

## P02. BUILDING PROGRAMME

Unless stated otherwise, the stated requirements are advisory and non-compliance with them is not a reason to exclude the proposal from the assessment and to exclude the participant from the Competition. The quality and complexity of incorporating these requirements into the competition design will be the subject of evaluation of the jury. Only the requirements for the project part of the design are listed. The idea part is left to the invention of the participants.

HSR TERMINAL

PUBLIC AREAS OF THE TERMINAL

- **Location of the terminal:**  
The terminal building can be located next to the track or directly above the track. If the building is located above the tracks, it is necessary to take into account the maintenance of the facades and roof of the Terminal (especially glazed parts).  
The proposed solution should primarily meet the requirements for functional and operational connections, taking into account expected construction and operating costs. Publicly accessible spaces should be easy to navigate, allow for natural orientation and reduce opportunities for crime.
- **Passenger terminal:**  
Open to the public 24/7. There is no special space in the terminal building for the check-in of passengers in the sense of their check before boarding the train, but the competition design should allow for this possibility. It is especially recommended to separate the entrance to the platform, or the area of a separate waiting room with a system of turnstiles with camera surveillance.
- **Waiting room:**  
A waiting room or a place suitable for waiting. It can be considered as a separate room or space in the hall. Visual contact with the platform is recommended. Smaller separate waiting rooms can also be placed on the platform.
- **Toilets:**  
Men, women, cabins and baby changing counters with sufficient capacity.
- **Ticket offices:**  
1x common area of approx. 25 m2 with sales at a counter and information point, accessible from the hall, or it can be part of it.
- **Retail premises:**  
3-5x independent retail units of approx. 15-30 m2 (total approx. 100-150 m2) with the possibility of a future variable arrangement (newsagent, bakery, etc.), with common facilities.  
Deliveries are possible via the hall or separately from the outside.
- **Other activities:**  
Ticket machines in the hall, approx. 3-5x, ATM 1-2x;  
Information system panel  
Advertising panels

NON-PUBLIC AREAS OF THE TERMINAL

- **Facilities for SŽ (Správa železnic) employees:**  
Transport office of about 15 m2 for emergencies and management. (maximum staffing 2), – this office will not be occupied permanently.

- **Backrooms for employees**  
Security room approx. 15 m2, – will be occupied permanently.  
Common day room, changing rooms, toilets, kitchen for employees.
- **Cleaning and warehouses::**  
Cleaning machines, maintenance room, storage of material and technical elements, lighting replacement storage and a high-lift platform.

PLATFORM AND FORECOURT OF THE TERMINAL

- **Platforms:**  
The dimensions and positions of platform edges are stated in Annex **P03 Area Concerned and are mandatory**. The height of the platform is 550 mm above the top of the rails, which are at an absolute height of 217.400 m above sea level.  
  
The platform structure and the composition of the base layers is not part of the competition entry. The material solution of the platform surface (paving) is part of the design, including signal, guide and safety belts.  
  
Standard lighting and an information and orientation system are expected on the platform.
- **Platform access:**  
Footbridges, staircases, elevators, access walkways (ramps), escalators or travelators are foreseen and it is recommended that they are designed to respect the cross sections of the railway line and buffer zones specified in Annex **P04 Profiles and Sections**.
- **It is also recommended to design this capacity:**  
In normal operation passengers shall leave the platform in a time not significantly exceeding 30 seconds (not including the walking on the platform). Under normal circumstances, it is necessary to equip each platform with an access staircase with a width allowing the passage of 240 people per minute or adequate capacity of the escalator, lift and ramps.  
  
In case the only exit from the platform is a multi-level exit or otherwise spatially limited exit and escape e.g. on the slope of the rail cut or embankment (e.g. island platforms) can be ruled out, it is recommended to verify the capacity of the roads for an emergency:  
  
In an emergency situation, the coming of passengers to the platform should provide sufficient capacity for the safe departure of passengers. Free space of at least 1830 m2 is required on the platform. This area does not include a strip 0.9 m wide from the boarding edge. The access is to allow 2,050 people to leave the platform within 3 minutes.  
  
Considered staircase capacity in both directions:  
40 people/ min / meter of width  
  
Considered capacity of the escalator:  
down: 60 people/ min / meter of width  
up: 50 people/ min / meter of width  
  
Capacity of corridors and ramps foreseen:  
40 people/ min / meter of width

It is not recommended to design any form of level crossing over the tracks.

Barrier-free requirements: It is recommended to respect the TSI (Technical Specification for Interoperability) COMMISSION REGULATION (EU) No 1300/2014  
<https://eur-lex.europa.eu/legal-content/cs/TXT/?uri=CELEX%3A32014R1300>

- **Platform roofing:**

It is recommended to roof the entire width of the platform (between platform edges or between boarding edge and platform edge) and the entire length of the platform (standard length of one train). The design of the roof should take into account the possibility of safe maintenance in the vicinity of overhead lines. The use of green roofs is not recommended for platform roofing.

It is possible to design a roofing connected to the terminal or a separate roofing for each platform. The height and location of the supports is recommended to respect the cross sections of the railway line and the protection area specified in the Annex **P04 Profiles and Sections**.

- **Dispersing space:**

For the protection of soft targets, the dispersal area in front of the main passenger entrance in front of the Terminal should be separated by mechanical barriers to prevent vehicles from ramming into people being evacuated.

- **Operating space:**

The Terminal building should be accessible by an access road allowing fire vehicles to enter at least 20 m from all entrances to the building through which fire fighting is expected to be organised unless these buildings require a fire action starting area or inner intervention routes according to the requirements specified in fire safety standards.

- **Furniture:**

It is possible to use standard furniture or design atypical furniture with reasonable costs for its production and maintenance (in the minimum set a bench with a backrest, a bench without a backrest, a waste bin, a bin for sorted waste, an information panel).

- **Lighting:**

The whole area shall be lit by standard lighting and light smog shall be minimised.

## SYSTEMS AND EQUIPMENT OF THE TERMINAL

- **Ventilation room:**

Ventilation, cooling, heating dimensioned according to the volume of the building.

- **Electro, FAS (Fire Alarm System), MaR (Measurement and Regulating):**

Switchboards and connection points dimensioned according to the volume of the building.

- **Water supply, sewage:**

Connections and connection points dimensioned according to the volume of the building. For the purposes of the competition, technical infrastructure connection points are assumed to be by the II/240 road.

## DRÁŽNÍ TECHNOLOGICKÉ ZAŘÍZENÍ V TERMINÁLU

- **Transformer:**

25kV/400V for the power supply to the Terminal from the main power distribution system (can be located outside the Terminal building). It may be located in or near the Terminal building to allow for installation and maintenance.

- **Switching station:**

20 m<sup>2</sup>

- **Rooms with systems and equipment:**

3x20 m<sup>2</sup>

- **LV substation:**

For the operation of the information system and other technologies of the Terminal, about 50 m<sup>2</sup>

- **Backup power source:**

Battery or Diesel as required e.g. for evacuation.

- **Cable duct:**

A cable duct is placed by the tracks and will be connected to the low-voltage substation.

## TRANSPORT AROUND THE TERMINAL

In the Terminal area such traffic solution is assumed that provides for all modes of transport with regard to traffic flows and safety. The arrangement of pedestrian and cycling routes should take into account connections to expected main routes to the municipalities of Kleneč, Roudnice nad Labem and Přestavlky.

- **P+R car park:**

3,000 parking spaces in the P+R system and long-term parking. In the overall context of the design, it is possible to design surface, underground and above ground car parks.

It is recommended to design this parking so that the distance to the Terminal is as short as possible.

The parking should allow for phasing of the construction in approximately three steps (approximately 1000 parking spaces for one phase).

- **K+R stand:**

5 spaces near the entrance, covered, lit

- **TAXI stand:**

5 spaces near the entrance, covered, lit

- **BUS stand:**

4x parking spaces for articulated, 18 m long buses, roofed, illuminated  
 4x long-term parking with simple sanitary facilities for the driver

- **Operator:**

2x reserved parking space for supply, security and maintenance of the building

- **Bicycles:**

roofed bicycle parking with a capacity of 300 bikes and with the possibility of further expansion.

It is recommended to design part of the bike stands with a higher level of security.

Some bike places should allow charging (for electric bikes).

## OTHER REQUIREMENTS

- **Supporting walls:**

The sloped cut for the rail line can be supplemented locally with an abutment wall to reduce the span if necessary. Its structure must not reach into the clear profile

and the protection zone.

- **Integration in the landscape:**

In the wider area it is assumed that the current bio-corridors and bio-centres will be incorporated and connected according to the Zoning Plan in Annex **P08\_Zoning Plan**.

- **Rainwater management:**

The system to be proposed must use rainwater from buildings and infiltration from paved areas, taking into account geological conditions. Possibility to use the composition of a green roof.

- **Air field:**

The Terminal lies near the Roudnice nad Labem international air field. The Contracting Authority recommends meeting the requirements for protection zones of aviation structures as specified in Title 11 of Aviation Code L14. attached as Annex **P06.6**

### HSR MAINTENANCE DEPOT

The design of the Maintenance Depot should respect the site layout of the Maintenance attached in Annex **P03\_Area Concerned** and the reference structures in Annex **P06.5** are used as a basis for the design.

The staffing of the Maintenance Base assumes two types of employees. Stable employees who work in the Depot every day and occasional employees who commute to the Depot for specific or major maintenance/reconstruction work during which the Depot capacity is 100%. The sizing of the Depot should take into account a standard operation with up to 61 permanent HSR maintenance staff, with the possibility of up to 90 maintenance staff (with reduced comfort). Besides all these employees, supporting staff (about 6 staff) will be present as well: for catering, cleaning, security, etc.).

The 47 HSR maintenance staff will use only the changing room, 7 people will use both the changing room and the office and 7 people will white-collar staff only. The staff are divided into heads of units and managers, technical experts and 3 working groups:

- maintenance group for the superstructure and substructure (25 + 3 foremen);
- maintenance group for signalling and communication equipment (13 + 2 foremen);
- maintenance group for overhead lines and power supply (9 + 1 foreman).

The groups work in shifts (for 1 to 3 weeks in a night shift, for 1 week in a day shift) depending on their focus and needs.

### BUILDINGS IN THE HSR MAINTENANCE DEPOT

- **Office building:**

(approx. 1 800 to 2 200 m<sup>2</sup> of gross floor area) The position of the building in relation to the storage area should be taken from Annex **P03\_Area Concerned**.

staff facilities (changing rooms, sanitary facilities, small kitchen); canteen/cafeteria (food delivery + small kitchen for heating food and preparing cold dishes); offices for 20 people (2 to 4 people per office; supplemented by sanitary facilities and small kitchen) and meeting rooms: meeting room for up to 20 persons adjacent to offices (clean operation), a common room for up to 30 persons adjacent to workshops (dirty operation); hall for monitoring, control and coordination of maintenance work; 10 accommodation units, each for two persons, for travelling employees (e.g. 5 x two-room apartment with bathroom and small kitchen with approx. 40 m<sup>2</sup> each).

Further space will be left free (shell and core) for the facility manager who will sub-divide this space.

- **Workshops and storage rooms:**

(approx. 1 700 m<sup>2</sup>), 3 workshops (approx. 20 x 16 m), 4 material storage room (approx. 12 x 16 m), the height of the storage room and workshops is approx. 6 m. Premises with access through a segmented garage gate from the storage area. Workshops and storage rooms should be connected to the office building, or its dirty operation section.

- **Garages / Hangars:**

(approx. 200 m<sup>2</sup>), a one-storey building allowing the parking of three maintenance, service and road freight vehicles (e.g. a three-axle crane) (total minimum size of one storage room = approx. 12 x 16 m, height approx. 6 m). Every parking space should have its own entry way or the building can be designed as a shelter (without walls and gates)

- **Workshop with a control pit:**

It is recommended that the design of the workshop with the inspection pit is taken from Annex **P03\_Area Concerned**.

(50 to 55 x 8 m) with passage on one end single track, for two universal machines or tampering machines, pit length 20 to 30 m, width 3.6 m, access to the pit by stairs, depth approx. 1.5 m, illumination by LED light fixtures, arrangement of compressed air stations – connection points every 10 to 12 m, 230 V and 400 V electric sockets every 10 to 12 m, 3 drainage troughs to catch spent oil (one on every side of the room and one in the middle, leading to a 3000l underground tank located outside the main building), up to 14 lifting stands that can be relocated (14 for a train/machine with a length of 54 m, 8 for a train/machine with a length of 32 m) on a reinforced concrete slab (the load-bearing capacity per one stand varies from 15 to 22.5 tonnes)

- **Pumping stations:**

It is recommended that the design of the pumping stations from Annex Annex **P03\_Area Concerned**.

A structure (this facility may be unroofed; approx. 4 x 7 m) located on a concrete slab in a slope with a drainage trough in the middle draining into an underground tank used for catching diesel leaks located on one end single track in front of the workshop, with a control pit to which it will be connected. The dispenser will be in suction dispenser. No splitting of diesel intake and output is foreseen and there is no connection to cabling for reception/return using cards.

### TRACKS AND SURFACES IN THE HSR MAINTENANCE DEPOT

- **Handling tracks:**

It is recommended to take the tracks layout of the Maintenance Depot from Annex **P03\_Area Concerned**.

The tracks of the fully equipped Maintenance Depot consist mainly of: 2 handling tracks with a recommended useful length of 300 m (exceptionally 200 m), one of which includes a civil structure with a control pit; 1 to 2 handling tracks of at least 150 m (at least 1 of them equipped with a front and side ramp of at least 5 m width and at least 15 m length for loading and unloading maintenance equipment and spare parts for infrastructure components onto working trains); entry surfaces for road/rail vehicles.

Handling tracks can be connected using crossovers to facilitate handling of rolling stock and for more flexible forming of working trains.

They are designed without overhead wires due to the intended use: handling of cargo and material by automotive cranes, crane booms of cranes or road loading machines, which excludes the placement of any systems above them.

- **Storage area:**

It is recommended to take the solution of the storage area of the Maintenance Depot from Annex **P03\_Area Concerned**.

This surface (approx. 20 m wide) is foreseen along the entire useful length of the handling tracks. This is the main storage and work area of the Maintenance Depot. The storage area is connected to garages, hangars, workshops and storage rooms as well as to a ramp by the handling tracks. It is recommended to make those parts of the storage area where there is frequent operation on them (by the ramp and buildings) with an asphalt cover and the rest of the area with unpaved surface.

- **Train wash:**

This area (approx. 32 x 8 m) is reserved for hand washing of vehicles. The wash always includes a drain duct for catching oil or the antifreeze liquid with a drain to the tank. A track of approximately 30 metres without any additional equipment needs to be placed in front of and behind the wash.

- **Secured cable park:**

This fenced and possibly also roofed area (approx. 16 x 25 m) protected by an alarm system and a camera serves mainly for the storage of communication cables and material for repairs of overhead lines in case of an emergency. We recommend that this cable park be located so that it is in visual contact with the office building.

- **Parking areas for staff and visitors:**

35 unroofed parking spaces by the office building, the part adjacent to the buildings is equipped with stands for charging electric vehicles;  
25 roofed parking spaces, the part adjacent to the buildings is equipped with stands for charging electric vehicles;  
approx. 20 roofed bicycle parking spaces.

- **Parking areas for service vehicles including road/rail vehicles:**

The parking area for oversized machines, e.g. road/rail excavators (approx. 100 m<sup>2</sup>) is planned as unroofed (except for approx. 3 parking spaces in the garage). It can be part of the storage area.

- **Flexible fire reserve:**

This is relevant only if no other sufficient source can be secured and only in the vicinity of the fuel tank. It can be a fenced area with a PVC fire bag with water (approx. 50 m<sup>3</sup>).

- **Retention tank:**

The retention tank design will be based on rainwater management requirements.

- **Zone with waste containers and tanks for spent oil from workshops:**

This area (approx. 380 m<sup>2</sup>) is mainly used for the placement of: waste containers in an area of approx. 300 m<sup>2</sup>;  
tanks for spent oil, antifreeze liquid, etc. (volume 3 000 litres, approx. 80 m<sup>2</sup>).

- **Balast, gravel and crushed gravel storage:**

This storage is foreseen as part of the storage area along the handling track.

- **Lighting of the premises:**

The whole area shall be lit by standard lighting and light smog shall be minimised.

- **Roads and other handling areas:**

Roads and other areas are sized for standard truck loads. The surface of areas with regular traffic shall be asphalt-concrete, other areas can have unpaved covers.

- **Fencing of the premises:**

It is recommended to adopt the design of fencing of the Maintenance Depot from Annex **P03\_Area Concerned**.

Maintenance Depots are fenced. The fencing shall be 2 m above the walking surface or the ground and its design should make it difficult to overcome and, if necessary, resist any attempt to do so. The unroofed cable storage shall have a non-transparent fence and shall be secured against unauthorised entry (barbed wire).

## RELATED STRUCTURES

### ROAD BRIDGE OVER THE RAILWAY TRACK

Load-bearing capacity:

The standard load-bearing capacity for a category II road S 9.5/70 is assumed.

Width:

The minimum width of the bridge deck should allow for a 9.5m wide two-way road, a pedestrian walkway and a two-way cycling path (recommended on the side adjacent to the Terminal).

Design:

The design of the bridge should be in accordance with the overall urbanistic and architectural design of the terminal. It is recommended that the height of the structure and the location of the supports are designed so as to respect the clear cross sections of the railway line and protection zones specified in Annex **P04\_Profiles and Sections**.

### OTHER UTILITY STRUCTURES

- **Signal box control structure:**

On both throat ends of the HSR station near switches, the signal box control structure will be situated (it can be integrated into another nearby building). The structure is controlled remotely.

It contains:

The signal box control panel, approx. 20 m<sup>2</sup>

Transformer 25kV/400V

Switching station 20m<sup>2</sup>