

STUDY

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Questionnaire for the State of the Art

in educating sustainability and heritage

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O2 INTELLECTUAL OUTPUT

Output type: Studies / analysis – Questionnaire development and survey implementation

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**Enhancing of Heritage Awareness and
Sustainability of Built Environment in
Architectural and Urban Design Higher Education**

2021



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TITLE

STUDY: Questionnaire for the State of
the Art in educating sustainability and
heritage

PUBLISHER

University of Belgrade,
Faculty of Architecture

DESIGN LAYOUT

Aleksandra Đorđević, Aleksandra
Milovanović, Ana Zorić, Mladen Pešić

ISBN-978-86-7924-267-9

2021



Co-funded by the
Erasmus+ Programme
of the European Union

STUDY: Questionnaire for the State of the Art in educating sustainability and heritage

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This result has been produced as a part of O1 INTELLECTUAL OUTPUT within HERSUS project within Erasmus + Strategic Partnerships for higher education. The creation of these resources has been co-funded under grant no. 2020-1-RS01-KA203-065407 (funding period 2020-2023; total grant 246.922,00 €). This publication [communication] reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



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EXPERTS QUESTIONNAIRE STUDY RESULTS



Serbia (Belgrade)



Italy (Venice)



Cyprus (Nicosia)



Greece (Thessaloniki)



Spain (Seville)



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SERBIA

01

ABSTRACT / SERBIA / UBFA



The survey covered 12 experts from various fields of expertise as defined at the consortium level. The responses were informative and detailed in most cases.

The section on presence/awareness of issues of sustainability and heritage in practice have revealed an imbalance between the two issues. While sustainability was well recognised and often thoroughly discussed, heritage remained less visible in experts' responses.

The responses referring to competences in practice indicated that the general knowledge and theoretical background obtained during academic education were rather good and need to be maintained and further improved. Interdisciplinarity, practical knowledge and internationalisation were stressed as areas in which graduates' competencies should be enhanced. Experts' responses in the last section regarding requirements in the context of academic programs were consistent with the statements and evaluations of competences and have provided a valuable feedback that should be taken into consideration when designing a new study module.

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Petar
Tufegdžić

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(Government or local
authorities members or
consultants)



A4

Decision Maker in
Public Administration
(Ephorates, Ministries,
Devolved Administration)



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A5

Decision Maker in
NGO / Professional
Society

INTRODUCTION



This report presents the results of analysis of the Expert Questionnaire on the State of the Art in the field of urban and architectural design education in Serbia in relation to sustainability and heritage, conducted by UBFA HERSUS team. It is based on methodological framework provided by AUTH HERSUS team and agreed by all HERSUS members.

The targeted profiles of Serbian experts and their projected relevant participation were chosen so as to reflect the different tiers of engagement with issues of sustainability and heritage. Since the required number of responses for the HERSUS surveys was agreed to at least 10 experts from each country, in order to ensure the adequate response, UBFA team invited 13 experts to participate in survey and fill the expert questionnaire.

The individual experts were selected based on their references and previous collaboration with members of the research team, and in accordance to the proposed profiles of participants for the experts' survey: 2 +1 *Researchers / Academic Educators* (20%), 2 + 1 *Practitioners* (20%), 2 *Policy Makers* (20%), 2 *Decision Makers in Public Administration* (20%), 2 *Decision Makers in NGO / Professional Society* (20%).

Each expert was first personally contacted by the members of the UBFA team, and informed about the HERSUS project and its purpose. After receiving their informal confirmation to participate in the survey, UBFA team sent the personalised official invitation letters to individual experts.

Twelve out of 13 invited experts fully completed the questionnaire. One expert has only partially completed the questionnaire and this case was not included into experts' answers for further analyses.

In relation to how the experts filled the Questionnaire, the representation of the stakeholders engaged doesn't fully achieve the target of 2 per Field of expertise, since the

representation of the experts from Decision Makers in Public Administration is missing. The structure of experts, as they indicated their main field of expertise (Q2_1.2), is: A1 *Researcher, Academic, Educator* (3), A2 *Practitioner* (4), A3 *Policy Maker* (3), A5 *Decision Maker, NGO* (2). The imbalance observed in the profiles can be attributed to the "role" that the experts themselves chose for this question, which may be different from how the UBFA HERSUS teams envisaged their "role" based on their previous professional position as Decision Makers in Public Administration.

The distribution of results reveals balanced gender representation, since the experts group consists of 5 men and 7 women.

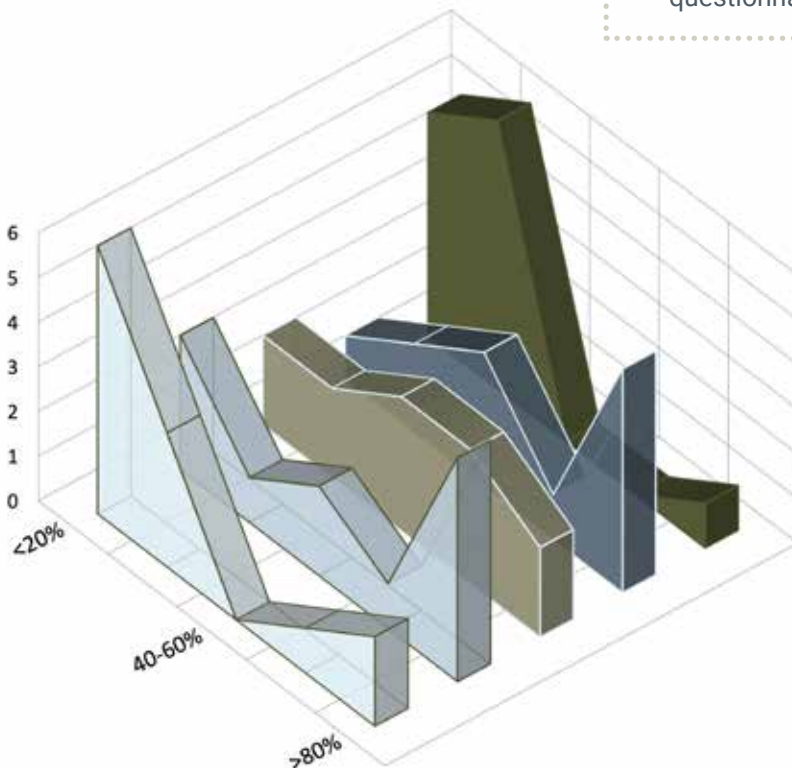
Experts have different academic and professional backgrounds and a high level of formal education. Most of them (7 out of 12) are educated in the field of *Arts and Humanities* (Architecture, Arts, History, Cultural Studies, Archaeology), while small number of experts have *Technology and Engineering* (Construction & building technology, Civil Engineering, Environmental Engineering, Materials Sciences) (3 out of 12) and *Social Sciences* (Urban studies, Planning and Development, Geography, Political and Economics, Management, Law, Environmental studies, Sociology) (2 out of 12) as their studies/professional background. In relation to academic education and titles experts' background also vary: one half of experts (6) hold PhD (SQ004), 4 experts have Masters Degree (SQ003) and 3 experts have 5-year integrated Diploma (SQ002). All of this sets the ground for their diverse, high quality and relevant view of the state of art in the field of urban and architectural design education in relation to sustainability and heritage issues.

Although the general experts experience in the field of work covers the entire spectrum from 5 to more than 20 years, the majority of experts (58,33%) have more than 20 years of experience, which ensures the high quality feedback. This is also supported by the high quality of experts CVs, as well as by the fact that most of them (8 of 12) have participated

in the academic programs in different ways: as professors, as invited lecturers, guest critics, through workshops, and other forms of collaborations. Therefore, it can be said that they are well informed about state of art in A+U design education at UBFA.

The answers that experts provided are relevant and reflect their field of expertise, years of experience, and specific professional and decision-making profile as expressed in their CVs. Most of experts are / have been on leading positions (as directors, professors, heads of departments, national level consultants/ senior experts/ specialists) and have a substantial and high impact on their field of expertise and work.

Fig 1. Mapping of the various design scales of practice (urban planning, landscape, urban design, architectural design, construction detailing) that the experts are engaged in (responses to Q2.3)



Q2.3
Proportion of Different Scales of Design in the Experts' Workfield

- Construction detailing
- Architecture
- Urban design
- Urban planning
- Landscape design

respondents' studies or professional background

Experts are engaged in all five scales of design practice, but at different levels (Fig 01). The results indicate that three groups of relevance can be identified. The relevance of the *Construction Detailing and interior Design* as well as *Landscape scale* is low in the work field of most experts (only 3 experts recognised *Construction Detailing*, and only 1 recognised *Landscape scale* as very relevant for their work). On the other hand, the relevance of the *Architecture and Urban and regional planning scale* vary between experts, and is to certain level polarized. Almost all of the experts recognise them as important but for one half it is of high importance while for the other half it is of low importance. As opposed to that, *Urban design scale* is relevant but at moderate level to almost all experts. These observations have been taken into account while analysing the results of the questionnaire.

PRESENCE/AWARENESS OF ISSUES OF SUSTAINABILITY AND HERITAGE IN PRACTICE

THE IMPORTANCE / AWARENESS OF SUSTAINABILITY AND HERITAGE IN PRACTICE/RESEARCH



The concept of sustainability is very important in everyday practice of majority of experts, regardless their field of practice. On the other hand, the concept of heritage seems to be of less importance to experts. Although several of them recognised the importance of both concepts, only two experts related the concept of heritage to their work.

This is also reflected in the character and type of projects the experts have participated in. Even though there are differences among experts in relation to the level of their participation in projects that focus on sustainability or heritage or both, most of these projects are related to variety of sustainability issues. The type of these projects also varies, and includes research and professional projects at local, national or European level. For experts that have participated in these projects, the focus on sustainability and/or heritage was mostly based on strict requirements and restrictions, but almost equally on experts' initiative. The latter is especially characteristic for the experiences of Decision-makers NGO's and Academics. On the other hand, the Practitioners mostly recognised Client and public sensitivity as additionally important to strict requirements and legislation as basis for HER/SUS in these projects.

Great majority of experts think that their colleagues, collaborators, and other associates are highly aware and familiar with the key concepts and principles of sustainability and/or heritage, but most of

them actually refer only to the concept of sustainability. They also point out to that, although high level of awareness of these concepts exists, there are problems when it comes to their application in practice. Besides that, some experts stress that their associates are not fully aware on the relationship between sustainability and heritage.

Experts opinion on whether these concepts are adequately integrated in the main corpus of architectural academic studies vary from those that think that both concepts are appropriately integrated, those that recognise certain level of integration but think that it is not sufficient, to those that think that concepts are not well integrated. Significant difference is also made between heritage and sustainability in relation to the level of their integration in architectural academic studies. It has been recognised that while principles of sustainable development are well represented, this couldn't be claimed for heritage.



”

THE CONCEPT OF SUSTAINABILITY IS ESSENTIAL TO US, AND WE APPLY IT IN ALMOST ALL PROJECTS WE DEAL WITH. HOWEVER, THE FOCUS OF THE MINISTRY OF SPACE IS MORE ON SOCIAL, ENVIRONMENTAL, AND CULTURAL SUSTAINABILITY THAN ON ECONOMIC. WE GENUINELY TRY TO MAKE SUSTAINABILITY THE BACKBONE OF OUR WORK ”

Iva Čukić, Director, collective Ministry of Spatial Planning



”

THE URBAN AND NATURAL HERITAGE WAS IN THE FOCUS OF WORK IN TOWN PLANNING INSTITUTE OF BELGRADE BY THE RULE OF LAW, EITHER RELATED TO MEASURES OF PROTECTION, IN THE CASE OF NATURAL CORE OF BELGRADE STUDY, OR POSSIBILITIES FOR THEIR PROMOTION AND REPRESENTATION: IN STRATEGIC PLANS, REGULATION PLANS FOR THE TRANSFORMATION OF INDUSTRIAL HERITAGE OR PLANS FOR CONTEMPORARY HOUSING/ COMMERCIAL ZONES, ESPECIALLY IN THE MODERN CITY OF NEW BELGRADE. ”

Žaklina Gligorijević, senior urban consultant in WBG Belgrade

RELEVANCE OF KEY CONCEPTS IN PRACTICE/ACADEMIA/DECISION MAKING/POLICY MAKING



In relation to sustainability and heritage, all three key concepts of *reuse*, *restoration* and *resilience* are relevant to experts, regardless of their work field. Several experts stressed the importance of all three concepts, but when specified, the concepts of *reuse* and *resilience* were more frequently recognised than *restoration* as the most relevant to experts practice.

Experts' opinion on the relevance of Key concepts of Sustainability and Heritage in the context of the different scales of design practice is presented in Figure 02, and shows the difference between experts engagement in design scales (landscape scale is least relevant for their work), and that different concepts are of different relevance for different scales of design practice. Some concepts which are of high importance to one scale are of least importance to another scale. This refers to the concepts of *Whole-Lifecycle Design* and *Nature based solutions*. The former is very important for *Construction/Interior/Architecture scale* and of low importance for *Landscape scale*, and the reverse is true for the latter.

Besides that, there are concepts that are of high relevance for all scales of design practice. This refers to the general concepts, such as *Regeneration* and *Cultural Enhancement/Contribution*. But it also refers to the concept of *Public Advocacy for social Participation/Inclusion*, revealing the ever growing importance of social dimension of sustainability in Serbian context.

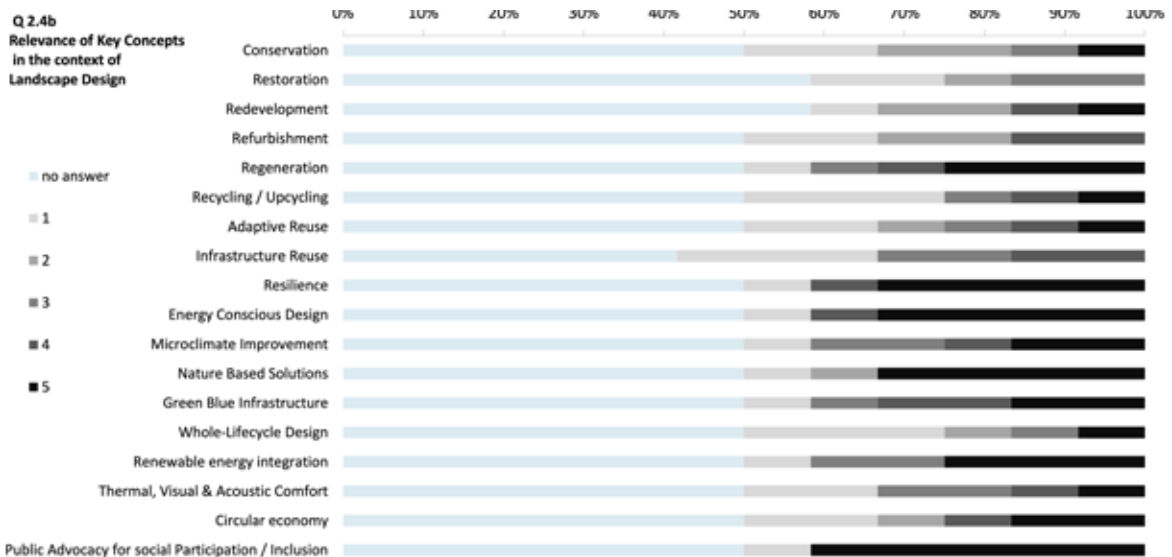
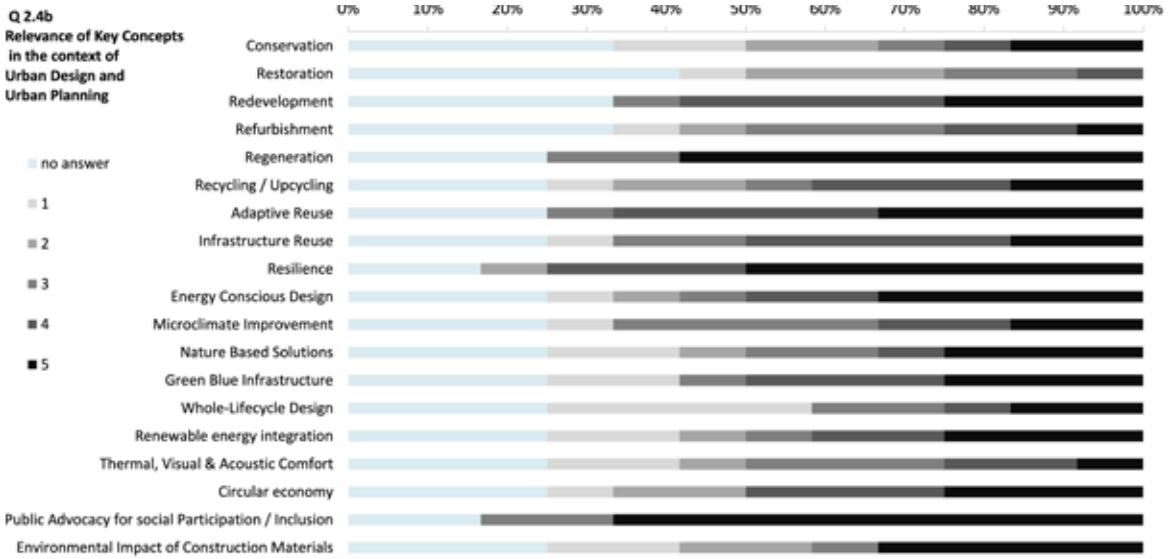
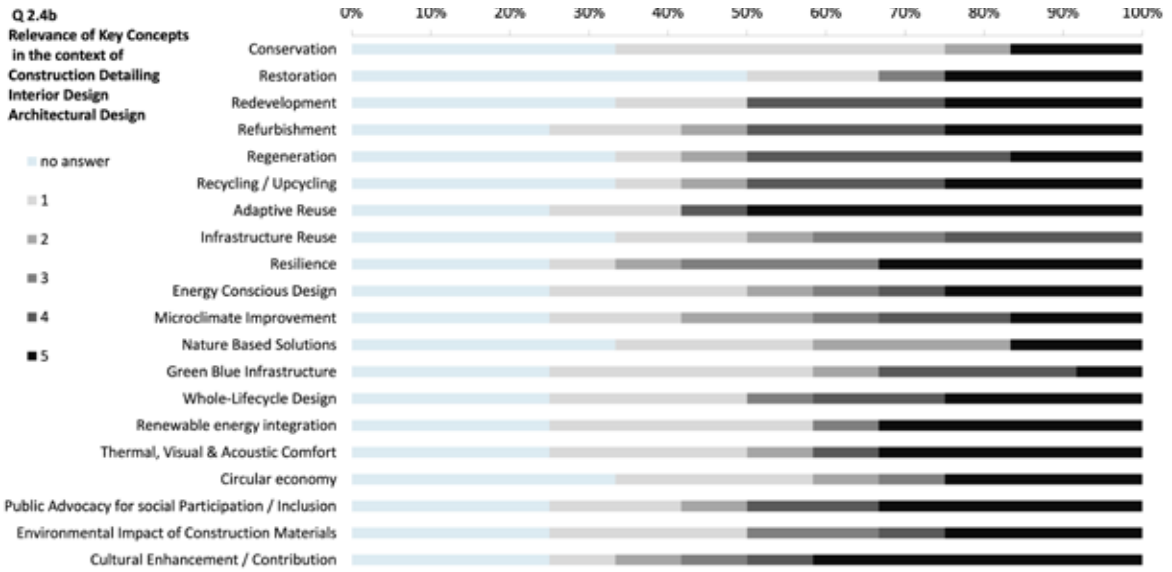
• For *Construction Detailing, Interior Design and Architectural Design* scale, the most important are the concepts of: *Adaptive reuse, Resilience* and *Cultural Enhancement/Contribution*, while also of high importance are the concepts of *Redevelopment, Refurbishment, Regeneration Recycling/Upcycling, Whole-Lifecycle Design, Renewable Energy Integration, Thermal, Visual & Acoustic Comfort* as well as *Public*

Advocacy For Social Participation/Inclusion. The concepts of *Conservation, Infrastructure reuse* and *Nature Based Solutions* have the least significance for this scale of design.

• For *Urban Design and Urban Planning* scale, most of concepts seem to be of high relevance. The most important are the concepts of: *Regeneration, Resilience, Public Advocacy for social Participation/Inclusion* and *Cultural Enhancement/Contribution*, and to little less extent concepts of *Redevelopment* and *Adaptive Reuse*. The concepts of: *Restoration, refurbishment* and *Thermal, Visual & Acoustic comfort* have the least significance for this scale.

• For *Landscape design* scale, the most important are the concepts of: *Resilience, Energy Conscious Design, Nature Based Solutions, Public Advocacy for Social Participation/Inclusion* and *Environmental Impact Of Construction Materials*, and to little less level- *Regeneration, Microclimate improvement, Green Blue Infrastructure, Renewable energy integration, and Cultural enhancement/contribution*. The concepts of: *Whole-lifecycle design* and *Restoration*, have the least significance for this scale.

Fig 2. Mapping of Key Concepts' relevance in the context of Design



PILLARS OF SUSTAINABILITY IN THE DECISION MAKING PROCESS



The analysis of Experts' opinion reveals that all pillars of sustainability (Society / Economy / Environment / Culture) are at certain level important in decision making process, and should be further emphasized. Almost half of the researchers recognised that all aspects of sustainability are equally important and "mostly intertwined and inseparably linked when it comes to practical actions". In addition, several experts indicated that it is "balance of all 4 pillars" that should be emphasized since "the goal is to unite all these aspects and thus provide a sustainable concept that provides a better quality of life, both now and in future".

For experts that identified specific pillars of sustainability as the most important Social and Economic pillars were slightly more valued than others, and this, for them, reflects the specific development problems of Serbia. Besides that, these pillars are also seen in the complex relations with Environment and Culture, recognising that they should further be improved. Experts that recognised Environmental pillar as the most important, mostly focused on energy transition, environmental problems and damage related to both natural and cultural heritage, and suggested that "mitigation of natural disasters, consequences of climate changes, or general environment vulnerability might be the strongest argument in affirmation of sustainability". On the other hand, while Cultural aspect is recognised as important, only two experts recognised it as the most important. In relation to heritage, the problem of domination of passive regime of cultural heritage protection is recognised as an obstacle to be surmounted.

It is not possible to strongly conclude that any of pillars of sustainability is more important for the specific field of practice, but some variations among fields exist. For instance, Academic/researchers mostly recognised importance of all aspects of

sustainability, while economic aspect is recognised as more important for Practitioners, and social aspect for NGO decision makers.



”

IN MY PRACTICE, THE MOST IMPORTANT THING FOR ACTING AND DECIDING IS THE LEGAL ASPECT. IN ORDER FOR A STATE BODY TO BE ABLE TO ACT, A LAW MUST BE PASSED, WHICH IS A COMPLEX PROCEDURE.

”

**Petar Tufegdžić, Advisor,
Ministry of Construction,
Transport and Infrastructure**

COMPETENCES IN RELATION TO SUSTAINABILITY AND HERITAGE IN PRACTICE

AWARENESS OF SKILL LEVEL OF GRADUATES FROM ACADEMIC STUDY PROGRAMS DEALING WITH SUSTAINABILITY AND/OR CULTURAL HERITAGE



The extent and nature of experts' cooperation with graduates from academic study programs dealing with sustainability and/or cultural heritage during the last 10 years varied significantly. While some of the experts had rather insignificant professional contact with young graduates, others have occasional collaborations, while several of them work constantly with the graduates from relevant study programs.

The professional engagement in sustainability and/or cultural heritage requires wide scope of knowledge and competences that is related both to theoretical background and practical knowledge. This is also the common denominator that can be derived from the experts' responses: their comments refer to either one or both aspects. The theoretical background seems to be rather adequate at the level of general academic knowledge and a starting base for further improvements. The importance of continuous learning was stressed throughout the responses and the experts believe that constant improvements are necessary due to the very nature of the expertise as well as the pace and involvement of the sustainability issues in all areas of practice and research. The actual knowledge is not expected from the graduates it is believed that the most relevant practical skills are obtained through professional engagements. Such knowledge and skills are often closely related to the very specific issues that are not necessarily covered by particular academic curricula.

The experts that collaborate with graduates who remain involved in academic and/or research activities had quite positive evaluations of graduates' readiness and capability to advance their skills and improve knowledge. Such approach to professional engagement is highly appreciated, since the experts have recognized the multilayered and multidisciplinary character of work in this field.



I HAVE COLLABORATED WITH SEVERAL. KNOWLEDGE IS AT THE GENERAL ACADEMIC LEVEL. SUSTAINABILITY JOBS, WHICH ARE MULTIDISCIPLINARY, REQUIRE A LOT OF PRACTICAL EXPERIENCE, AS WELL AS INDEPENDENT LEARNING IN AREAS THAT ARE NOT THE SUBJECT OF UNIVERSITY STUDIES.



Martin Elezović, Director REENG

QUALITY AND LEVEL OF SKILLS AND KNOWLEDGE OBTAINED FROM ACADEMIC EDUCATION IN RELATION TO THOSE EXPANDED IN THE WORK ENVIRONMENT



The experts' responses given in free form emphasized the importance of multidisciplinary and keeping up with advancements in relevant technology and methodology. The lack of knowledge and skills regarding technical and analytical tools and methods, knowledge of specific software, evaluation and life-cycle assessment (LCA) tools as well as soft skills is mentioned throughout the answers.

The evaluation of quality and level of specific skills and knowledge have revealed four distinctive groups of skills:

- a) Skills obtained in significant level through academic programs and further strongly improved through practice: primarily *Technical competences* and *Fundamentals*, and *Interdisciplinarity* (with somewhat weaker base in the academic education);
- b) Skills obtained through academic programs up to certain extent and further strongly improved through practice: *State of the art* and *Presentation communication*;
- c) Skills obtained mainly through practice, with rather weak base in academic education: *Local context*, *Managerial and administrative skills* and *Practical experience*;
- d) Skills and knowledge with rather weak base in academic education with limited improvements through practice: *International context*, *Analytic tools and methods*, *Specialist environmental design skills* and *Specialist conservation skills*.

Skills and knowledge stated in the last group (d) can be enhanced through formal academic education and are rather compatible with methodologies applicable in design studio and theoretical courses whereas the ones from groups (c) and (b) can be improved mainly through design studio, workshops and extracurricular activities. Skills and knowledge from group

(a) shall maintain and further improve in quality since they are recognized as highly important in experts' open form answers.

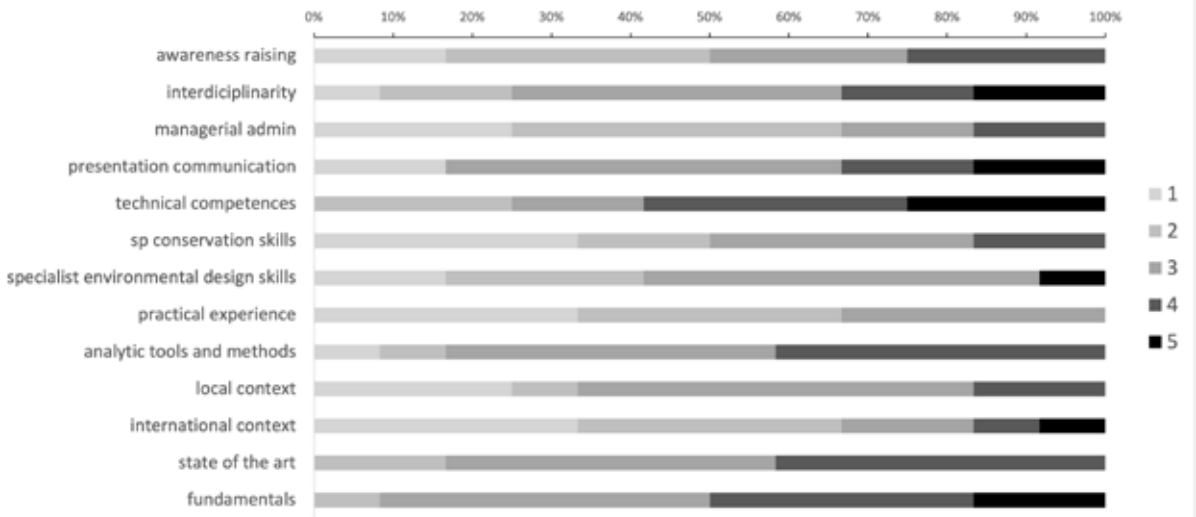


THROUGH PARTICIPATION IN PREVIOUS ERASMUS PROJECTS, SOME INSIGHTS ON GAINING NEW KNOWLEDGE AND SKILLS WERE ACHIEVED THROUGH THE ASSESSMENT OF THE RESULTS OF THE APPLICATION OF PRACTICE-ORIENTED AND COLLABORATIVE LEARNING TO INTEGRATE SUSTAINABILITY INTO HIGHER PLANNING EDUCATION. SUGGESTED APPROACH AIMS TO FOSTER COMPETENCES SUCH AS SYSTEMIC THINKING, ANTICIPATORY, NORMATIVE, STRATEGIC, AND INTERPERSONAL COMPETENCES



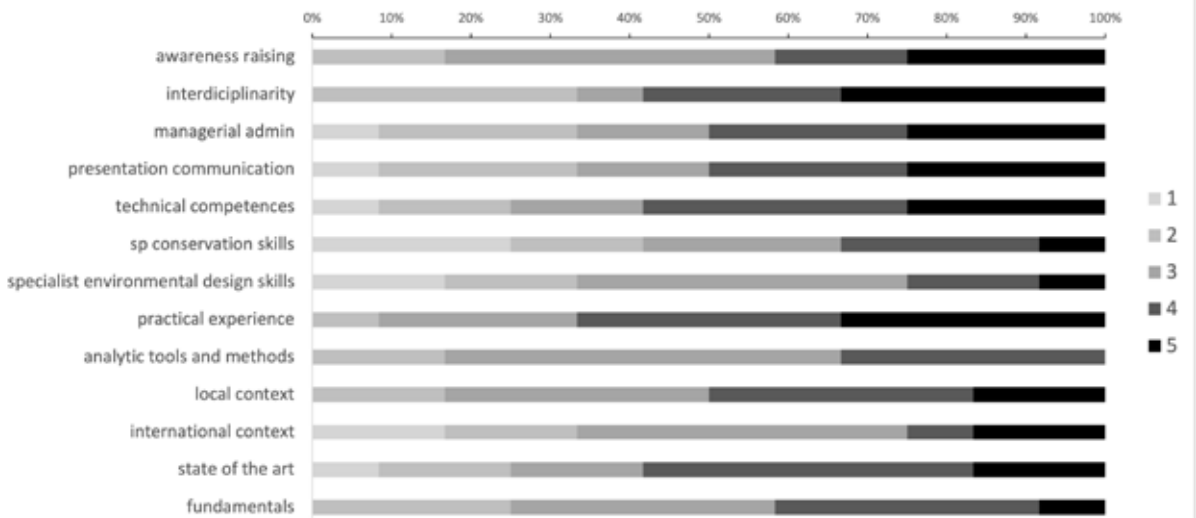
Ratka Čolić, Assistant professor
University of Belgrade, Faculty
of Architecture

Q3.2a Skills obtained through academic programs



ACADEMIC PROGRAMS

Q3.2a Skills obtained through practice



PRACTICE

Fig 3. Mapping of the quality and level of skills and knowledge of graduates.

REQUIREMENTS IN THE CONTEXT OF ACADEMIC PROGRAMS ON SUSTAINABILITY AND HERITAGE

IDENTIFYING AND OVERCOMING KNOWLEDGE GAPS IN EXISTING ACADEMIC PROGRAMS



Most experts that were not involved in academic activities didn't feel comfortable and/or qualified to discuss knowledge gaps since they did not have direct knowledge regarding the content and methodology of relevant study programs. Hence, they could only identify the lack of certain knowledge/skills but can't identify the cause – graduate's individual interest or inadequate academic curriculum. The more elaborated responses referred mainly to the issues of knowing and understanding legal framework and practical and formal constraints that arise in practice. The suggestions for overcoming knowledge gaps corresponded with the abovementioned context and offered a series of practical ideas and concepts regarding exposing students to real-life aspects of work within the field of sustainability and built heritage and variety of proposals for institutional engagement. The proposals for students' engagements included dealing with bad practice case studies, interdisciplinary cooperation and mutual leaning, professional practice/internships etc. Stronger institutional engagement and involvement in series of legislative, civic and practical activities was also mentioned in several responses, implying that the academic institutions themselves should be more active; one of the experts stated that "stronger and more direct penetration of academic institutions into state bodies and public services through legislative engagement, which would condition the replacement of technocracy with meritocracy (an example of this is the engagement of experts from the Faculty of Architecture in Belgrade in the context

of enacting regulations to increase energy efficiency)". Closer links and continuous collaboration between the Faculty of Architecture and various non-academic stakeholders were suggested throughout the experts' comments.



WHILE WORKING WITH STUDENTS FOR MANY YEARS, THE NECESSITY OF INTEGRATING STUDY PROGRAMS WITH PRACTICE AND WITH OTHER CENTERS FROM OTHER COUNTRIES EMERGES, WHICH WOULD PROVIDE NEW INSIGHTS WHILE DIFFERENT VALUE ASPECTS IN THIS AREA COULD BE ACCEPTED THROUGH COOPERATION.



**Milica Jovanović Popović,
Full professor, University of
Belgrade, Faculty of Architecture**

BALANCING THEORY, TOOLS AND PRACTICAL TRAINING IN ACADEMIC PROGRAMS



The questions Q4.3a and Q4.3b referred directly to teaching methodology and most experts (8 out of 12) didn't provide any additional comments in the open form (Q4.3a) and mostly referred to the answers given in the Q4.3b.

The prevailing proposed share of knowledge transfer was either 20-40% or 60-80% (each was suggested by 5 experts). No experts suggested share of knowledge transfer higher than 80%, and one suggestion was to reduce it below 20%. The additional comments in the open form question implied that the good balance is needed, which is consistent with the dominant answers and indicate that about a half should be allocated to the knowledge transfer.

The expected share of practical and technical training was the same - 20-40% or 60-80% (each was suggested by 4 experts).

It is interesting that no experts suggested the share lower than 20%, while there were 2 suggestions for share higher than 80%. This is mainly consistent with experts' comments throughout the questionnaire since the importance of practical and technical training (and the lack of a good one in current education system) was addressed in several sections.

Experts' suggestions regarding the share of evaluation methods varied: four suggested 20-40%, three proposals were for more than 80%, two proposed less than 20% or 40-60%, while there was one suggestion for 60-80%. These answers are not coherent nor consistent with previous answers and experts' comments. The reason might be the rather wide scope of activities listed in the description of this category and the fact that most experts are not involved in academic education processes and methodologies. Some experts have provided valuable feedback and advises regarding the methods and tools that might be used when designing a well-balanced curriculum (see responses A124, A142, A164) and they could be probably contacted again later in the project.

Q4.3b appropriate proportion of activities in academic education

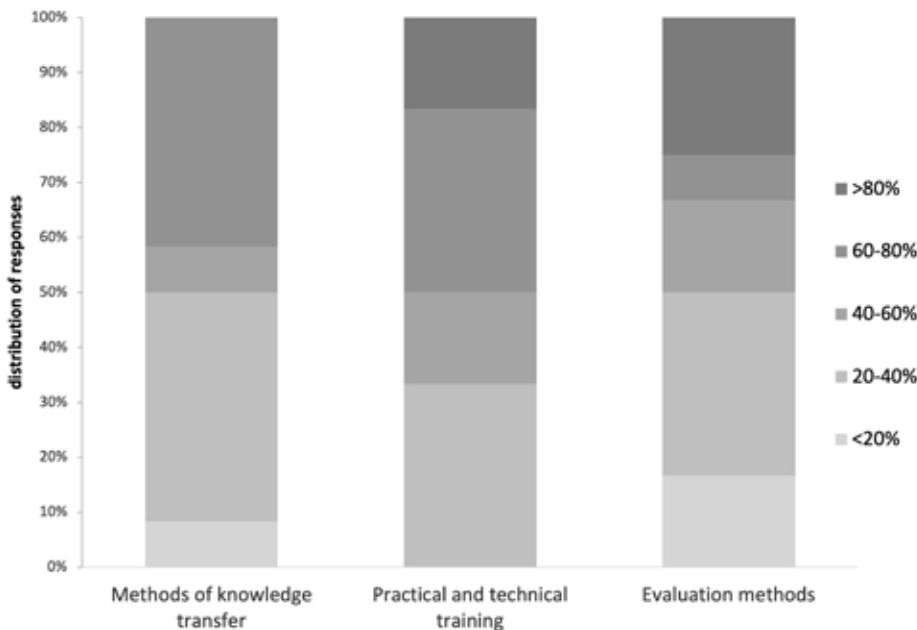


Fig 4. Mapping the proportion of activities in academic education.

IDENTIFYING AND OVERCOMING KNOWLEDGE GAPS IN EXISTING ACADEMIC PROGRAMS



Experts recognise almost all key concepts as very significant for educational programs, and half of them highly valued (score 4 or 5) their importance. The only exception is the concept of *Circular economy* which was recognised as very important by only 40% of experts. But even in this case all other experts recognised at least its moderate significance (score 3). Analysis of the intensity and distribution of significance among experts reveals different levels of significance of key concepts:

a) High significant concepts: *Regeneration, Recycling/Upcycling, Adaptive reuse, Resilience, Energy conscious design, Public advocacy for social participation/inclusion, Environmental impact of construction materials, Cultural Enhancement/Contribution, and Redevelopment.*

Energy conscious design, Resilience and Environmental Impact of Construction Materials are the most significant for all experts

b) Moderate significant concepts: *Refurbishment; Renewable energy integration; Thermal, Visual & Acoustic Comfort, Infrastructure Reuse, Microclimate Improvement, Nature Based Solutions, Green Blue Infrastructure*

c) Low significant concepts: *Conservation, Restoration, Whole-Lifecycle Design, Circular economy*

It is interesting to acknowledge some specifics of each of these groups. Low significant group of concepts includes either concepts that maybe considered well-integrated in existing programs (*Conservation and Restoration*), or new concepts (*Whole-Lifecycle Design, Circular economy*) where their relation with architecture and urban design is not yet clear in Serbian context. Moderate significant group of concepts includes two groups of concepts: a) those related to building quality (*Refurbishment; Renewable energy integration; Thermal, Visual & Acoustic Comfort*) and those more related to

landscape and urban design (*Infrastructure Reuse, Microclimate Improvement, Nature Based Solutions, Green Blue Infrastructure*). High significant group of concepts includes general, multidimensional concepts (*Regeneration, Resilience*) and also reflects that for experts all dimensions of sustainability are significant: environmental (*Recycling/Upcycling, Adaptive reuse, Energy conscious design*), social (*Public advocacy for social participation/inclusion*), economic (*Redevelopment*) and cultural (*Cultural Enhancement/Contribution*).



STRONGER AND MORE DIRECT PENETRATION OF ACADEMIC INSTITUTIONS INTO STATE BODIES AND PUBLIC SERVICES THROUGH LEGISLATIVE ENGAGEMENT, WHICH WOULD CONDITION THE REPLACEMENT OF TECHNOCRACY WITH MERITOCRACY (E.G. THIS IS THE ENGAGEMENT OF EXPERTS FROM THE FACULTY OF ARCHITECTURE IN BELGRADE IN THE CONTEXT OF ENACTING REGULATIONS TO INCREASE ENERGY EFFICIENCY).

Rade Mrlješ, Architect, senior conservator, Institute for the Protection of Cultural Monuments of the City of Belgrade



Q4.4
The Significance of
Key Concepts of
Sustainability and Heritage
which should be addressed
in the context of Academic Education

- 1
- 2
- 3
- 4
- 5

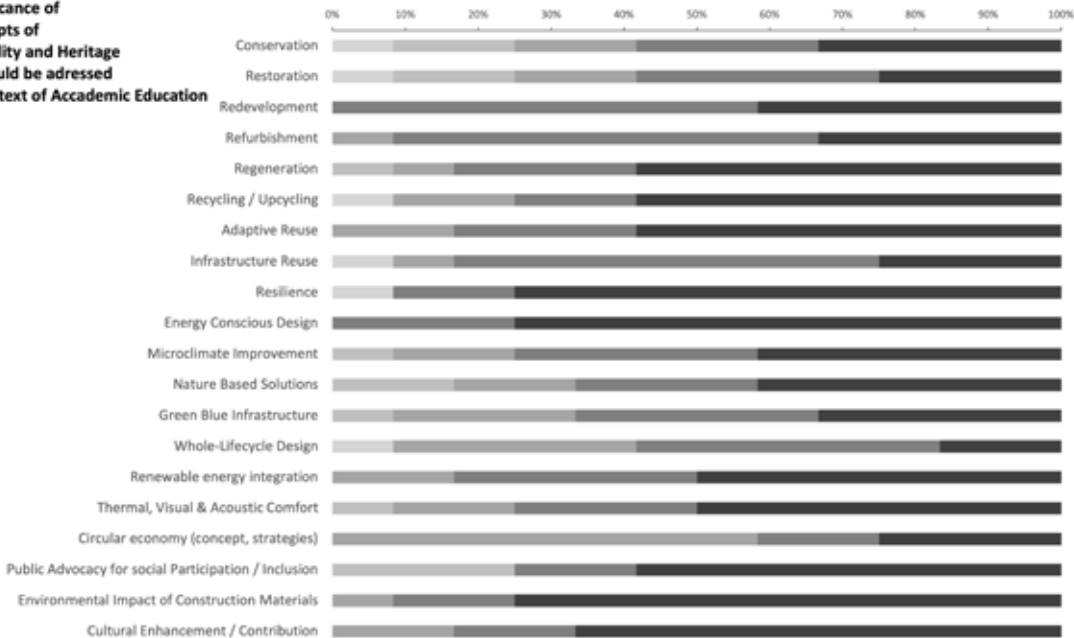


Fig 5. Mapping the significance of Key Concepts of Sustainability and Heritage in academic education.



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AS IN GENERAL, I THINK THAT INTERNSHIP DURING STUDIES IS OF GREAT IMPORTANCE, OFTEN INTERNSHIP IS ONLY FORMAL AND COMES DOWN TO FORMAL ASPECTS RATHER THAN SUBSTANCE. EXPANDING KNOWLEDGE AND MASTERING AGILE METHODOLOGIES USED IN OTHER INDUSTRIES (IT ABOVE ALL) IS AN ABSOLUTE PRIORITY.

”

Vladimir Đorić,
 Partner, COO, Zabriskie d.o.o



”

IT IS NECESSARY TO EDUCATE STAKEHOLDERS AS WELL AS DECISION MAKERS, IN ORDER TO BRIDGE THE GAP BETWEEN KNOWLEDGE AND APPLICATION IN PRACTICE. EXAMPLES OF NOT UNDERSTANDING THE MEANING AND PROTECTION OF THE STRICTEST DEGREE OF PROTECTION OF CULTURAL AND HISTORICAL HERITAGE ARE NOT ISOLATED IN PRACTICE. SUCH INCLINATIONS ARE DEMORALIZING.

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Ružica Bogdanović, Professor
 emeritus, Faculty of Architecture and
 Urbanism, UNI Union Nikola Tesla

KEY FACTORS FOR THE IMPROVEMENT OF ARCHITECTURAL EDUCATION IN TERMS OF SUSTAINABILITY AND CULTURAL HERITAGE AWARENESS AND TRAINING



Experts recognised several factors for the improvement of architectural education in terms of sustainability and cultural heritage awareness and training in Serbia.

These are:

- **INTERDISCIPLINARITY** is strongly suggested by experts, assuming that use of interdisciplinary approach, methods and practices would significantly enhance architectural education.
- **INTERNATIONALISATION** refers to the exchange of knowledge and experiences with international academic institutions, exchange of students and active use of EU funding mechanisms.
- **MORE PRACTICAL WORK and WORK ON REAL PROBLEMS.** Practical training and providing an understanding of the local/national/regional context is recognised as one of the most important factors for the improvement by many experts. In order to achieve this, they suggested: learning about best practices, involvement of experts from practice and representatives of institutions, and “calibrating expectations”.
- **NETWORKING AND COLLABORATION.** Experts stressed the importance of more collaboration with local institutions, organisation and stakeholders in solving real context problems, horizontal collaboration at different educational levels; linking with public programs involving citizens and general audience, different forms of sharing of knowledge, but also different forms of networking and “exit from “archicentric” action and point of view, expansion and interaction with commercial business sector”.
- **WORK ON DIVERSITY OF SCALES and INTEGRATION OF DIFFERENT ASPECTS OF DEVELOPMENT** are recognised as important factors for improvement of architectural education, for which new knowledge and competencies are needed.

- **RAISING AWARENESS ABOUT THE IMPORTANCE OF HERITAGE and MOTIVATION OF STUDENTS** to work on the topic, as well as **INTEGRATION of SUSTAINABILITY ASPECT** to almost all courses. Sustainability should be basis of all scales of design, and good knowledge of the principles, monitoring of good practices and innovative solutions, networking and work out of your box are important to achieve this goal.
- **INNOVATIVE METHODOLOGICAL APPROACHES and CONTINUAL ADAPTATION** of the program to new achievements in research are needed in dynamic and complex educational environment.
- **STRENGTHENING THE SCIENTIFIC APPARATUS, FINANCIAL RESOURCES and MULTILATERAL ENGAGEMENTS** of the faculty.



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THE ASPECT OF SUSTAINABILITY MUST BE PERMEATED THROUGH ALMOST ALL COURSES IN ORDER TO BE ABLE TO ACHIEVE THE EXPECTED RESULT - THE NECESSARY SUSTAINABILITY. GOOD KNOWLEDGE OF THE PRINCIPLES OF GREEN-SUSTAINABLE CONSTRUCTION, MONITORING OF GOOD PRACTICES AND INNOVATIVE SOLUTIONS, AS WELL AS GOOD NETWORKING AT A MULTIDISCIPLINARY LEVEL; WORK OUT OF YOUR BOX.

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Dragana Korica, Executive Director, Green Building Council of Serbia



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MUCH MORE INTERDISCIPLINARY (EVEN TRANSDISCIPLINARY) METHODS AND PRACTICES; HORIZONTAL COLLABORATION AT DIFFERENT EDUCATIONAL LEVELS; PUBLIC PROGRAMS INVOLVING CITIZENS AND GENERAL AUDIENCE; SHARING OF KNOWLEDGE, EGG. OPEN AND TRANSPARENT METHODOLOGIES, DATA AND RESULTS/FINDINGS (FAIR PRINCIPLES); INTERNATIONALISATION OF LEARNING PROCESS, ACTIVE USE OF EU FUNDING MECHANISMS AND EXCHANGE OF STUDENTS.

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Dobrivoje Lale Erić, Head of Department of International Cooperation, Center for the Promotion of Scienc



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THE KEY FACTOR OR THE IMPROVEMENT OF ARCHITECTURAL EDUCATION IN TERMS OF SUSTAINABILITY AND CULTURAL HERITAGE AWARENESS AND TRAINING IS A COLLABORATION WITH LOCAL INSTITUTIONS, ORGANISATION AND STAKEHOLDERS IN SOLVING REAL CONTEXT PROBLEMS.

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Ksenija Lalović, Associate professor, University of Belgrade, Faculty of Architecture

DISCUSSION / CONCLUSIONS

The participating experts were selected and questioned according to the general methodology established at the consortium level. The survey included 12 experts from all targeted fields of expertise, covering a variety of educational backgrounds and practicing disciplines. The selection of experts seems to be well balanced in terms of age, gender, years of professional experience and scale/scope of their work.

The section on presence/awareness of issues of sustainability and heritage in practice have revealed an imbalance between the two issues. While sustainability was well recognised and often thoroughly discussed, heritage remained less visible in experts' responses. This is notable throughout questions 2.1, 2.2, 2.4 and 2.5 in terms of professional contacts, projects, recognising of key concepts, etc. While the importance of heritage is recognised, the awareness of the actual connections between the heritage and sustainability issues seems to be rather weak. Fields of expertise and scale of design in professional engagement did not reflect significantly on questions 2.1 and 2.2. The scale of design in expert's area of work reflected on the answers regarding relevance of key concepts while the expert's field of work reflected on their views on key pillars of sustainability in decision-making process. "Reuse" and "resilience" are

