Community-Centred Design for Social Innovation:
Bottom-Up and Government Initiatives in Shanghai

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Abstract

Insecurity has gripped our society. When we write these words, some countries may be experiencing war, hunger, and poverty. The causes of this extreme insecurity vary, but the major contributors include a lack of community cohesion, relevance, and cultural identity. In the absence of timely solutions to these problems, more social problems will arise. Therefore, through design, this research attempts to propose a new way from the social innovation perspective. The paper begins by exploring the concept of social innovation design, which is crucial to explain the challenges and transformations that design disciplines face in today's society, particularly in Shanghai, China, where the research is based. This is a qualitative methodology process. At the beginning of the study, the Delphi method was identified as an appropriate research methodology used as a tool for forecasting and validation. Some considerations about design ethnography are also presented to understand the methods used in the experimented participatory design process. This is followed by presenting three case studies in Chinese territory described and displayed in their participatory design process: the *Xixi Garden* and the *Shanghai Playscape* in Shanghai and *The Community Museum* in Xiazhu Village, Zhuji City, Zhejiang Province. The objective is to understand the importance and role of social innovation design and participatory design processes of both government and bottom-up initiatives in Shanghai and Zhejiang Province. The main goal is to deepen the foundations for developing other research in social innovation and to promote the emergence of more projects in the future.

Keywords: Community-Centered Design, Design for Social Innovation, Participatory Design, Government Initiatives, Bottom-Up

Introduction

As we've seen, society is in great insecurity. When we write these words on the desk, some countries may be at war, hungry, or poor. For instance, the BRICS countries are rising economies with the greatest development potential and are becoming more important globally. But there are still billions of people, many in the BRICS countries and other emerging economies, who live on less than $2 per day (Kiss et al., 2011). Due to 20th-century social growth, one of the greatest tensions in the modern world is excessively imbalanced regional economic development and the cultural identity problem. Globalisation is quietly rebuilding the economic and cultural networks. This has also affected all aspects of human life. Design, a sociological area, has faced obstacles in the contemporary period. Traditional product design cannot match today's needs. We know from design history that the American designer Papanek (Papanek & Fuller, 1972) challenged this practice of creating things primarily for the pyramid's summit. Because of materialism, these ideal societal conditions have not happened. At this time, social innovation is becoming a promising model for community innovation and problem-solving among governments, academia, and businesses. Design links creativity and efficiency, making it a privileged road to innovation.

This paper explores community-centred design for social innovation, describing bottom-up and government initiatives in Chinese territory and providing a detailed overview of the participatory design process through three case studies. On the other hand, the three case studies demonstrate the value of social innovation design in bottom-up and top-down processes, summarizing the Shanghai and Zhejiang provincial participatory design processes.

In particular, two cases were analysed in Shanghai. The first is about the *Xixi Garden* project (Fig. 1) in the Sanlin community, Dongming Road Subdistrict, Pudong New Area, Shanghai. Through the *Xixi Garden*, the researcher identified a 1) bottom-up participatory planning process and a 2) top-down mechanism of innovation.

Figure 1: The *Xixi Garden*. Date: Late October 2021.

Another case is the *Shanghai Playscape* (Fig. 2) at 281 Fuxin Road in Yangpu District, Shanghai, China[1], which is tracked by the DESIS Network[2]. Project designers believe the public domain is community-based. Thus, new cultural aspects or optimizing local inhabitants' access to new public amenities, environment, and services must be carefully evaluated. The spatial story, place-making, experience design, and service design can revive passive public spaces' sensory and community creativity. Professor Minqing Ni[3] from Tongji University states that the *Shanghai Playscape* was effective in a new micro-intervention public area.
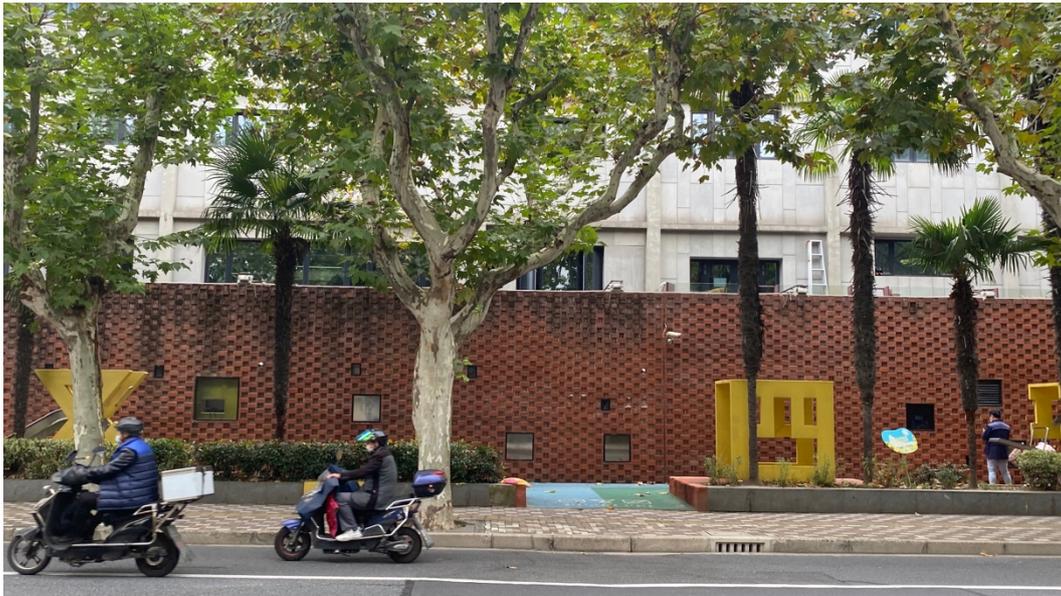

Figure 2: The *Shanghai Playscape*. Date: 16.10.2022.

Finally, another case study is related to the design practice and process of social innovation within the project developed in Xiazhu Village, Wuxie Town, Zhuji City, Zhejiang province, China. Unlike the above two cases from Shanghai, this case is a design practice project developed by the researcher. It's called *The Community Museum* (Fig. 3).

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[1] The Open your Space introduction section of Tongji DESIS Lab from DESIS Network is quoted here. For more information, see: https://www.desisnetwork.org/wp-content/uploads/2016/03/21-01_OYS_Open-Your-Space.pdf

[2] This is a network platform of design for Social Innovation and sustainability founded by Professor Ezio Manzini and related scholars. DESIS Network aims at using design thinking and design knowledge to co-create, with local, regional and global partners, socially relevant scenarios, solutions and communication programs. https://www.desisnetwork.org/

[3] On January 17, 2023, at ten o'clock in the evening Beijing time, we conducted a semi-structured interview with the professor Minqing Ni through the Tencent online conference.

Figure 3: *The Community Museum*. Date: 22.09.2022.

The main objective is to turn a vacant living place into a space for public ideas, a base for co-creation in the community, in order to respond and propose solutions to solve the problems they face.

Research Through Design for Social Innovation

In the design field, Findeli (2004) has proposed three types of design research: research for design, research on design, and research through design. The author highlights the approach of research through design, which he describes as project-led research (2004, p. 44). Findeli emphasizes the potential of interpretive (hermeneutics, phenomenology, personal history) and active methods (participatory research, action research, grounded theory, etc.) (2004, p. 45). On the other hand, the author demonstrates the importance of design for social innovation through design practice – projects and case studies, which also fall under the category of research through design. Therefore, this study also falls under the project-led research paradigm, namely research through design that focuses on people. Supported by practice, exploration, and self-reflection, design is used in this research to generate knowledge.

Problem

At the same time, there are two research problems, one for the urban community and one for the rural community in China, as specific descriptions can be found in Table 1.

	Problems
One	In the Sanlin community, due to the long-term stagnation of the community's property planning, there is minimal greenery, including some areas that were initially part of the community's public space because they have been left unattended for a long time and are littered. These problems have made the living environment of the residents worse. They also have resulted in less and less communication between the residents and a lack of a sense of belonging to the community.
Two	In China, along with the urbanisation process after the industrial revolution, many working people in rural communities left the land they depended on to work in the cities, thus changing the relationship between people and the land. However, this transformation also brought about a series of community problems, such as the education and emotional communication of children left behind and the care of the elderly. On the other hand, there has been a massive exodus of labour from rural communities, which has created a crisis in the transmission of indigenous culture. As a result of the post-epidemic era, people are still in a state of relative lockdown and have not fully recovered to the pre-pandemic social state. Due to their prolonged stay at home, people are alienated from one another, resulting in many social problems. Secondly, people's jobs and economies are inevitably severely affected by the restrictions on inter-regional mobility, deepening the social fabric of unrest.

Table 1: Research Problems.

General and Specific Objectives

The research objectives in this study are divided into two parts, one for general objectives and one for specific objectives, as described in Table 2.

	General Objectives	Specific Objectives
One	To understand how government, residents and designers can collaborate toward building a better future in Shanghai and the Zhejiang province communities.	Understand the relationship between government initiatives and bottom-up social innovation design projects in the community.
Two		Describe the role of designers and design in community-centred design for social innovation projects.
Three		Describe the role of designers and design in community-centred design for social innovation projects.
Four		Identify the design processes and methods that stimulate the community to build a better future.

Table 2: General and Specific Objectives.

Questions

On the other hand, the research questions contain both the main questions and the sub-questions (Table 3).

	The main questions	The sub-questions
One	How do the *Xixi Garden*, the *Shanghai Playscape*, and *The Community Museum* community-centred social innovation design projects manifest themselves in the respective communities, considering that they are two different approaches—bottom-up and government initiatives?	Who are the promoters of the *Xixi Garden*, the *Shanghai Playscape*, and *The Community Museum* design projects in the community in both bottom-up and government initiatives?
Two	How significant is it to empower the community and designers to build a better future for all citizens through community-centred social innovation design?	What are the priorities and how to boost the development of more bottom-up and government initiatives of social innovation design in Sanlin, in the *Shanghai Playscape*, and within the Xiazhu community?

Table 3: Research Questions.

Hypothesis

The hypothesis is that a portfolio of community-centred social innovation design processes will help to empower communities and designers in the region of Shanghai, improving its social well-being.

Methodology

This paper initially describes bottom-up and government activities in each community-centred social innovation design project to understand them. Thus, qualitative case study research matches this method. This method goes deep enough to show phenomena' dynamic processes in complex circumstances.

In the beginning, the researcher used the Delphi method and the case study method. Firstly, the research is based on the Delphi method, which is used as a tool for forecasting and validation. The research will use the Delphi method twice. That is, (1) at the beginning to refine the research questions, hypothesis, and objectives, and (2) at the end to validate a set of case studies.

At present, the researcher has completed the first moment of Delphi and has received questionnaire responses from five experts from China, including Professor MiaosenGong[4]; Professor Xiangyang Xin[5]; Professor Yongqun Chen[6]; Professor Jun Zhang[7]; Professor Jianzhong Cao[8].

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[4] Dr. Miaosen Gong is an associate professor in the School of Design of Jiangnan University. He is the director of DESIS Lab. He is a doctor of design jointly cultivated by the Politecnico di Milano and the Massachusetts Institute of Technology.

[5] Dr. Xiangyang Xin, founder of XXY Innovation design thinking and strategy consulting, professor, PhD supervisor. He graduated with PhD in design from Carnegie Mellon University. In 2007, he founded China's first interactive design major at the Hong Kong Polytechnic University.

Regarding the case studies, the first one is the Sanlin community's *Xixi Garden*. The second case study is the *Shanghai Playscape*, No. 281 Fuxin Road, Yangpu District, Shanghai, China. The third case study is from a design project developed by the researcher and her design team in Xiazhu Village, Wuxie Town, Zhuji City, Zhejiang Province.

Xixi Garden

Sanlin, Pudong New Area, Shanghai. The Chinese and Singaporean governments built Sanlin as a model residence in 1995. Tongji University's architecture department designed east Sanlin's first community, which Chinese state leaders carefully reviewed. It was one of China's third experimental urban residential development communities and the eastern basis of the city's four major residential zones, sanctioned by the Chinese Ministry of Development in 1994. Second, Sanlin has 2,094 families, 15 hectares of land, and 180,000 square metres of building area, 150,000 of which is residential. This once-representative Chinese community has problems: 1. Hardened soil in the neighbourhood; 2. Standing water after rain; 3. Site with glass, tiles, and other debris in the ground; 4. Location is often littered with waste; 5. No vegetation is grown on the land. Additionally, community administration has languished for years. This has blocked residents' communication and damaged relations. Participatory groups resolved Sanlin community issues, and the group designs collaboratively in phases. In particular, the participatory group held a multi-participant design workshop in the Sanlin community. These participants included residents of the Sanlin community, students of Xiaolanghua Kindergarten, students of Sanlin Primary School, residents of nearby communities, and others from young people from Huangpu District who are interested in the event. After contacting the design team leader, the researcher was allowed to share the team's design process with other researchers. The specific steps for collaboration can be found in Table 4.

Steps	Participatory design process and steps for the Sanlin community.
One	Investigation workshop in the community.
Two	Participatory design workshop in the community.
Three	Generating projects in 3D software.
Four	Project implementation.
Five	Projects Follow-up and Maintenance.

Table 4: Participatory Design Process and Steps for the Sanlin Community.

Top-Down Case Study: Innovations in Government Mechanism in the Sanlin Community

According to the community-based participatory planning handbook for Dongming Road subdistrict, we know that the fourth plenary session of the 19th party central committee, which adopted the decision of the central committee of the communist party of China on several major issues concerning the adherence to and perfection of the socialist system with

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[6] Dr. Yongqun Chen is the associate professor at the School of Design and Innovation, Tongji University, and the director of the Asian Lifestyle and Design Gene Research Office. He graduated with the PhD from Helsinki University of Art and Design in Finland. He taught at the University of Helsinki in Finland. He is the chief curator of the "Good Fortune China Contemporary Design Exhibition" at the Helsinki Design Museum, Finland.

[7] Dr. Jun Zhang is the EU-Hunan University LeNS Sustainable Design Laboratory Leader. He graduated with the Ph.D. in Industrial Design from Hunan University. He is a visiting scholar at the School of Design, Politecnico di Milano, Italy (2009-2011).

[8] Dr. Jianzhong Cao is a teacher at Hefei University of Technology. He works in the field of industrial design.

Chinese characteristics and the advancement of the modernisation of the State governance system and the ability to govern, put forward several requirements for the establishment of a social governance system (table. 5):

Points of the several requirements	The several requirements for the establishment of a social governance system
One	Requires adherence to and improvement of a social governance system built and shared by all. To create a social governance community where everyone is responsible, contributes, and enjoys it.
Two	Improve institutionalised channels for mass participation in grassroots social governance. To fully utilize group and social organizations, realize the positive interaction between government governance, social regulation, and residents' autonomy, strengthen the foundation of grassroots social power, and adhere to and improve the system of people's mastery and socialist democratic politics.
Three	Improving a vibrant system of grassroots mass self-governance and the mechanism of grassroots mass self-governance led by grassroots Party organisations. Self-management, self-service, self-education, and self-monitoring by the masses are widely prasticed in urban and rural community governance, grassroots public affairs, and public welfare undertakings, and channels for the people to express their views and suggestions are broadened. Efforts are made to institutionalize, standardize, and proceduralism direct democracy at the grassroots level.

Table 5: The several requirements for the establishment of a social governance system.

Based on the previous policy presentations, Shanghai will become a global city of excellence. The city's core, the community, implements these macro goals. Innovative social governance can be implemented through community regeneration, and good community planning immediately improves urban life. These suggestions will help the Shanghai Pudong New Area government address people's biggest community issues. This necessity and all parties' consensus and expertise encourage community autonomy and shared governance and provide institutional support and experience for residents to participate in grassroots social governance and sophisticated urban management. People's city for the people will warm the city. We can learn about practical projects made in this general setting.

Community-Based Participatory Planning in the Dongming Road Subdistrict, Pudong New Area, Shanghai

The community-based participatory planning manual included Dongming Road Subdistrict history. Dongming Road Subdistrict is located in Pudong's Sanlin Expo. The Subdistrict was built in July 1997 and created on December 8 1999. The relocation and growth of Puxi and Pudong established this Subdistrict. Lingzhao new village and Sanlin community are the main regions of Dongming Road Subdistrict (5.95 square kilometers), which has 38 residential areas and 73 housing complexes. Dongming Road Subdistrict has four key issues in Lingzhao new village and Sanlin community: unequal development, lack of public backing, illogical spatial arrangement, and relative lack and shortage of social capital. In light of these facts, the Dongming Road Subdistrict government has welcomed the national policy and proposed three requirements to advance participatory community planning (table 6).

Areas	Specific Requirements
One	Construction of a team of community planners. The Dongming Road Subdistrict insists on prioritising a diverse, collaborative and professional team of community planners, effectively providing strong support for constructing a community-based participatory planning system and adhering to the principles of diversified composition, clear responsibilities and focusing on external empowerment.
Two	Community Garden building and public space renovation as the work base. The government continues to promote the construction of a network of community gardens.
Three	Micro governance, micro wisdom, and micro infrastructure construction as the starting points; a wide range of residents to mobilise the power of self-government and social organisations' professional ability.

Table 6: The specific requirements in three areas to further the work of participatory community planning.

Then, a summary of the steps and process of community-based participatory design is also included (table. 7).

Steps	The Process and Steps in Community-based Participatory Design
One	Residents Need to Research
Two	Identifying Community Situations
Three	Generating Planning
Four	Generating Projects
Five	Preliminary Project Review
Six	Get Funding
Seven	Public Hearings
Eight	Projects Validation
Nine	Project Implementation
Ten	Projects Follow-up and Maintenance

Table 7: The Process and Steps in Community-based Participatory Design.

Shanghai Playscape

The College of Design of Innovation Tongji University organized the DesignX workshop in the fall of 2015 to examine the future of Shanghai's design and design education. Many of the world's foremost design educators attended and contributed to the discussion at the meeting. DesignX, as described by Norman and Stappers, is referred to as 'X', as in the variable used in algebra to indicate an unknown number. DesignX is a novel, evidence-based strategy for addressing many of the world's most difficult and significant problems. It adds to and enhances current design practices, redefining the role that design can play (Friedman et al., 2014; Ni, 2017). In this meeting, the experts reflected on the work of designers, in particular, the fact that they must take an active role in implementing and building solutions in short, iterative increments (Ni, 2017; Norman et al., 2015). It was crucial to examine the various techniques designers are using to engage in social and political issues, particularly from the standpoint of a creative actor to an enabler (Lou, 2010; Ni, 2017). One of them spans a wide spectrum of socially and environmentally responsible design actions: design activism. As Lou Yongqi emphasized, design necessitates an innovative, more proactive approach to economic and social development. Active design must replace passive design (Lou, 2015; Ni & Cattaneo, 2019).

On the other hand, Shanghai is a rapidly urbanizing city with considerably accelerated social and environmental development. Migration, housing, urban pressures, social inequality,

social separation, etc., are only a few of the issues urbanization in Shanghai has produced, ranging from local to global. Long-term migrants now make up more than 39% of Shanghai's population, which has tripled in the last ten years. Thanks to immigrants from the nation's rural districts, Shanghai had the desired expansion. Since housing costs in Shanghai have been rising sharply for the past ten years, most low- and middle-income households' primary concern is finding affordable accommodation. These and other issues have surfaced and affected daily life; the absence of social cohesion and low social resilience are visible and degrade the standard of living (Ni & Cattaneo, 2019; Thorpe & Manzini, 2018).

Under these circumstances, a research and design project called *Open Your Space* (OYS) was started in May 2015. The project seeks to improve urban residents' perceptions of public space accessibility, comfort, and sustainability. In order to practice design-driven social innovation strategies for Chinese urban community-building and resilient transformation, the objective is not to explore new undeveloped spaces but rather to regenerate existing spaces and prioritize the design of the social functions of how to integrate space and demand (Ni & Cattaneo, 2019).

Secondly, the *Open Your Space* project was launched in the Siping community, Shanghai, China. The fourth edition of *Open Your Space* (OYS), a continuous study and design initiative started by the College of Design and Innovation at Tongji University in 2015, was achieved in 2018. The OYS project took place in the village of Siping, situated in the center-west of Shanghai's Yangpu district, with 2.75 km in size and a population of more than 100,000. Siping community includes Anshan village, one of Shanghai's early worker villages. In the 1950s of the previous centuries, it was constructed and became one of the largest villages in Shanghai. After years of expansion, there are presently eight communities. Two-thirds of the buildings in the community are considered to be old due to the condition of the housing, the antiquated infrastructure, and the lack of quality in the public spaces, and the neighbourhood appears less alive and robust. At the same time, there is a great deal of unused space, and concealed space has not been utilized effectively (Ni & Cattaneo, 2019).

The OYS study project also investigates the Siping Community's physical environment as well as its social and cultural relevance. It uses three key design principles: encouraging creativity and reappropriation, empowering different stakeholders to drive local change, and enhancing the diversity of the community environment[9]. Below is a summary of the *Shanghai Playscape* design process (Table 8).

Steps of the design process	The design process
One	Preliminary preparation.
Two	Display of design projects.
Three	The Project Construction.
Four	The Final Presentation.

Table 8: The design process of the *Shanghai Playscape* project.

The Community Museum

The Community Museum is a design project in Xiazhu Village, WuXie Town, Zhuji City, Zhejiang Province, China. The inhabitants of this small village rely on the hosiery industry

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[9] For more information about the *Shanghai Playscape*, please refer to https://www.theplan.it/eng/award-2019 public space/shanghai-playscape.

and agriculture as a source of income. As a result of urbanisation, most of the village's young people have moved on to areas with more job opportunities, leaving the village populated by older people who have lost their ability to work.

This village area has excellent ecological conditions and a well-preserved ethnic culture. A significant highlight of the village is that many ancient village buildings are well preserved. However, the area has a homogenous economy and a high degree of ageing, thereby hindering the development of the community as a whole.

In 2019, the researcher and the design team rented a vacant house to learn more about the village and its needs. After observing the community, we found that most residents were elderly, lived alone with closed doors, and rarely interacted with their neighbours. Due to urbanisation, this is now a social issue in rural China. We identified social capital for future designs in response to community issues. These resources include existing ecological resources, human resources, and the behaviour and lifestyle of local residents. In the wake of informal discussion, we decided on developing design interventions to revitalise the community. In 2019, three designers organised and completed the first phase of this project. We wanted to change the community on a more personal level so that residents felt these issues were important to them and became more involved over time.

Start From One – Place Making: A Place is a Space Endowed With a Sense

Our design interventions gave this derelict residential area cultural and public ideas significance, transforming it from its monolithic function. The transformation from a new settlement to a place where different representatives participate in activities shows that locally based collaborative organisations, new residential communities, and new ideas of the locality are exciting and positive (Manzini, 2015).

In August 2022, Xiazhu Village, Wuxie Town, Zhuji City, Zhejiang Province, China, opened our community museum. After seeing press coverage, local government leaders visited the museum and offered their ideas for its future development. Media coverage has brought people across the country to the museum to take pictures. The community has gained energy and youth power from our museum discussions - a foreign place. A variety of places is also a precondition for a more resilient natural, social, and production system (Manzini, 2015).

On November 21, 2022, we organised an exhibition entitled *Looking Back*, which was an opportunity for us to involve residents in the set-up of the exhibition and other activities, empower residents, and develop their sense of participation and ownership.

From One to Infinite Possibilities

- As a Contribution to a New Territorial Ecology

We created a collaborative idea space in Xiazhu Village, intending to solve problems and meet the community's needs while also promoting the growth of more livable communities and improvements to the territorial ecology of the community and the regions in which they operate to create a better life for the future.

Then, we continued to develop other projects. For instance, through a Chinese co-creative website[10], we encouraged people interested in this subject to travel from all over China to *The Community Museum* to participate in independent design projects like We and Six Seconds, the UNICEF POP-UP Festively event. Furthermore, some teachers and parents brought their children to the museum to study. Following the shared feast, we revisited some participating residents to better prepare for the upcoming event.

Discussion

Regarding the *Xixi Garden* in the Sanlin community, it's a community-based participatory planning approach with the goal of co-creating the community with the residents by holding participatory design workshops. The government has also introduced community-based participatory planning mechanisms through specify the exercises. In this case study, the bottom-up approach interacts with the top-down.

The *Shanghai Playscape* case is also characterized in two ways. The first one is related to the playing facilities in the public space, benefiting people of different ages and improving the spatial quality of the area. Secondly, it combines designers and the government because many top-down aspects are in question, which is common all over China. Still, through micro-update projects, the frequency of interaction between designers and the government is increasing. The government provides money and power, professional designers or teams, and universities provide professional design capabilities.

In the exploratory project in the Zhejiang Province, a design project was developed from scratch to demonstrate the importance of design for social innovation. Through a change in attitude between the local government and the neighbourhood, we found that placemaking and design action can reactivate and solve community problems to create better living standards.

Conclusion

This study, by means of a qualitative methodology process, has displayed cases of community-centric social innovation in the Chinese territory. The methodology presents the advantage of being based on practice data, particularly in a type of design for social innovation that provides a reference base for future researchers in this field. This work in progress has the potential to act as an initial tool for the government and grassroots organizations in facilitating effective assistance. Moreover, analysing the Chinese scenario within the context of the BRIC countries in the field of social innovation will prove beneficial in identifying the strengths and weaknesses of the Chinese system.

This is even more important in a nation such as China, as shown by the participatory design process, through which the core points are discovered. The *Xixi Garden* case shows a community-based participatory planning approach with the goal of co-creating the community with the residents by holding participatory design workshops. The *Shanghai Playscape* is particularly relevant in two ways; the first one is related to the playing facilities in the public space, benefiting people of different ages and improving the spatial quality of the area. Secondly, it combines designers and the government. In the last case, *The*

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[10] URL is：https://www.actionvillager.com/home.

Community Museum is a design project where placemaking and design action are essential factors that can reactivate and solve community problems to create better living standards.

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