Designing with the Participation of the Community – an On-Going Project of Redesigning a School Yard in Serbia

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Abstract

Is it possible to gather ideas from school children and teachers, translate them into design language and build them into an architectural design of a school yard? With this project we intend to investigate and broaden our knowledge of the methodology and process of participatory and cooperative design in the specific environment of a local elementary school in Serbia with limited financial resources. The research is focused on creating methods and techniques of gathering data from all user groups (children, school staff, and parents), weighing them with respect to the available spatial, organizational and financial conditions and, finally, formulating the relevant brief – architectural design assignment.

The research input data focused mainly on diverse uses of the school yard space, problems users encounter daily, and multiple needs of school yard users. The data was collected through: interviews with the school staff and parents; hands-on workshops with school-children, producing drawings/models

and led by urban design students as mentors; as well as through question-naires for all categories of users – children, school staff and parents. The data gathered was analyzed both statistically and through qualitative content analysis, and the research outcomes were then applied by the design/organizational team as a starting point for developing the architectural design of the school yard.

Since the research showed that user-centered design process can benefit significantly from developing new methods of gathering "design data" from direct users, and that "translating" them into the design language is a powerful design tool, this approach can be used as a developed case study for further research in the field of participatory and cooperative design in limited institutional and financial conditions.

Keywords

Participatory design, cooperative design, user-centered, case study, school yard.

What is Participatory Design?

Participatory design is an approach in design that promotes involvement of all stakeholders in the design process – from direct users to decision makers and investors – aiming at recognizing and communicating their needs and bringing about sustainable decisions. It is a design process that engages different non-designers: existing and potential users, various stakeholders and design team members who come from disciplines such as marketing, engineering, sales, etc. It is practiced through a variety of collaborative activities throughout the entire design process (Sanders *et al.*, 2010). Participatory design process is based on the core idea of democracy: that

we should ask those directly affected by design for their opinion. "Participatory design strength lies in being a movement that cuts across traditional professional boundaries and cultures. Its roots lie in the ideals of a participatory democracy where collective decision-making is highly decentralized throughout all sectors of society, so that all individuals learn participatory skills and can effectively participate in various ways in the making of all decisions that affect them" (Sanoff 2004, 213–214).

Carroll and Rosson (2007) state that: "Participatory design integrates two radical propositions about design. The moral proposition is that users have a right to be directly included in the process of design. The pragmatic proposition is that directly including the users' input will increase the chances of a successful design outcome" (Carroll and Rosen 2007: 243).

The starting point and basic assumption of this approach is that the process has a long term positive impact on the community's self reliance, bonds strength and internal involvment. By working together on a shared vision, different stakeholders have more chance of understanding competing positions over an issue, and forming realistic expectations towards their own interests. Involvement also lowers resistance to change among certain interest groups, which is a common feature of the urban planning and design practice.

While theory of participation and collaboration in design is widely available (Frayling, 1993; Sanoff, 2000, 2004; 2006; Sennet, 1977), the urban design focused case studies are significantly fewer. Bearing in mind the complexity of the urban environment, collective decision making, the organization and control over the process – it is a rather demanding, possibly slow and complicated, as well as very diverse process. Participatory design process appears to be a fluid concept, and each spatial situation and problem in particular demands a project-specific design of the participatory process, preceding the action.

In this paper we shall present a case study in participatory design process – a specific ongoing project of redesigning a school yard in Belgrade, Serbia, with the participation of all user

groups.

Introduction to the case study

The authors of this paper are both mothers, and their children go to the same elementary school in Belgrade, Serbia. Besides being mothers of school children, Vera V. teaches Art Education at the Teacher Education Faculty in Belgrade and Biljana B., an architect, works at the Faculty of Applied Arts at the University of Art in Belgrade, where she teaches Urban Design to urban design students.

The school that their children go to is located in the city center of Belgrade, a historical area that is protected by Serbia's Law on Cultural Heritage. There are several cultural and historical buildings in its close neighborhood, one of them being the Historical Museum, in the first building right next to the schoolyard.

The images 1 and 2 show the actual schoolyard of the school.

Figure 1: Present day look of the school-yard.

Figure 2: Schoolyard, detail: old concrete with steel bars exposed.

Besides being almost 90% covered in concrete, without trees or greenery, it has never been renovated since the school was built in 1959. Hence, there are now many spots in the schoolyard that can jeopardize children's health and safety. Some of these problems are: the old and

damaged concrete surfaces with exposed steel bars, a very low fence that can very easily be stepped over even by very young children, lack of gates that can be closed and locked.

After having pointed out these problems, and after several unsuccessful attempts to persuade the authorities to remediate and reconstruct the schoolyard, we, the parents, decided to take action on our own and organize ourselves in order to solve this problem. A team of parents was formed on a voluntary basis, consisting of parents that were willing to contribute in different ways: with various skills, knowledge and competencies, links and connections in relevant institutions, devotion of time, financially etc. Biljana B. as an architect and teacher of Urban design, was one of the heads of the organizational team of parents and coordinator of the Project.

Since we, as parents, initiated the reconstruction ourselves and were the ones that were supposed to carry it out from start to end, we saw a great opportunity and freedom to do it, hence, in a way that enables all the user's voices to be heard – by applying participatory approach.

Since there are not many cases of participatory design in Serbia, we had to make our own first baby steps in the whole process and learn along the way. We had to investigate and broaden our own knowledge of the methodology and the process of participatory and cooperative design in the specific environment of a local elementary school with limited financial resources, and this paper describes the process that we went through.

Participants in the Project

Participants in this Project were: parents of schoolchildren, school children, school staff, the local community and neighborhood of the school, urban design students from the Faculty of Applied Arts, local authorities – policy and decision makers.

The time dynamics of the Project

The project started in the beginning of the year 2017, and had several phases until now, with few more to follow: 1. data gathering; 2. data analysis and defining the priorities; 3. defining the architectural design assignment (architectural brief) based on the outcomes/priorities of the data analysis; 4. designing possible architectural solutions; 5. defining the final architectural design; 6. further steps.

Data gathering

In order to gather the data necessary for the beginning of the restoration project we wanted to investigate what were the real needs and problems of all groups of users: mainly school children, school staff and parents of schoolchildren, but also the local community and neighborhood of the school. We organized and conducted parent talks, interviews and talks with school staff, discussions with neighbors, as well as workshops with schoolchildren. These workshops were designed by a team of art and architectural educators (among the parents) and were led by school teachers and urban design students as mentors. The workshops were designed to encour-

Figure 3 & 4: Practical workshops with schoolchildren led by urban design students as mentors.
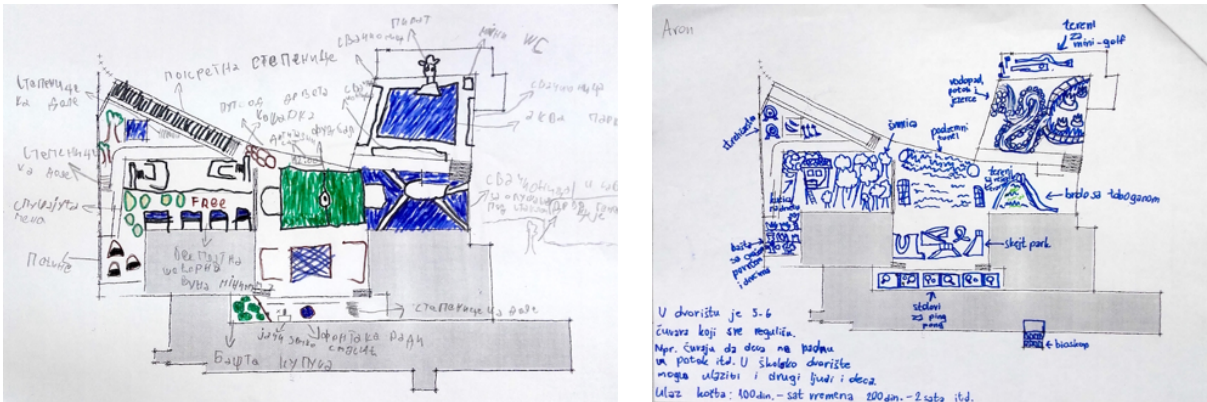
Figure 5 & 6: Schoolchildren's ideas for new elements of the schoolyard. Marker drawing on a printed schoolyard layout plan (age 9).

age and help children express their own visions about the present, and ideas for the future of the schoolyard, both through drawing and building 3D models. Also, as a contribution to the practical workshops, the children filled out a questionnaire pointing out the problems and the needs that they saw in relation to the school yard.

Images 5–9 represent some of the schoolchildren's ideas for improving the schoolyard. Children drew their ideas on a plan of the court (images 5, 6), and on black and white photos of dif-

Figure 7: Children's ideas for introducing greenery and rest/leisure zones. Marker drawing on black-white photo (age 12).

ferent spots of the schoolyard (images 7–9). Images 10 and 11 represent some of the children's ideas for the schoolyard developed through 3D modeling.
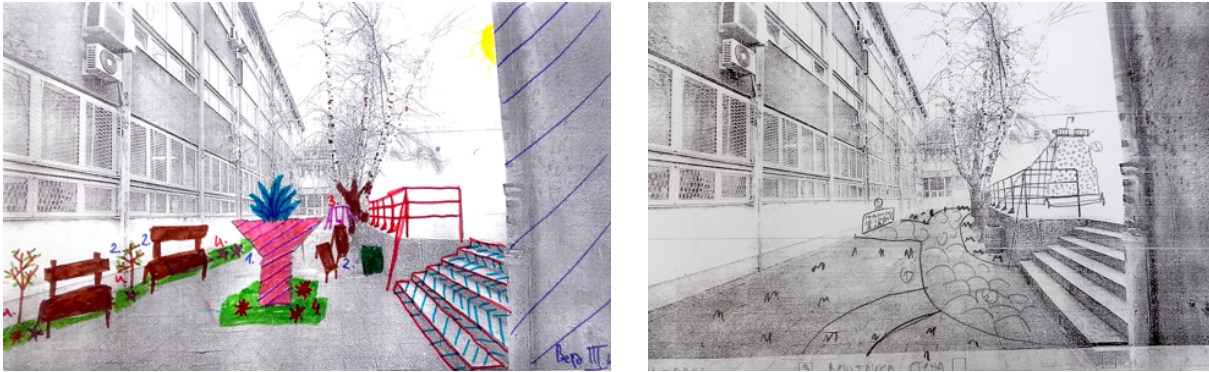

Figure 8 & 9: Children's ideas for rest and leisure zones. Marker and pencil drawing on black-white photo (age, 10).

Figure 10 & 11: Children's ideas for play and leisure areas in the schoolyard. Different 3D materials (age, 8).

Data analysis – defining the priorities

All the data gathered was then analyzed both statistically and through qualitative content analysis and the conclusions pointed to three major priorities:

1. Safety and hygiene: fence and gates, remediation of concrete surfaces.

   The schoolyard has two diagonally positioned gates that trace a shortcut through the urban block, so the yard became a fast route that brings many unwanted visitors and passersby. Among them, there are also many dog owners that use the schoolyard for walking their pets, often leaving mess behind. Old concrete sport stands are run down, with steel bars exposed, and in need of reconstruction.

2. Improvement: new materials, sitting areas, educational content, outdoor classroom, greenery and sensory garden.

   Research conclusions indicate the lack of ambient quality of the space, as well as the opportunities for leisure, rest and touch with nature. Hence, one of the priorities is enriching the palette of materials and introducing wood, horizontal, vertical and educational greenery, and new polymer surfacing for the sport courts. As far as the functions are concerned, apart from the sport activities that dominate the space, there is a strong inclination towards new content such as an outdoor classroom, sensory garden and rest areas.

3. Mobilizing and strengthening of the local community and giving the children an example of good practice – by engaging all of the relevant parties and groups of users on a common cause.

The architectural design assignment

All of the conclusions from the previous phases were translated into the technical language of architectural design assignment defining the necessary elements and requirements of the future design.

1. Safety

2. Multifunctional space adequate for handling various scenarios of use and different age groups simultaneously (sport fields, outdoor classroom, leisure and rest...)

3. Visual noninvasive design concerning the neighborhood – closeness of a museum (protected heritage building)

4. Space that encourages physical activity and movement

5. New rest and leisure zones

6. New greenery

Possible solutions and design options

1. Safety

The old fence is not an actual barrier – it can easily be stepped over from both inside and outside of the yard. Architectural design assignment defines the need for increasing the height of the fence as well as locking of the two gates, so the yard would not serve as a shortcut any more.

Figure 12: Fence, actual state.

Figure 13: Fence. Possible solution, preliminary architectural design.

2. Multifunctional space

The space needs to offer more opportunities for diverse activities and treat children of all ages equally. Younger children should have a secluded zone for playing and enhancing physical activity, while older ones play sports, walk or sit in small or big groups and all of them together should enjoy the ambience of the yard more that it is the case now.
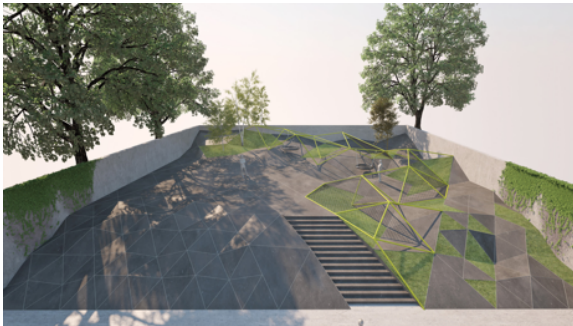

Figure 14 & 15: Multifunctional space. Possible solutions, preliminary architectural designs.

3. Visually noninvasive design concerning the closeness of the museum (protected heritage building)

Closeness of the protected heritage building and the regulations this situation imposes, implied the use of visually noninvasive architectural language, cautious of not interfering with

Figure 16: Museum (in the background). Actual state.

Figure 17: Visual noninvasive design. Possible solution, preliminary architectural design.

Figure 18 & 19: Solutions for a separate polygon-like playground zone for the youngest schoolers that encourages physical activity. Preliminary architectural design.

or jeopardizing the old structure in any way. It was also important not to disturb its visual perception.

4. Encouraging physical activity

Since teachers particularly accented the need of enhancing physical activity of youngest schoolers, who do not use the big sport fields yet, a separate zone was devoted to creating a
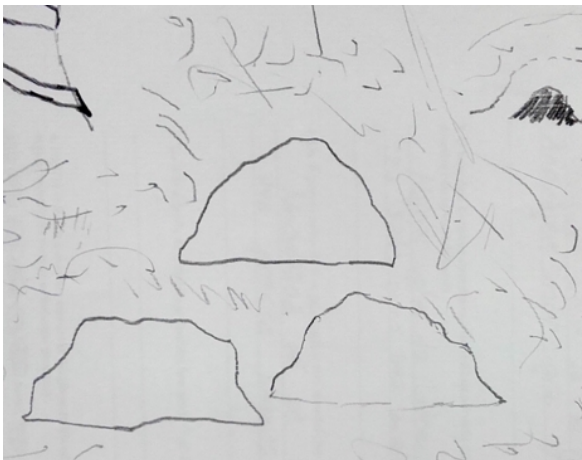

Figure 20: A child's solution for a separate zone for the youngest schoolers that encourages physical activity. Drawing on paper (age, 8).

Figure 21: A solution for a separate zone for the youngest schoolers that encourages physical activity, based on a child's drawing (image 20). Preliminary architectural design.

polygon-like playground for various activities, paying attention to the needs and wishes of the children, as well as the possibilities space offers.

5. New rest and leisure zones and new greenery

Currently, nature is almost completely absent from the school yard, and as the priorities implied – special attention was devoted to finding all the possible ways of applying different types of greenery – horizontal, vertical – with new trees, as well as green walls. Complementary to natural elements, zones for rest were designed to enable leisure and enjoyment.
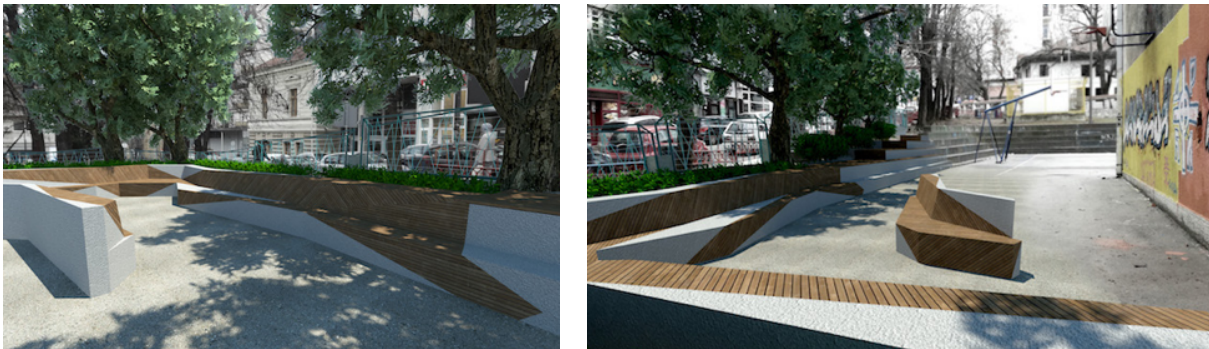

Figure 22 & 23: Solutions for rest and leisure zones. Preliminary architectural design.
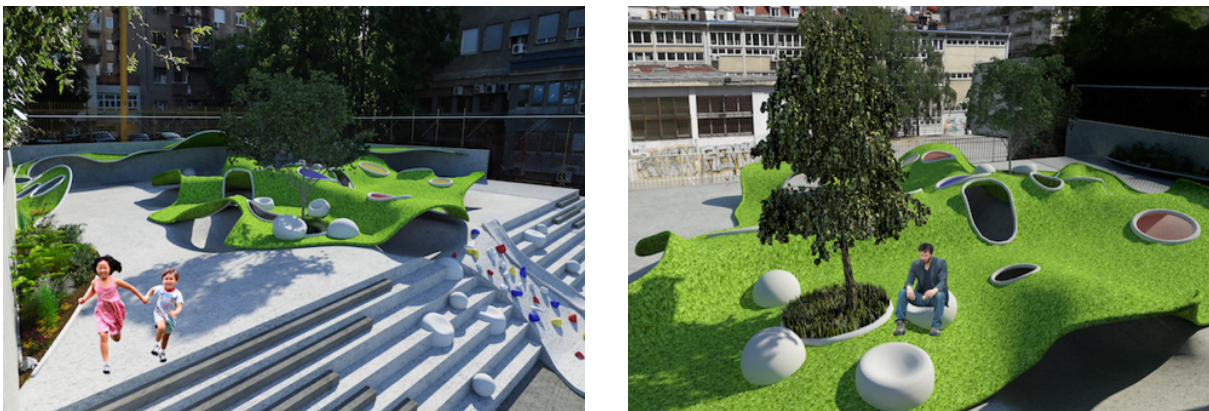

Figure 24 & 25: Solutions for rest and leisure zones and new greenery. Preliminary architectural design.

The final architectural design

The final architectural design implies "packing" these different solutions into one architectural design. The participatory approach directed the whole design process towards a collaboration of many parties, so the final architectural design is currently „under construction" and engages a team of urban design students with a professor as a mentor (among the parents, Biljana B.), and an organizational team of parents and school staff coordinating the whole process.

After acquiring the final architectural design, several further steps are to be taken:

Further steps

- acquiring comprehensive documentation and applying for the building permission

- fundraising from both small and corporate contributors (organizing a donor exhibition in the school; applying for financing from various government sponsored plans, providing help from companies, parents network – services, materials etc.)

- building in phases

Time flexibility and ability to conduct the reconstruction in several stages are one of the most important requirements from the school management, since it enables them to raise funds step by step and realize parts of the project separately.

Conclusion

So far, this bottom-up experimental approach of engaging the community, school staff, children, parents and design students on a single project appeared to be complex and slow in realization, as expected. It has proven the importance of participation and collaboration – bringing us knowledge and experience none of the parties would have acquired working separately. It is

yet to be discovered in the near future how successful this common project will be in fund raising and communicating the message of the undertaking. And finally, if we do accomplish the realization of the project – we will learn how well it will perform in practice.

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