VILNIUS
LITHUANIA

The City of Vilnius Street Design Manual

2021


NORTHWIND

VISION OF VILNIUS STREETS

This Design Manual means streets of a new quality for Vilnius and residents of Vilnius, which we will use to reinstate several perspectives:

- A street is the main public space of the city, which is meant not only for traffic, but also is a venue of life. Today, many streets look more like roads, where movement in means other than a car is not particularly convenient.
- A street is everything between facades of buildings: pedestrian and cycle paths, green landscape and carriageways.
- Streets allow us to experience the city, so first they must be safe and convenient for people rather than vehicles.

The Design Manual offers a set of practices which will be used to turn roads of Vilnius into real city streets. We want to have the best, the greenest and the most convenient public spaces in the city.

The document consists of two parts – twelve principles of city streets and five thematic chapters itemising these principles:

- Applying the twelve principles, we will check whether the designed projects and the works planned on the streets are in line with the vision of city streets.
- The thematic chapters on geometry, landscaping, materials, urban furniture and lighting explain in practical ways how to tackle the key challenges of street design and the solutions to be chosen.

The Design Manual also broadens the approach to the existing legal regulation, allowing for experimenting and improving the current rules considering the best solutions applicable in Vilnius, Lithuania and abroad.

In case of any conflicts between the Design Manual and other legal acts (e.g. technical construction regulations), they will be discussed individually, adapting to the existing legal regulations, until the regulation is improved.

The Design Manual was developed based on the structure of the Street Design Manual of New York City, adapting it to the context of Vilnius.

This document is available for use, making a reference to the original source. Vilnius always welcomes suggestions for improvements to this Design Manual. When solutions are found that are better than those provided in the Design Manual, they will be discussed with representatives of the municipality and, if approved, will be integrated into this document.

I would like to thank everyone who contributed to the development of the Street Design Manual and everyone who shapes the streets of Vilnius by contributing their work and using them. I hope this work will make our main public spaces even better for everyone.

Mayor of Vilnius City
Remigijus Šimašius

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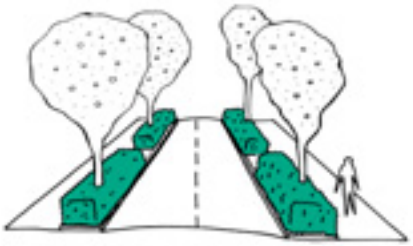
1. Key principles to reshaping streets

01

A TREE ALWAYS COMES FIRST

We start works of design or repairs with a tree: we protect the existing trees and find places for new ones, matching all other elements (furniture, lighting, networks or trails) to the trees.



02

TREES AND SHRUBS – BETWEEN CARS AND PEDESTRIANS

Trees and shrubs create a green street perimeter, protect pedestrians from cars and provide shade. The lawn along the carriageway must be replaced with shrubs without damaging the existing trees.

05

LIGHTING – FOR PEDESTRIANS FIRST

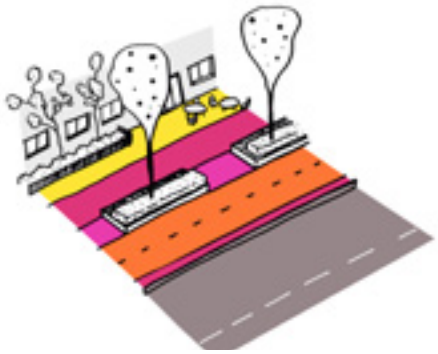
Light ensures safety. First of all, luminaires need to illuminate pavements and pedestrian crossings, not just the street alone. Separate lighting for pedestrian and cycle paths must be installed, on separate poles or supplementing the existing street lighting.

06

ALL STREET ELEMENTS – BLACK

There are many different elements on the streets. By making them one colour, we will give the streets integrity, emphasising the rhythm and silhouette of the street. Newly designed elements will be black only, while the existing ones will be gradually repainted.

All street elements, including urban furniture, rubbish bins, information stands, lighting and signposts, except for bicycle stands, will be painted in uniform black RAL 9004 MATT colour.



09

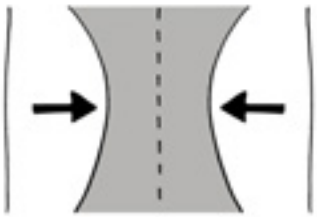
SURFACES THAT CREATE STREET CHARACTER

Different pavements create the character of streets and reflect the speed of movement. Pavements will be chosen depending on the context, the current and the planned situation, unique features of a neighbourhood and the desired speed of movement. They must be comfortable, aesthetic and high quality. Pedestrian trails will be designed using several types of paving stones; slabs of a different size may be used in the furniture zone and along facades. All pavement elements must be consistent.

10

VISUAL NEATNESS – NO EXCESS ELEMENTS

Less is better, so the necessity of the offered street elements will be double checked. Street elements will be multifunctional and will not duplicate another's purpose: shrubs will function as a protective fence, a 30-cm-wide kerbside strip will serve to keep materials such as road maintenance salt, while signs will be affixed to lighting poles.

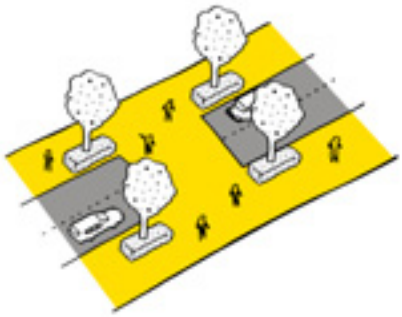


03

CARRIAGEWAYS WITHOUT ANY EXCESS WIDTH

Lane widths will be adapted to the street speed and modes of transport rather than to the street category. For cars: on 30 km/h streets – 2.75 m; on 50 km streets – 3.0 m. Lane widths for public transport – 3.25 m at least.

Space saved that way should be used in the following hierarchy: for pedestrians, greenery along the pedestrian pavements, cycle paths, parking and greenery in the dividing lane.

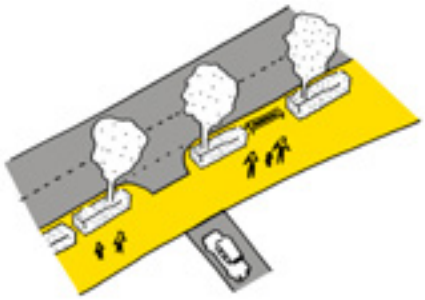


04

SAFE PEDESTRIAN CROSSINGS (UNINTERRUPTED PEDESTRIAN MOVEMENT)

Pedestrian crossings will be installed more densely, ensuring more convenient pedestrian movement. Pedestrian crossings must be signed to show the priority of pedestrians.

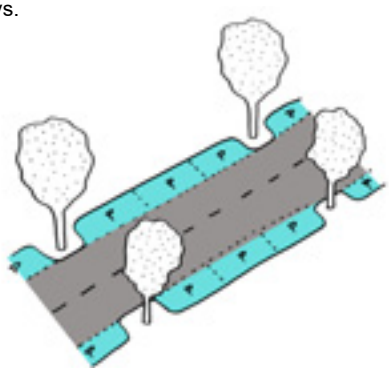
Pedestrians must cross the smallest possible area of carriageways.



07

PAVEMENTS ESTABLISH THE PRIORITY OF PEDESTRIANS

At the entries to courtyards or slow-speed, residential zones and pathways will not end at, or descend to street level – car drivers must feel like guests. A block-paved walkway will symbolise a priority to other traffic participants, so it is also welcome on quiet streets and elevated crossings.



08

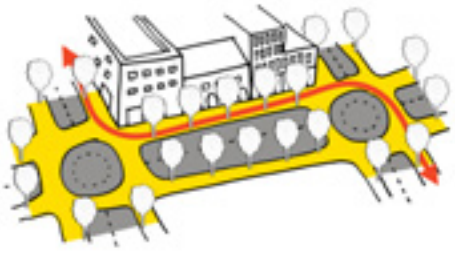
CAR PARKING SPACES SET UP ON MOST STREETS, USUALLY PARALLEL

Parking spaces can be installed on all 30 km h and 50 km/h streets. They will be divided into groups of 2–3 spaces, separated by a greenery island, which will be at least 3 metres long. These areas will normally be covered in paving slabs.

11

A METRE OF A STREET – FOR OWNERS

Owners of buildings by the street will use, plant and look after the 0.5–3 metre-wide areas between the pavement and the facade (looking after a green lane and planting next to the street is also possible, with the agreement of the municipality). Residents can plant facades in creeping plants, shrubs or other low height greenery, set up pots with plants outside, on tables, chairs or benches, so they do not interfere with pedestrian traffic.



12

SMALLEST POSSIBLE INTERSECTIONS AND TURN RADIUS

For vehicles – to the extent required by minimum technical requirements only, giving away all the saved space to people, trees, shrubs and environmental quality.

Figure 1. Trees in the street profile. Photo from the archives of DO ARCHITECTS

01 A tree always comes first

We start works of design or repairs with a tree: we protect the existing trees, find places for new ones, matching all other elements (furniture, lighting, networks or trails) to the trees.

- New trees will be planted densely in greenery lanes.
- When carrying out works and engaging in design, all trees will be protected. Trees will be fenced according to the rules; if trenches are excavated nearby, the works will be carried out manually to ensure that tree roots are not damaged.
- When installing pedestrian pathways, when there is a tree to be installed close by, the pathway will be curved leaving room for the tree, also taking into consideration the width of the street, and estimating if the trail can 'bypass' the tree.
- When renovating pedestrian trails, paving stones will be removed from tree roots. If possible, pathways will be moved away from trees or narrowed down, if this does not impair the comfort of pedestrians. The aim is to leave at least a 1.5-metre-wide lane for greenery.
- Cabling and pipework will be installed under carriageways, while lighting will be designed in parallel with the designed trees.

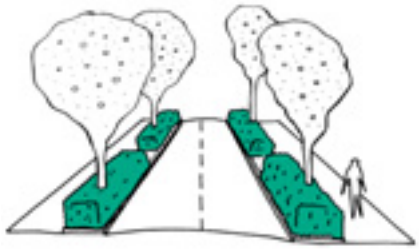
Figure 2. Trail adapting to the existing trees. Photo by Saulius Žiūra

In addition, the following must be provided for project assessment:

- the existing trees, shrubs and creeper plants in units;
- if inevitable, the reason for felling trees and the number of felled trees;
- an explanation of how tree roots will be protected during works.

Figure 3. Trail adapting to the existing trees. Photo by Saulius Žiūra

Figure 5. Naugarduko Street. Photo by Saulius Žiūra



02 Trees and shrubs – between cars and pedestrians

Trees and shrubs create a green street perimeter, protect pedestrians from cars and provide shade.

Shrubs and trees will be planted

- in places of existing lawns, freeing up the undergrowth underneath the tree crown;
- instead of kerbside areas for road mantenance materials and safety fences;
- in dividing lanes and islands;
- between cycle and pedestrian paths;
- in blocks – inserting other elements (such as bicycle racks and furniture);
- dividing parking spaces;
- in waiting areas: at intersections and bus stops;
- on sloping ground;
- along the buildings, combining with the eleventh principle – a 'Metre of a Street' – for owners.

Figure 4. Upės Street. Photo by Daugvinas

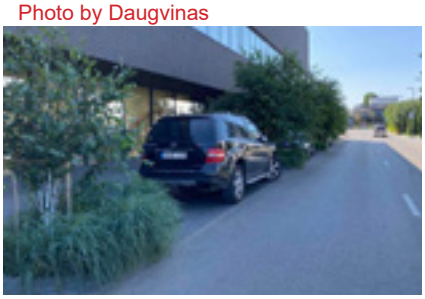


Figure 6. Dividing parking spaces. Photo from the archives of DO ARCHITECTS

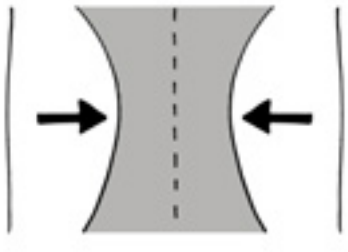
- If a pedestrian path being repaired can be moved, thus making space for more greenery, this must be done. The minimum width between the kerbs for shrubs is 50 cm, and for trees – starting from 1 m. In narrower areas, trees are planted with root-volume systems only. Trees and shrubs can be used to install chicanes on 20–30 km/h and 5 km/h streets.

In addition, the following must be provided for project assessment:

- A number of trees, seedlings, shrubs and creeper plants planted in the above zones.

Figure 7. Islandijos Street. Photo by Saulius Žiūra

03 Carriageways without any excess width



Reducing the width of traffic lanes is aimed at the safety of traffic participants – narrower carriageways ensure that drivers stay attentive and vigilant, contributing to safe speed. They also allow for narrowing intersections and shortening the distance between intersections of pedestrian and cycle paths with motor vehicles, thus reducing potential conflicts.

Lane widths will be adapted to the street speed and modes of transport rather than to the street category:

- for cars: on 30 km/h streets – 2.75 m;
  on 50 km streets – 3.0 m.
- for public transport – 3.25 m when there are two lanes and 3 m – when there are three or more lanes in both directions. When there is not enough space, the public transport lane can be narrowed to 3.05 metres.

The space saved that way will be used in the following hierarchy: for pedestrians, greenery along pedestrian trails, cycle paths, parking and greenery in dividing lanes.

Arrangement works will include dismantling pavement which is no longer necessary, such as excess asphalt in the carriageway (excess lane width, excessive radii), flagstones under old container sites and similar.

In addition, the following must be provided for project assessment:

- matching lane widths to the city street speed limit and modes of transport.

Figure 8. Islandijos Street.
Photo by Saulius Žiūra

Figure 9. Naugarduko Street. Photo from the archives of DO ARCHITECTS

Figure 10. Elevated pedestrian crossing. Photo by Saulius Žiūra

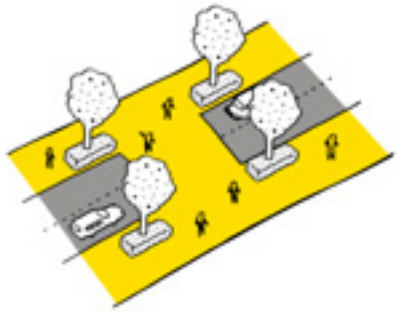


Figure 11. Pedestrian crossing in London. Photo by Giedrė Puzinauskienė

Figure 12. Pedestrian crossing in Ogmios city. Photo by DO ARCHITECTS

04 Safe pedestrian crossings (uninterrupted pedestrian movement)

Pedestrian crossings will be installed more densely, ensuring more convenient pedestrian movement. Pedestrian crossings must symbolise the priority of pedestrians. Pedestrians should be able to safely cross quiet streets at any place.

- Pedestrians must cross the smallest possible area of carriageways; therefore, the following will be chosen depending on circumstances:
  - extending pedestrian pavements into parking spaces (installing kerb 'build-outs);
  - on 50 km/h streets – pedestrian crossings normally installed with islands;
  - on quiet traffic streets (5 km/h, 20–30 km/h) – crossings and intersections are usually elevated;
  - unmarked crossings (residential areas).
- Pedestrian crossings being renovated will be designed to be as short as possible. In places where street lanes at crossings are wider than indicated by the technical requirements, they will be made narrower by installing kerb 'build-outs' (extensions of pedestrian paths into the street) or crossing islands (if there are more than two lanes or if extensions cannot be installed). This is important for both speed control and visual clarity, so pedestrians have priority at crossings.
- At crossings, kerbs will be lowered on both sides of the street, installing 60 cm-wide tactile paving along the entire length of the crossing, leaving a 30-cm gap from the street.
- In the Old Town, installing crossings only in transit streets is recommended, turning local streets into a common use area, where specific solutions will be adapted to the needs of the locality.

Figure 13. Naugarduko Street. Photo from the archives of DO ARCHITECTS

05 Lighting – for pedestrians first

Luminaires light up pedestrian trails and crossings, not the street alone. Light ensures safety.

- Separate lighting for pedestrian and cycle paths must be installed, on separate supports or supplementing the existing street lighting.
- Lighting will be matched to green landscape, also assessing how trees grow and seasons of the year, when tree crowns can cover it.

In addition, the following must be provided for project assessment:

- lighting scheme of pedestrian pathways, taking tree crowns into account

Figure 14. Lighting of cycle and pedestrian paths. Photo by Saulius Žiūra

Figure 15. Lighting of cycle and pedestrian paths. Photo by Saulius Žiūra

Figure 16. Pylimo Street. Photo by Saulius Žiūra

06 All street elements – black

There are many different elements on the streets. By making them uniform, we will give the streets integrity, emphasising the rhythm and silhouette of the street. Newly designed elements will be black only, while the existing ones will be gradually repainted.

- All street elements, including city furniture, rubbish bins, information stands, lighting and signposts, except for bicycle stands, will be painted in uniform black RAL 9004 MATT colour.
- All elements of any material will be painted, including concrete pots or the back of all signs, metal legs of benches. Elements for sitting down and bicycle stands will be left unpainted.
- Before repainting poles, their placement must be assessed.
- When designing poles, road and other signs will be grouped to minimise their numbers.

Figure 17. Italy. Photo from the archives of DO ARCHITECTS

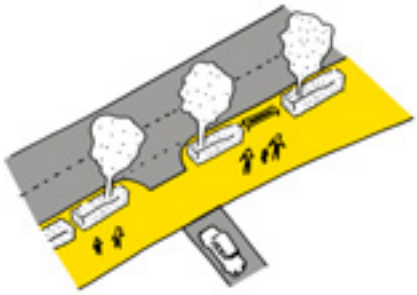
Figure 18. View having dismantled a protective fence. Photo by Saulius Žiūra

The requirements of heritage protection will be taken into account in the Old Town, but the black colour of elements is preferred.

Figure 19. Street in Amsterdam. Photo by Anton Nikitin

07 Pavements establish the priority of pedestrians

At the entries to courtyards or quiet streets, trails will not end nor descend to street level – car drivers must feel like guests. The slabbed pavement will symbolise a priority to other traffic participants, so it is also welcome on quiet streets and elevated crossings.



- Entries to courtyards will be elevated to the height of pedestrian trails. Pedestrian and cycle paths will not come down to the street level at all intersections with entries to courtyards, stores, parking areas (everything except streets of the same importance) and will continue smoothly; entries will be installed using flagstones, cycle paths will continue in red asphalt pavement.
- Entries to courtyards will be narrowed to the minimum parameters: two-way to 5.5 metres, one-way to 3.5 metres. Car parking will not be possible on narrower entries, as this reduces visibility and safety.
- Pathways at intersections will not be steep, and corners will be rounded to a radius of at least 1 metre. The corners of intersecting paths often suffer wear, so when renovating them it is best to install them in such a way as to correspond to usual pedestrian movement.

Figure 20. Entry to a courtyard in London. Photo by Giedrė Puzinauskienė

Figure 21. Entry to a quiet street in the Netherlands. Photo by Anton Nikitin

Figure 22. Ogmios city. Photo from the archives of DO ARCHITECTS

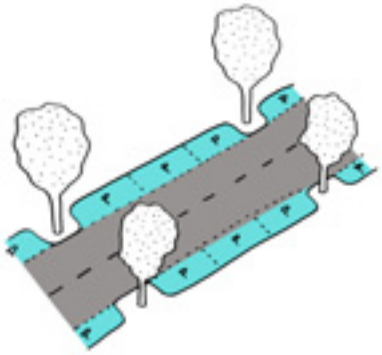


Figure 23. Longitudinal parking on the street. Photo from the archives of DO ARCHITECTS

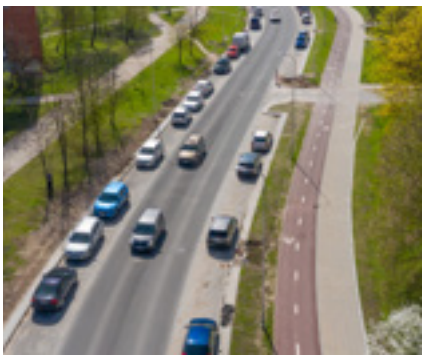


Figure 24. Didlaukio Street. Photo by Saulius Žiūra

08 Car parking spaces set up on most streets, usually parallel

Parallel car parking can be installed on all 30 km/h and 50 km/h streets.

- Parking spaces will be divided into groups of 2–3 spaces, separated by a greenery island, which will be at least 3 metres long. These areas will normally be covered in paving stones. Perpendicular or angled car parking will normally be allowed for in car parking areas.
- On quiet streets, car parking spaces may be installed forming bends.
- Different types of parking will be planned:
  - paid parking spaces
  - drop-off places
  - delivery places (service places)
- Parking spaces on streets must not prevent pedestrians from crossing the street, so they will be separated not only by greenery, but also by an appropriate number of passages and crossings.
- Cars will not take away space from pedestrians and cyclists. Parking kerbs or widening of paths will be undertaken in places where cars are to be parked, or approaching paths.

Figure 25. Jaktgatan and Lövängsgatan Streets, Stockholm. Project created by AJ Landskap. Photo by Kasper Dudzik

09 Pavements that create street character

Different surfaces create the character of streets and reflect the speed of movement.

- Pavement surfaces must be comfortable, aesthetic and high quality.
- Pavement surfaces will be chosen depending on the context, the current and the planned situation, unique features of a neighbourhood and the desired speed of movement.
- Pedestrian paths will be designed using several types of block paving; blocks of a different size may be used in the furniture zone and along facades. All pavement elements must be consistent.
- The main focus when designing pavements will be on the pedestrian zone and the pattern of its pavements. Smaller blocks will be used in Vilnius pedestrian pavements (100 mm x 100 mm and 100 mm x 200 mm).
- If there is a wide pedestrian trail on the street, the furniture area and the owner's metre will be made of small block paving, while the pedestrian path will be of large flagstones or slabs. Smaller block paving is more suitable for narrow pathways.
- Pavements and kerbs will be selected from the 'Materials' section of this Design Manual.
- Areas of unnecessary paving will be replaced with green landscaping.

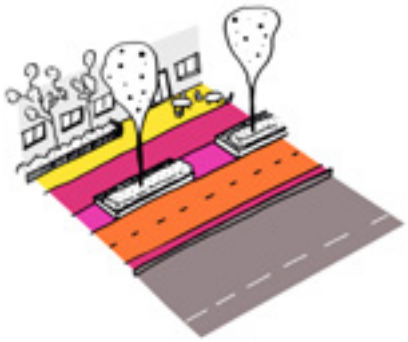


Figure 26. Renovated S. Fino Street. Photo by Saulius Žiūra

Figure 27. Paupys. Photo by Saulius Žiūra

Figure 28. . Removal of excess elements. Photo by Saulius Žiūra

Figure 29. Before removing the protective fence. Photo by Saulius Žiūra

Figure 30. After removing the protective fence. Photo by Saulius Žiūra

10 Visual neatness – no excess elements

Less is better, so the necessity of the offered street elements will be doublechecked.

- Street elements will be multifunctional and will not duplicate another's purpose: e.g. shrubs will function as a protective fence, a 30-cm-wide kerb as a place to keep road maintenance materials, while signs will be affixed to lighting poles.
- The number of poles will be reduced. If there is more than one road sign, lighting or tram wire pole nearby, signs should be moved to them. If new signs are installed, possibilities for installing them on the existing poles must be checked.
- Any poles on pedestrian trails must be removed, or pedestrian trails must be curved (as long as this does not impair pedestrian movement). All obstacles must be at a distance of 50 cm from pedestrian trails (lateral safety zone). The lateral safety zone can be reduced up to 25 cm in the Old Town only.
- Areas to store road maintenance materials will not be installed where they are unnecessary. Such an element is only suitable kerbside where there are designated parking spaces.
- Pedestrian barriers will be installed in exceptional cases and only following discussions. In all other cases, the aim is to provide space for greenery (shrubs) instead.
- Unnecessary, distracting elements such as rubber bollards, flashing elements or bright pedestrian crossing panels will be eliminated.

In addition, the following must be provided for project assessment:

- layout plan of the existing poles, poles to be designed and other elements

Figure 31. Paupys. Photo from the archives of DO ARCHITECTS

11 A metre of a street – for owners

Owners of buildings will use, plant and look after a space near the facade of their building.

- Areas approximately 0.5 m–3 m wide (sometimes more) between the footpath and the facade will be left for planting.
- Looking after green lanes next to streets is also encouraged, once planting plans have been agreed with the municipality. Residents can plant facades with creeper plants, shrubs or other low height greenery, set up pots with plants outside, and tables, chairs or benches as long as they do not interfere with pedestrian traffic.
- During the design process, a space along a building facade may be left for planting various plants.
- These principles may also be used in the territory of the Old Town, if they do not violate heritage protection requirements and have been approved by the Cultural Heritage Protection Division.

Figure 32. Owner's metre. Photo from the archives of DO ARCHITECTS

In addition, the following must be provided for project assessment:

- the proposed width of the 'metre' of the owner (marking it in the drawing).

Figure 33. Owner's metre. Photo from the archives of DO ARCHITECTS

Figure 34. Roundabout in Paupys. Photo from the archives of DO ARCHITECTS

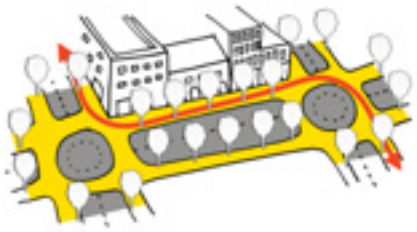


Figure 35. Intersection in Paupys. Photo from the archives of DO ARCHITECTS

Figure 36. Intersection in Vytauto Street. Photo by Saulius Žiūra

12 Smallest possible intersections and turn radius

For vehicles, the allocated space must be minimal according to legal technical requirements; all the saved space will be given to people, trees, shrubs and improving quality.

- An intersection is a smooth connection, rather than a stop for all traffic participants. Traffic lights are not always necessary at such intersections, as the good design of the spaces protects drivers who can see each other clearly and aggressive driving or speeding is made more difficult.
- The street turning radius will be reduced to the minimum.
- The narrowing of carriageways aims to also replace traffic light-controlled intersections by small and ultra-small roundabouts, thus easing the movement of traffic participants and reducing waiting times for all.
- Intersections will be selected from the ‘Geometry’ section of this Design Manual.

2. APPROVING DESIGN PRINCIPLES TO RESHAPING STREETS

Principle	In line with the principle
01 A tree always comes first	There are no felled trees (except for the populus genus and the ash-leaved maple). The number of the existing trees in units, number of the existing shrubs in units or square metres (m2), and the number of creeper plants in units or metres (m) is to be presented.
02 Trees and shrubs – between cars and pedestrians	Included in the plans is the planting of trees, shrubs, creeper plants and seedlings (indicating the number in units). These must run along the entire length of the road unless the existing greenery is sufficient.
03 Carriageways without any excess width	The width of traffic lanes has been planned according to requirements of the Design Manual (for public transport traffic – 3.0–3.25 metres, for cars – 3.0 metres, and on quiet streets (20–30 km/ h) – 2.75 metres). Previous parameters of traffic lanes should also be provided.
04 Safe pedestrian crossings (uninterrupted pedestrian movement)	Smooth pedestrian movement has been ensured (has not been interrupted).
05 Lighting – for pedestrians first	There is a separate lighting for pedestrian pavements and cycle paths, or separate lighting has been planned.
06 All street elements – black	All painted surfaces must be black.
07 Pavements establish the priority of pedestrians	Elevated entries and pavements made of slabs; the street pavements and pedestrian crossings are made of slabs.
08 Car parking spaces set up on most streets, usually parallel	Parking spaces have been installed and they are parallel.
09 Pavements that create street character	A relevant pavement drawing has been selected, where aesthetics matches functionality, retaining integrity.
10 Visual neatness – no excess elements	All elements have been reviewed, and there is no clutter or unnecessary elements remaining.
11 A metre of a street – for owners	The ‘ownership’ line has been defined, and residents have been informed that they now have this semi-private ‘metre’ of the street.
12 Smallest possible intersections and turn radius	There is the minimum possible turn radii at intersections.

Partly meet the principle	Do not meet the principle
If works are conducted in the root protection zone or roots may be damaged. The number of such trees must be specified	If there are trees to be felled, the number and the diameter of such trees (in units) must be specified, detailing their species.
If the existing greenery is not between cars and pedestrians	If planting has not been planned
–	If the width of traffic lanes is not in line with that provided for in the Design Manual, indicating the reason for this.
–	In all other cases
If the existing lights illuminate footpaths or cycle paths no worse than on the carriageway	In all other cases
If existing galvanised elements remain	In all other cases
–	In all other cases
Parking is not parallel	No parking
The pavement is solid, neat, but without a relevant drawing	In all other cases
–	There are elements (such as poles, bollards, fences, areas for storing road mainrenance materials, excess poles for road signs) remaining.
–	In all other cases
–	Larger than the minimum radii

3. Process

Aspects important in applying the Design Manual

- All works relating to changes of street infrastructure or its elements can be carried out in the city only after the checklist of the twelve principles has been completed (see pages 20–21).
- Specialists appointed by the municipality will be responsible for the assessment of each of the twelve principles. Compliance, partial compliance or non-compliance with the principle will be recorded; the comments will have to be discussed with suggestions on how to adjust the projects or solutions. If there is no way to eliminate the discrepancies, the reason for this will be recorded.
- This Design Manual will be used as a fundamental document in the design of Vilnius streets. Other approved documents (such as recommendations for pedestrian, bicycle projects and surfaces) will apply to the extent they are not in conflict with the Design Manual or extend its solutions.
- The Design Manual can also be applied in case of discrepancies with national legislation, after discussing such solutions with responsible divisions of the municipality or in working groups. Experiments with both the application of new practices and the search for better solutions than those described in the Design Manual are welcome. Authorities are to be contacted promptly regarding any discrepancies in legal acts, initiating any necessary amendments.

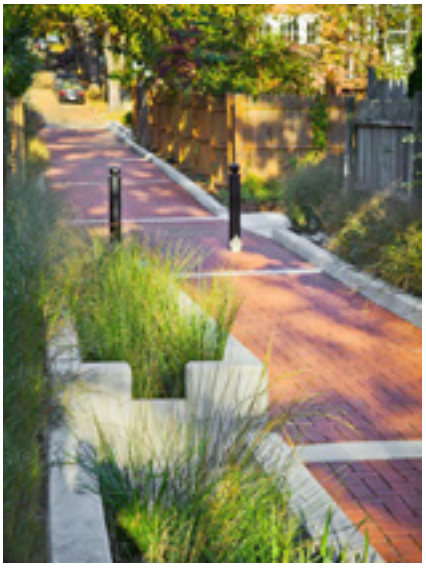


Figure 37. Biological pit for surface water collection and filtration

Development of the Design Manual

This Design Manual is the result of the joint work of five teams. This was achieved through the analysis of thematic parts and the needed solutions, the search for best practices both in Vilnius and abroad, and joint discussions that synthesised theories into aspects applicable in practice.

In developing this Design Manual, the essential challenges of designing streets today were reflected in the twelve principles of transformation of Vilnius streets in creating a new quality of streets.

The aim is to first test the principles on streets that will become examples to follow in the future*. Works were already completed on some of them or are to be performed in the near future.

The Design Manual was developed by specialists from different fields including architects, urban planners, landscape architects, lighting specialists and representatives of the municipality related to the implementation of the projects. The document has therefore become a comprehensive and integrated practical guide.

For the Design Manual to be relevant and usable, summarising the results of its application one year after its approval is recommended, reassessing the principles of transformation and supplementing it with the missing aspects.

Figure 38. Laan op Zuid, Roterdamas

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