION
This type of station it is the platform and proper shelters and unstaffed.

2.2.1.3. *Signage*

All signs what are used in regional passenger station or stop shall be easy to understand and read, placement of signs shall be functional as shown in RBDG-MAN-031G.

Signs used in all infrastructure of Rail Baltica should be united.

Design Guidelines conteining:

- Color scheme
- Size
- Ratio
- Font
- Pictograms
- Universal design

Are described in RBDG-MAN-031G.

Signs shall be placed to organize flow of passengers in stations and on platforms. Signs shall contain minimum necessary information to guide passengers through their journey.

2.2.1.4. *Materials*

All materials used in building of regional passenger train stations and stops shall be functionally and economically justified, according to infrastructures life cycle. Material shall be resistant to local climate. All materials what shall be implemented in to the buildings need to be chosen according to local standards for public buildings and safety regulations and requirements in RBDG-MAN-031B and RBDG-MAN-031D. Materials used for buildings shall be, resistant to extreme local weather, easy to clean, easy to maintain, anti-vandalism and anti-graffiti protected.

2.2.1.5. *Platforms*

All platforms should be designed according to Rail Baltica Design Guidelines RBDG-MAN-026 and RBDG-MAN-031B but considering dimensions of regional train operation needs as stated under 2.2.1.1.

2.3. Bridges and overpasses

All bridges and overpasses should be united in architectural perspective (unless other requirements prevail) in all three Baltic states.

Architectural and constructional solutions used in designing bridges shall be functionally and economically justified. The technical solutions for bridges and overpasses, except road overpasses should respect the requirements in RBDG-MAN-031F, according to environment and exact placement needs. The requirements of RBDG-MAN-031F may be applied to road overpasses crossing Rail Baltica line, if functionally and economically justified.

For the bridges and overpasses within the scope of Rīga (LV), Rīga Airport (RIX) (LV) designs, which already have accepted architectural solutions, the requirements should be applied as far as they do not contradict with the already accepted solutions.

2.3.1. Architecture of bridges and overpasses

In architectural and design solutions for bridges and overpasses in RBDG-MAN-031F is used main color scheme, what are related to Rail Baltica.

The railway bridge design principles shown in RBDG-MAN-031E are:

- Environmental harmony
- Economically justified
- Ergonomic – small ships, boats and yachts can go under the bridge (for main rivers)

Railway bridge shall be:

- Sound absorbent (sound barriers on perimeter);
- Bird friendly – birds can be able to see structure and possibly avoid it (example: putting silhouette of predator etc.);
- Bat and insect friendly.

2.3.2. Pedestrian overpassand bicycle passes

Pedestrian overpasses, underpasses and bicycle passes are functional objects to organize flow of pedestrians over or under Rail Baltica railway and its infrastructure. Universal design shall be implemented in these infrastructure buildings.

Principle requirements shall be:

- Safety requirements (public, railway)
- Stairs, ramps and elevators
- Universal design
- Easy to maintain
- All other requirements are described in RBDG-MAN-031E and RBDG-MAN-031F

2.3.3. Animal passages

Animal passages in all Baltic states shall be designed in similar manner. All architectonical and constructional solutions should be economically justified.

Animal passages shall be placed according to EIA and mammal monitoring studies and set national requirements.

Fences of animal passages are designed to be anti-graffiti and vandalism-resistant.

As shown in RBDG-MAN-031F, Fences shall have the following finishes:

- Wooden slats
- Vegetation

Recommended type of animal passages is arc bridge with embankment on both sides and supporting walls. Exact design and dimensions shall be defined by EIA report and mammal monitoring studies and set national requirements.

Construction shall be weather resistant, able to resist extreme local weather conditions.

Fences can be replaced with noise barriers to avoid possible disturbance of animals (light and sound).

2.3.4. Architecture of noise barriers

Architectonical solutions for noise barriers shall be implemented and economically justified.

Placement and sizing of noise barriers shall be determined and proven by appropriate noise modelling study and according to Design Guidelines RBDG-MAN-017. The visual aspect of the Noise Barriers shall be according to RBDG-MAN-031F. Alternative materials and dimensions to those specified in RBDG-MAN-031F with at least same technical features can be used, if functionally and economically justified.

As an exception the use of metal absorbent noise barriers in rural areas and forests is permissible, if the need for its use is justified by the fatigue test based on EN 16727-2-1 taking into account the location of noise barrier and train speed.

Noise barriers shall be with following properties:

- Sound absorbent
- Safe (prevents road vehicle intrusion)
- Weather resistant
- Chemical resistant (salt in winter is used on roads, also other chemicals)
- Vandalism resistant
- Highly valuable architecture.

3. Landscaping

Landscaping shall be implemented into surrounding area of Rail Baltica Regional stations, to minimize visual, vibration and sound impact on surrounding area.

Landscaping solutions shall be economically justified and shall fit into existing urban / rural environment or improve its quality.

Area around Rail Baltica Regional stations in suburban/rural areas shall be entirely designed as grassing (where it is not against Design Guidelines RBDG-MAN-027, RBDG-MAN-031C and RBDG-MAN-031D).

3.1. Fencing

Fencing in all Rail Baltica railway infrastructure is used to prevent intrusions and protect railway infrastructure from possible threats (people, animals, etc.). The possibility of installation of necessary security equipment shall be foreseen on all fences. Fencing around embankments shall be designed according to Design Guidelines (RBDG-MAN-027 and RBDG-MAN-031F).

Fences shall be realized according to RBDG-MAN-031F with following properties:

- Safe (possible vehicle intrusion)
- Weather resistant
- Chemical resistant (salt in winter is used on roads, also other chemicals)
- Vandalism and graffiti resistant
- Highly valuable architecture
- Easy to maintain

3.2. Cut-ins and embankments

Embankments and cut-ins shall be designed according local environment, re usage of excavated soil shall be taken into account. Height of embankment shall not be dominant in landscape, it shall be designed to avoid unnecessary rise form ground level and can be mixed with cut-ins. When designing a cut-in, embankments shall be placed on both sides of a cut-in. Noise protection measures shall include planting.

Visual elements are ruled by RBDG-MAN-031F.

Planting may not substitute noise protection structures but shall be applied to improve landscaping appearance of the structures and provide additional noise protection below national thresholds of permissible noise level.

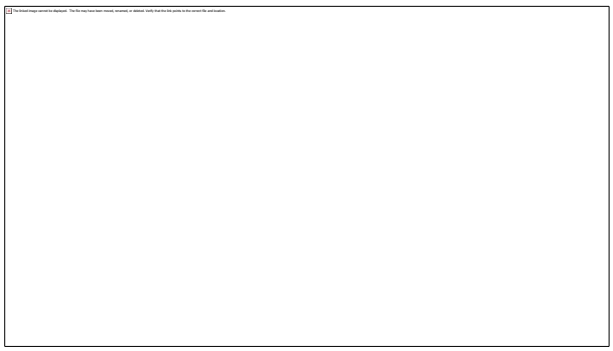
3.3. Placement of bridges and tunnels

The placement of different types of bridges and tunnels crossing Rail Baltica railway and placement of adjacent new roads shall be evaluated according to following principles:

- The pattern of newly designed bridges and crossings should not copy all the existing roads and pedestrian routes but seek for rational and economically justified alignment of those bridges and tunnels.
- The number of bridges and tunnels shall be minimalized, and sufficient amount of access roads shall be designed.
- Every bridge and tunnel shall serve as many adjacent real estates as possible.
- Access of each land plot / real estate shall be ensured. It is preferred to make access by using existing local road infrastructure. In situations, where it is not possible or reasonable, an access shall be provided by a new local road in parallel to railway.

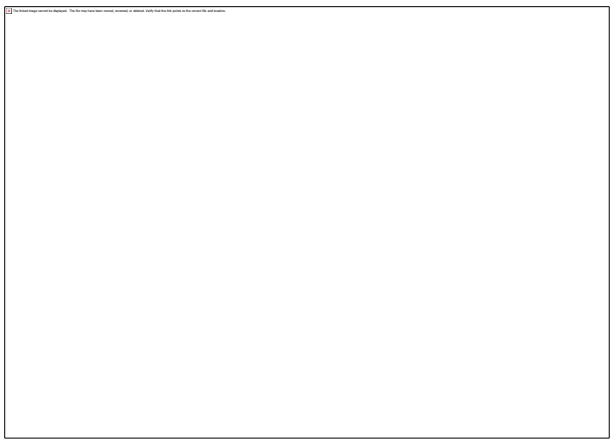
Pattern of railway crossings

Crossing of main and regional roads (A and P category) shall be without dispositioning of the roads, principle sketch No 1.



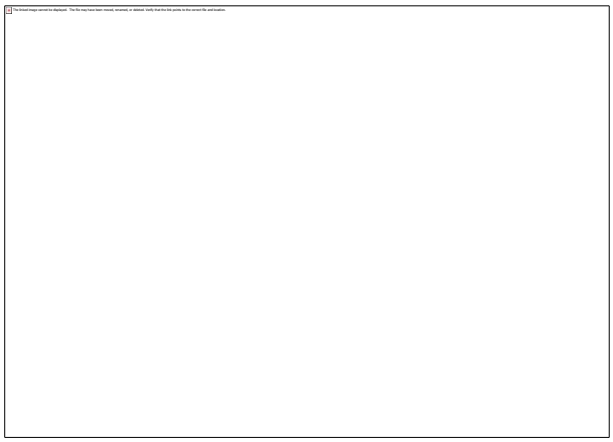
1. SKETCH NO 1

Local roads regional road crossings shall be de design with minimum distance between crossings not less than 1 km, principle sketch No 2.



2. SKETCH NO 2

Small municipal road crossings shall be designed with minimum distance between crossings not less than 2 km, principle sketch No 3.



3. SKETCH NO 3

Placement of crossings may take in count the local economy needs as forest and agriculture needs.

3.4. Area around regional passenger train stations and stops

Area around regional station shall be green and simple, easy to maintain.

The landscaping solutions shall minimize adverse climatic conditions effects – shall minimize wind and precipitation effects, protect from snow-building.

Implementation of green environment around stations shall be welcoming and environmentally friendly.

Regional Station Urban Area visual and architectural elements are ruled by RBDG-MAN-031C and RBDG-MAN-031D.

3.5. Animal passages

Landscaping solutions on animal passages shall be in harmony with surrounding area and climate.

Surface of animal passage shall be reinforced to avoid land sliding in extreme weather conditions and to resist possible usage of heavy loaded vehicles (15t axel load).

On animal passage should be (according to main surrounding area):

Landscaping solutions for animal passages shall be with following properties:

- Grassland
- Trees
- Bushes

- Other solutions proposed by designer

There shall be smooth transition between two sides, to make connection of two similar environments fluid.

Animal passages visual elements are ruled by RBDG-MAN-031F.

4. Typical models

RBDG-RVT-001	Animal passage
RBDG-RVT-002	Basic station
RBDG-RVT-003	Embankment and cut
RBDG-RVT-004	Landmark Plus station
RBDG-RVT-005	Landmark station
RBDG-RVT-006	Landscape
RBDG-RVT-007	Noise barriers
RBDG-RVT-008	Pedestrian overpass
RBDG-RVT-009	Railway bridge
RBDG-RVT-010	Road overpass

5. Annexes

RBDG-MAN-031A	Station Brand
RBDG-MAN-031B	Station Elements
RBDG-MAN-031C	Urban Brand
RBDG-MAN-031D	Urban Elements
RBDG-MAN-031E	Network Brand
RBDG-MAN-031F	Network Elements
RBDG-MAN-031G	Signage & Wayfinding
RBDG-MAN-0310	Volume 0