

## Supplementary material

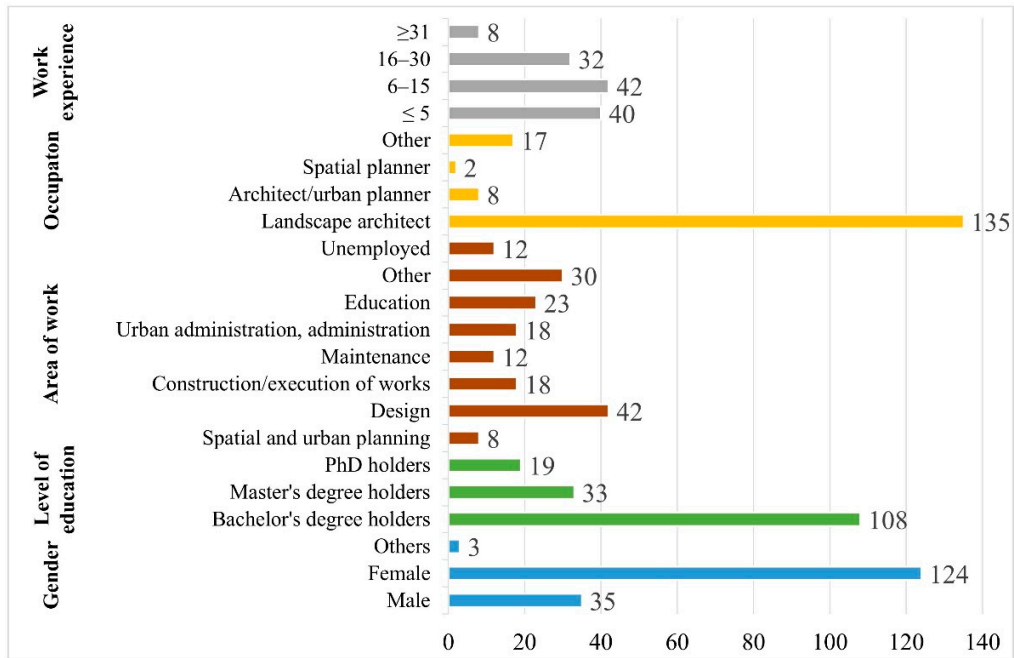


Figure S1. Summarised general information about the respondents (2019)

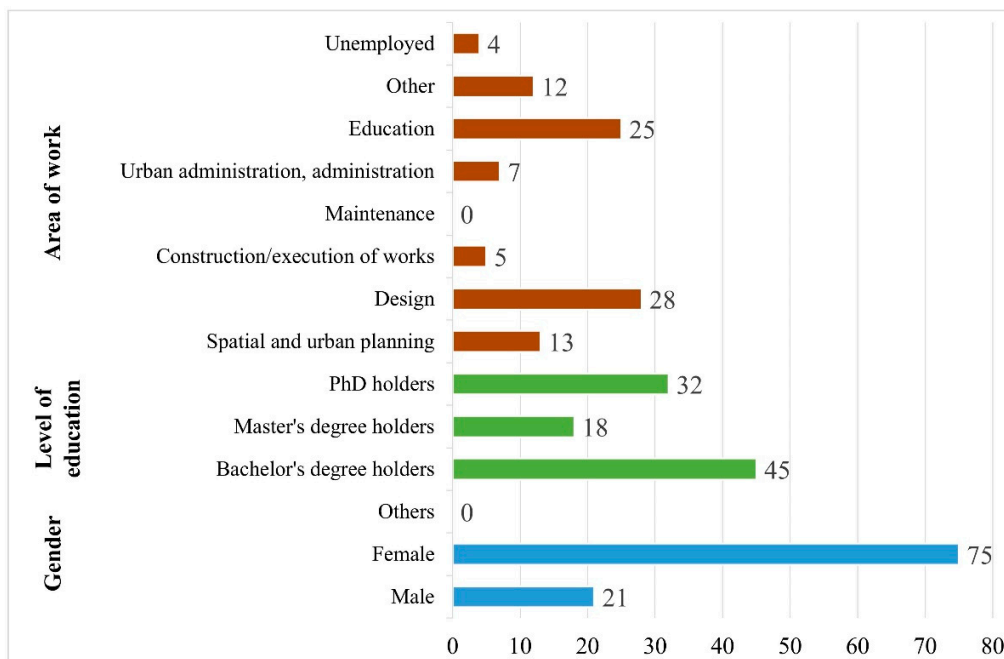


Figure S2. Summarised general information about the respondents (2020)

Questionnaire 1 (2018)

1. What is the keyword (term) to introduce the obligation to protect existing greenery in the Law on Environmental Protection? \_\_\_\_\_

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2. How can legal solutions compel Serbian cities to establish a registry (GIS) of green spaces? \_\_\_\_\_

\_\_\_\_\_

3. How can regulations compel planners to plan and preserve existing greenery? \_\_\_\_\_

\_\_\_\_\_

4. How can investors be compelled to preserve existing greenery when investing in construction projects? \_\_\_\_\_

\_\_\_\_\_

5. What should be the mandatory input data for a project to preserve greenery? \_\_\_\_\_

\_\_\_\_\_

6. How can designers be compelled to preserve existing greenery when designing projects? \_\_\_\_\_

\_\_\_\_\_

7. What building rules can compel contractors to preserve existing greenery during construction? \_\_\_\_\_

\_\_\_\_\_

8. If monetary compensation for tree cutting is one element of possible protection, list all elements to be evaluated for each tree and included in the compensation calculation formula.

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**9. Is it necessary to establish a data protocol for the preparation of planning documentation regarding open and green spaces, and what specific data is required?** \_\_\_\_\_

\_\_\_\_\_

**10. Do you think existing methods of evaluating green spaces should be improved? If so, what improvements could be made?** \_\_\_\_\_

\_\_\_\_\_

**11. Should legal instruments for protecting existing green spaces in the planning process (in plans, laws, regulations, etc.) be improved?** \_\_\_\_\_

\_\_\_\_\_

**12. What are the weak points in the connection between legal and planning regulations related to green spaces?** \_\_\_\_\_

\_\_\_\_\_

**13. What are the opportunities for improving green space planning in the context of climate change (air temperature regulation, flood water management, etc.)?** \_\_\_\_\_

\_\_\_\_\_

**14. What are the common problems encountered when preparing Volume 9, which is part of the documentation for obtaining a building permit?** \_\_\_\_\_

\_\_\_\_\_

**15. Should the procedure for technical control of landscape architecture projects (considering their specificities) be more precisely defined? If so, how could this be achieved?** \_\_\_\_\_

\_\_\_\_\_

**16. Should green spaces under private ownership be subject to legal regulations?** \_\_\_\_\_

\_\_\_\_\_

17. Should a standard be introduced, specifying the minimum area required to be qualified as a green space? \_\_\_\_\_

\_\_\_\_\_

18. How can institutional links be strengthened: from responsibility to implementation, control, and sanctions? \_\_\_\_\_

\_\_\_\_\_

19. What steps should be taken to standardise contractor works in landscape architecture? \_\_\_\_\_

\_\_\_\_\_

20. How do you envision standardising the descriptions and sequence of various types of works in LA? \_\_\_\_\_

\_\_\_\_\_

21. How should the supervision process in the field of implementing works in LA be standardised and enhanced? \_\_\_\_\_

\_\_\_\_\_

22. What elements should be included in and what should be the basis of the regulation for the implementation and initial/investment maintenance of new LA facilities? \_\_\_\_\_

\_\_\_\_\_

23. How can the obligation to maintain green spaces be established at a level higher than decisions made by local self-government? \_\_\_\_\_

\_\_\_\_\_

24. How can the obligation and mechanisms for maintaining public green spaces which fall outside the programs and responsibilities of local public companies be established? \_\_\_\_\_

\_\_\_\_\_

25. What are your suggestions for preserving vegetation in environmentally valuable urban areas, including public spaces and zones of individual housing, considering new construction in these areas? \_\_\_\_\_

\_\_\_\_\_

26. What roles and responsibilities do landscape architecture engineers have within the structure of local self-government? \_\_\_\_\_

\_\_\_\_\_

27. What is your opinion on the obligation of maintaining free spaces until they are put to their intended use? \_\_\_\_\_

\_\_\_\_\_

28. What is your opinion on the necessity of establishing plant waste landfills in cities/local self-governments? \_\_\_\_\_

\_\_\_\_\_

29. What is your opinion on the need and method of introducing automatic watering systems in public green spaces? \_\_\_\_\_

\_\_\_\_\_

30. What do you believe should be addressed in the context of this topic that hasn't been mentioned so far? \_\_\_\_\_

\_\_\_\_\_

31. Do you have any additional important points to add? \_\_\_\_\_

\_\_\_\_\_

*Thank you for your time.*

Date: \_\_\_\_\_

Interviewer: \_\_\_\_\_

Questionnaire 2 (2019)

1. Gender (tick):

- 1. Female
- 2. Male
- 3. Other

2. Occupation (tick):

- 1. Landscape Architect
- 2. Architect/Urbanist
- 3. Spatial Planner
- 4. Other

3. Area of Work (tick):

- 1. Spatial and Urban Planning
- 2. Designing
- 3. Construction/Execution of Works
- 4. Maintenance
- 5. Urban Governance, Administration, etc.
- 6. Education
- 7. Other
- 8. Unemployed

4. Education Level (tick):

- 1. Bachelor's Degree
- 2. Master's Degree
- 3. Ph.D.

5. Work Experience (in years) (tick):

- 1.  $\leq 5$
- 2. 6-15
- 3. 16-30
- 4.  $\geq 31$

6. Rate the extent to which the following terms relate to the concept of "Green Infrastructure".

	Rating (tick)	1	2	3	4	5
Term		to the least extent	slightly	neutrally	to a great extent	to the greatest extent
Urban Parks						
Tree Rows						
Watercourses						
Roads						
Areas of Individual Housing						
Open Spaces in the City Generally						
Soil Porosity						
Forests in Peri-urban Areas						
Agricultural Land in the Surroundings						

7. Rate the importance of green infrastructure:

	Rating (tick)	1	2	3	4	5
Element		almost insignificant	slightly insignificant	moderately significant	quite significant	extremely significant
Air Quality in the City/Settlement						
Climate of the City/Settlement						
Preservation and Quality of Water						
Biodiversity in the City						
Soil in the City						
Noise Level in the City						
Residents' Recreation						
Ambience and Aesthetic Values						
Residents' Education						
Residents' Health						
Tourism						

8-18. Based on your own experience and observations in your environment, rate the current state of relationship to green infrastructure, considering the assessment elements listed below:

Question	Rating (tick)	1	2	3	4	5
		to the least extent	slightly	neutrally	to a great extent	to the greatest extent
To what extent is existing greenery respected in planning, designing, and executing works?						
To what extent do planners/urbanists go out into the field?						
To what extent do designers go out into the field?						
To what extent do plans and projects include mapped elements of existing green areas?						
To what extent does the documentation provide recommendations for the protection of existing greenery?						
To what extent are existing elements of nature respected in the space for which planning or technical documentation is being prepared?						
To what extent are urban planners aware of the need to connect elements of green infrastructure?						
To what extent in your environment do unified procedures provide conditions related to greenery?						
To what extent is it clearly defined in your environment who is responsible for green infrastructure?						
To what extent are positions of greenery and installation routes harmonised in projects?						
To what extent is a landscape architect a member of the planning team?						
General assessment of the state of the relationships to green infrastructure...						

19. Propose measures through regulations to enhance the preservation and protection of EXISTING elements of green infrastructure\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



20. Propose measures to realise the creation of a REGISTER of elements of green infrastructure in Serbian cities\_\_\_\_\_

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21. Propose measures to improve PLANNING to enhance and develop green infrastructure in Serbian cities\_\_\_\_\_

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22. Propose measures to improve DESIGN to enhance green infrastructure\_\_\_\_\_

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23. The development of green infrastructure needs to be managed in every urban environment. Propose a method of organisation, i.e., MANAGEMENT of the development of green infrastructure in Serbian cities\_\_\_\_\_

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24. If you have anything to add that is not covered by the survey and relates to the topic of green infrastructure, please write briefly.\_\_\_\_\_

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*Thank you for your time.*

Date:\_\_\_\_\_

Interviewer:\_\_\_\_\_

Questionnaire 3 (2020)

1. Gender (tick):

- 1. Female
- 2. Male
- 3. Other

2. Area of work (tick):

- 1. Spatial and urban planning
- 2. Design
- 3. Construction/Execution of works
- 4. Maintenance
- 5. Urban governance, administration, etc.
- 6. Education
- 7. Something else
- 8. Unemployed

3. Level of education (tick):

- 1. Bachelor of Engineering
- 2. Master of Engineering
- 3. Ph.D.

4. Opinion on the European Green Infrastructure Strategy (tick):

- 1. I am fully familiar
- 2. I am partially familiar
- 3. I know it exists
- 4. I am not familiar

5. The concept of green infrastructure has not yet been established in the legislation of the Republic of Serbia, and there is currently no systematic approach to this matter. There is a lack of specific laws or sublegal acts directly addressing green infrastructure. In your opinion (tick):

- 1. A completely new Green Infrastructure Law is necessary.
- 2. There is no need for legislative regulation in this area.
- 3. Green infrastructure should be integrated into existing laws.

6. If it's not feasible to enact a standalone Green Infrastructure Law, which existing laws should incorporate green infrastructure? (tick):

1. Law on Environmental Protection
2. Law on Planning and Construction
3. Law on Communal Activities
4. All three listed laws
5. All relevant laws

7. The structural diversity and multifunctionality of green infrastructure suggest that its planning should occur at all levels. In your opinion, should the Green Infrastructure Strategy be formulated at the level of (tick):

1. Republic of Serbia
2. Cities/municipalities
3. Both previous levels
4. Protected areas

8. Within spatial and urban plans in the territory of the Republic of Serbia, the incorporation of the green infrastructure concept is still in its infancy. However, the essence of its planning is substantially present, although only through sectoral themes such as forests, water, agriculture, nature protection, and environmental protection. This approach is justified considering the ecosystem services it provides. In your opinion, should green infrastructure be planned (tick)::

1. As a new, independent topic
2. As part of sectoral themes
3. Both ways (in a synchronised relationship)
4. Within protected areas

*Thank you for your time.*

Date: \_\_\_\_\_

Interviewer: \_\_\_\_\_

Questionnaire 4 (2023)

1. Lack of a legal framework in the field of green infrastructure at the national and local levels:\_\_\_\_\_

2. Inadequate enforcement of existing legal and planning regulations in areas related to elements of green infrastructure: \_\_\_\_\_

3. Inadequate prescribing of sanctions in the field of green infrastructure:\_\_\_\_\_

4. Inadequate inspection control:\_\_\_\_\_

5. Existing organisational structure is insufficient for the development of green infrastructure:\_\_\_\_\_

6. Lack of intersectoral cooperation:\_\_\_\_\_

7. Incomplete and imprecise conditions of public authority holders for the purposes of planning and preparing technical documentation:\_\_\_\_\_

8. Absence of incentive measures for the development of green infrastructure:\_\_\_\_\_

9. Jurisdictional issues over elements of green infrastructure:\_\_\_\_\_

10. Owners and/or users of certain elements of green infrastructure lack the capacity for their maintenance and improvement:\_\_\_\_\_

11. Absence of a model enabling the maintenance of public elements of green infrastructure by the private sector:\_\_\_\_\_

12. Inadequate cooperation between citizens and public authority holders:\_\_\_\_\_

\_\_\_\_\_

13. "Responsibility shifting" to managers who lack the capacity to solve specific problems:\_\_\_\_\_

\_\_\_\_\_

14. Degradation and encroachment of elements of green infrastructure:\_\_\_\_\_

\_\_\_\_\_

15. Vulnerability of elements of green infrastructure that are not formally protected but are valuable for biodiversity conservation, cultural heritage, and/or spatial identity:\_\_\_\_\_

\_\_\_\_\_

16. Insufficient recognition of elements of green infrastructure in private ownership:\_\_\_\_\_

\_\_\_\_\_

17. Insufficient elements of green infrastructure, insufficient surface area of elements, poor spatial distribution, and their disconnectedness:\_\_\_\_\_

\_\_\_\_\_

18. Inadequate reservation of adequate space for new elements of green infrastructure during the planning process:\_\_\_\_\_

\_\_\_\_\_

19. Ignoring the potential for addressing environmental issues resulting from climate change through green infrastructure planning:\_\_\_\_\_

\_\_\_\_\_

20. Lack of a multidisciplinary approach to planning, in which spaces of different purposes are planned integrally with green infrastructure elements:\_\_\_\_\_

\_\_\_\_\_

21. Inconsistent regulative norms for preserving existing and constructing new green infrastructure elements:\_\_\_\_\_

\_\_\_\_\_

22. The absence of a planning approach that improves conditions and addresses problems by respecting ecosystem services:\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

23. Failure to conduct evaluations of planning solutions through levels of ecosystem service provision:\_\_\_\_\_

\_\_\_\_\_

24. Inconsistent typology of green infrastructure elements in the territory of the city of Belgrade:\_\_\_\_\_

\_\_\_\_\_

25. Incomplete Geographic Information System of green infrastructure:\_\_\_\_\_

\_\_\_\_\_

26. Tendency to plan public green infrastructure not accessible to everyone:\_\_\_\_\_

\_\_\_\_\_

27. Unresolved property-legal relations affecting existing and planned elements of green infrastructure:\_\_\_\_\_

\_\_\_\_\_

28. Designing and building without assessing and integrating existing elements of green infrastructure into solutions:\_\_\_\_\_

\_\_\_\_\_

29. Underutilisation of potential for forming green infrastructure structures, such as roofs, walls, facades, etc., of public and private buildings (urban pockets):\_\_\_\_\_

\_\_\_\_\_

30. Conflict between technical infrastructure and green infrastructure:\_\_\_\_\_

\_\_\_\_\_

31. Neglecting the multifunctional (ecological and aesthetic) significance of elements of green infrastructure during green infrastructure feature design:\_\_\_\_\_

\_\_\_\_\_

32. Inadequate equipment of public green infrastructure elements:\_\_\_\_\_

\_\_\_\_\_

33. Lack of a wide range of plant materials in the domestic market, especially suitable for extreme conditions in urban environments and changing climate conditions:\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

34. The absence of an approach designed to enhance biodiversity in project solutions:\_\_\_\_\_

\_\_\_\_\_

35. Lack of data on green infrastructure elements within location information (construction possibilities and restrictions):\_\_\_\_\_

\_\_\_\_\_

36. Inadequate financial resources for regular maintenance of elements and integral green infrastructure:\_\_\_\_\_

\_\_\_\_\_

37. Insufficient human resources for regular maintenance of elements and integral green infrastructure:\_\_\_\_\_

\_\_\_\_\_

38. Inadequate maintenance of green areas adjacent to multi-family (collective) residential buildings:\_\_\_\_\_

\_\_\_\_\_

39. Presence of invasive species in elements of green infrastructure and lack of a systemic solution for their permanent removal:\_\_\_\_\_

\_\_\_\_\_

40. Insufficient education of stakeholders in the decision-making, planning, and design processes regarding the significance of green infrastructure:\_\_\_\_\_

\_\_\_\_\_

41. Inadequate understanding of the importance of the multifunctionality of green infrastructure and its synergistic effects with other activities:\_\_\_\_\_

\_\_\_\_\_

42. Inadequate media promotion of the significance of green infrastructure:\_\_\_\_\_

\_\_\_\_\_

43. Limited knowledge about the use of available and innovative solutions:\_\_\_\_\_

\_\_\_\_\_

44. Investors do not recognise the potential for investing in green infrastructure:\_\_\_\_\_

\_\_\_\_\_

45. Insufficient involvement of citizens in the planning and design process of green infrastructure:\_\_\_\_\_

\_\_\_\_\_

*Thank you for your time.*

**Date:** \_\_\_\_\_

**Interviewer:** \_\_\_\_\_