Research on renewal of leftover spaces based on multi-actor planning

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Abstract: Leftover spaces in cities are becoming a global issue. Having undergone significant changes in historical, spatial, political and socio-economical aspects, the number of leftover spaces has been increasing year by year. Now cities are facing the challenge of integrating them into their urban fabric. This research first focuses on worldwide cases that show the current approaches to re-use these leftover spaces, and then systematically classifies them according to their multi-actor planning strategies. The classification includes: diverse models (top-down, bottom-up, public-private partnership) by engaging with different actors at various levels of participation. China has its own urban renewal rules and policy system. Influenced by factors such as its state structure and economic system, China and the West have many differences. Based on the case classification that provide a worldwide overview and the real condition in China together with its existing needs, this study develops "City 360" platform as a democratic, multi-level planning tool and an innovative method to tackle the following problems in leftover space renewal process: simplification resulting in social inequality, information imbalance, resources/funds shortage and diversification encouraging urban complexity, inclusive planning. "City 360" turns the process of leftover space renewal from an urban simplification into an urban diversification, and responds to high-level challenges. Having integrated multiple actors into a participative process creates collaborative urban governance, which can balance the power among state, society and market, and maximize the cooperation in between government, private sector, community self-governing organizations, volunteer organizations and residents. This innovative, inclusive multi-level planning tool helps integrating development resources, promotes the vitality in developing urban communities. It aims creating a new level in Chinese urbanization, which has started with "traditional governance" and transformed into "multi-level governance". The goal is now "traditional governance" to "governance" to "good governance".

Keywords: Leftover Space, Multi-level Governance, Multi-actor Participation, City 360

1. Introduction

In late 1980s, when Thomas Trancik has first referred leftover spaces in his book "Finding Lost Space", he was describing them as spaces "*that are in need of re-design, making no positive contribution to the surrounds or users*" (Trancik, 1986, p.3). Over years the issue of leftover space has not only generated series of definitions in worldwide ("*cracks in the cities"* (Loukaitou-Sideris, 1996), "*vacant lands*" (Pagano & Bowman, 2000), "*in between spaces*" (Hajer & Reijndorp, 2001), *"spaces of uncertainty"* (Muller and Busmann, 2002), "*slack spaces"* (Worpole & Knox, 2007),

“zombie properties” (Silverman, Yin and Patterson, 2013), but also comes in different aspects in contemporary cities. Their contribution to their surroundings and users varies in different cases, as contrary to what Trancik limitedly described three decades ago.

Spatially speaking the scale of a leftover space range between the building, plot, block or even to the neighborhood scale (Azhar & Gjerde, 2016). This can be so interpreted that, these spaces can take place in between, underneath, around or top of the buildings. They can be publicly or privately owned, but they can be also no man’s land that left abandoned for years. The examination of the leftover spaces has shown that they vary not only in forms, locations or their property types, but also in aspects that trigger them to happen. But why has the number of leftover spaces been increasing in recent years?

To answer this question is anything, but simple. It is only clear that leftover spaces are products of significant changes that cities have undergone in historical, spatial, political and socio-economical aspects. That’s why in a German city a leftover space can be a potential tool for opening new discussions to address urban shrinking (Dubeaux, Cunningham, Emmanuèle, 2017), but on the other hand the same spaces can turn an economic fallacy for a neighborhood in USA into an effective financial strategy to flourish again (Forbes, 2012). In UK, for example, leftover spaces can be developed to evoke the property owners that stuck into current real estate policies (The Guardian, 2018). Or in Kuala Lumpur they can trigger series of public space activities by transforming the “unsafe” into “livable” as Jane Jacobs emphasized the importance of the need “eyes upon the street” decades ago (Zaman et.al, 2012). All these cases from various parts of the world show that leftover spaces can be conceptualized in different locations with diverse motives and aims. Although they may have different political and socio-economical systems, the global perspective of this issue has a great potential to offer possible interactions between cases when it comes to realization.

China, on the other hand, separates itself from other countries regarding the ways of dealing with leftover spaces. China has its own urban renewal rules together with its own urban policies. Given to its state structure and economic system, it is clear that China and the West have many differences. However, recent economic reforms and drastic shifts in the structure of Chinese government allow us to think about the possibilities to envision new levels of participation and communication in urban planning.

This paper aims to investigate new planning strategies, which can be developed by engaging with different actors and levels of participation in order to integrate leftover spaces into urban settings of Chinese cities. First, it focuses on worldwide cases that show the current approaches to re-use these leftover spaces, and then classifies them as models according to their multi-actor planning strategies. These diverse models include top-down, bottom-up, public-private partnerships and collaborations, which bring together government, private sector, non-profit organizations, academia, artists and locals. By linking this assessment of case studies with Chinese urban situation, the paper focuses on the current climate in China in terms of dealing with increasing number of leftover spaces. Following that this paper introduces the project “City 360”, which aims creating a new level in Chinese urbanization by integrating multi-level planning tools in the light of analytical interpretation of worldwide cases.

2.1. Literature review

Having critically analyzed the current approaches in the literature, it is seen that the main focus has been mostly on the ways of reusing leftover spaces by emphasizing its design elements. But in the absence of constructive planning tools together with the participation of multiple stakeholders, only design itself may not be sustainable. In order to reveal the critical role of participation and communication at various levels, this literature review focuses on a historical overview of transforming / governing leftover spaces in cities.

In 1998 Barry Wood looked at four European countries in terms of approaching leftover spaces and their development. Although the study was conducted nearly three decades ago, he concluded his study something very global by noting, "the causes of vacant land are clearly seen to be changing, and most importantly not declining" (Wood, 1998). Based on his study, the emergence of leftover spaces could be driven by suburbanization, deindustrialization, migration, inefficient allocation of goods and services in city (Wood 1998; Bowman and Pagano 2000). In the context of Europe, by the 1980s the populations of European cities, where the industry had dominated for years began to decline. According to Haase et. al, approximately 40% of European cities were losing population and experiencing de-densification, which let the emergence of leftover spaces (2014). During mid-80s in Germany there were about 25 million square meters, 22 million were in Britain, 10 millions in the Netherlands and in Italy about 6.4 million brownfields were listed as vacant (Errigo, 2013).

Given the fact that the traditional planning tools in Europe has been zoning and master planning, which meant big financial capital and non-flexible process of implementation, managing leftover spaces in modern world needed innovative strategies (SUC, 16). Instead of having a concrete plan, it is seen that transformation of a leftover space could adapt itself over the process, with the participation of users and other stakeholders. Transforming the abandoned Cable & Wire Factory district (KDAG) in Vienna, for example, has started in 1998 with the aim of creating a new and improved image for the district and finalized in 2007 by becoming one of the good examples for changing the understanding of managing vacant spaces (Pamer, 2007).

Meanwhile in Germany dealing with these leftover areas in cities has taken place much later than acknowledging them. In 1994, Firebrace in his book "Jasmine Way" mentions, "*The existence of these vacant spaces has never been officially acknowledged. On the city map they were covered over with fictitious streets, reflecting of the shame that Berlin is not like other cities with their respectable centers*" (Firebrace, W., 63-66). In 2006, 14,4% of Berlin's urbanized areas was classified as "vacant spaces" (Colomb, 2012). Given the fact that Berlin among other German cities found itself in a big financial burden after World Wars, these vacant areas needed to be not only acknowledged but also developed. 2001-2003, a group of architects and urban planners, known as Urban Catalyst, has started to investigate the potential of transforming these vacant spaces as temporarily. Berlin was one of their case studies and in 2007 together with city officials in Berlin they have initiated a conceptual plan by emphasizing high social and economic value of leftover spaces for the city (SenStadt, 2007). In other words, they emphasized the image of Berlin as a "creative city" by revitalizing these leftover spaces for short-term uses.

Years later, as one of the biggest urban projects in Germany, Hafencity, came to the attention. The country had been suffering from deindustrialization since mid 1980s and that's why this huge port

area needed to be developed in a way that the needs of residents should be fulfilled. Hafencity began as a master plan, which was very familiar to European traditional zoning and planning tools. However, in 2010 a revision on eastern district of the project took place, where it has been originally determined for a concrete development. The city officials have decided to leave the space open to temporary and innovative uses in the light of local needs (Urban Catalyst, 2013). Once again, the renewing the leftover spaces for temporary use by taking the local needs seriously became an urban strategy for a city.

Starting from 1960s in United Kingdom the issue of leftover spaces has developed differently than other European cities. Under severe housing crises, the "Squatting Movement" which refers claiming possession without being owner of area started in London first and then spread to other boroughs (Bosetti, 2018). Given the fact that 30,000 people lived in squatted accommodation in UK for years, it would be not wrong to say that the aim of using leftover spaces became a part of urban history (Bosetti, 2018). A current report shows that across the city the vacant lands, which were left abandoned for six months and more reaches up to 2,700 hectares (Sullivan, 2018). Having underestimated the risks of leaving the areas empty and lacked of effective planning tools to improve the quality of space becomes the main reasons to end up the raising numbers for leftover spaces across the country (Bosetti, 2018). Although UK has also acknowledged the fact that renewing leftover spaces brings many improvements into city life and city economy, still there are some challenges to tackle. According to this report from 2018, it is seen that city officials has to step in by engaging the role of "mediator" and begin more effective to convince the landowners about the potential of re-using these spaces as "meanwhile spaces" (Bosetti, 2018).

While Europe has been dealing with its vacant spaces by implementing more "dynamic" and "effective" urban planning tools, USA on the other hand, needed to deal first with the diversity of its leftover spaces, which came into different types and characters in all over the country (Pagano and Bowman 2000). Cities such as Detroit, Michigan and Baltimore, Maryland have been going through similar post-industrial phase, as many European Cities in mid 80s. However, the issue of leftover spaces was also very vivid when it comes to growing cities such as Phoenix Arizona, which has had 43% land vacancy after its population increased by 55% (Pagano and Bowman 2000). The biggest challenge for USA has been the necessity to deal with each city with its own rates of population and land area growth by analyzing its abandoned structures and asking customized questions (Pagano and Bowman 2000).

According to a current inventory of vacant land and structural abandonment in United States conducted in 2016, the most commonly referred reason for increases in vacant areas is the lack of reinvestment of capital. Suburbanization and deindustrialization were following as the leading causes of vacancy since 2000 study by Pagano and Bowman (Newman, Bowman, Kim, 2016). The 2016 Study also shows that the main reasons of decreasing leftover spaces are linked to growing local economy and city policies to reuse them (Newman, Bowman, Kim, 2016). Acknowledging leftover spaces as a potential to create a growth in local economy has been gaining ground in some American cities, such as Chicago. It is seen that traditional ways of generating this growth by providing tax incentives for new business, are no longer financially viable, instead "locally inspired" public spaces, which generated for the quality of life shows that it has a real effect on local economies (Forbes, 2012). Place making Chicago, for example, have been implementing temporary projects to turn

leftover spaces of various neighborhoods into community gardens or art exhibitions together with Metropolitan Planning Council and local residents (Placemaking Chicago, 2018).

Another good example is an organization named as 596 Acres in New York City. The organization defines itself as a community land access advocates, who believe that residents should have a say over how or who use the lands in their neighborhood (596acres). One of their projects was about turning a vacant lot into a community garden, where local residents can socialize in a community space (Kennedy, 2014). The initiative itself sounds not so unfamiliar for New Yorkers, given the fact that in the United States during economic fallacy and two World Wars, gardening in vacant lots was one of the efficient ways to create less depressive environments especially for unemployed people (Drake and Lawson 2014). However in this case the most valuable contribution of this initiative is to provide a "mediation" service for locals, who has difficulties to reach the right information and right people in city government agencies (Kennedy, 2014). In other words, this initiative fills the gab between urban policies and the local residents in a way that both government and other non-profit organizations have certain challenges to manage.

The issue of vacancy in Japan differs from Europe and USA. Except the metropolises such as Tokyo, Osaka and Nogaya, Japanese cities have been facing population loss for the last decades (Sakamoto et. al, 2017). The migration from small regional cities to large cities with the aim of having better opportunities and rapid economic growth were two main reasons for an increase in vacant land in the country (Sakamoto et. al, 2017). At political level the role of local governments in Japan has becoming very prominent, when the central government implemented the decentralization process at local level and lately most of Japanese local governments took legal actions to push the owners of vacant properties for an appropriate management (Takamura, 2015). It starts with creating a council authorized by central government in order to identify the vacant areas and its owners. Then the process continues to obligate the property owners to take an action to refurbish these areas. In the cases of not finding the real owners or not seeing any action from owner's side, the local government has right to demolish or refurbish by its own terms (Stroud, 2015). Although the local governments receives more power over urban development, civil society was still weak and fragmented in a way that it had little influence on urban issues that concerns locals (Sorensen, Koizumi, 2009). In response to top-down central planning, which put more priority on economic growth rather than quality of life, the role of community building or in other words "town building" became more dominant on developing urban neighborhoods in Japan. Regarding vacant, leftover spaces in urban settings, community groups together with local residents and non-profit organizations have started to take actions in order to reuse these areas for the benefit of neighborhoods (Sorensen, Koizumi, 2009).

As similar with some Japanese cities, many African cities have been also rapidly urbanizing, yet the pace of their planning is still behind the city growth (Haas, 2018). As cities grow, such as Kampala, they don't show the type of density that a productive city requires, but low-rise buildings and great urban sprawl (Haas, 2018). As a result of that, many African cities have been tackling the issue of leftover spaces, which remain for years unbuilt and undeveloped. The reasons of this emergence can vary. In some cases unclear ownership can be the main reason, why the land is being left as undeveloped. The urban land can remain also vacant to produce speculation for its price or the reason can be simply the lack of financial resources to properly develop them (Haas, 2018). Lately in Kampala it has been considered to tax these vacant lands in city at a higher rate in order to encourage the property owners for a further development (Haas & Kopanyi, 2018). This means, if there is still no

development after a certain time period, the city can legally reclaim the land. Although there are some good examples in the world, such as Bogota, where this kind of taxation works in favor of efficient use of land, the reasons why these leftover spaces have emerged In the first place and the motivations of developing these spaces for users need to be deeply analyzed (Haas, 2018).

China, on the other hand, has been dealing with its own urban transitions under the influence of its politics and economy. In China urban land belongs to the government, as a means of production by Chinese socialist state planning. Urban economy, on the other hand, has been controlled by state-owned initiatives, which were strictly controlled by the state (Zhu, 2004). This central planning, which has dominated the country for almost 30 years, has transformed into more compact and market-oriented planning as a result of the economic reforms and institutional change in 1980s (Lin, 2009). The decentralization in economy has led also a political decentralization, which means more financial power to municipal local governments (Chen, Gao, Chen, 2016). In the meantime, Chinese urban growth has begun to accelerate dramatically as a result of new economic reforms and the "open-door policy" in 1978, which aims to utilize foreign investment and engage in international trade (Chen, Gao, Chen, 2016). All of these developments and the rural to urban migration in the country have a big impact on shaping the Chinese urbanization process. Urban expansion or in other words "urban sprawl" correlates with economic growth very strongly in China. It means that local municipal governments are having strong motives to promote the economic growth by using land leasing as a tool to generate revenue (Fang, 2016). This desire of local governments to increase the amount of buildable land by converting the land from farmland without any compensation can be seen as a main driving force of urban sprawl in China (Fang, 2016). As a result of this process, it is not a surprise to see that China has been also dealing with vacant, leftover spaces, which remained as undeveloped for years. And developing these spaces based on needs of local residents comes not as a first priority under the current political influence. The politically centralized planning system in China is in a way very fragmented, complex and overlapping among different agencies at different levels of government (Evans, 2004). In other words developing an area means a competition between these different agencies and that means the whole process lacks users' input. To be able to reuse these leftover spaces for the benefit of users requires a change in current Chinese planning tools.

2.2. Models of action for renewing leftover spaces

The literature review leads us following models regarding the renewal of leftover spaces. In the light of global overview on this topic, each of these managing/planning models is developed based on different intentions and execution patterns regarding its various needs and organizational structure. Considering this global categorization together with Chinese context, understanding these models sheds light on new possibilities in Chinese urban planning tools and new lessons to learn in governing leftover spaces in China.

Community driven model:

Community driven model for renewing leftover spaces in cities can be initiated, when a community or individuals in a neighborhood identify an unused, leftover space as an unproductive, unutilized, or in some cases criminal to the neighborhood (Kremer & Hamstead, 2015). Transforming such spaces needs some additional tools or third parties to make the process of evaluating the land potential easier. Non-profit organizations, for example, play a crucial role to provide contextual information to

individuals or communities by using online mapping platforms or organizing local gatherings (Kremeretal, 2015) (Figure 1). The initiatives from USA, including 596 Acres or Better Block, can be seen as good examples to encourage locals to integrate more into developing process of vacant lands in their neighborhood by providing needed materials or guidance. In these examples, it can be also seen that the focus is mostly on short-term developments, which refers temporary use or in other words "tactical urbanism", which means "*low-cost, minimum effort, temporary interventions that improve the livability and aesthetics of local neighborhoods"* (Lydon, & Garcia, 2015). Taking the example of Japan, the power of "community" can be the main driven force for developing vacant spaces in city by considering the real wishes and problems of local residents. The cooperation between the communities and the government does not only improve public efficiency, but also reduces the burden on the government by solving tasks. In this process, residents have gradually deepened the relationship between each other because of their high level of participation and self-determination, and can cultivate a team belonging to the community itself, and play a virtuous circle (Kikusawa & Kondo, 2017). Without formulating any "end result", which has been very uncommon in any traditional city planning tools, creating livable spaces with the participation of community has become one of the important models for reusing leftover spaces in cities.

What can be reflected on China in terms of managing leftover spaces in urban settings is to acknowledge the changes in understanding of urban management. As Urban Catalyst, a group of architects and designers from Berlin emphasizes, now "*the focus is not on urban design, but urban use* (Urban Catalyst). What that means in our contemporary cities is to let the decision of how to use vacant areas to local communities, in other words actual users. And very different from top-down planning tools, the main aim is not push people to follow certain master plans, which were mostly prepared in favor of economic growth rather than quality of life, but to create an interactive platform, where all the stakeholders can meet, discuss and decide together.

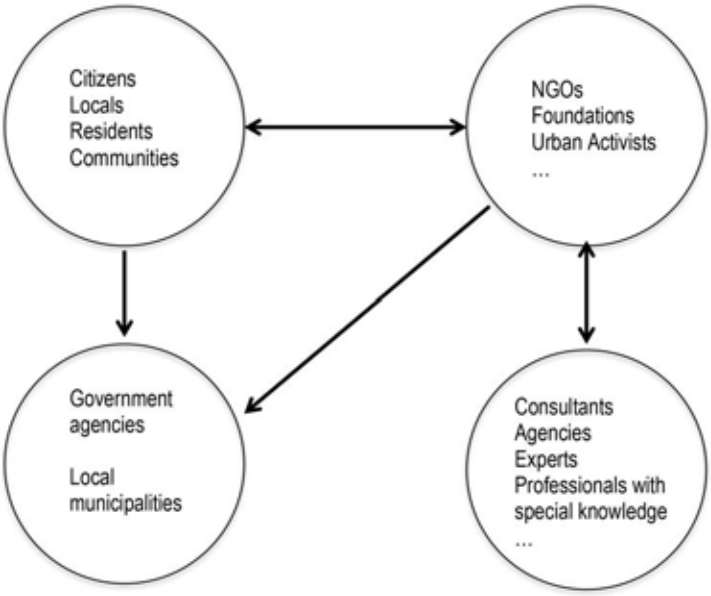

Figure 1. Community driven model

Source: Author

Government driven model:

Government driven models have become very common strategy in managing leftover spaces, especially in Europe. Based on the current examples of this model, it is seen that the scale of the projects extends and time of usage is mostly considered as long term.

The planning process happens, where government takes the role of "mediator", rather than "decider". Given the fact that the traditional planning tools as master plans have been applied in Europe for years, dealing with leftover spaces with an innovative strategy can be considered as a big step. This paradigm change in development of leftover spaces can be seen in many other current projects in Europe, which have been initiated first by government and been delegated to various agencies, non-profit organizations and related foundations. And for these projects the government was playing not the role of decision maker but the role of "mediator" in between various organizations, agencies and local residents. This role of mediator can be also interpreted as an "enabler", where the government starts enabling the communication between different parties and stakeholders (Figure 2). And in some cases the government enables the impact of property owners by helping them financially in order to manage their vacant lots (Urban Catalyst). Hafencity in Hamburg, where the government decided to leave the space open to temporary and innovative uses in the light of local needs (Urban Catalyst, 2013) or Urban Living Lab initiative in Amsterdam, which creates a platform to connect multiple stakeholders from multiple organizations and expertise, while the users play an active role as co-innovators in the process can be good examples to understand this new role of government (Westerlund & Leminen, 2011). This planning model basically ensures not to let government dominate the planning decisions by providing top-down projects, which is mostly not prioritizing the needs of local residents and let residents or in other words "users" to play an active role.

The most important input from these examples for Chinese context can be the balance in "intervention" of governments. Although government agencies/city officials seem to be initiators for those long-term big scale projects, it is clear that the aim is not to dominate the process in a way that they might compromise the "multi-actorness". The cooperation between residents and various organizations together with urban experts/professionals becomes a vital element in order to sustain planning process.

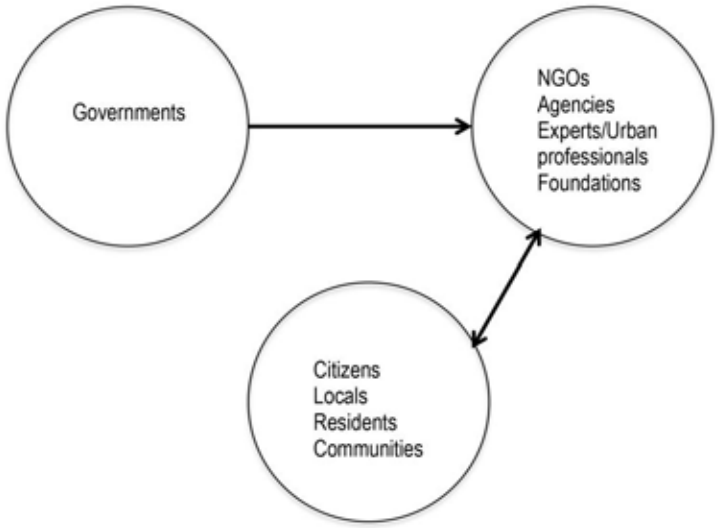

Figure 2. Government driven model

Source: Author

Artist/Designer/Architect-driven model:

In this model of renewing leftover spaces in cities, the main initiator happens a local artist, designer or an architect as a local resident or urban activist, who concerns about his/her neighborhood (Figure 3). It can be a temporary action to reuse the vacant lots in city, as in Berlin, where this "temporariness" becomes an urban strategy to promote the city. For example, Spacebuster, an art project from Raumlabor, aims to explore the qualities and possibilities of vacant lands in city (Raumlabor). It is a mobile inflatable structure – a portable, expandable pavilion, which creates a space for almost 80 people and organically adjusts itself to its surroundings (Raumlabor). This womb-like space created by artists becomes capable of transforming any one of the cities' inhospitable, abandoned, leftover spaces into a gathering place. On the other hand, this model can refer a long-term action, which aims not only to reuse leftover spaces in favor of locals, but also to change the character of a neighborhood. In the case of Cohen Alley, in other words Tenderloin National Forest in USA, an artist, who was later supported by locals, citywide and national organizations aimed to turn crime filling leftover public space into world's smallest "forest". The process took almost 9 years to complete but with this initiative, over the last three decades, this dead-end alley that once stored dumpsters has been transformed into a thriving arts space (Hulkower, 2012).

What it can be reflected on China is to acknowledge the impact of designers, artists and experts, who has knowledge to provide contextual information and guidance to develop leftover spaces by collaborating with local residents and communities.

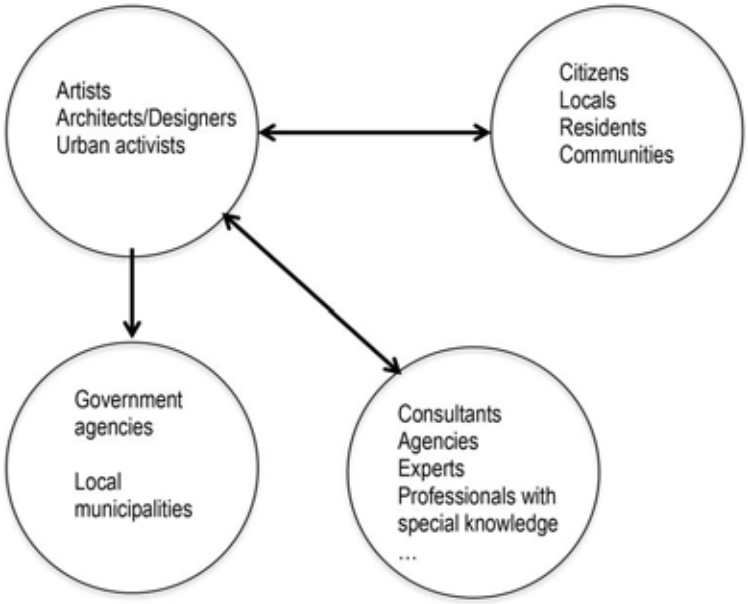

Figure 3. Artist/Designer/Architect driven model

Source: Author

3. China mode

In the light of above case analysis and classification, this part presents first the problems that China faces, and latter a suitable model that the country can adopt in terms of dealing with leftover spaces.

3.1. Problems in the process of China's leftover space

(1) Power conflicts between the state, society, and the market

China has promoted community governance for more than 30 years (Fulong Wu, 2003). Resident autonomous organizations and voluntary community organizations are maturing, and enterprises are also improving the level of public services. The enthusiasm of community residents to participate in community governance is improving. However, in the current process of leftover space renewal, the power allocation of the powers of the state, society and market is not standardized

(2) "No distinction between political and social organizations"

As mentioned in case study, there are many subjects that can participate in the process of over space transformation, which is seen worldwide. However, in China, street offices and neighborhood committees are two different entities that represent the country and society. The street office can be understood as a grassroots government and belongs to the state dispatching agency. The neighborhood committee is an institution formed by the people's self-government or democratic management. In Chinese cities, the community exists in the form of a neighborhood committee, which is an autonomous organization of residents and accepts the leadership of the street office.

However, the government has led most of community renewal. The street offices overcharge a large number of work in the neighborhood committee. It also indirectly leads to fewer participants (Liu Zekun etc,2018).

(3) Lack of entire process renewal

China's current leftover space renewal model has a long process and a long period of time. The participants in each stages are different and the information transmission efficiency is low. After the completion of renewal, there is a lack of follow-up supporting service tracking. And the continuity after renewal is poor.

3.2. Problems of actors in China's leftover space renewal

3.2.1. Supply side cannot function

Government departments, private departments, designers, community self-governing organizations, volunteer organizations, university students, etc.

(1) National power represented by the government and the neighborhood office

For the grassroots city managers, updating the leftover space actually faces a relatively contradictory situation. On the one hand, the higher-level government has issued tasks, and the grassroots managers are willing to solve the problem; on the other hand, they lack professional knowledge and lack

communication channels with professional designers. At the same time, due to issues such as the annual budget approval process, they also face the problem of limited budget and cost control (Li Xiao, 2018).

(2) Social forces represented by community self-governing organizations, volunteer organizations, and university student service teams

At present, the cultivation of volunteer organizations participating in community governance in China is not in place because government departments and officials have become accustomed to "governing by government" (Zhouxiang, 2017). Volunteer teams and public service groups are unable to communicate with residents in the community, enter the neighborhood office to communicate with staff, or coordinate the work of different departments.

(3) Market forces represented by designers and the private sector

In the process of updating the leftover space, on the one hand, developers still tend to take orders for large-scale projects instead of small projects like leftover space. On the other hand, the designer's information source is not sufficient. On this basis, the designer is not satisfied with the project itself and the entrusted income.

In the face of the above problems, information gaps between multiple parties have led to inefficient communication and unsatisfactory results. At present, some large cities in China have a certain foundation for the use and transformation of leftover space, but there is no deliberation.

3.2.2. The demand side (resident) opinions are not fully heard

The autonomy of the four types of participation increased in the following order (Table 1): mandatory participation, guided participation, spontaneous participation, and planned participation, and the impact on the formation of community communities was weak to strong (Yang Min, 2007). During the current period of leftover space renewal in China, public participation is still in its infancy stage, staying in the stage of mandatory participation or non-participation.

Participation content		Participate in the decision making process	
		NO	YES
Public issue	YES	Mandatory participation (welfare participation)	Spontaneous participation (recreational participation)
	NO	Guided participation (voluntary participation)	Programmatic participation (equity participation)

Table 1. Types of Urban Community Residents Participating in Community Governance

Source: Yang Min. Community as a unit of national governance [J]. Sociological Research, 2007 (4).

It can be seen from the analysis above that in the process of renewing leftover space, each subject faces various problems, further deepening social inequality, information imbalance, resource/finance shortage, and causing various subjects to be unwilling to participate (Yamazaki,2019).

4 city 360

The general conclusions that can be drawn from the cases (1) the coordinated management of urban communities should promote the development of community non-profit organizations; (2) effectively enhance the participation of community residents; (3) broaden community governance Source of funding.

4.1. Project

Faced with this, we creatively proposed a full-process leftover space renewal plan--city 360(Figure 4) based on the core value of 360-degree repairing the city and created a knowledge sharing and business platform -- city 360 platform to provide services in the community. City 360 team has built a knowledge sharing and business platform -- city 360 platform to provide services in the community.

Figure 4. City 360-a democratic, multi-level planning tool and an innovative method

Source: Author

City 360 platform (Figure 5) has several prominent features, such as upload on the spot, design guidelines, database and product library. Using GIS technology, users can upload photos to the platform, submit transformation requirements in real time and make specific positioning. The team integrated to create the design guidelines of leftover space, from aspects of safety, green, vitality and wisdom, which the output design is based on. Database refers to a large number of design drawings, most of which come from the resource database of Tongji university. Through parameter screening, suitable schemes can be quickly found out. The product library is a collection of fabricated building fittings that the team researches and develops, which will be described later.

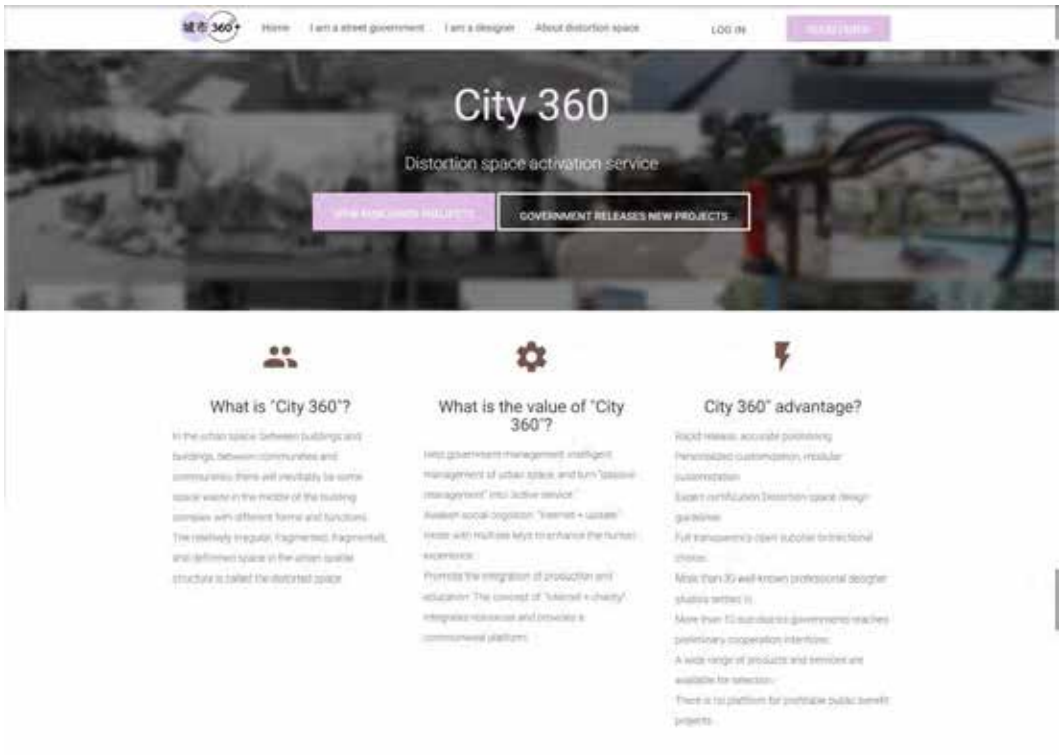

Figure 5. City 360 platform based on big data and artificial intelligence

Source: https://www.city-tech360.com/city360_web/

The platform, whose main forms are website and WeChat applet, can play a role in every stage of transformation. In the early stage of the renewing process, the platform can match the subjects of the leftover space renewal online, provides them with communication channels, and identifies the needs of the transformation. In the design stage, the introduction of artificial intelligence technology enables the realization of intelligent design. After several simple multiple-choice questions (Figure 6) finished, the platform can immediately output design drawings that meet users' requirements. During the bid evaluation stage, residents can vote on the proposal through the platform (Figure 7) In the later process of construction and use, each participant can also continuously supervise and track the transformation through the platform (Figure 8). City 360 did the following work.

Figure 6. Simple Multiple-choice questions on City 360 platform, which assists Community autonomy

Source: https://www.city-tech360.com/city360_web/

Figure 7. City 360 APP generated plan map for residents to vote

Source: https://www.city-tech360.com/city360_web/

Figure 8. City 360 platform assists whole process of leftover space renewal

Source: https://www.city-tech360.com/city360_web/

4.2. Project Innovation

(1) Full-process services

City 360 creates a full-process service on activating leftover space and proposes an innovative business model with reference value to the industry. City 360 will transform the entire process data and feedback data into the database, and continue to follow up on volunteer activities and internships in the space.

(2) Introducing artificial intelligence

Considering the cost limitation, time limit and professional limit of the leftover space modification, City 360 introduces artificial intelligence technology in the design process. Combining with the existing cases and using the structured processing, the method forms a self-contained database for machine learning, so as to realize an intelligent design process from the input of the transformation

scenario and the transformation requirement to the output transformation scenario, which brings more possibilities for leftover space.

(3) Assembled environmental protection modules

While providing full-process services for transformation, City 360 independently developed a number of building assembly molds (see Figure 9), materials and finished products for use in leftover space transformation.

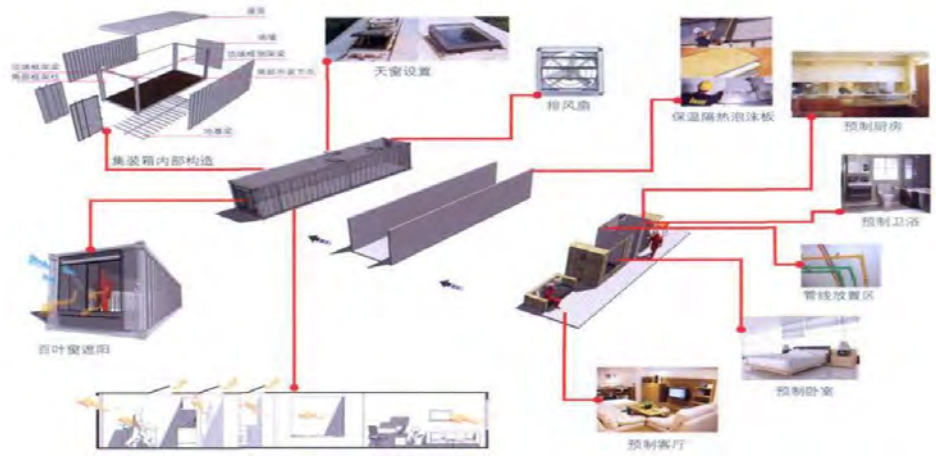

Figure 9. Application of prefabricated building products

Source: Author

(4) Improving employment

City 360 creates a teaching application scene in the whole process of transformation, introduces college students into social practice, and helps college students understand the industry situation, cultivates the professional quality of college students, and promotes the goal of adapting college students' talents to meet social needs, thus improving the employment quality of college students.

(5)Multi-actors cooperation

The full-process service described by City 360 is actually an innovative cooperation system that conforms to “Government-Industry-University-Institute collaboration”. It is a systematic cooperation of production, learning, scientific research and practical application by the government, users, enterprises, universities and scientific research institutions. (Lei Xiaoping *et.al,* 2012)

4.3. Multi-actors participation

4.3.1 Power balance

China is shifting from a "strong state-weak society" system to a "strong country-strong society strong market." As an auxiliary force, City 360’s starting point is from a public welfare perspective. It mobilizes the enthusiasm of the corresponding stakeholders, maximizes the needs of all parties,

alleviates the conflicts of interests among the multiple subjects, realizes the coordinated management of the community in the three dimensions of government, society and market, and jointly strengthens community building and promotes the integration of community resources.

4.3.2 Cooperation between multi-actors

From the perspective of successful experience, the leftover space update mode has been transformed government independently responsible by the early period, into multi-actors collaboration between the government, community self-governing organizations and non-profit organizations. (Wang Chenghui, 2018)

The leftover space renewal involves multiple interest groups, such as government, street offices, designers, and local residents. These groups have different demands for space. (Xu Leiqing etc, 2017) City 360 acts as a non-profit organization to integrate multi-actors cooperation (Figure 10).

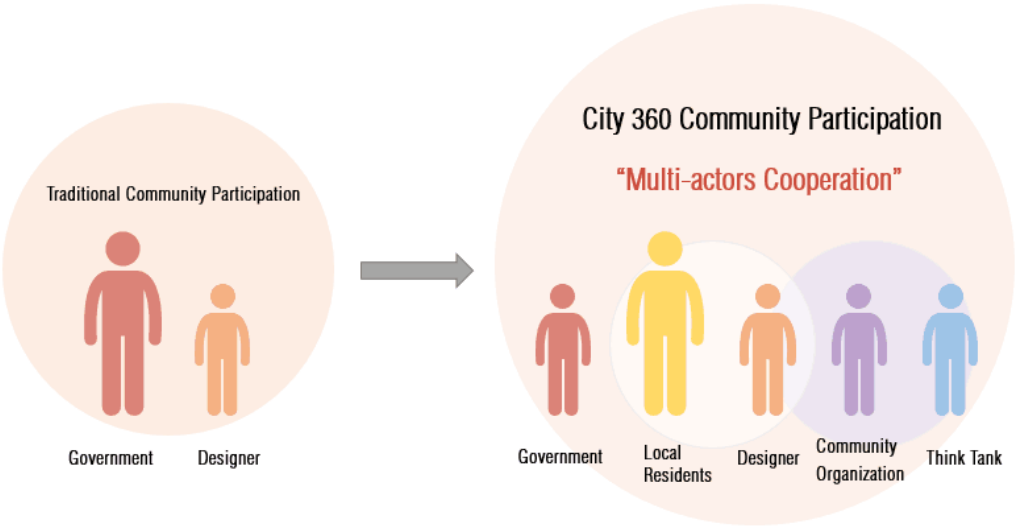

Figure 10. City 360 Community Participation

Source: Author

(1) National power

The City 360 team platform assists the grassroots city managers in contacting the designer team and checking the project, while this model can also introduce competition from the construction team to reduce costs. In this way, the city 360 team has played a very good role as the third party, allowing the grassroots government to get the desired design and service to the people in a short time and low cost.

(2) Social forces

The commonweal of the City 360 is not only reflected in the service of residents, the renewal of the city, but also in the platform of the university, serving on the students. The company team introduced the college student group into the role of “designer”. At present, the company has carried out a series of small-scale community renovation activities. On this basis, joining the strength of student volunteers will also help foster community self-governing organizations and foster volunteer organizations. At the same time, the platform also helps to create a teaching application scene, serving the teaching and research, and is highly praised by teachers and students (Figure 11).

Figure 11. Fosters community volunteer team to work with local residents in Xuhui, Shanghai

Source: Author

(3) Market forces

The City 360 can match the designers to the projects they want to do, and promote designer's work in the community to raise awareness, and get the opportunity to continue working with government agencies. In addition, through cost control, designers can also get a reasonable reward. It is a win-win situation for designers to improve their visibility and reduce costs while increasing visibility.

4.3.3 Resident satisfaction

Community residents are highly praised in the renewal of completed projects. At present, City 360 has realized the process from mandatory participation to guided participation, and is continuously implementing spontaneous participation of residents. Through the above series of simple and feasible methods, the team is not only strengthening the public participation awareness, so that they are willing to participate in the activities or affairs of the distortion of the space transformation, but also gradually exert their supervision role on the community public decision-making, to finally achieve the ultimate goal -- community autonomy (see Figure 12).

Figure 12. Spontaneous participation of local residents in Yangpu, Shanghai

Source: Author

5. Summary

City 360 promotes multi-actors integration in the whole process of leftover space renewal, ensuring the technical and economic rationality of project operation. The government can get out of the heavy project management. While reducing the financial burden for the government, the choice of designers and design teams is broadened. The whole process introduces college students to participate in the design, improve the practical skills of college students, and realize the integration of production and education. At the same time, the team assisted in the establishment of a residential hearing system to promote residents to become the main body of distortionary space transformation and urban governance. The city 360 team public welfare project is used as a carrier to stimulate the vitality of social organizations. Through this series of practices, the problem of proactive discovery is finally achieved, and the city is refined and intelligently managed (Figure 13).

Figure 13. City 360's Full-cycle Logic

Source: Author

References

Azhar, J. & Gjerde, M, 2016, Re-Thinking the role of Urban In-Between Spaces.

Bosetti, N., 2018, How Can We Unlock the Potential of London's Unused Spaces? London: Centre for London. Date of access: 21/05/2019 https://www.centreforlondon.org/blog/temporary-vacant-space/

Chen, J. & Gao, J. & Chen, W., 2016, Urban land expansion and the transitional mechanisms in Nanjing, China. Habitat International. 46. 10.1016/j.habitatint.2015.11.040.

Chen, Y. L., & Li, D. L., 2018, Practice and Model Construction of Collaborative Education by Government, Industry and Higher Education Institutions from Perspective of Triple Helix Theory. Heilongjiang Researches on Higher Education, No.292(08), 92-95.

Chen, W.D., & Wu, H. T., 2015, On the Professional Approach of Community Governance. Journal of Central China Normal University (Humanities and Social Sciences), 54(5), 21-28.

Colomb, C., 2012, Pushing the urban frontier: Temporary uses of space, city marketing, and the creative city discourse in 2000s Berlin. Journal of Urban Affairs, 34(2), 131–52.

Drake, L. and Lawson, L., 2014, Validating verdancy or vacancy? The relationship of community gardens and vacant lands in the U.S. Cities 40. Elsevier Ltd: 133–142. doi:10.1016/j.cities.2013.07.008.

Dubeaux, S. & Cunningham-S., E. ,2017, Maximizing the potential of vacant spaces within shrinking cities, a German approach. Cities. 10.1016/j.cities.2017.06.015.

Evans, P., 2004, Development as institutional change: The pitfalls of monociropping and the potentials of deliberation. Studies in Comparative International Development, 38 (4), 30-52. doi: Doi 10.1007/Bf02686327.

Fang, Y., 2016, Drivers of Urban Sprawl in Urbanizing China – A Political Ecology Analysis. Urban Studies and Planning Faculty Publications and Presentations.

Firebrace, W., 1994, Jasmine way. AA Files, 25, 63-66.

Forbes Magazine, 2012, Date of access: 21/05/2019. https://www.forbes.com/sites/ashoka/2012/08/16/the-economic-secret-of-vacant-city-spaces/#3a2c8282c8ca

Fulong Wu, 2003. Globalization, Place Promotion and Urban Development in Shanghai, Journal Urban Affairs, vol.25, no.1,pp.55-78.

Galen D. Newman, Ann O'M. Bowman, Ryun Jung Lee & Boah Kim, 2016, A current inventory of vacant urban land in America, Journal of Urban Design, 21:3, 302-319, DOI:10.1080/13574809.2016.1167589

Guardian, 2018, Date of access: 21/05/2019. https://www.theguardian.com/cities/2018/nov/28/the-rise-of-the-meanwhile-space-how-empty-properties-are-finding-second-lives

Haas, A., 2018, Maize Sellers Where Skyscrapers Could Be. Date of access: 21/05/2019. https://www.citylab.com/perspective/2018/07/maize-sellers-where-skyscrapers-could-be/563795/

Haas, A. & Kopanyi, M., 2018, Taxing vacant urban land in Kampala. Retrieved from https://www.theigc.org/wp-content/uploads/2018/08/Haas-and-Kopanyi-2018-working-paper.pdf

Haase, D., Annegret H., and Dieter R., 2014, Conceptualizing the nexus between urban shrinkage and ecosystem services. Landscape and Urban Planning 132: 159–169. doi:10.1016/j.landurbplan.2014.09.003.

Hajer, M. A., & Reijndorp, A., 2001, *In search of new public domain: Analysis and strategy*. (Rotterdam: NAi Publishers)

Hulkower, B., 2012, Tenderloin National Forest Brings Green to San Francisco's High crime Neighborhood. Date of access: 21/05/2019. https://www.treehugger.com/lawn-garden/tenderloin-national-forest-brings-green-san-franciscos-high-crime-neighborhood.html

Kennedy, D., 2016, Vacant lots into community gardens: a profile of 596 Acres, Date of access: 21/05/2019. http://newyork.thecityatlas.org/lifestyle/vacant-lots-into-gardens-a-profile-of-596-acres/

Kikusawa, I. & Kondo, K., 2017, Designing Autonomous Communities in Suburbs of Japan. European Journal of Sustainable Development (2017), 6, 1, 1-10 ISSN: 2239-5938 Doi: 10.14207/ejsd.2017.v6n1p1

Kremer, P & Hamstead, Z., 2015, Transformation of Urban Vacant Lots for the Common Good: an Introduction to the Special Issue. Volume 8 Issue 2 Urban Vacant Land and Community Access.

Lei, X. P. , Zhao, Z. Y. , Zhang, X. , Chen, D. Z. , Huang, M. H. , & Zhao, Y. H. . 2012, The inventive activities and collaboration pattern of university–industry–government in china based on patent analysis. Scientometrics, 90(1), 231-251.

Lin, George C. S., 2009, Developing China. Land, Politics and Social Conditions, Abingdon (New York: Routledge)

Liu Ze-kun, Zheng Zhi-ding, Cao Yu-xiao, XU Xin-yang, Zhu Yi-lei, 2018, Thoughts on Residents' Participation in Community Construction: Case Study of Shanghai. Value Engineering, 37(13)29-31

Li Xiao., 2018, Research on urban community collaborative governance of multi-subject participation[M]. Beijing：Economic science press.

Loukaitou-Sideris, A., 1996, Cracks in the city: Addressing the constraints and potentials of urban design, Journal of Urban Design, 1:1, 91-103, DOI: 10.1080/13574809608724372

Lydon, M & Garcia, A., 2015, Tactical urbanism: Short-term action for long-term change. 10.5822/978-1-61091-567-0.

Mika, Westerlund & Leminen, Seppo., 2011, Managing the Challenges of Becoming an Open Innovation Company: Experiences from Living Labs. Technology Innovation Management Review. 1. 19-25. 10.22215/timreview/489.

Muller and Busmann, 2002, Spaces of Uncertainty, Kenny, M, Markus, C. Berlin.

Pagano, A., Michael & Bowman, A., 2000, Vacant Land in Cities: An Urban Resource. The Brookings Institution Survey Series. 1. 1-9.

Pamer, V., 2007, Cable & Wire Factory Vienna Meidling District, Vienna City Administration, Date of access: 21/05/2019. http://www.iiinstitute.nl/sites/default/files/Vienna_projectXS_230.pdf

Placemaking Chicago, 2018, Date of access: https://www.pps.org/article/placemakinginchicago

Raumlaborberlin. Date of access: 21/05/2019. http://raumlabor.net/spacebuster/

Sakamoto, K. &Iida, A. & Yokohari, M., 2017, Spatial Emerging Patterns of Vacant Land in a Japanese City Experiencing Urban Shrinkage, A Case Study of Tottori City. Urban and Regional Planning Review, Vol.4

SenStadt Senatsverwaltung fu¨ Stadtentwicklung (Ed). 2007, Urban Pioneers. Berlin: Stadtentwicklung durch Zwischennutzung. Temporary use and urban development in Berlin. (Berlin: Architektenkammer & Jovis Verlag)

Silverman, R., Yin, L. and Patterson, KL., 2013, Dawn of the dead city: An exploratory analysis of vacant addresses in Buffalo, NY 2008–2010

Sorensen, A. & Koizumi, H. & Miyamoto, A., 2009, Machizukuri, Civil Society, and Community Space in Japan.

Stroud, M., 2015, What the U.S. Needs to Know About Japan's Vacant Property Crisis. Date of access: 21/05/2019. https://www.citylab.com/equity/2015/12/what-the-us-needs-to-know-about-japans-vacant-property-crisis/422349/

SUC Studio Urban Catalyst, 2003, Urban Catalysts. Strategies for temporary uses – potential for development of urban residual areas in European metropolises. Final Report. Berlin: Studio Urban Catalyst.

Sullivan, F., 2018, Why Does London Have So Much Empty Space? Date of access: 21/05/2019. https://www.citylab.com/solutions/2018/10/londons-empty-spaces/572011/

Tang, S. Q., 1996, Civil Society, The Modern State, And The Relationship Between The State And Society In China, 1996, Journal Of Peking University (Humanities And Social Sciences), 1996(06):66-73+128.

Trancik, R., 1986, *Finding Lost Space, Theories of Urban Design.* (Van Nostrand Reinhold Company, New York)

Xiang ZHOU Tina TIAN Xiaoqing GU, 2017, Development and practices of Neighborhood Conservation-Based Community Building In Japan[J]. Landscape Architecture Frontiers, 5(5)

Xu, L. Q. , Song, H. N. , Huang, S. Q., & Huang, J. M., 2017, Practice and Reflection on Community Micro-regeneration under the Background of Innovative Social Governance:Two Practice Cases by 408UDR Lab. Urban and Rural Planning(04), 45-53.

Wang, C. H., 2018, Community Micro-renewal Mechanism Directed By Good Governance. Planners.

Worpole, K.; Knox, C., 2007, *The social value of public spaces*. (York, Joseph Rowntree Foundation)

Wood, B., 1998, "Vacant Land in Europe." Working paper, Lincoln Institute of Land Policy, Cambridge, MA.

Yamazaki, 2019, Community design [M].Beijing:Beijing Science and Technology Press.

Yang, G. (0). Citizen Participation In Community Administration. (Doctoral dissertation).

Yang Min. Community as a unit of national governance - a case study of community participation and community cognition in the process of urban community building [J]. Sociological Research, 2007 (4).

Qamaruz-Zaman, N., Samadi, Z., & Azhari, N., 2012, Opportunity in Leftover Spaces: Activities Under the Flyovers of Kuala Lumpur, Procedia - Social and Behavioral Sciences, 68, 451–463.

Zhu, J., 2004, From land use right to land development right: institutional change in China's urban development. Urban Studies, 41, 1249e1267.

596 Acres - Tools for Community Land Access Advocacy. Date of access: 21/05/2019. http://596acres.org/