CIRCE

Creative Fellow

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UX research service for architecture and urban design

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Project report

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Main argument & insights

Why is user experience research so well-developed in the design of digital products and services, but not in spatial design? Which user experience research methods could be transferred to the spatial design process? How can a service be designed to bring the user experience closer to clients in the architecture and urban design sector? My research focused on these three key research questions. A six-month study, involving in-depth work with clients, a workshop and a focus group with architects, sociologists, and representatives of local communities, and an analysis of more than 420 methods, revealed that:

The process of architectural and urban design is not user-centric. Reasons for this include the lengthy planning process, financial and time constraints, a different professional culture, high regulation of solutions, as well as a lack of awareness within the field regarding user experience and architects' aversion to involving end-users in the design process.

The standardised spatial design process could be supported and enhanced by running a research process in parallel. This provides clients with an abundance of data that help them achieve more efficient results. I have outlined five distinct phases of this parallel research process: Explore, Define, Develop, Test & Implement, Evaluate. User experience research methods complement all phases of the urban design process described above. However, not every phase necessitates user involvement, sometimes urban designers play the primary role.

User experience research methods from digital and service design can be transferred to architectural and urban design. It became evident that architectural firms and studios interested in user-oriented design are primarily acquainted with methods that help them understand the current state and user needs. They, however, overlook the potential of involving users in all design phases. There's a significant demand among potential clients for the evaluation of interventions upon completion. Therefore, a crucial emphasis should be put on evaluation.

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The most significant deviations between architectural and digital design in incorporating user experience occur in the testing phase. Despite the presence of testing methods in architecture and urban design, such as models and approaches like tactical urbanism, the prototyping and testing process is often deemed impractical due to high costs. Consequently, we adapted numerous methods specifically for spatial disciplines during the testing phase.

A critical distinction between architecture and graphic, digital, or product design lies in the nature of the research focus. In design, the ultimate goal often centres on encouraging product purchases. In contrast, architectural and urban design prioritise creating resilient, attractive spaces that adhere to numerous urban regulations, serve immediate user needs, and allow for unforeseen future uses. Instead of evaluating what convinces people to make a purchase, the focus shifts to understanding what motivates people to use a building or urban space over the long term. These insights are strong indicators of whether a new or renovated space will function effectively. It's essential to establish well-defined performance criteria that the space must fulfil.

My project resulted in a toolbox of user experience methods that correspond to the needs of the sector. I also designed a service framework that outlines how communication between the client and UX researcher should occur. The framework helps the client and the research provider define which stage the project is in, where user research is needed, who the key users to involve are to ensure project inclusivity. It also assists the research provider in developing a communication plan. At the end of the project, the research provider can deliver a transparent research report to the client, which is informative, highlighting key findings and offering improvement suggestions.

My research project holds significant benefits, especially for the growing sector of inclusive, user-oriented architecture. Architects and urban planners can now more easily obtain information that best fit project requirements, time and budget constraints, and their expertise. The project unveils opportunities and highlights the various ways architects can systematically integrate users into their process and design solutions that will be well-received by the people they are intended for. This is particularly critical for public buildings and spaces, which should be created with special attention to accessibility, usability, and appeal to diverse societal groups.

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Creative endeavour

The problem addressed in this project revolves around the need for systemic changes within the spatial planning and architecture sector. Given the ongoing societal changes, **there's a call for a shift in spatial planning to focus on understanding and incorporating the needs, behaviours, and preferences of end-users into the design and planning process.** In architecture, user experience methods can provide valuable insights to create spaces that not only meet functional requirements but also resonate with the people who use them. However, the sector itself is rigid and resistant to change, and its employees are often unprepared for such shifts. To instigate systemic changes, it becomes essential to demonstrate the benefits that the introduction of new services and research methods could bring to the entire sector.

User experience (UX) research is the study of analysing behaviour, needs and pains of target users for the purposes of the creation or improvement of user-friendly designs. These insights are essential for making data-driven decisions and creating products that meet user demands. It is also an important business strategy, as understanding a customer base is a crucial factor for remaining competitive. User experience research is an impactful tool in any point of the project life cycle. Methods such as ethnographic field studies, journey mapping, desirability studies, usability or testing, etc. can be used to identify and prioritise what to design, to test and validate urban design ideas, identify areas of improvement, detect viable investments and define success. UX research is part of the UX design process, which tries to provide positive experiences for its users. The practice of user research has yet to be structurally transferred to the field of urban planning, despite the sectors having the same overall goal: creating products that provide real value to users. The importance of applying UX research in urban planning is arguably even more important because of the permanence of the built environment and the scale of investments.

Why is user experience research so well-developed in the design of digital products and services, but not in spatial design? Which user experience research methods could be transferred to the

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spatial design process? How can a service be designed to bring the user experience closer to clients in the architecture and urban design sector? My research focused on these three key questions. The goal is to develop a standalone service to serve as a support process to urban design by taking advantage of the benefits of structured UX research.

The specific conditions within the Slovenian architectural sector, characterised by job precarity and architect self-employment, were also taken into account during this project's execution.

Opportunities and obstacles to incorporation of UX methods into architecture

Many scholars advocate for incorporating user-centred design principles from fields like Human-Computer Interaction (HCI) and User Experience (UX) design into other sectors (for example Montgomery, 2014; Norman, 2021), such as architecture. This integration helps create spaces that better address the needs, behaviors, and emotions of occupants, leading to improved user satisfaction and well-being. Specifically, ethnographic methods, borrowed from anthropology, have been recognized as valuable tools for gaining in-depth insights into how people interact with their environments. Scholars emphasize the significance of qualitative research techniques in uncovering nuanced user experiences that quantitative methods might overlook. Participatory design methods are often highlighted for their ability to empower users and communities to actively shape the design process. The potential of co-creation approaches to foster a sense of ownership and increase the success of architectural projects by aligning them more closely with user needs is more and more recognised.

However, certain obstacles have been recognized and should be critically examined before digital UX methods are directly transitioned into architecture and planning. Some scholarly perspectives highlight the challenges of implementing user experience research methods in architecture and spatial planning. These challenges can range from resistance to change among architects, lack of standardized evaluation metrics, to the complexities of translating digital-focused UX methods into the physical realm. Another issue is the quantification of user experiences in architecture.

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While quantitative data provides valuable insights, it can fall short in capturing the emotional and sensory dimensions of human interactions with spaces, which are essential for holistic user-centered design. Third issue is the gap between user research findings and the actual implementation of architectural projects. This can be attributed to limited collaboration between researchers and practitioners, leading to unrealized potential in creating user-focused spaces. The application of user experience methods and services faces several key pitfalls and obstacles when being introduced into the realm of architecture:

Tradition and Aesthetics-Centric Approach: Architecture has long been associated with aesthetics and visual appeal. As a result, traditional architectural evaluation often places more emphasis on the visual aspects rather than the experiential. This aesthetic-centric mindset can hinder the integration of user-centric methodologies that delve into how spaces are experienced and used.

Lack of Familiarity: Architects and urban planners are often more familiar with conventional design methodologies than with user research techniques. The introduction of UX methods requires a paradigm shift in thinking, which can be met with resistance due to unfamiliarity and the learning curve associated with adopting new approaches.

Complexity of Physical Spaces: Unlike digital interfaces, physical spaces are multidimensional and have a multitude of interacting factors. Translating UX methods, which have been honed for digital interfaces, to the intricate context of architecture can be challenging. Defining metrics for success, such as user satisfaction or usability, becomes more complex in the architectural realm.

Interdisciplinary Collaboration: Successful implementation of UX methods in architecture necessitates collaboration between architects, sociologists, psychologists, anthropologists, and other experts. Bridging these interdisciplinary gaps and fostering effective communication can be difficult due to differences in language, methodologies, and goals.

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Time and Budget Constraints: The architectural design and planning process is often constrained by tight deadlines and budgets. Integrating thorough user research can be seen as time-consuming and financially burdensome. Convincing stakeholders of the long-term benefits of user-centred design can be challenging in such resource-constrained environments.

Resistance to Change: Architecture, like many professions, has its own established practices and traditions. Introducing new methodologies can be met with skepticism, especially when architects perceive them as disrupting well-established routines.

Lack of Metrics for Success: While digital design often employs metrics like conversion rates and engagement, measuring the success of architectural projects through UX methodologies can be more subjective. Defining clear success criteria that encompass user satisfaction, quality of life, and environmental impact is a complex task.

The precarity of Slovenian architecture sector: The presence of job precarity in the field of architecture presents a significant barrier to fostering interdisciplinary approaches to spatial research. Architects facing uncertain work conditions and financial instability often encounter challenges that hinder their engagement in collaborative ventures. Architects are dealing with multiple projects simultaneously due to precarious employment. They lack the time needed for sustained interdisciplinary collaborations. In the research on Gender Equality in Architecture by ZAPS in 2019, self-employment accounted for 47% of employment in the field, making it the most common form of employment for architects, even ahead of employment in companies (38%). A study by the Pod Črto media outlet in 2022 reveals that among the self-employed in the cultural sector (a special status in Slovenia), the largest proportion consists of individuals working in architecture and design: In August of this year, Slovenia had 3,185 self-employed individuals in the cultural sector, of which 2,279 have the right to have their social security contributions covered. The majority (864) of self-employed individuals in the cultural sector operate in the field of architecture and design, but nearly half of them do not have the right to have their contributions covered

by the state. This data highlights the prevalence of self-employment in the architectural field in Slovenia. This precarious situation can hinder the ability to invest in research and development, including the adoption of new user experience research methods. It underscores the need for support and initiatives to promote more secure employment in the architectural and design sectors, which could, in turn, facilitate the integration of user experience research methods into architectural practice.

Overcoming these challenges requires a combination of education, advocacy, and pilot projects that demonstrate the tangible benefits of integrating user research methods into architectural practice. Raising awareness about the potential for creating more human-centric and sustainable spaces can help shift the mindset within the architectural community. Additionally, emphasising the adaptability of UX methods to diverse contexts and the potential for enhancing project outcomes can encourage architects to explore these methodologies further.

In today's era, the traditional notion of "grand experts" that characterized modernism no longer holds. This has led to increased criticism within the architecture field. The integration of UX methods into architecture and urban design is a promising avenue for creating more user-centered and impactful spaces. However, this transition is not without its hurdles, ranging from established traditions to interdisciplinary collaboration challenges. By addressing these obstacles head-on, the architecture sector can evolve to create spaces that truly resonate with and benefit the people who inhabit them.

Introducing the client: Prostorož studio

My experience working for Prostorož, a Slovenian non-profit urban design studio, played a pivotal role in helping me identify an unexploited opportunity for enhanced user research within architecture and planning. During my tenure at Prostorož, I was exposed to the practical challenges and dynamics that govern urban design and architectural projects. This hands-on involvement provided unique insights that ultimately led me to recognize the untapped potential for more robust user research methods in the field. My experience at Prostorož made me aware of the potentials and limitations of conventional architectural research methods. While aesthetics

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and functionality are crucial, they do not encompass the holistic user experience. Throughout my work with Prostorož, I critically illuminated the shortcomings of conventional urban design practices and the potential for enhanced user research within urban design. While Prostorož espoused community engagement and inclusivity as core principles, a closer examination revealed several unaddressed challenges that highlighted the need for a more comprehensive approach to research.

Prostorož's emphasis on community engagement often remained at a relatively basic level. While the studio conducted public consultations and gathered input, these insights were integrated into final projects to a limited extent. Few new methods were being tested by the team. This limited engagement approach raised concerns about whether genuine user needs were being adequately addressed. Despite advocating for inclusivity, Prostorož's engagement efforts were tied to budgetary and time restrictions of individual projects. Genuine collaboration with marginalised or minority voices could be improved and broader issues of representation and true inclusivity within urban design could be further explored. Due to the fast project cycles, projects carried out by Prostorož occasionally exhibited a lack of sustained impact on communities.Post-implementation evaluation and feedback loops were limited, hindering the studio's ability to iteratively improve designs based on user experiences. This problem should be addressed within the Prostorož team but also in the initial negotiations with their clients. Additionally, Prostorož's practices focused on physical spaces and spatial configurations. Effective user research methodologies that could enhance the functionality, emotional resonance, and overall quality of architectural spaces, were sometimes overlooked.

In summary, while my time at Prostorož exposed me to community engagement and inclusive urban design, it also shed light on critical shortcomings within these practices. The gap between the intended principles and the actual outcomes highlighted the potential for more robust user research methods within architecture and planning. A more comprehensive and critical integration of user research could address these challenges, leading to spaces that genuinely prioritise user experiences and better serve the diverse needs of individuals and communities.

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Creative process

The primary objective of the project was to conceptualise and validate an innovative service tailored to address the unique needs of clients in the spatial design sector. UX methods used in the service can provide valuable insights to create spaces that not only meet functional requirements but also resonate with the people who use them. Service evolved from literature review to a focus group and workshop approach, driven by the desire to gain a deeper understanding of sector needs. The end product of the project was a toolbox of methods tailored to meet the distinct requirements of clients operating in the spatial design sector. The service was then tested with a client on a project aimed at establishing a new creative hub in the city.

Literature Review

The project was initiated with a comprehensive literature review. This encompassed two critical aspects: (1) the development of an extensive overview of User Experience (UX) research methods currently used in design, and (2) the compilation of established research and participation methods within architecture and urban design. It is worth noting that while the latter methods may already prove effective for studying user experiences, they often go unrecognised as such due to variations in sector-specific terminology. Due to the impossibility of compiling all the existing methods, I opted to outline the approaches currently featured in method collections, both in printed books (for example Martin & Hanington, 2019; Sanders & Stappers, 2012), as well as on the internet using Google search engine. The outcome was a meticulous inventory of 312 UX research methods within design and an additional 110 methods applicable to architecture and urban design. Each method was accompanied by a detailed description, practical applications, and frequency of references in various sources.

Needs Identification

My research uncovered an unexpected abundance of methods during the initial phase, emphasising the necessity of precise criteria for method inclusion in the resulting toolbox. A

change in the project approach was necessitated by the realisation that it was crucial to obtain in-depth insights into the work processes and sector needs. This shift involved moving from a survey-based approach to a focus group and workshop format, as these methods facilitated more candid discussions and a comprehensive understanding of sector-specific nuances. This methodological change was prompted by concerns that surveys and interviews might yield less candid responses, given the potential reluctance of studios to share specific work details for competitive reasons. Consequently, the focus group approach proved invaluable in fostering open discourse and obtaining more genuine insights.

This phase focused on identifying the needs of potential clients within the sector. I hosted a focus group consisting of municipality employees, urban planners, architects, and experts from various backgrounds. Their insights illuminated how projects are formed and the pain points experienced within the sector, offering diverse perspectives from architects, planners, and UX consultants. Some of the notable take outs include:

- *There is demand for applied research of urban space.*
- *Evaluation of new spaces/implemented measures is one of the most overlooked parts of the process where research is needed.*
- *There is a demand and need to measure more aspects of urban space that are not only connected to use of space but to economic, health, … impact of space.*
- *Municipalities put too much value into the results of public debates without realising the people attending them do not accurately represent the community. A combination of methods is needed to show a more complete image of needs and opinions of the locals.*
- *In the case of architectural competitions, research should be done in the preparatory phase and inform the design brief. After the competition is public, planning studios have to follow the guidelines set in the brief.*
- *Researchers have to improve their communication and present the "complete picture" to decision-makers. The aim is to minimise fear of action that arises if decision-makers are personally confronted with only one method of public engagement (public debate).*

This served as the foundation for a workshop that further validated the urban design project process and defined method selection criteria.

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Criteria Development and Method Selection

A collaborative workshop with an urban design professional and a social scientist was conducted aimed at validating the urban design project process and defining criteria for method selection in the upcoming toolbox. These criteria were vital for ensuring that selected methods aligned with sector-specific needs. The inclusion or exclusion of methods was then determined based on the chosen criteria. The resulting criteria were categorised into several types, including those suitable, those requiring modification, those only applicable to digital products, those unsuitable for sector needs, those overshadowed by more resource-efficient methods, those deemed too abstract, and those categorised as techniques rather than methods. Each method was included or excluded to the next round based on chosen criteria.

Service Prototyping

Service prototyping involved an extensive process of reviewing UX research methods and connecting them to the needs of potential clients. For this, I outlined five distinct phases of user experience research that correspond to the pain points of potential clients and can support the process of urban design: Explore, Define, Develop, Test & Implement, Evaluate (described in detail in the next chapter). The remaining methods were integrated into this workflow, determining the phase in which each method made the most sense. A second review of the selected methods took place, with additional exclusions of methods that were redundant or less relevant for architects and urban designers. Minor adaptations were required for some methods to make them suitable for the architecture and spatial design sector. This process resulted in a toolbox containing descriptions of methods, their utility, the number of participants they can involve, their level of complexity, duration, best practice examples, and useful references. The developed tool allows for easy addition of methods. It enables the inclusion of interesting methods that were not initially analysed or those yet to be developed. Currently, the toolbox with methods is not open-source as I intend to test it within my service for some time. Subsequently, I plan to share it with other practitioners interested in utilising these methods. The presentation of these methods will also provide an opportunity for education and training. Due to the specificity of the

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architecture and urban design sector, it's crucial to carefully plan which combination of methods is most suitable for investigating a particular issue. It is recommended that practitioners always opt for a combination of methods, not just one. Therefore, it's of utmost importance to create a comprehensive research plan at the beginning of a project, within which resources and available time can be efficiently allocated. This addresses a common misconception in the sector: currently, those who wish to involve users and explore their experiences often believe that such involvement is necessary in all phases of the process, making it time-consuming. To address this, I have additionally defined a service framework that outlines how communication between the client and user experience research provider should occur, what information they need, who the stakeholders are in the project, and when to involve them in the process. The framework helps the client and the research provider define which stage the project is in, where user research is needed, who the key users to involve are to ensure project inclusivity. It also assists the research provider in developing a communication plan. At the end of the project, the research provider can deliver a transparent research report to the client, which is informative, highlighting key findings and offering improvement suggestions.

Pilot launch

Once the service procedure was established, I conducted service testing in collaboration with Studio Prostorož and their client, the City Municipality of Celje. My role involved investigating the needs of citizens regarding the renovation and establishment of a new creative hub in the city.

At the beginning of our collaboration I got a brief from Prostorož that they need to understand the desires of local artists and residents for the new urban centre before embarking on the project task, which would determine the program and renovation of the whole facility. The project will last for approximately two years. Prostorož was responsible for shaping the programme for the newly renovated creative hub, essentially impacting the whole city. After the programme will be determined, Prostorož will also design the renovation plans for the building.

I organised a meeting with my client: Prostorož. The meeting was held in a workshop format, as determined in my service framework. At the meeting all the important topics were discussed:

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- What are the short-term and long-term goals of the project? What are the potential risks? How might we statements were defined (method no. 50 in the toolbox)
- How will we measure success for the short-term and long-term goals of the project? What are the KPIs? (method no. 112 in the toolbox)
- Who are the stakeholders in the project? Are there any other organisations or individuals who can contribute to the project success? What impact do the stakeholders bring? (method no. 106 in the toolbox). When should the defined stakeholders be involved - when should they be informed, when should they make decisions and when should they be left alone.
- What are the proposed activities in the project? What activities have already been done so far? What is the purpose of the proposed activities?
- What are the time and budget constrictions?

This workshop/meeting took approximately 1 hour. At the end of the activities I presented the project phases I defined. Together we agreed the project is still in phase 1 - Explore. So far, they did the stakeholder analysis, they did the spatial analysis, they already contacted people from the creative sphere in the local area (as potential tenants of the space), they held interviews with a few. At the moment, they had two problems: (1) they did not know how to merge and analyse the results they already gathered to present to the municipality, (2) they did not know if they did enough to confidently start working on the program ideas for the building renovation since this renovation will bring great changes to the creative people from all around the city.

After the meeting, I sent them the meeting minutes together with the work plan that also worked as a design brief. I asked them to check the brief for any questions and suggestions. At the end of the brief, I sent my recommendation for methods to be included. I asked them to have a 15 minute Zoom meeting to discuss the chosen methods. Here are some of my conclusion and suggestions:
- They have not yet included the local residents in their need analysis. The renovation will affect the residents - either by participating in the programme, such as dancing lessons, ceramic workshops, etc. or by the renovation itself (a lot of residents live nearby, if they

don't support the renovation, the municipality can expect complaints from the residents concerning noise and air pollution).

- Even though the participation process could be continued, it is also important to comply with the time and budget constraints. This is why it is important to not spend all the money for the project in the Explore phase but rather to include the residents and artists in the test implementation and evaluation phase.

- My suggestion was to opt for a relaxed format of data gathering from the artists and the residents, with a secondary goal of presenting the upcoming project to the community which is why an "Open house" was organised for residents to visit the centre before renovation. The goal of the project was shown with materials with thought-out data visualisation. People could mingle with local creatives on one hand and ask about the project (voicing their concerns) on the other with architects from Prostorož.

- In each room there was Pop-up infrastructure (method no. 86 in the toolbox) - each room showing what the potential of the room could be - improvised children play areas, a dancing studio, a painting workshop, a gallery, etc. In each of the rooms, people could talk to the architects to voice their opinions about the content and the design.

- In the last room, we also included an idea gathering method - a method "Graffiti wall" (method no. 47 in the toolbox) was chosen for participants to voice their opinion and vote on the upcoming programme. On one of the posters, people could write their impression of the building (they had to write 3 things about the building). There were some programme suggestions on the wall - participants could vote for their favourite programme and also add their own ideas.
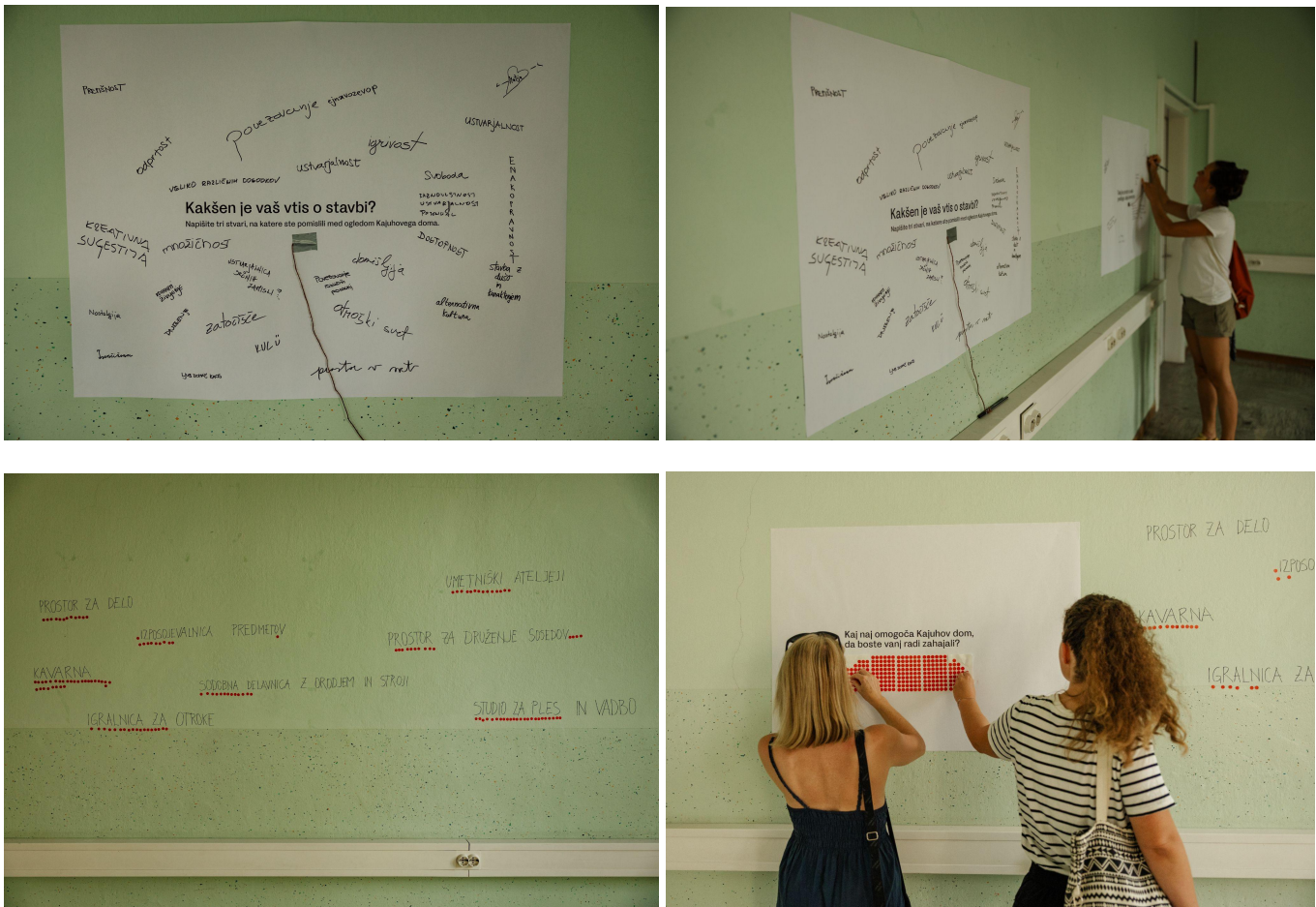

Photo credits: Robi Valenti

I facilitated the methods on the spot, although they could also be implemented by the client, if they have the confidence to lead these methods by themselves. Besides these methods I also send them recommendations on how to include users in the next phases of the project (and where it is not necessary). I suggested including them in the testing phases, opening of the renovated building and at evaluation, together with some suggested methods. After the "Open house", I had a meeting with the client where I presented the results in a PPT presentation. After the meeting, I sent them a research report with key findings.

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During the service implementation, I assessed the effectiveness of the proposed service as well as any shortcomings in the methods used (which often depend not on the project itself but on the facilitator). The service proved to be highly successful.

I asked Studio Prostorož for an evaluation meeting. They reported that:
- they could commission an external service without investing a significant amount of time in creating a detailed project brief, which can be time-consuming.
- After our initial meeting, they promptly provided me with relevant materials and a completed brief document, allowing them to seamlessly proceed with their work.
- They appreciated the concise and precise presentation of the work plan, which they could review, comment on, and suggest adjustments as needed, giving them a sense of control over the process.
- They also found the final report valuable, as it included an executive summary summarising key findings while also offering a more detailed exploration of the results. This was helpful for their presentation to the municipality, which now has relevant data to make better data driven-decisions.

My own evaluation showed that:
- The first meeting/workshop is a big time consuming, so the next time I tried the service I opted for a shorter version - I sent an empty design brief to the client beforehand. They had a chance to prepare the answers and the materials, which is why the meeting was shorter. There is a shortcoming of not going through the thought processes of the client concerning the project. I suggest asking the client beforehand which way he prefers (workshop / brief filling).
- With the work plan, the client understands and can follow the process easily without misunderstandings.

In conclusion, the service is well-prepared for market entry.

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Analysis and main insights

UX research process for architecture and urban design

It was essential to map out the architectural and urban design process in order to identify precisely where the integration of user experience research methods could enhance the design process. The structure of this process wasn't predetermined but was instead established and validated through a combination of a focus group and a workshop. My working hypothesis was that the standardised spatial design process could be supported and enhanced by running a research process in parallel to it. This would provide clients with an abundance of data that could help them achieve more efficient results. I have outlined five distinct phases of this parallel research process: Explore, Define, Develop, Test & Implement, Evaluate.

1	2	3	4	5
Explore	Define	Develop	Test & implement	Evaluate

1 Explore

Formative evaluation A combination of various data collection methods is essential to acquire insights regarding the present conditions associated with a physical space and its users (assessing inclusivity & accessibility, safety, sustainability, amenities, user's pain points, user's behaviour etc.).

Need identification A wide range of data collection methods are employed to assess preferences and needs of the users. This involves identifying the amenities and physical features they desire to enhance their urban experience.

2 Define

Identifying insights Once a large volume of information is gathered, the data (both qualitative and quantitative) is analysed in order to identify clusters, themes and insights of the research.

Identifying key opportunities & HMW questions Opportunities for enhancing spaces are explored and ranked or prioritised based on their significance and potential impact. "How might we?" questions are formulated to guide the ideation process. **Clear metrics for success are defined**, ensuring that the evaluation and testing phases have well-defined criteria for measuring the effectiveness of the proposed solutions (alignment with community insights, potential impact, scalability, etc.).

3 Develop

Ideation A creative and collaborative process is implemented to brainstorm and conceptualise potential solutions and urban design concepts. Chosen methods encourage diverse perspectives, ensure inclusiveness, and foster creative thinking. The outcome of this phase includes the generation of design sketches, concept diagrams, rough prototypes that visually represent potential urban interventions.

Prioritisation & concept selection Each concept is evaluated based on criteria established during the 'Define' phase. The evaluation also takes into account feasibility factors, including budget, available resources, regulatory requirements, and technical feasibility. The phase concludes with the selection of a concept to proceed to the prototyping phase.

4 Test and implement

Testing Detailed design plans and prototypes are developed based on the selected concepts. Prototypes serve as tangible representations of the urban interventions, enabling stakeholders to visualise the proposed changes. Prototypes (series of iterative, temporary interventions) are subjected to testing to evaluate functionality, usability, and user experience of the proposed interventions.

Implementing Once the temporary prototypes have undergone sufficient refinement, the approved concepts move forward to permanent implementation. Although this phase does not incorporate UX research methods, it is instrumental in translating the insights and knowledge garnered earlier into tangible spatial improvements.

5 Evaluate

Monitoring and follow-up After implementation, ongoing monitoring is conducted to track the performance of the implemented interventions. Continuous data collection and analysis help ensure that the intended benefits are being realised and that unforeseen challenges are addressed promptly.

Summative evaluation A comprehensive assessment of the urban interventions is undertaken. Based on the results, decisions are made regarding the continuation, modification, or expansion of the interventions. Lessons learned are invaluable for refining urban design strategies, optimising resource allocation, and ensuring that the urban environment evolves in a way that meets the evolving needs and desires of the community.

User experience research methods complement all phases of the architectural design process described above. However, it's important to recognize that not every phase necessitates user involvement, there are instances where user participation might not be essential. In certain project phases or projects, architects and urban designers, as experts, play the primary role.

Specifics of architecture and urban design

A critical distinction between architecture and graphic, digital, or product design lies in the nature of the research focus. In design, the ultimate goal often centres on encouraging product purchases. In contrast, architectural and urban design prioritise creating resilient, compliant spaces that adhere to numerous urban regulations, serve immediate user needs, and allow for unforeseen future uses. **Instead of evaluating what convinces people to make a purchase, the focus shifts to understanding what motivates people to use a building or urban space over the long term.** Therefore, a thorough examination of why the existing space functions or doesn't, as well as an understanding of user needs, becomes pivotal (research phase: explore). These insights are strong indicators of whether a new or renovated space will function effectively. It's essential to establish well-defined performance criteria that the space must fulfil.

In design, testing, especially usability testing, takes centre stage. However, in the realm of physical space research, this approach is complex and often impractical due to the intricate and costly nature of developing physical prototypes. **Therefore, rather than exhaustive testing of physical prototypes, the focus in spatial planning lies in meticulously defining performance criteria and evaluating conceptual solutions to ensure they align effectively with these criteria** (research phases: define and evaluate)**.** In architectural and urban design, the evaluation phase holds particular significance, as predicting all the influences on an urban space can be extremely challenging. During the evaluation phase, the focus is on testing whether the defined performance criteria were well-conceived and if the designed space aligns with these criteria.

From the focus group and workshop with urban design practitioners, it's evident that there's a significant demand among potential clients for the evaluation of interventions upon project completion. **Therefore, a crucial emphasis of the service should be on evaluation**, since enlightened clients are interested in the long-term impact of the intervention, which extends beyond user satisfaction to encompass various indicators that justify the investment. Municipal authorities must justify the meaningful allocation and expenditure of funds. Furthermore, the users of public urban spaces often constitute a significant portion of the electorate, making support from the public crucial for municipalities. Currently, the evaluation of public architectural and

urban projects is rarely carried out because (1) the resources for evaluation are not provided (2) clients lack expertise to conduct them, (3) there are no well-defined success criteria established before the intervention itself, often making it unclear what should be evaluated in the first place.

The analysis of methods already employed in urban planning reveals that urban planners are most familiar with and utilise the greatest number of methods aimed at gathering information about the current state and user's needs, for example surveys and observations (research phase: explore) phase. However, this knowledge is often not applied in the evaluation phase. **There appears to be a discrepancy between the needs of clients and the services offered by providers.** It's also possible that there are insufficient resources available for the evaluation phase, a hypothesis that should be further investigated.

Another significant shortcoming in the architectural sector is the **inability to effectively evaluate research work.** Even if, for instance, users are involved, there's often an inability to objectively assess whether the research was well-planned and how the results should be utilised. Municipalities in Slovenia, specifically municipal employees, place excessive value on the results of public debates without realising that the participants in these debates do not accurately represent the local community. While live public debates remain important, they need to be supplemented with different methods of engagement and research to provide a more comprehensive picture of the attitudes, needs, and opinions of the local population.

A **gap between user research findings and actual implementation was also identified** (the extent to which these insights were integrated into final projects remained questionable). To address this within the service, I introduced an additional DEFINE phase where I gathered methods exclusively aimed at identifying key opportunities, prioritising problems, ideation focused on solving relevant issues, and defining success criteria. This resolves the issue faced by clients who already involve users in planning, possess knowledge of user experience research and implementation planning, but may lack the expertise in effectively concluding projects, articulating findings, and designing a comprehensive action plan for the future that effectively addresses the identified problems.

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Overcoming the barriers of the sector

My project has demonstrated the desirability of changes within the sector. Clients, often including municipal employees and representatives of local politics, are acutely aware of their knowledge gaps and recognize the potential benefits of incorporating user research practices into their planning and decision-making processes. This is precisely the gap that *UX research service for architecture and urban design* addresses:

Overcoming Tradition & Aesthetic-Centric Approaches: While aesthetics remain vital in architecture and urban design, contemporary expectations for the built environment extend beyond aesthetics alone. The inclusion of user research elevates user satisfaction. Architects, far from losing their status as aesthetic experts, gain additional insights into functionality. The goal of user research isn't to debate aesthetics but rather to enhance the user experience, making spaces easier and more enjoyable to use while maximising their potential.

Gaining Trust and Overcoming Lack of Familiarity: It makes sense for user experience research to stand as an independent service that architects and urban designers can enlist. This separation allows professionals to distance themselves from concerns about acquiring new approaches. It falls to the researcher or service provider to present research findings in a clear, informative, relevant, and genuinely helpful manner for the spatial design process.

Navigating the Complexity of Physical Spaces: Designing physical spaces differs significantly from product or digital design. Only methods proven effective in both digital and physical environments have been included in the method set, with some methods adapted to effectively address the specifics of the built environment. The planning process in spatial design places a strong emphasis on defining success criteria, breaking down complexity into tangible goals.

Fostering Interdisciplinary Collaboration: Interdisciplinary collaboration is essential when creating spaces for people. Collaborations across fields can yield innovative ideas. Establishing collaboration is achieved through well-defined objectives, tasks, and success criteria, all of which have been considered in the service's design.

Tackling Time and Budget Constraints: Many UX research methods are efficient and yield long-term results. Moreover, investing in user experience research results in higher return on investment (ROI) because it satisfies both users and clients. Well-designed spaces are more likely to endure without requiring additional iterations, saving both time and resources in the long run.

Defining Metrics for Success: In my research, the lack of success metrics for UX research services emerged as a significant drawback. Well-defined success criteria, including indicators such as user satisfaction, environmental sustainability, and more, contribute to client satisfaction.

In conclusion, integrating user experience research practices into architecture and urban design is not just beneficial but also addresses the changing expectations and needs of users in today's built environment. This approach not only enhances user satisfaction but also promotes better decision-making, efficiency, and long-term cost savings.

Linking back to CIRCE

CIRCE focuses on the cultural and creative economies and their role in addressing contemporary and future challenges. Here's how the project's insights link back to CIRCE's overarching themes:

Importance of Innovation: The project highlights the importance of innovation in the cultural and creative economies. It demonstrates that incorporating established user experience (UX) research methods into spatial planning and architecture can lead to more innovative and user-centric design solutions. This aligns with CIRCE's emphasis on fostering innovation within the creative industries.

Cross-disciplinary Collaboration: The project underscores the value of cross-disciplinary collaboration, a theme central to CIRCE's mission. By integrating insights from UX design into spatial planning and architecture, it promotes collaboration between traditionally separate domains. This resonates with CIRCE's goal of creating a sustainable ecosystem for the creative industries by encouraging interactions between different sectors.

User-Centric Approaches: The insights emphasise the significance of prioritising user experiences and needs, which align with CIRCE's focus on understanding the cultural and creative economies' impact on individuals and society. Research has to ensure inclusion of all types of users of urban places, marginalised and vulnerable groups, which are otherwise overlooked, are always represented. This user-centric approach not only enhances design quality but also addresses societal challenges by creating inclusive and accessible spaces.

Resource Efficiency: The recognition of resource constraints in method selection highlights the importance of efficiency, a theme that resonates with CIRCE's interest in sustainable practices within the creative industries. Utilising UX research methods efficiently can help optimise resource allocation and minimise waste in design processes.

Policy Implications: The project's insights into the need for researchers to engage in policy and advocacy efforts have direct implications for policy-making, another core concern of CIRCE. By actively participating in shaping policy and advocating for the integration of user-centric methods, the cultural and creative economies can become more resilient and responsive to societal challenges.

European Context: While the project's insights are not limited to Europe, they provide valuable lessons applicable to the European cultural and creative economies. The principles of innovation, cross-disciplinary collaboration, user-centricity, and resource efficiency align with CIRCE's aim of promoting a sustainable ecosystem for these economies within the European context.

The project's insights contribute to CIRCE's overarching questions by showcasing the potential for innovation, collaboration, and user-centricity in the cultural and creative economies. These insights not only speak to the challenges of today but also provide guidance for a more sustainable and responsive future. They emphasise the importance of active engagement in policy-making and resource-efficient practices, aligning with CIRCE's mission to foster a thriving cultural and creative ecosystem in Europe.

We offered a new service to enterprises within CCI fields (e.g. research, design, cultural heritage) and improved the service of the architecture and urban design sector. Our contribution improves the competitiveness of CCE in Europe by continuing to secure our position as a leading source of urban design expertise. The service has three major long-term impacts: (1) improved urban planning (evidence-based design leads to better quality of urban spaces and better adaptation of cities to climate change - mitigations are met with less opposition by the public if they are based on needs prioritisation and design testing), (2) social cohesion (less conflicts between citizens and investors, higher citizen approval of new projects), (3) systemic changes and impact on policy framework (currently, urban design competitions do not require the inclusion of user research or participation, which is why it's rarely used in practice; good practices in user-centred urban designs implementations can lead to successful policy transformation).

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Acknowledgements

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