



**POLITECNICO**  
**MILANO 1863**

**Urban street experiments in Milan and Shanghai.**

**Transforming streets in a tactical and experimental approach**

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## **Abstract**

The need to transform the design of street space in favour of people and active mobility practices has found in Street Experiments, an effective tool to promote small-scale, easy-to-implement, gradual and participatory interventions capable of reducing car space.

The aim of this thesis is to discuss, from both theoretical and empirical perspectives, the value of the Street Experiment as a tool for implementing pedestrian-friendly urban street design interventions. To achieve this goal, the thesis is divided into the following parts.

The first step is to reconstruct the concept of the Street Experiment as a tactical intervention promoted mostly by communities to transform street space through urban experiments aimed at creating the conditions for long-term transformations and whose process can be broken down into three interdependent phases 'implementation-evaluation-transformation'.

The second part identifies and classifies the characteristics of Street Experiments from the practical experiences conducted and with reference to the operational mechanisms adopted. From the point of view of the approach, six types of intervention can be classified: the redistribution of spaces, the redesigning of road sections, the transformation of intersections, the artistic design of pedestrian crossings, the transformation of car parks into parklets and the colouring of the ground. After a presentation of the main characteristics and forms of each approach, the thesis returns the design methods. These can be divided into four types: towards the stabilisation and persistence of solutions, towards the reproducibility of the transformation mode, towards the sustainability of public activities and towards the updating of planning policy. Of each mode, the main operational characteristics, advantages, disadvantages and implementation scenarios are listed.

The third part introduces two case studies and illustrates their characteristics in depth and then offers a comparative evaluation. These are One Square Meter Action in Shanghai and the Open Squares practice in Milan. A comparison of these two cases clearly reveals common features and differences. Considering the differences in political and cultural contexts, the practice in China is more cautious in obeying street regulation policies, resulting in temporary, short-term and small-scale interventions that focus more on creating cooperation mechanisms to make the intervention more sustainable. The Milanese case offers an evolution in approach between early and more recent experiences and a tendency for some experiments to become definitive. In its conclusions, the thesis offers suggestions for promoting this effective urban design tool in China in order to improve the quality of public spaces and reduce the role of the car.

**Key words: Street Experiment, Piazze Aperte, Tactical Urbanism**

## Sommario

La necessità di trasformare la progettazione dello spazio stradale in favore delle persone e delle pratiche di mobilità attiva ha trovato negli Street Experiments, uno strumento efficace per promuovere interventi su piccola scala, facili da attuare, graduali e partecipativi capaci di ridurre lo spazio per le auto.

Obiettivo della tesi è discutere secondo una prospettiva sia teorica che empirica, il valore dello Street Experiment come strumento per attuare interventi di progettazione delle strade urbane in favore dei pedoni. Per raggiungere questo obiettivo, la tesi si articola nelle seguenti parti.

Il primo passo è quello di ricostruire il concetto di Street Experiment come intervento tattico promosso perlopiù dalle comunità per trasformare lo spazio stradale attraverso esperimenti urbani finalizzati a creare le condizioni per trasformazioni di lungo termine e il cui processo può essere scomposto in tre fasi interdipendenti "implementazione-valutazione-trasformazione".

La seconda parte identifica e classifica le caratteristiche degli Street Experiment a partire dalle esperienze pratiche condotte e in riferimento ai meccanismi operativi adottati. Dal punto di vista dell'approccio, si possono classificare sei tipi di interventi: la redistribuzione degli spazi, la riprogettazione della sezione stradale, la trasformazione delle intersezioni, la progettazione artistica degli attraversamenti pedonali, la trasformazione dei parcheggi in parklet e la colorazione del suolo. Dopo una presentazione delle caratteristiche principali e delle forme di ciascun approccio, la tesi restituisce le modalità di progettazione. Queste possono essere suddivise in quattro tipi: verso la stabilizzazione e la persistenza delle soluzioni, verso la riproducibilità della modalità di trasformazione, verso la sostenibilità delle attività pubbliche e verso l'aggiornamento della politica di pianificazione. Di ogni modalità vengono elencate le principali caratteristiche operative, i vantaggi, gli svantaggi e gli scenari di implementazione.

La terza parte introduce due casi studio e ne illustra in profondità le caratteristiche per offrirne poi una valutazione comparativa. Si tratta di One Square Meter Action a Shanghai e della pratica Piazze Aperte a Milano. Dal confronto tra questi due casi emergono chiaramente caratteristiche comuni e differenze. Considerando le differenze dei contesti politici e culturali, la pratica in Cina è più cauta nell'obbedire alle politiche di regolazione delle strade, il che si traduce in interventi dal carattere temporaneo, di breve periodo e su piccola scala, che si concentrano maggiormente sulla creazione di meccanismi di cooperazione per rendere l'intervento più sostenibile. Il caso milanese offre una evoluzione nell'approccio tra le prime esperienze e quelle più recenti e una tendenza a tradurre in definitivi alcuni esperimenti. La tesi, nelle conclusioni, offre suggerimenti per promuovere questo efficace strumento di progettazione urbana in Cina al fine di migliorare la qualità degli spazi pubblici e ridurre il ruolo dell'auto..

**Parole chiave: Esperimenti urbani, Piazze Aperte, Urbanistica tattica**

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# 1 Introduction

## 1.1 Background: The core of street design transforming from "car-oriented" to "people-oriented" model

The traditional car-oriented street space has been re-examined due to the rise of the New Urbanism theory in developed countries since the 1990s, which has caused problems with the chaotic traffic order and air noise pollution unfriendly to pedestrians and non-motorized vehicles.

Following the turn of the twenty-first century, theories about street space have flourished and progressively gained social acceptance internationally, including the Transit-oriented Development Model (TOD) from America which promotes a symbiotic relationship between dense, compact urban form and public transport use; Traffic Calming theory from Europe which encourage safer, more responsible driving and potentially reduce traffic flow; Complete Street theory from America which emphasizes convenient and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation; Convivial city planning by Malcom Miles and Henry Shaftoe which emphasizes the building of convivial public spaces which are comfortable and friendly to use, etc.

In this general framework, also in China and in particular in Shanghai, there are similar thinking and practice on streets. In October 2016, the Shanghai Municipal Planning and Land Resources Administration and the Shanghai Municipal Transportation Commission jointly issued the Shanghai Street Design Guidelines, the first street design guideline in China, which is edited by Shanghai Urban Planning and Design Research Institute. The Shanghai Street Design Guidelines focuses on the classification, design requirement and management suggestion of urban streets towards more humanized public space. Although the guideline has not been updated, it produces a demonstration effect which stimulates some other cities in China to publish their own guidelines, like Guangzhou Complete Street Design Manual in 2018, Urban Design Guidelines for Beijing Street Regeneration and Governance in 2020, etc.

## 1.2 Definition of "Street Experiment": Short-term action for long-term changes

The experimental intervention of street renewal which is the origin of Street Experiment has had a long history and has derived some similar nouns such as Tactical Urbanism, Open Street, Park(ing) Day, Play Street, etc.

In 2011, Mike Lydon has put forward the concept of Tactical Urbanism and published a booklet named Tactical Urbanism: Short-term Action for Long-term Change, which lists a couple of examples and operation rules. Lydon put forward the definition of Tactical Urbanism as an approach to neighborhood building and activation using short-term, low-cost, and scalable interventions and policies.

In 2020, Dutch urban planner Luca Bertolini integrated a series of tactical operations from the view of space transition and formally proposed the concept of "Street Experiment" which is defined as follows, "an intentional, temporary change of the street use, regulation and/or form, aimed at exploring systemic change in urban mobility, away from "streets for traffic", and towards "streets for people" (Bertolini, 2020, p. X). What's more, he also classified the practices of street experiments into four typologies, "re-marking streets" which means reallocating space for different types of traffic, pedestrian crossings and parking

spaces; “re-purposing parking space” which means transforming an on-street parking space into a (semi-)public space; “re-purposing sections of streets” which means re-purposing a section of a street into public space where space for motorized traffic is reduced but not eliminated; “re-purposing entire streets” which means re-purposing an entire street with motorized traffic entirely banned.

Bertolini mainly focuses on the influence of Street Experiment on many fields, like urban renewal, community building, child-friendly community, etc. However, in my understanding, Street Experiment shows a clear characteristic of experimental thinking on goal and intervention which differs from other spatial intervention and Bertolini's definition does not emphasize it.

Therefore, in this research, based on Bertolini's definition, **“Street Experiment” is defined as “a kind of bottom-up and tactical intervention on street space through experimental thinking for longer-term changes”**.

Affected by Tactical Urbanism theory which refers to a city, organizational and/or citizen-led approach to neighborhood building using short-term, low-cost and scalable interventions to catalyze long-term change, the goal of Street Experiment can be understood as “Short-term action for long-term changes”. Not only should we pay attention to changes in streets in a short period, but also we need to continuously adjust and adapt to the new needs of the space. That is to say, the influence of street experiments can be divided into immediate effects and sustainable impact in both spatial dimension and public awareness (the way space is observed, used and distributed) dimension.

In terms of immediate effects, on one hand, the physical space is directly changed through spatial intervention, including the optimization of traffic flow, environmental quality and activation of the space; on the other hand, the perspective of the public on the publicity of the street is also changed. For example, by periodically holding activities like play streets, one-day plazas and farmers' markets in streets, residents' demands for activity are linked to street resources, directly changing the public's traditional perceptions of streets as passing space.

In terms of sustainable influence, on one hand, it is related to the follow-up maintenance of the project, which makes intervention fault-tolerant through flexible implementation modes; on the other hand, multiple local subjects have the opportunity to continuously participate in the projects and share the outcomes, where new consensus on streets as public space is achieved and new community network is established.

### 1.3 Core research question and purpose

Discussing the value of Street Experiment as a new tool for urban street design systems from both theoretical and practical perspective is the main research goal of this paper.

To achieve this goal the Master thesis addresses the following research tasks:

- Reconstructing the theoretical notion of Street Experiment. Given the current discussions on Street Experiment are mainly based on case study, it is essential to rebuild the concept of Street Experiment from fragmented practices.
- Analyzing some representative cases around the world, identifying and classifying their distinctive characteristics.
- Comparing two cases from Milan and Shanghai in order to identify differences and their underlying causes to provide some guidance for future development.



## **1.4 Research meaning**

The research meaning can be summarized as follows:

### **1.4.1 To promote the transformation of streets towards vivid public space**

As a form of tactical urbanism at the level of street space, Street Experiment emphasizes enhancing the pedestrian and bike experience, limiting the rights of motorized traffic and promoting community activities. Researches on the theoretical perceptions, design forms and implementation mechanisms of street experiments could help transform streets into new public space and boost the vibrancy and inclusivity of the city.

### **1.4.2 To explore new planning tools to facilitate continuous changes for improving the liveability of public spaces**

The "Tactical Urbanism" theory, which supports incremental street renovation through low-cost, experimental, and simple-to-implement approaches, is the foundation of "Street Experiment" theory. Street Experiment could support longer-term spatial transformation in a flexible way rather than completing it all at once, focusing on the cooperative network of various subjects, the comparison of the outcomes of various interventions and flexible experimental cycles for ongoing changes. The capacity for the renewal of public space and the examination of the planning implementation process could solve a lot of emerging problems in the stock development stage.

## **1.5 Research method and framework**

### **1.5.1 Literature research**

The literature study approach involves gathering, organizing, and summarizing relevant theoretical literature in order to develop cognition. Street Experiment itself, as well as theories and practices associated to it such Tactical Urbanism, Urban Experiment, Play Street, Open Street, are the main subjects of the literature review. Reconstructing the theoretical framework of Street Experiment as a base for the analysis of case studies is the main objective of the literature review. What's more, considering the difficulty of conducting the survey on the case of Milan, literature research will be mainly adopted in this case.

### **1.5.2 Case study**

In this research, two specific cases in Milan and Shanghai will be chosen to test the effectiveness and efficiency of the Street Experiment tool in real circumstances. The reasons of choosing these two cities are as follows: firstly, they are both representative large cities in their own countries; secondly, they have both stepped into the stock development stage; thirdly, they both have enough resources to conduct street experiments and the impact of experiments are demonstrative. Besides these three similarities, the differences of cultural, political and economic backgrounds of these two countries would be an exploration of application of street experiments in the Eastern and the Western countries.

When it comes to the selection of specific project, Piazza Aperta is the representative practice of street experiments in Milan and the project in Piazza Dergano is one of the earliest practice which has undergone the complete transformation stages. As for the practice in Shanghai, most of the urban renewal cases are relatively traditional which are dominated by professional urban designers and architects which can not be classified into street experiments. One

Square Meter Action is a relatively pioneering project which demonstrates the thinking of street experiment and can be further discussed.

In terms of the research methodology, for the case in Milan, the research will mainly adopt existing literature combined with author's own experience; for the case in Shanghai, the research will mainly conduct a field study considering the author's base in Shanghai.

## 2 Street Experiment: tactical and experimental intervention of streets

### 2.1 Characteristics of “Street Experiment”

“Street Experiment” refers to the fusion of tactical intervention and experimental thinking that is small-scale, low-cost, simple to implement and relatively temporary influenced by the theory of Tactical Urbanism; dynamic and flexible influenced by the theory of Urban Experiment.

#### 2.1.1 Approach: Tactical spatial intervention

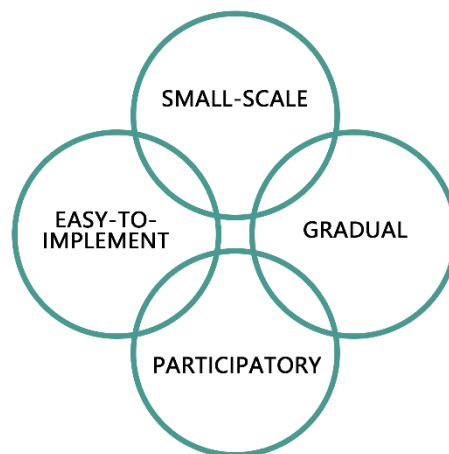
Street experiments have significant tactical features in approach that can be categorized into four aspects (Fig.1) : **small-scale, easy-to-implement, gradual and participatory.**

“**Small-scale**” refers to tiny transformation on objects, adopting “acupuncture-style” thinking to precisely resolve issues.

“**Easy-to-implement**” means that the implementation threshold of intervention is relatively low, featuring low cost in capital and low construction technical requirements, allowing for a quick change in the usage status without expending a lot of time and resources.

“**Gradual**” means that the intervention encourages starting from a temporary state and gradually progressing to a permanent one. At the same time, it also can be duplicated in space, starting in a representative site and spreading to space with similar features.

“**Participatory**” refers to the joint participation of diverse stakeholders such as local citizens and social organizations in the experiments, even though street experiments are a top-down organized intervention tool dominated by the local government.



*Fig.1. The specific characteristics of the "tactical" approaches of street experiments*

*Source: Author*

#### 2.1.2 Process: “Implementation-Evaluation-Modification” Circulation

Based on the cases and literatures author studied, in general, the process of street experiments can be extracted as follows. Although street experiments begin by finding solutions to actual spatial difficulties, they focus more on the dynamic situation ready to respond to new issues, which requires continuously practice and revision as a circulation. To be more precise, it begins with spatial practice, tests the efficiency of the means, returns to practice after reflection, which forms a spiral pattern approaching towards a longer-term goal (Fig.2).

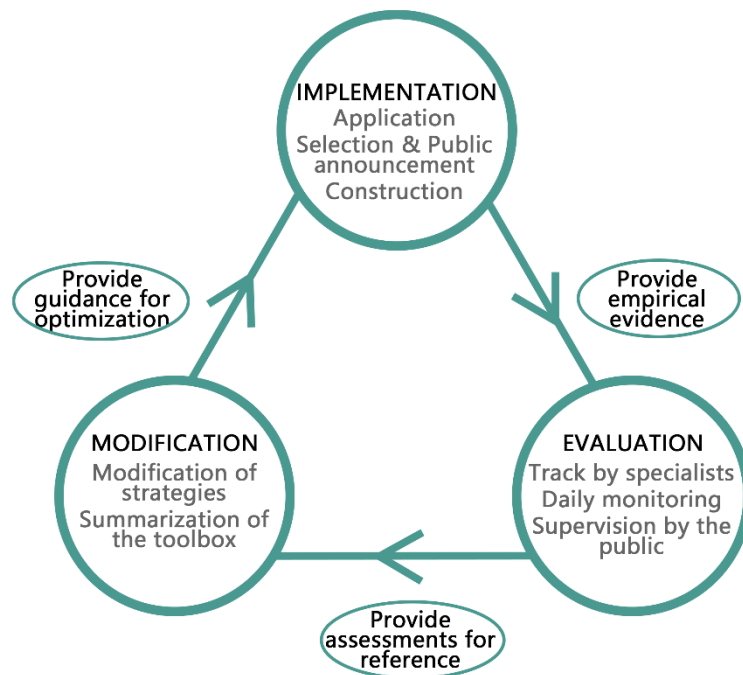


Fig.2. The mechanism of " Implementation-Evaluation-Modification " circulation

Source: Author

#### A Implementation: Spatial Intervention on streets

##### ■ Content

Street experiments begin by taking actions directly to real-world issues. Street experiments will implement suitable interventions in accordance with various circumstances, such as remarking the ground, transforming the function of parking lots, temporarily banning cars from the street, holding activities, etc.

##### ■ Working mechanism

In the initial stage, the intervention can be divided into four parts: "Proposal application – Selection and public announcement – Further design and administrative approval - Actual implementation".

Gathering proposals from the public is the first step. The organizer of street experiments will issue a design brief to clarify the design requirements and the rights and responsibilities of different participants, involving an acceptable design toolbox, project site selection rules, funding resources, maintenance rules, etc.

Selecting proposals and conducting public announcement is the next phase. The initial ideas

will be selected in the first round by the organizers, like the government or social associations. Taking the NYC Plaza Program as an example, it divides the evaluation of the proposal into four dimensions, community initiative, site context, organizational capacity and income eligibility. The lower the average public open space area is, the more obvious the influence of the proposal on the community is, the more diverse the surrounding space elements are, the stronger the applicant's operational capabilities are and the lower the average income level of the residential area is, the more promisingly the proposal will be chosen. The government will then publicize the selected plan for a while and collect public comments.

The third step is to intensify design preparing for the implementation. The proponent needs to submit the final version of the design list, budget, maintenance plan, activity operation plan, etc. The project will be awarded a construction permit by the government after jointly reviewed and approved by the partners, the design team and the planning department.

The fourth step is the construction of the projects. The government will start from the transformation of traffic guidance, such as road markings and traffic signs. The local people are then responsible for soft transformation, such as planting, painting streets and arranging urban furniture. Promoting public involvement in space revitalization can increase public understanding of local issues.

Depending on the circumstances, subsequent intervention in the second or third round can be simplified as "revision following comments from the previous round - actual implementation".

## B Evaluation: Recording and measuring effects of Street Experiment

### ■ Content

Following the spatial intervention, the post-transformation environment will be evaluated to record the impact of the street experiment and the efficiency of the intervention strategy. Three testing objects make up the testing session. The first is to monitor direct physical effects, including the maintenance of facilities and the durability of materials. The second is to compare space use before and after the intervention, taking into account factors like public satisfaction, surrounding traffic, local business revenue, activity operation, air quality, etc. The third is to assess the feasibility of the operation mode, such as the maintenance capabilities of community partners and the degree of completion of street experiments.

### ■ Working mechanism

Daily monitoring by volunteers or cameras: Local residents are recruited to help with the upkeep following the intervention, in charge of daily cleaning, weekly inspections and dynamic tracking, which can provide useful reference for the future selection of relevant materials and facilities.

Government-sponsored or professional surveys: To determine the effects of renewal, the organizer will invite experts to conduct surveys using on-site observation, questionnaires, semi-structured interviews, worn pedometers to record data, etc.

Channel for public complaints: It is essential to invite public comment on how they perceive the intervention.

## C Modification: Reflective part of Street Experiment

## ■ Content

The revision part takes advantage of the affordability and adaptability of street experiments to monitor the operation status and effects. In order to respond dynamically to the shifting circumstances, the preceding intervention must be revised, condensed or developed into a new direction.

The optimization of street experiments can be primarily divided into the following directions, including the adjustment of existing intervention; toolboxes formed to systematically conclude appropriate methodologies; and the potential to optimize the operation mode facing the longer-term goals.

## ■ Working mechanism

The creation of strategies for the following round: Based on the results of the evaluation process, any newly discovered issues need to be fixed and strategies for more challenging objectives to guide the next round need to be decided in this phase.

The establishment of toolboxes of street experiments: Based on the current implementation effects, the validated workflows and design toolboxes shall be summarized and published as action manuals, like "PIAZZE APERTE: A Public Space Program for Milan", "San Francisco P4p Public Space Design Guidelines 2019" and "New York City Plaza Program Application Guidelines 2021", providing a more standardized and clear work path for similar practice in the future.

## 2.2 Street element design emphasizing tactical approaches

The street experiment encourages people to resume using bicycles, walking and other slow mobility on streets. It is possible to make improvements by limiting the speeds of motorized traffic, redesigning crosswalks to direct pedestrians and warn drivers, redividing areas for motor traffic and slow traffic, etc. In these ways, street environments will be more hospitable to vulnerable populations including children, the elderly and the disabled.

### 2.2.1 Area redistribution: Restriction of motor traffic in streets

According to the "Boston Complete Street Design Guidelines", the instantaneous speed at which motor vehicles and pedestrians collide correlates with the severity of traffic accidents. If a person is hit by a car at 35 kph, he has a 95% chance of surviving; if he is hit by a car at 70 kph, the odds are much lower, just a 15% chance. Therefore, streets where cars drive at slower speeds make people feel safer and more motivated to walk around. The street experiment highlights the necessity to defend the freedom and safety of pedestrians, limiting the speed, quantity and variety of vehicles.

On one hand, it is feasible to establish traffic plannings to divide areas of various speeds. In the Superblock Design in Barcelona (Fig.3), it is scheduled to combine 3\*3 adjacent blocks into a Superblock where transit vehicles, buses and trucks are forbidden to go through and the speed of local motor traffic inside is one-way with a 10 km/h speed limit. Based on the traffic control, the original crossroads are transformed into public space like playgrounds or community parks. Due to the reconstruction, there are now 74% more pedestrian spaces than

there were before, and there are 13% fewer moving vehicles and 50% fewer traffic incidents.

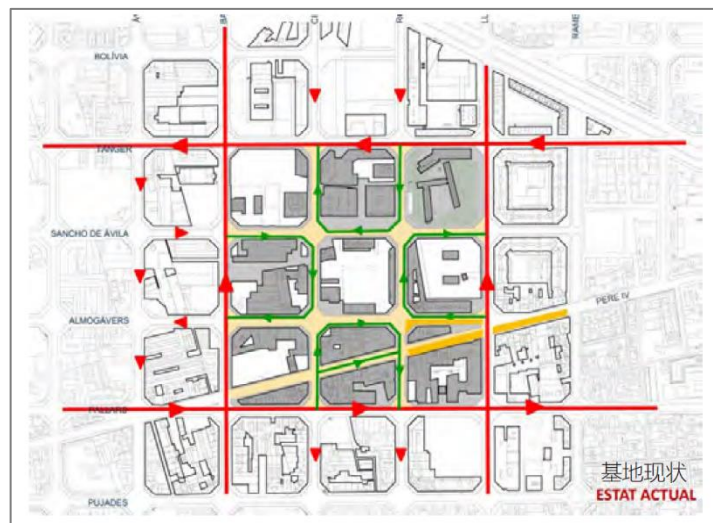


Fig.3. Traffic flow control in and around the superblock in the Poblenou neighborhood

Source: the Superblock Design of Barcelona

On the other hand, for streets improper to restrict the passage of motor traffic, it can be considered to apply to the government to impose speed limits or temporary traffic restrictions on streets after conducting study and making an informed decision. For instance, the public can request a temporarily semi-closed or closed street for motor traffic for a couple of hours in the Open Street Plan by the New York Department of Transportation (NYC DOT) to promote activities on the street.

In the Open Street Plan (Fig.4), it specifies three methods of limited traffic. The first kind is

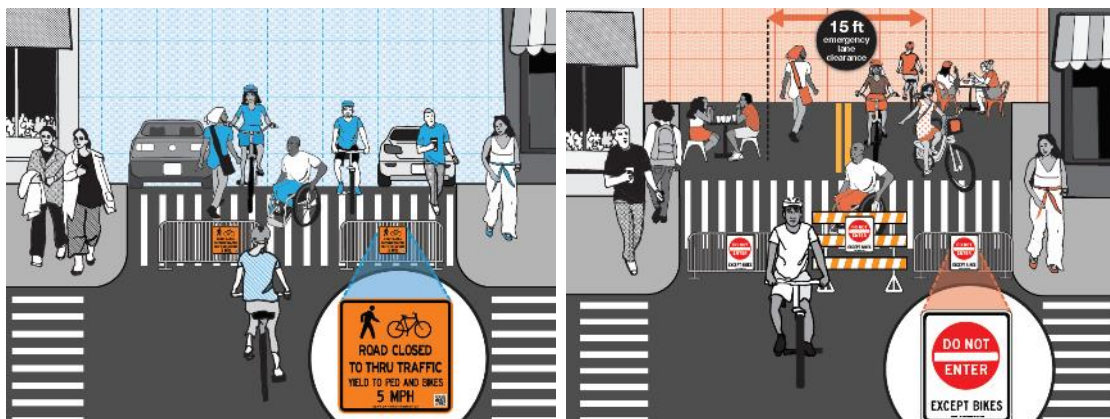


Fig.4. The restricted access to local vehicles(left)

The fully forbidden access to vehicles(right)

Source: the Open Street Plan of New York

restricted access to local vehicles. Pedestrians and bicycles are the primary users of the street. Vehicles undertaking emergency tasks such as ambulance and firefighting or logistic services for local shops, can only pass through at a speed of no more than 8 km/h. The second category fully forbids passing or stopping of motorized traffic and promotes outdoor dining, socializing, fitness and other activities on the street. The third category is to

cooperate with schools specially. For schools whose playgrounds or stadiums are under maintenance, they can apply to close down the streets nearby to motor traffic for a specified amount of time each day for students to exercise outdoor. A 4.5-meter lane is also spared for emergency situations in the latter two scenarios where motor traffic is more strictly prohibited.

### 2.2.2 Street Section: Redistribution of sections of streets

The street experiment emphasizes the redistribution of the rights of different users on the streets. By means of the division of the street section, the space for motorized traffic will be reduced and the proportion of space for slow traffic will be raised. One approach is comparatively gentle. By narrowing the width of lanes, cutting off the numbers of lanes and transforming the functions of parking spots, sidewalks are extended and new bike lanes are developed. Another approach is relatively radical, represented by Open Streets Plan and Superblock Plan. It encourages the public to treat the streets as new urban squares to conduct various public activities, such as the well-known cycling-friendly Ciclov'as festival in South America and Summer Street Street in the US. Besides, the possibility of being permanently car-free needs to be accessed by the degree the closure will affect the space and the traffic in the larger region (Fig.5).



*Fig.5. More refined section allocation for roads with complex traffic flow and high traffic volume(left)*

*Full pedestrianization of roads connecting two urban parks with less traffic pressure(right)*

*Source: Piazze aperte - A public space program for Milan*

Once the space has been redistributed and a portion of the motorized traffic area is transformed into public activity space for rest and leisure, new public space is adjacent to the motorized traffic space, which brings some risks of safety. Therefore, it is necessary to explore physical or visual dividers to separate space and guide streamlines (Fig.6). One type employs soft barriers like traffic warning columns. Another uses more substantial barriers like isolation piers for partitions and creatively decorates them by implanting plants, benches, and sunshades. For example, the New York City Department of Transportation (NYC DOT) launched the barrier beautification campaign in the spring of 2010 where it invited artists to create urban painting patterns and draw them on the isolation piers with local volunteers. The other adopts movable potted plants as partitions elements, which not only act as a barrier but also has ecological and environmental advantages.





*Fig.6. The effects of different partitions such as traffic warning pillars (left)*

*Transformed isolation piers (middle) and independent potted plants (right) on space division*

*Source: Internet*

### 2.2.3 Intersection: The transformation of intersections

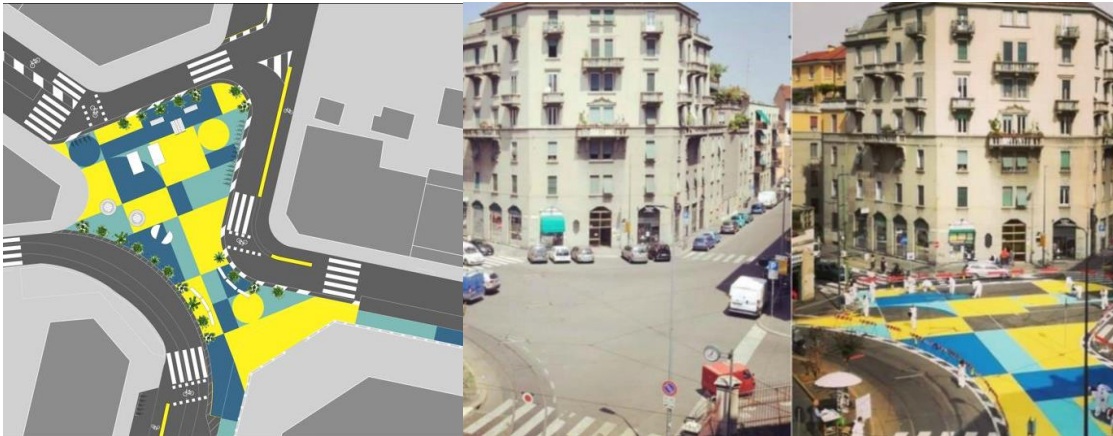
Intersections offer a significant potential as public space in addition to the traffic function (Fig.7). The turning radius and the quantity of intersecting roads are the main influencing factors of intersections. The street experiment reduces the risks of traffic accidents and increased opportunities for communication at intersections by drawing temporary patterns on the ground and implanting urban furniture for enclosure elements and functioning facilities. For a general intersection with a large turning radius, the turning radius can be decreased by enlarging the area of sidewalks. For intersections composed of several roads, streamlines can be rearranged through restricting traffic in particular directions, transferring part of the pressure of traffic into neighborhoods nearby. For some more radical experimental situations, like Barcelona's Super block, several adjacent blocks are closed, completely transforming the intersection into a friendly urban square.

For an intersection with a large turning radius, the intersection in Piazza Bacone in Milan is an example. The intersection is located in the downtown of Milan where the road network is quite organic and irregular. The street experiment widens the pedestrian area to various



*Fig.7. Intersections before and after street experiments in Piazza Tito Minniti (left), Piazza Sicilia (middle), and Piazza Bacone (right) in Milan*

*Source: Piazze aperte - A public space program for Milan*



*Fig.8. In 2019, Piazza Spoletto reorganizes intersection flow and shapes plaza spaces through street experiments*

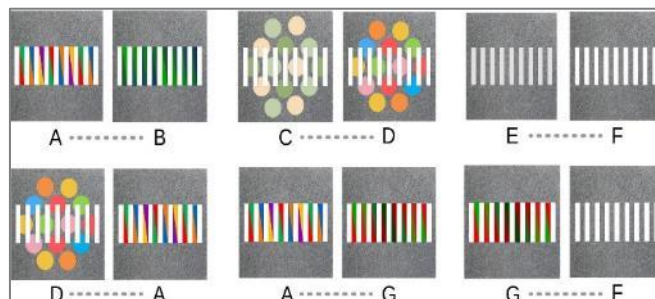
*Source: Internet*

degrees based on the radius, forming two corner squares, widening several sidewalks and narrowing the width of crosswalks.

For an intersection composed of several roads, Piazza Spoletto is an example (Fig.8). The intersection of the original five roads forms convoluted streamlines and a primary school is located on one of the corners, resulting in low safety for youngsters crossing the street. In the street experiment, the central intersection is transformed into a square directly connected to the school entrance, assuring the safety of children entering school and creating waiting areas for parents. Cars in the intersection can only drive around the square instead of going through it.

#### 2.2.4 Zebra crossing: Artistic design of zebra crossings

As one of the most common circumstances for traffic accidents, zebra crossing becomes an important focus of street experiments. Zena O'Connor (2020) examined the impression of various color pattern combinations for crossings and the findings revealed that the more exaggerated patterns are, the higher the contrast of colors is, the brighter colors are, the more likely zebra crossings are to release reminder signals (Fig.9). Exaggerated colors and patterns can lower the probability of accidents by drawing attention of both drivers and pedestrians.



*Fig.9. Research shows that D, F and A perform better for human eye stimulation*

*Source: O'Connor Z. Tactical urbanism: Colour interventions with purpose[J]. Color Research & Application. 2021, 46(3): 516-523.*

However in the experiences in Liverpool, several particular groups have expressed concern

that the artistic zebra crossing design will obstruct their crossing. Those with learning difficulties, for instance, have a hard time understanding creative patterns as crossing paths; autistic patients experience color overload; visually impaired people are likely to miss it because of the declining black-and-white contrast. These comments are a reflection of the extreme part of the street experiment and more testing is required to investigate more societally acceptable forms.

### 2.2.5 Parking space: Conversion of parking spots along streets

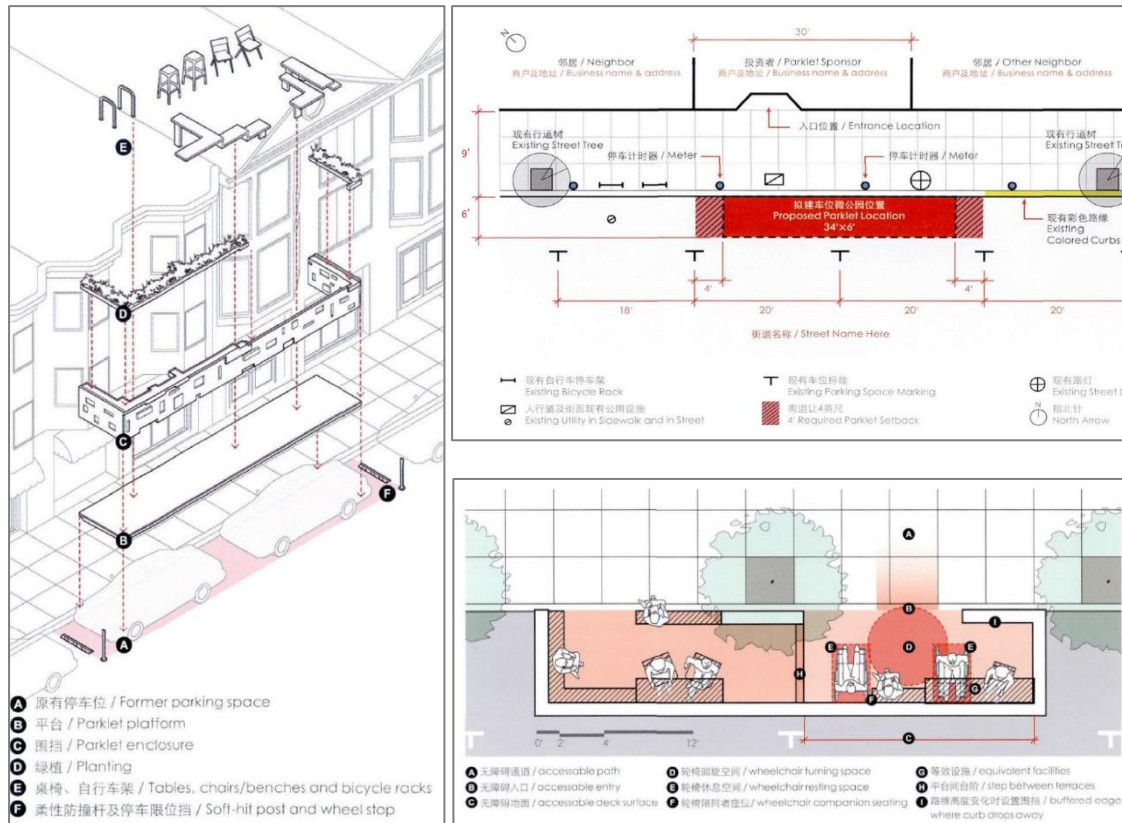


Fig.10. Basic elements of "parklet" (left), example of "parklet" general plan (top right), barrier-free design requirements (bottom right)

Source: San Francisco Parklet Manual

For the parking spots along streets, the street experiment employs the idea of "losing two parking spots in exchange of an urban park". Through the installation of public furniture and the modification of the site environment, the parking area is converted into a multi-functional activity space for rest, fitness, art and gardening, embedded as an open node in the street. There are two categories of parking spot conversions: temporary and permanent. The former is represented by "parking day" with a basic template of "bench-turf-enclosure", inserting movable urban furniture and taking up the space for several hours. The "Parklet Program" in San Francisco is known as an example of the latter, which converts parking spots into open, public space connected with sidewalks, composed of a bottom platform, a space enclosure, and urban furniture. Site selection, the form of platforms and enclosures and barrier-free design are the primary considerations in the transition from parking spots to parklets (Fig.10).

### 2.2.6 Ground marking

In contrast to traditional pavement design approaches, street experiment tends to handle the ground with temporary and cheap paintings. It can effectively test the feasibility of projects for the incoming permanent conversion besides defining new functional areas in an interesting way. It is important to consider identity, interest and connection with the local community culture while designing patterns and colors. Additionally, since street experiments frequently start with test paint, it is vital to take into account how the deterioration rate of materials will affect the expected service life (Fig.11).

For instance, in 2019, Camilla Falsini, an illustrator from Rome, designed the pavement of new squares for community of Isola and Loreto in Milan as part of the CLEAR plan, a project intended to transform the public space. The artist was inspired by the names of the neighborhoods and translated letters of names into combination of color blocks on the ground as functional areas such as exercise, recreation, rest, bicycle parking, etc. The ground marking is not only an art work, but also arouses the sense of community. Unfortunately, low durability of the paint meant that it quickly faded and became dirty, which became the main source of dissatisfaction from the public.



*Fig.11. The ground marking in Via Guido Reni, Milan*

*Source: Internet*

### 2.3 Design modes emphasizing operation mechanism

On the micro level, in the actual practice all over the world, street experiment focuses on resolving issues which shows similarity on the methods, as can be seen in the previous section. On the more macro level, various social, economic and political contexts in different regions will have an impact on how long-term objectives are set for street experiments, leading to variations in the differences in the circle of "practice-test-revision-practice-test" and resulting in different street experiment design patterns.

The street experiment's long-term objectives can be broken down into four types as followings. From the perspective of physical transformation, it is the pursuit of stabilization and persistence of solutions; from the perspective of duplicability of modes. it is to conclude repeatable working modes; from the perspective of content of experiment, it pursues

sustainable operation of activities in the space; from the perspective of policy optimization, it is to explore how practice can optimize planning policies. The goals may crossover in one case in the real situation.

This section will analyze the different characteristics, advantages, disadvantages and operational recommendations of each mode and discuss them in the context of existing international cases.

### 2.3.1 Towards stabilization and persistence of solutions

In this type of street experiment, its long-term objective is to produce a steady and durable transformation effect. It places a focus on the transition of strategies from temporary to permanent intervention, emphasizing the long-term and stable preservation of the transformation effect after confirming the feasibility the flexible strategies.

**Phase** - In the phase of implementation, the street experiment starts with transitory and inexpensive intervention to swiftly make space changed. In the phase of evaluation, not only subjective feelings from the public but also objective statistics like the change of traffic flow, the number and frequency of users and air quality are monitored. For issues that arise during actual use, it is possible to swiftly alter intervention, get results and analyze repeatedly. After gathering sufficient positive feedbacks of intervention and willing to make it more persistent, it is scheduled to discuss the choice of materials, design, fund and form a implementable solution.

**Advantages** - The key benefit of such a mode is that it take responsibility for the long-term spatial quality improvement of the neighborhood with continuous accompaniment.

**Drawbacks** - However, the biggest issue of this kind is the high inputs on the resources. On one hand, dealing with a more permanent change needs greater expenditures of money, materials, and labor during the transformation process. It is especially difficult for non-government groups who conduct the experiment, which means limited resources. On the other hand, it is necessary to assure ongoing site monitoring and inputs of time and staff, which may take 2-3 years or longer.

**Suggestions** - As a result, there are several ideas for this type of street experiment. Firstly, approval from the society is important for getting funding and reducing the complaints on construction in the latter stages, which can be achieved by regularly publishing evaluation reports and inviting the public to experience the space. Secondly, it can be useful to accomplish the transformation step by step, which means establishing advanced options for the level of temporary intervention and periodically evaluate the efficiency of the renovation and the public's feedbacks. Additionally, organized cooperation platforms can be established to disperse the burden of long-term follow-up intervention onto more organizations and connected stakeholders.

This kind of experimental paradigm is appropriate for communities which have already identified with short-term intervention and are willing to some more persist changes.

#### ***Case study: Pavement to Plaza, New York***

In 2007, the New York Department of Transportation launched the P2P initiative, Pavement to Plaza. The goal of the initiative is to turn traffic-oriented roadways into open areas that can be used as squares. There are three different kinds of progressive interventions,

including one-day squares with pop-up public events, temporary intervention lasting from a couple of days to months and long-term upgrades asking for more resources. The one-day square serves as a demonstrative experiment to test public's approval of novel space strategies before the latter two are implemented. The temporary intervention can experimentally test how people use space providing evidence for the decision whether and how to conduct permanent changes. Besides evolving towards more continuous transformation, it also pays close attention to the monitoring data support during the progression of each stage, including not only the tracking of traffic flow and traffic accidents, but also social data like commercial activities, public use methods and frequencies, etc

One of the typical examples is the Times Square redevelopment in New York (Fig.12). The first wave of temporary intervention took place in 2009 and a permanent square refurbishment took place in 2012. Hans Geier, a Danish expert in urban planning, was invited by the government to record and analyze activity data before and after the refurbishment using the PSPL (Public Space-Public Life) study methodology he developed. Data reveals that in 2009, after the interim measures were implemented to turn the roadway into a square, traffic congestion was significantly decreased by 63% and pedestrian flow crossing the plaza increased by 11%. In the meantime, the pedestrian flow in the nearby Herald Square was also benefited.

The outstanding outcomes encouraged the decision to execute a long-term makeover of the square in 2010 and the official construction started in 2012. According to the follow-up observation in 2013, the secondary remodeling enhanced pedestrian flow by 15%, reduced traffic accidents and boosted regional retail performance by 180%.

The combination of advanced transformation and ongoing monitoring can help the public fully comprehend and accept the idea of space change, which helps the intervention conducted more smoothly.



*Fig.12. The pre-renovation, temporary-intervention and permanent-renovation phases of New York's Times Square*

*Source: Internet*

### 2.3.2 Towards reproducibility of transformation mode

The street experiment which takes duplicability of mode as the longer-term goal places a high value on the adaptability of the experiment, emphasizing the standardized exploration

of space design elements and operation methodologies processes in the initial experiment stage. In that way, the working concept of street experiments spreads more efficiently to space with similar needs.

**Phase** - In the phase of implementation, street experiments prioritize choosing the sites with representative issues for pilot renovation. In the process, the generalizability of each parts, including the difficulty of actual operation, adaptability to various environments, cost of material selected and transportation fee, etc. In the phase of evaluation, it mainly focuses on the effects of solutions on the general spatial issues, like arrangement of traffic flow, conversion of space functions, follow-up maintenance, etc. In the phase of modification, it is essential to summarize the effective design methods and conclude an integrated process

including site selection, design, operation and maintenance.

**Advantages** - The universal issue of street space can be resolved by this street experimental

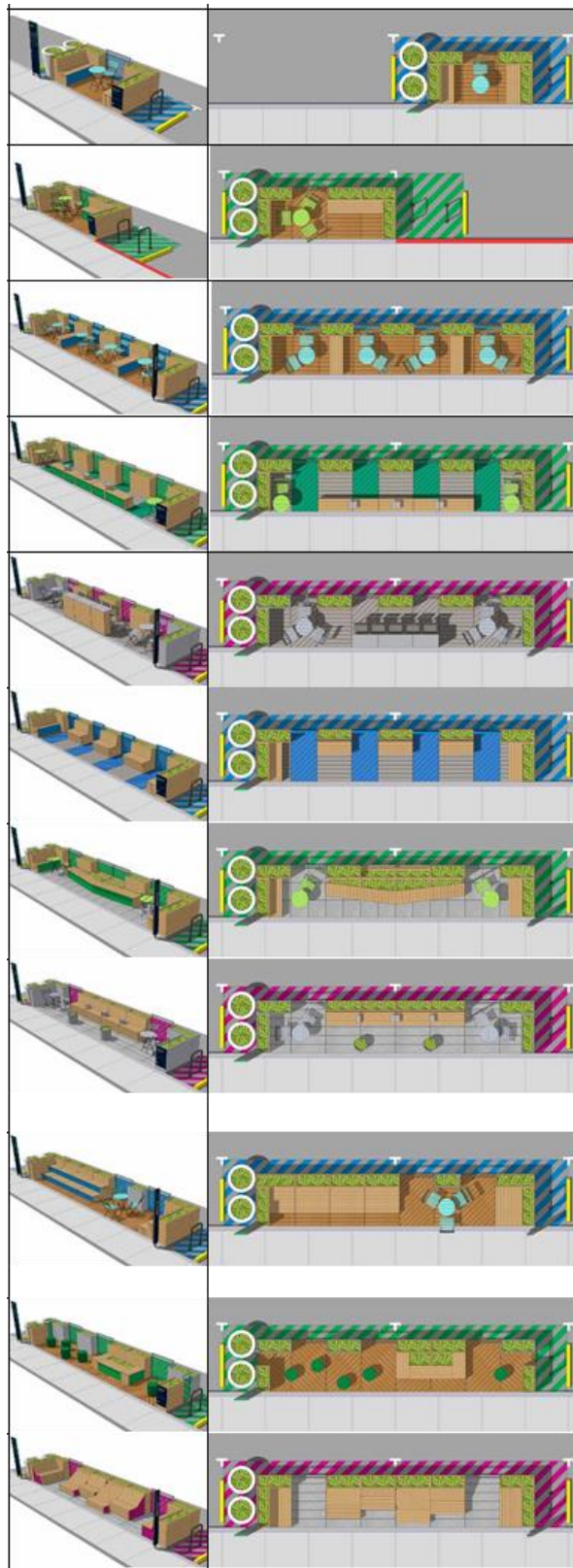


Fig.13. 11 optional layouts and furniture design patterns of parklets in People St, Los Angeles

Source: Parklet Application Manual 2020, Los Angeles



paradigm, which targets reproducible utility. By promoting trusted intervention, large numbers of similar cases can be swiftly improved. What's more, through standardized process design, organizational structure, personnel rights and responsibilities can be clear, which increases efficiency of experiments.

**Drawbacks** - The drawbacks of this mode are also apparent. Overemphasizing the reproducibility has the tendency to the pursuit of standardized spatial operation, ignoring the solution to site-specific problems and losing the identifiability of the local community.

**Suggestions** - The pursuit of standardization should not be the only goal. It is essential to explore the balance between the efficiency of space design and personalization of the space itself. The time and energy saved through the standardization should be input into the specificity of the site. What's more, while creating a design toolbox, options need to be diverse to create a varied replication and be more adapted to areas with various financial status.

This kind of experimental model is appropriate ①when there are numerous streets in the area with comparable issues ②where there are communities lack motivation or funding to conduct the study of street experiments themselves. Through repeatable street experiments, they can quickly draw lessons from the successful experience, cut down design expenses and get the gain from the space renovation as soon as possible.

#### ***Case study: People St, Los Angelas***

One of the tasks of the People St Plan supported by the Los Angeles Department of Transportation (LADOT) is to explore how to transform parking space into mini parklets (Fig.13). After years of practice, LADOT has published a series of booklets, such as Parklet Application Manual(2020), Kit of Parts for Parklets(2020) and Kit of Parts for Parklets Technical Appendix(2020). Among them, the application manual specifies rules like the site selection criteria, partner qualifications, funding sources, responsibilities on maintenance. It sets out the step-by-step application process and provide detailed application document templates. In the toolbox, according to the functional needs, the design of parklets is divided into three types, sidewalk café, sidewalk extension and landscape lounge, with 11 professional design solutions for selection. After selecting the scheme model, a series of choices of materials can be made for each element in the technical appendix. This clear design path can satisfy the demand for multiple needs. At the same time, the operation of street experiments can be assured under supervision of the platform, the design effect can be unified and the cost estimation can be controlled.

#### **2.3.3 Towards sustainability of public activities**

The street experiment which takes sustainability of public activities as the longer-term goal highlights the demands of taking part in activities in public spaces. Compared to the optimization of physical space, it places greater emphasis on the potential of streets as time-sharing public space and the coordinated operation mechanism of public activities. By temporarily forbidding cars to go through streets, this strategy stresses the usefulness of street space for public activities and encourages people to engage in a variety of outdoor activities there. The closure period varies from half a day, a day, a weekend to a season and the closure section also varies from a partial street to a continuous path consisting of several streets, as represented by the "Open Street Day" in the United States.

**Phase** - In the implementation session, since the main demand for space is somewhere available for activities, the focus of the street experiment is to coordinate the related traffic, shop owners and residents through the organized operation of street activities and the orderly restoration of temporary urban furniture. In the evaluation process, the street experiments mainly focus on the immediate impact on traffic and the sustainable social benefits to the surrounding communities. In the modification process, we should pay attention to the mechanism of periodic organized public activities and the optimization of the content of activities.

**Advantages** - First, through the time-sharing use of street space, it can balance the demand for public activities and traffic pressure, which is suitable for the downtown area with limited open public space. Secondly, the intervention can promote social interaction and help build new public consensus on the street as space for public interaction rather than purely transportation space. Moreover, in the process of public participation in street events, new local partnerships can be established or consolidated, contributing to the construction of social networks and sense of community. At the same time, temporary events require a relatively small budget and commercial street events such as open fairs can acquire additional revenue, increasing source of funding and easing the pressure of operation.

**Drawbacks** - The disadvantage of this mode is that the activation effect of the space is temporary in nature and depends on the quality of the operation of the activity. Compared to the transformation of the physical space, the organization of the activity requires a lot of energy. And it needs to coordinate with multiple departments related to street, from the department of transportation, landscape to urban planning, which brings about many uncertainties. Therefore, it is more difficult to keep sustainable operation of activities.

**Suggestions** - Firstly, it is essential to establish rules to guarantee the operation of activities. On the one hand, the government should simplify and clarify the application and approval process of activity, such as allowing single application for holding a series of activities, to improve the efficiency of approval and reduce the administrative burden of applicants. On the other hand, the government should promote multi-departmental coordination to work together to guarantee the time-sharing space scheduling and operation of activities. Secondly, in terms of operation mechanism of activities, it is necessary to build a local cooperation network through the introduction of multiple partners, encouraging various social organizations to contribute technical support on fundraising, maintenance and operation, dispersing the operational pressure of each link.

This type of street experiment is suitable for neighborhoods where ① there are demands for public activities but in lack of organized operation groups ② the existing public space and activity cannot meet the diverse needs of residents.

#### **Case study: Festival Streets, Seattle**

Based on the 2007 Complete Streets Plan and the 2009 Seattle Pedestrian Network Master Plan, the government launched the Festival Streets Program. The Festival Streets temporarily closes streets to motorized traffic and conducts public events such as music, dance, performance, art exhibits and outdoor games. The program encourages community-driven street events which are mainly initiated by community organizations, residents, local merchants or other local communities. The program focuses on policy innovations in the

event approval system and operational incentives to motivate event operators. Meanwhile, the government is primarily responsible for clearing and rehabilitating the space so that the organizers can fully focus on the operation of events.

Seattle officials have designed a special street use permit. Upon submission and approval of an event operation plan, organizers will receive a one-year permit to operate the festival street events, with motorized traffic closures several times throughout the year to organize pre-approved small-scale neighborhood events. And it is also flexible to revise the pre-submitted event schedule. At the same time, the government will offer different types of incentives to event organizers based on their contribution to the vitality of space use, such as partial tax reduction for local businesses or subsidies for local social organizations or other facilitation of the use of public resources. The simplification and flexibility of the application process and the incentive mechanism have greatly increased the willingness of potential organizers to participate, ensuring the sustainability of the event.

#### 2.3.4 Towards update of planning policy

With the long-term goal of gaining recognized and introduced by the official, this type of street experiment emphasizes the value of tactical intervention and experimental thinking in the development of planning policy, realizing a more far-reaching impact beyond the practical level. The street experiment is a complementary innovation to traditional planning by using dynamic strategies, which can also provide a guarantee for the organized implementation of the experiment.

**Phase** – In the implementation stage, it is essential to fully take into account the existing upper-level planning background, such as the compatibility and complementarity between the street experiment strategies and the current public space strategies. At the same time, it's important to focus on how well the street experiment addresses the actual space issues, which could help receiving more official recognition. During the evaluation phase, it mainly focuses on collecting the data of spatial changes and evaluating the relevance of the implementation of street experiments and related policies, such as whether street experiments assist in promoting regional public transportation. The modification part places emphasis on summarizing the relationship of street experiments and urban policies based on the effects. How street experiments correspond to urban policies? In which way do street experiments supplement existing urban policies? Further, it's time to consider the forms of integration with existing policies and propose ways to optimize them.

**Advantages and drawbacks** - This type of street experiment has the advantage of breaking free from the constraints of the general street experiment focusing on concrete practice. It begins to explore treat street experiment as a new planning tool for the develop of the cities. Yet, the true path for policy optimization is unclear due to a lack of precedents.

**Suggestions** – On one hand, it is essential to cultivate the understanding from the society. Based on the opinions collected during the follow-up phase, feedbacks from the public may promote the government's reform of planning policies through social media and some other reflection paths. On the other hand, since the idea of small-scale scattered transformation is difficult to connect with the existing planning and design system, it can be considered to assemble government representatives from related departments to form expert groups for specific issues in policy optimization.

This type is suitable for neighborhoods that have already achieved some improvement and public awareness with a group of activists or professionals continuously exploring and optimizing the mechanism under it.

**Case study: Mini Parklet program, San Francisco**

In 2005, Rebar Group, a design company, acquired the right to use a paid parking space along streets in San Francisco for two hours (Fig.14). They built the world's first temporary on-street parking park with seating, turf and plants, unlocking the potential of parking space from the inefficient and negative use. The event quickly gained global popularity because of its convenience of practice and evolved into a regular Park(ing) Day on the third Friday of September every year. People can use the temporary public space to hold pop-up libraries, community craft workshops, outdoor classrooms and other activities.

The San Francisco government gradually recognized the potential of this bottom-up approach to achieve urban renewal. In 2010, the government launched the Parklet Program and standardized the application process and design principles officially, which subsequently became a key component of San Francisco's Pavement to Parks (P2P) program.

The San Francisco Parklet program has transformed a prototype of spontaneous street space renewal into a part of urban optimization policy, bringing sustainability to the funding, operation and promotion of the program. What's more, it also enriches the means of urban governance and provides a kind of feasible way to implement upper urban planning.

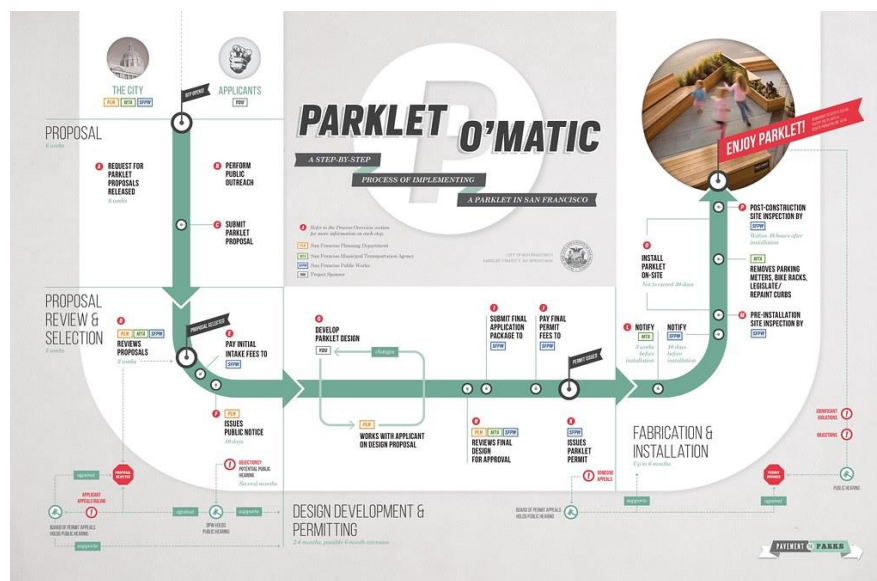


Fig.14. The San Francisco government has issued guidelines for the entire process of parking space renovation

Source: San Francisco Parklet Manual

2.3.5 Summary of the four modes

Tab.1. Summary of features of the four modes

Mode of Street Experiment	Operating characteristics		
	Implementation	Evaluation	Modification
<b>Towards stabilization and persistence of solutions</b>	To start from temporary and low-cost intervention to quickly shape space	To collect public feedback on the renovation and permanent transformation, following up objective data such as traffic flow, number and frequency of visitors and air quality	Selection of materials, design method and funding into implementable permanent proposals
<b>Towards reproducibility of transformation mode</b>	To prioritize sites with representative problems as pilot, considering the generalizability	To focus on the effectiveness of street experiments in covering universal spatial issues	To summarize the standardized working methods on both content and process
<b>Towards sustainability of public activities</b>	Coordination of temporary changes of street use Focus on organized operation of street activities	Focus on the immediate impact on traffic and the ongoing social benefits of the activities	Focus on the organization mode of public events and optimization of the content
<b>Towards update of planning policy</b>	Focus on the compatibility of the existing planning policy and experimental approaches	To assess the utility of the function of street experiments in relation to urban policies	Paths to optimize existing policies

Source: Author

Tab.2. Summary of features of the four modes

Mode of Street Experiment	Advantage	Disadvantage	Tips	Applicable scenario
<b>Towards stabilization and persistence of solutions</b>	To guarantee the spatial improvement in the long term	High demand for resources	/To establish understanding and recognition from the society /To set up progressive options for intervention /To establish a social cooperation platform	/Community where temporary intervention has achieved success /Community where the local people more accept the lasting transformation effects
<b>Towards reproducibility of transformation mode</b>	/To solve the universal issues /Standardized design procedures	Tend to neglect to respond to specificity issues of sites	/To balance the efficiency of design and the personality of the space itself /To provide differentiated options when building the design toolbox	/Communities with similar problems /Streets hoping to reduce the design cost and receive transformation effects quickly
<b>Towards sustainability of public activities</b>	/Time-sharing utilization of street space /To construct social networks	/The activation effect is essentially temporary /Large demand of time and effort which is not sustainable	/To obey policies to ensure the management of activities /To build consensus of streets as space for public interaction	/Neighborhoods with demands for public activities but limited operation experience /Lack of space for the diverse activities
<b>Towards update of planning policy</b>	Beyond the limits of perspectives of practice	Lack of precedent cases	To seek support for street experiments from the society	Achievements at the physical space level and a group of activists concerned with policy optimization

Source: Author

### 3 Practices in Shanghai: A case study of One Square Meter Action

#### 3.1 Site background and project introduction

##### 3.1.1 Site background

Shanghai is one of the four direct-administered municipalities of China. The city is located on the southern estuary of the Yangtze River, with the Huangpu River flowing through it. The population of the city proper is the third most populous in the world, with 24.89 million inhabitants in 2021, while the urban area is the most populous in China with 39,300,000 residents. Shanghai is one of the world's major centers for finance, business and economics, research, science and technology, manufacturing, transportation, tourism, and culture and the Port of Shanghai is the world's busiest container port.

Inside Shanghai metropolitan area (Fig.15), my research focusses on Xinhua Community, located in Changning District (Fig.16), the downtown of Shanghai with an area of 2.2 square kilometers. Residential area is the major part of the community with 76,000 existing residents. Various types of residential buildings like commercial housing, public housing and villas exist together. As a typical old residential community in the central of Shanghai, Xinhua Community has the common problems of old communities in the downtown, such as high population density, aging and limited potential space. But at the same time, Xinhua Road has many historical resources like cultural celebrities' former residences and some eye-catching urban renewal projects like Columbia Circle designed by OMA, Xingfu Lane commercial district, Yu Yuan Road commercial district, etc. The integration of residential and business functions makes it a highly dynamic and comprehensive community.

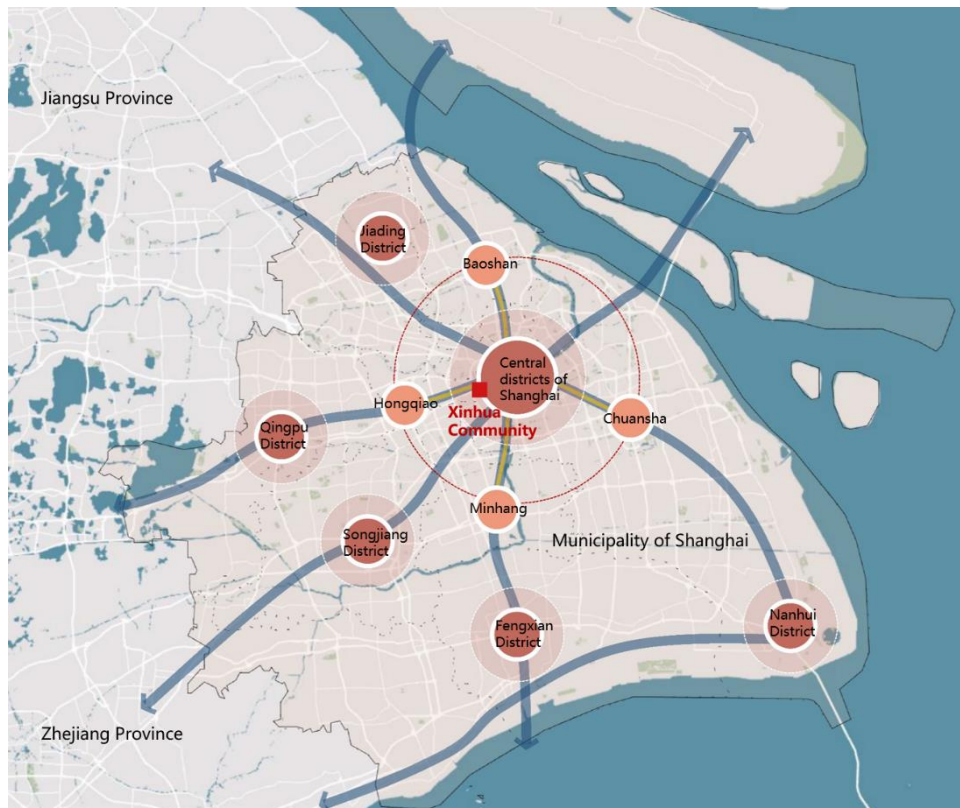
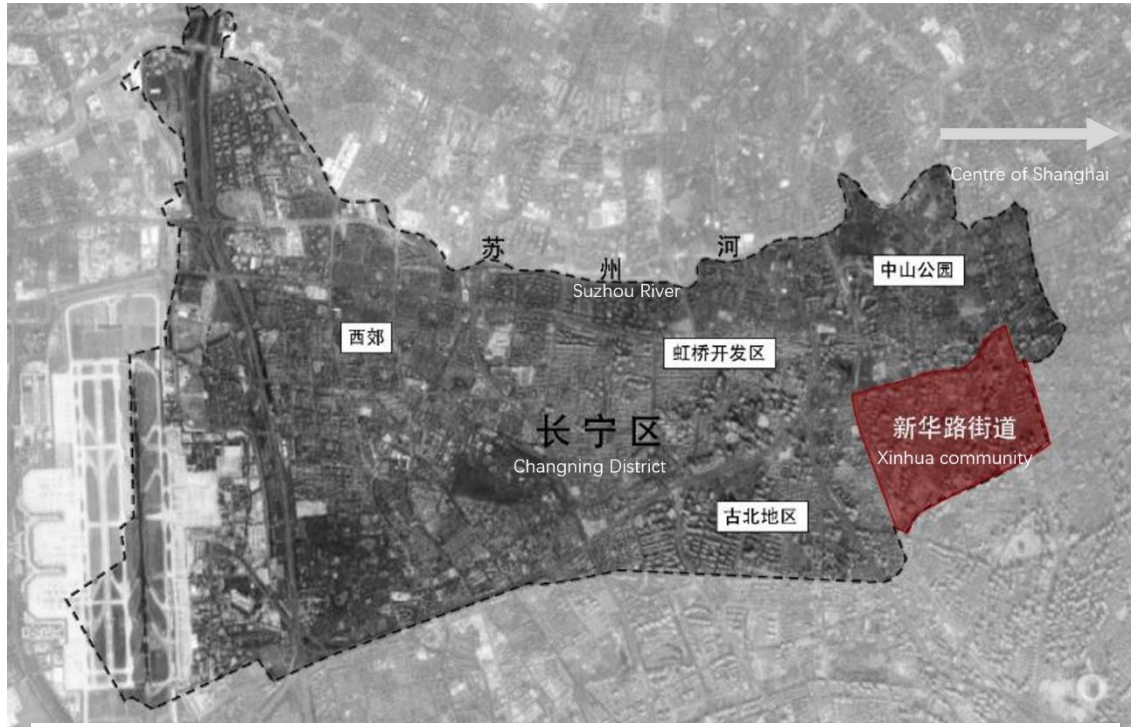


Fig.15. The position of Xinhua Community in Shanghai

Source: Author



*Fig.16. The position of Xinhua Community in Changning District, Shanghai*

*Source: Author*

### 3.1.2 Project introduction

The street experiment practice in the Xinhua Community is called One Square Meter Action which calls for proposals of intervention of streets in the area of one square meter. It takes streets of Xinhua community as the intervention space, encourages the local residents to proposal ideas through temporary and convenient methods restricted in the space of one square meter to activate the community. The action started from 2021 and the second season of it continued in 2022.

The official of Xinhua Community is the main promoter who provides the support of policies and funds. Besides, the social organization Big Fish Community Building Center is invited by the official to help establish and manage the operation platform considering Big Fish Organization's expertise in the field of urban planning and community building.

Unlike conventional community projects that are top-down driven and bottom-up responded, One Square Meter Action adopts the path of bottom-up initiated and top-down supported to stimulate more diversified and creative proposals. Not only the small-scale, temporary and direct intervention but also the experimental and progressive process of One Square Meter Action show the typical street experiment logic.

In 2021, One Square Meter Action started from the concept that everyone could make the community better by changing the space of one square meter around them, encouraging local residents, merchants and other people in the community to explore the community issues and solve them through small-scale, implementable intervention. Local proposers cooperated with designers and artists from society into two-person squads to make the proposals realized.



In 2022, One Square Meter Action took Resilient Communities as its theme, more than 50 participants brainstorming 100 ideas, forming more than 30 groups of deepened proposals and voting for 11 groups of proposals to be implemented with the support of experts. Each group could dominate no more than \$5,000 as the project funds which come from subsidies of the community official and revenue of activities. Proposals include a parent-child co-building playground, a toy exchange house for children, a street light upgrading action, a handicapped-friendly accessibility map, an intergenerational communication talk show for seniors on streets, etc.

By building a support platform for projects, One Square Meter Action has created a pool of supportive funds from government finance, foundations, social organizations and the public in the community.

- Timeline of One Square Meter Action in 2021 and 2022 (Tab.3)

*Tab.3. Important nodes of One Square Meter Action*

	<b>Important time node</b>	<b>Content of actions</b>
The first season of project: June to November, 2021	June 21st-22nd	One square meter floor sticker pop-up test
	June 28th	Calling for proposals from the local public and designers from the community
	July 15th	Deadline of application submission
	July 25th	Binding of cooperation between residents and designers, one initiators and one designer forming a project project
	July 26th - August 21st	Program deepening stage
	August 22nd	Public reports of selected proposals after public consultation and voting
	September-October	Completion of the program in reality
	October 10th	The open-up of projects and One Square Meter Action exhibition to the public
The second season of project: August to November, 2022	August 19th	The launch of Season2
	August 28th	Conference of action briefing, regulating the theme of Future Resilient Communities with categories of neighborhood business recovery / child-friendly community / sustainable living / voice of specific groups / community group activation / community space renewal
	August 31st	Deadline of application submission with 50+ proposals received
	September 3rd	On-site workshop with 30+ local residents brainstorming together
	September 18th	Online Program selection, taking the realizability and localization as selection criteria
	September 24th	Public reports of selected proposals after public consultation and voting
	October 1st - November 13th	Program implementation

	November 19th-	The open-up of projects and live field visit on the first day
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*Source: Author*

### 3.2 Description angle: Process and practitioners of street experiments

From the angle of street experiment, One Square Meter Action can be broken down into three cyclic stages of "practice - test - optimize – practice again" (Tab.4).

The first cycle, the "pop-up test cycle", is a one-day spatial intervention to test the response of the local public, exploring the feasibility of the event whether they will be interested in it.

The second cycle, the "Season 1 cycle", is the formal implementation of projects in cooperation with residents and artists for the first time, realizing the complete street experiment intervention.

The third cycle, the "Season 2 cycle" in the second year, has been a more mature round with the team from the community playing a stronger role in promotion of the initiative.

*Tab.4. Decomposition of the three cycles of One Square Meter Action*

<b>Phase of cycle</b>	<b>Implementation Session</b>	<b>Evaluation Session</b>	<b>Modification Session</b>
Pop-up test cycle	One-day pop-up action	To interview people's attitudes and ideas to test the feasibility	To define the main concepts and framework of action
Season 1 cycle	The design and implementation of proposals led by Big Fish	To track and report on the actual usage and public satisfaction	To summarize the achievement and promote through exhibition
Season 2 cycle	New round of issues initiated and realized, emphasizing the master of local community teams	To track and report on the actual usage and public satisfaction	To conclude a replicable mechanism

*Source: Author*

In terms of the design mode of street experiments, One Square Meter Action is a type oriented towards reproducibility of transformation mode, exploring replicable mechanisms that allow residents to collaborate and dominate.

At the same time, the richness of the activities and the influence of the project on participatory planning which become a representative case in the Participatory Community Planning Guidelines of Shanghai(2022) make the project as design modes towards sustainability and update of urban policy as well (Fig.17).

Chapter	Section	Topic	Page
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062	【工具箱 21】 社区规划工具	082	【工具箱 33】 社区规划工具

Fig.17. Table of contents of Participatory Community Planning Guidelines

Source: Participatory Community Planning Guidelines of Shanghai(2022)

**3.2.1 Pop-up test cycle: One-day street experiment to exploration the feasibility**  
 After the initial concept of One Square Meter Action took shape, the organizers conducted two pop-up events to test the concept without pre-determined topics or participants. On June 21st, 2021, a one-square-meter rectangle with blue tapes appeared on the floor of a busy section of the Xingfu Lane commercial street with the text "This is one square meter, this is your moment" and the organizers used cameras to record the reactions of passersby and interviewed them how they would deal with the one square meter. The second pop-up event was a bicycle equipped with One Square Meter Action sign which travelled in the community and collected residents' impressions of the Xinhua Community and ideas for One Square Meter intervention. Residents can fill in through the QR code and see other people's wishes in return.

In the end, the organizers set the concept of empowering the community with low-cost, temporary, easy to operate and effective approaches as the criteria for the events. In the meanwhile, considering the need for professional supports, professional designers are invited to help realize the initiatives (Fig.18).

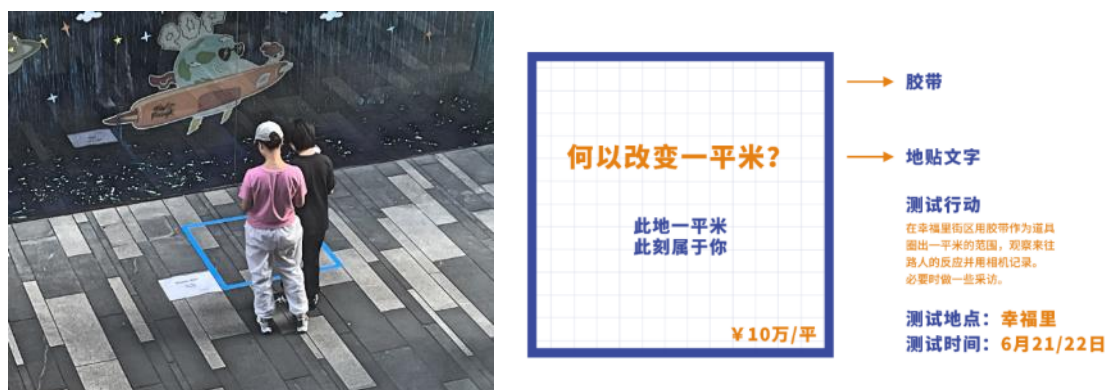


Fig.18. One square meter pop-up sticker

Source: Internet

### 3.2.2 Season 1 cycle: An exploration of street experiment suitable for Shanghai

The first step is to mobilize local residents to initiate proposals. One Square Meter Action encourages intervention in line with Xinhua's local culture and real problems. Three weeks later, 30 groups of qualified proposals were recruited by the voting of professionals, officials and local residents based on the operability and attractiveness of proposals, which could be divided into three directions as child-friendly, space beautification and local culture (Tab.5). In order to support the residents, professionals with design-related backgrounds are invited into the proposals through the process of "application-acceptance-plan-conduction-completion". One designer cooperates with one local initiator, forming a two-person action team.

Tab.5. Content and position of projects of 2021 One Square Meter Action

Classification	Project Name	Project content	Position	Features of position
Children-friendly	a 童趣新华	Exhibition promenade, beautification of pavements	In front of kindergarten	Community roads
	b 一平米沙坑	Sandbox games	Mobile Spot	Not fixed
Neighborhood interaction	h 怪物招领	Hut sharing community stories	Lane 345, Xinhua Road	Community roads
	d 银庄酒馆	Resting space	At the entrance of the bank	In front of shops
	i 心情周报在新华	Exhibition board for information consultation and mood sharing	Mobile Spot	Not fixed
Environment improvement	f 送你一朵小花	Interactive guide sign	No.40, Lane 329, Xinhua Road	Community roads

	j 城事泡泡	Interactive bubble machine	Lane 345, Xinhua Road	Community roads
Pet-friendly	g 自带闪光拴狗柱	Dog bolting point	At the entrance of two cafes	In front of shops
Intergenerational Communication	e 瓷旧迎新	Art wall decorated with crushed porcelain	Lane 329, Xinhua Road	Street corner, Community roads
Arts for the People	c 艺术便民橱窗	A window for residents to show their artwork	Near No. 369 Xinhua Road, No. 607 Xinhua Road, No. 600 Dingxi Road, No. 710 Dingxi Road	Street corner

Source: Author

Ten groups of landing plans were finally selected after further design, coordination of positions with the community and public inquiry. The characteristics of positions show that projects are scattered on the more residential streets in response to residents' demands for public activities. The small and flexible intervention make up the limited public space in such old residential areas (Fig.19).

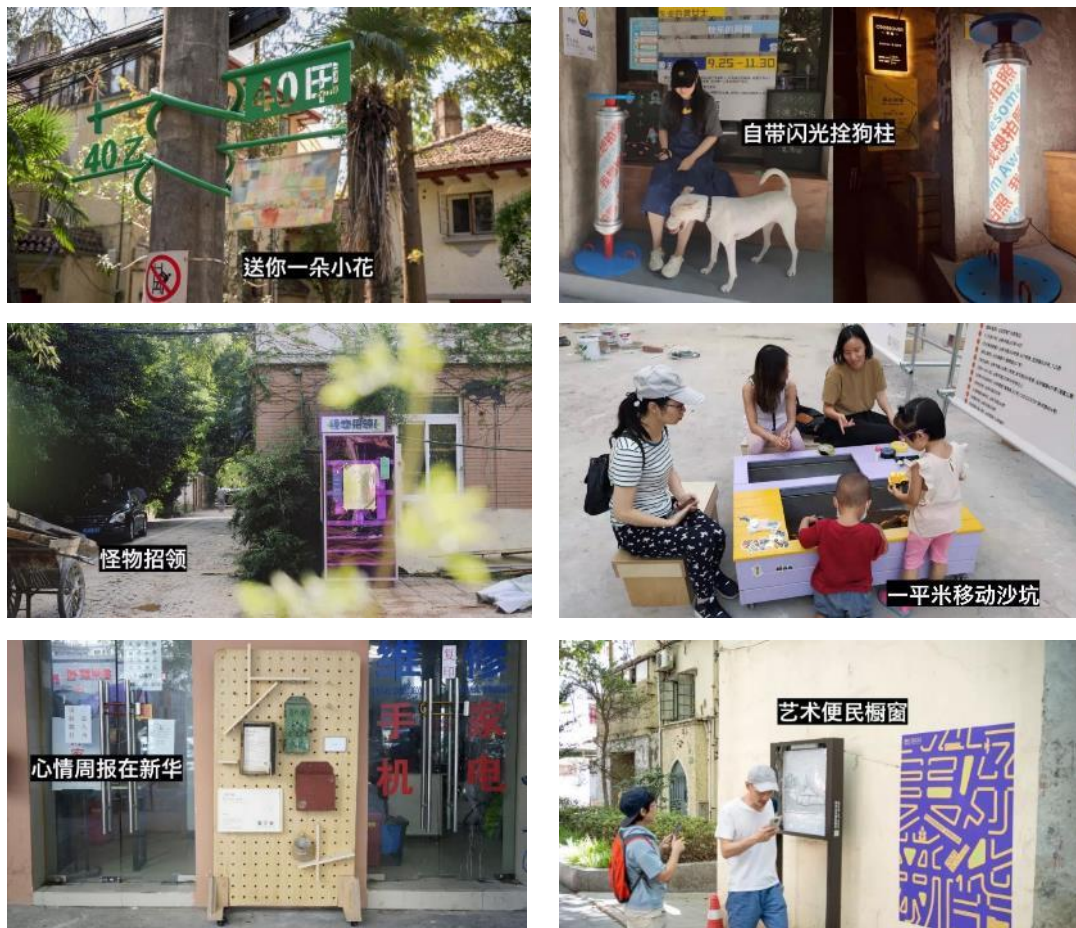


Fig.19. The implemented proposals of One Square Meter Action

Source: Internet

In the following stage, Big Fish also realized the value of displaying the whole activation process by means of online follow-up articles and offline exhibition. Through a single event, it may be difficult to fully solve the problem, but raising the issue to make more people aware of it may be more meaningful.

Big Fish summarized the participatory design process of One Square Meter Action in Xinhua community gallery which was once an abandoned carport. Through the exhibition, the effectiveness of such experimental mode, the significance of participatory planning for the community and the value that everyone can change the community for the better within one square meter would be spread further. Although Season 1 of One Square Meter Action is just a temporary spatial intervention experiment for half a year, it has accumulated experience in organizing and operating such street experiment intervention and has developed the brand of One Square Meter Action, which can help promote the street renewal of more neighborhoods in the long term.

### 3.2.3 Season 2 cycle: A new round of practice in an advanced way

In 2022, the second season of One Square Meter Action began (Tab.6).

This time, instead of the two-person action team composed of one local proposer and one designer to offer support, it proposes three types of intervention roles: proposer, activist and supporter. As a proposer, he/she can make his/her own suggestions for the community based on his/her daily observations before and after the pandemic towards a more resilient community. As an activist, he/she can conceptualize and implement a proposal with the help of a certain subdivision for the community building. As a supporter, he/she can be a volunteer, a researcher or a journalist, participating in the action according to his/her own interests and skills.

At the same time, the continuity of proposals is emphasized so as to continuously grow and develop.

*Tab.6. Content and position of projects of 2022 One Square Meter Action*

Classification	Project Name	Project content	Position	Features of position
Children-friendly	桔子游戏场 Orange playground	Free playground for all ages of children	Lane 345, Xinhua Road	Community roads
	社区玩具交换屋	Exchange of underused toys	Lane 345, Xinhua Road	Community roads
Pet-friendly	便民橱窗 2: 城乡联动窗口	The continuation of the art window, presenting culture from various sources	Near No. 369 Xinhua Road, No. 607 Xinhua Road, No. 600 Dingxi Road, No. 710 Dingxi Road	Street corner
Intergenerational Communication	点一盏心灯	Streetlights transformed into book floating points	No.40, Lane 329, Xinhua Road	Street corner, Community roads

*Source: Author*

Overall, the number of spatial interventions is lower than that of last year since many proposals focus on the management of events and creative products. However, these four

proposals are more mature than practice of last year in terms of not only the scale but also the organization mode.

On one hand, some proposers from the last season continued to deepen the initiatives. For example, the proposer of last year's Interactive guide sign further combined the streetlight space with the reading and book floating function; one Square Meter Window has been continuously updated every one to two weeks for the last whole year and form a series of tracking and reporting procedure for online publication.

On the other hand, a group of local residents sharing a same interest or goal have gathered together to form a team to sustainably operate the renovation project. Taking the Orange playground as an example (Fig.20), an unused green space in the community is transformed into a free playground for children of all ages, totally built and operated by parents from Xinhua Community. Children themselves participate in the imagination what the playground is like and parents help them realize it with recycled wood, ropes and tires. The parents are empowered as Xinhua local playmakers capable to organize and manage events, establishing a set of self-management and operation mode. What's more, by means of financial subsidies from the community official and revenue from activities, the fund is guaranteed. Through the organized team and sustainable source of funds, the playground can be continually renewed to meet the changing demands from children.



*Fig.20. The construction of Orange Playground by the local residents*

*Source: Internet*

### **3.3 Evaluation angle: Effectiveness and feasibility of intervention**

The evaluation has been done through direct observations, review of documents mainly

published by the official, interviews and surveys. The main topics I concentrate on are the effectiveness and feasibility of intervention, which emphasizes both the outcomes and process of the intervention.

### 3.3.1 Evaluation disciplines involving effectiveness and feasibility

The concept of street experiments originates from the combination of tactical intervention and experimental thinking. Correspondingly, when testing the outcome of its experimental progress, it is necessary to synthesize the effect of spatial intervention and the way the street experiment is managed. On this basis, this passage further subdivides the criteria under each dimension and establishes the following evaluation system (Tab.7).

*Tab.7. Dimension, criteria and method for the evaluation of street experiments*

Evaluation based on the results of street experiments			Evaluation based on the process of street experiments		
Dimension	Content	Methodology	Dimension	Content	Methodology
Spatial Environment	To enhance the quality of the environment	Social Survey	Follow up and assessment	Feedback approaches and tracking mechanisms	Literature research
	To increase community vitality			Periodicity and professionalism of the assessment	
Spatial Consensus	To strengthen social interaction		Optimized Abilities	Resilient adjustment and evolution	
	To develop local identity				

*Source: Author*

### 3.3.2 Effectiveness: The influence of intervention

A Spatial environment: environmental quality / community vitality

- The improvement of spatial environment is obvious from the point itself to the surrounding neighborhood

The improvement effect of the renovation consists on the increase of various leisure, interaction and display spaces and the friendliness of streets to pedestrians. Through small-scale, temporary spatial intervention, One Square Meter Action has sorted out and activated the existing spatial elements, shaping new spatial functions and guiding new spatial flow, which shows a strong catalytic effect. In terms of the choice of positions, scattered points in the streets of the residential land area are chosen, forming a small-scale removable spatial intervention network, which also connects the northern and southern areas where public service facilities are more concentrated (Fig.21).



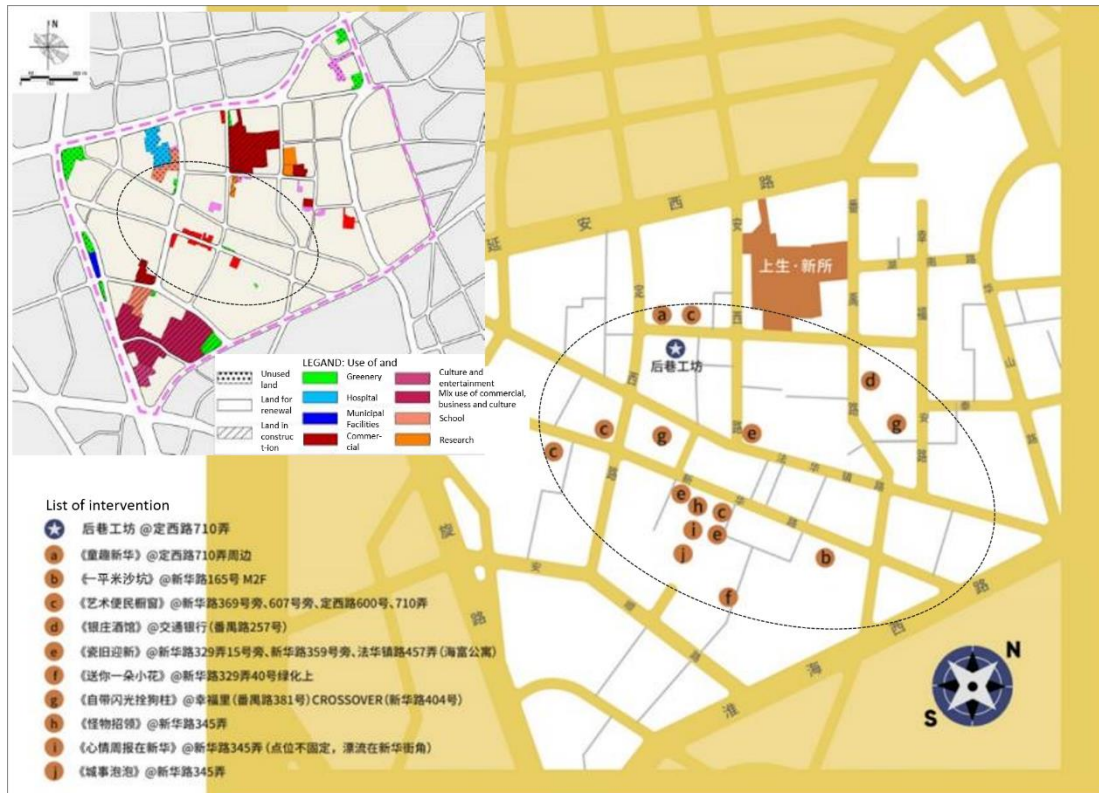


Fig.21. The choice of positions is in response to the issue of lacking public service in the community

Source: Author

- Residents' willingness to be engaged in public activities has increased, especially for some dynamic activities

New spatial intervention has increased the types of activities on the street, creating new nodes and roaming paths which can enhance the pedestrian's willingness to stay or engaged in activities.

I conducted a simple survey on January 10th, 2023. 70 residents whose ages ranging from 6 years old to 75 years old in Xinhua Community completed the survey. 45% interviewees indicate that they have increased their willingness to engage in static activities like resting and reading, while 65% show increased interest on dynamic activities like jogging, exercising, walking dogs in the intervention area. The higher number compared to static is presumed to be related to the type of dynamic activities supported by the intervention.

Young mothers in the community are interested in the intervention that take into account the needs of children's activities, such as the One Square Meter Sandpit, the Children's Fun of Xinhua, and the Orange Playground, offering more opportunities for children to play.

#### B Spatial consensus: social relationship/ sense of community

- Community relationships are becoming closer through cooperation and interaction

One Square Meter Action has demonstrated its positive effects on facilitating social interactions at various levels. "Through One Square Meter Action, we encourage people to think more about how to make our community better and then form a sustainable action,

helping the relationship between neighbors closer and more resilient ". So says the operating platform, Big Fish Organization.

The deep collaboration between the local residents and designers in the form of a team will not only contribute to the progress of the project, but also provide a new opportunity to help shape new relationships among them.

Furthermore, in the second season, the tightness among members in the team is more various. Taking the Orange Playground as an example, "New Star Fire" is the action team formed by Xinhua's local moms and dads to help manage the playground project. They share the same goal and have similar topics. They establish their own online chat group for sharing relevant data, which is pretty cohesive.

For community residents, intervention such as One Square Meter Sandbox and Dog bolting point create a period of time for interaction, which is more likely to stimulate opportunities for making new friends.

*Tab.8. Excerpts of interviews related to the construction of social relationships from the management teams*

Interview Content	Interviewees
<p>I received a lot of help from my friends when I was involved in the One Square Meter Action. During the creation process with Jiang, her imagination enriched the visual content of the "Monster Solicitation" in terms of graphics and illustrations; Chen Hao helped me to complete the initial idea of the kiosk. At first, I hesitated and thought for a long time about what to name the collection of stories, but finally I decided to name it "Monster Solicitation", with a feeling of "this is it". Monsters are not only other people, but also our lost selves; "Reclaim" is a friendly signal to build a good relationship. What's more, one resident, who actually met me through this project, said after reading my story that the life of a character named Cyclone Monster was like a reflection of his own and he felt a little released.</p>	<p>Wan Qian, the designer of Monster Recruiter</p>
<p>What we had envisioned and worked hard to do was to invite artists serve the residents. However, in the process of communication with the residents, we found that there are many creative people with ideas in Xinhua Community, so we provided Xinhua Art Window, hoping that everyone can come to show their good ideas, which is also a process of forming a spiritual dialogue with the community.</p>	<p>Deyi Studio, the creator of the Art Window</p>
<p>The One Square Meter Bookstall project has been a bit of a mixed bag, with two versions of the project being developed, but ultimately not implemented. During the process, the artist June and I became good friends and have been hanging out a lot in the past few weeks. I'm grateful to Big Fish for starting the One Square Meter Action, which created a lot of opportunities for people to connect with each other.</p>	<p>Nikko, the proposer of One Square Meter Bookstall</p>
<p>During the activity, it was a surprise that I found the elderly people in the community were very warm and accommodating. The best relationship I established was with Grandpa Ma, who is kind and really wants more people to help build the community.</p>	<p>Zhou Zhichen, the designer of the art wall decorated with crushed porcelain</p>
<p>I am grateful for the opportunity. I think the biggest reward is to meet my partner Tang. She gave me a lot of new ideas. And as an architect, I can also play my professional strengths and work with her to complete this space transformation.</p>	<p>Liu Zehua, the creator of Send You a Little Red Flower</p>

*Source: Author*

- The establishment of community identity

The vast majority of interviewees (Tab.8) recognize that the diverse and innovative spatial intervention of street experiments have enhanced the feature of neighborhoods. At the same time, in the transition of being involved into the intervention more and more deeply, from participation to organization, the local residents and the community have become more closely connected. And the process of continuous input into the local community and the positive feedbacks from the community further enhances residents' motivation to participate in community governance.

### 3.3.3 Feasibility: The process of intervention

A Follow-up and assessment: Feedback tracking/ assessment system

- There is a relatively clear sense of tracking

In terms of follow-up, the operator of One Square Meter Action, Big Fish, attaches great importance to tracking and recording. The whole process and final outcomes are all published online in the way of text and video. What's more, they maintain deep communication with the local people, providing public feedback channels in the whole process of the project.

- Assessment methodology still needs to be emphasized and developed

The assessment method of projects still relies on subjective impressions after on-site visits, professional information collection methods and evaluation tools have not been adopted yet. In addition, the existing evaluation is basically oriented towards the solution of emerging problems and the normalized assessment system has not been established.

In the future, data such as the activity features of community residents, the revenue status of local businesses and the diversity of on-street cultural activities can provide more powerful support for the improvement of street experiments and display the effectiveness more obviously.

B Optimized Capabilities: Resilient Adjustment and Evolution

- Good mechanism brings great potential to adjust and evolve

By comparing the two seasons of the One Square Meter Action, we can see that it has become more mature in terms of structure, operation and fundraising, showing a continuous evolution. In terms of the main driving force, as community residents become more active as activity proposers and are willing to invest more time and energy in community activities, Big Fish has changed its role from a strong promoter to a support platform, emphasizing more on the overall control of the process. When it comes to the organization and implementation of specific proposals, the residents who propose will take more responsibility. Accordingly, the cohesion among residents increased. As more residents join in the management group, the activities are organized in small groups with common interests and goals instead of the original 2-person team.

In terms of funding sources, the official of Xinhua community establishes the Xinhua-Community Creation Center, forming a supportive pool of funds to help intervention in the

community more sustainable and continuous. The multi-channel revenue comes from income from space operation and services, government subsidies, partnerships with foundations, etc. In terms of intervention approaches, the proposals of the new season are not limited to 1 square meter. They more refer to low-cost and easy-to-implement spatial transformations in general. What's more, they also care about the management of events after renewal. For example, the Orange Playground project plans to organize monthly activities for children in collaboration with PARS, a social organization focusing on the planning of games. And children are free to access the playground in the rest of time.

## 4 Practice in Milan: A case study of Piazza Aperte

### 4.1 Site background and project introduction

#### 4.1.1 Site background

Milan is a city in northern Italy, capital of Lombardy and the second-most populous city proper in Italy after Rome. Milan is considered a leading global city, with strengths in the fields of art, chemicals, commerce, design, education, entertainment, fashion, finance, healthcare, media, services, research and tourism. The city has been recognized as one of the world's four fashion capitals thanks to several international events and fairs, including Milan Fashion Week and the Milan Furniture Fair, which are among the world's biggest in terms of revenue, visitors and growth.

#### 4.1.2 Project introduction



*Fig.22. Piazza Spoleto-Venini in Milan*

*Source: Internet*

The "piazza aperte" (open square) " project is a tactical urban renewal program launched by the Municipality of Milan in collaboration with Bloomberg Associates, National Association of City Transportation Officials (NACTO), and Global Designing Cities Initiative in 2018. Piazze Aperte aims to enhance public spaces and turn them into community gathering places, to extend pedestrian areas, and to promote sustainable forms of mobility to benefit the environment and improve the quality of life in the city (Fig.22). The goal is to put public spaces once again at the center of community life and to encourage people to make the most of public squares, rather than just using them for parking or thoroughfares. The main idea of the project is to transform some redundant streets or intersections into new public spaces through the implementation of low-cost, short-term, easy-to-implement, reversible, light, and scalable interventions, which is a typical kind of street experiment. This use of interim or tactical urbanism strategies allows cities to try out new uses for urban spaces, and to launch long-term strategies to promote city living (Fig.23).

- Timeline of Piazza Aperta from 2018 to 2022 (Tab.9)

Tab.9. Important nodes of Piazza Aperta

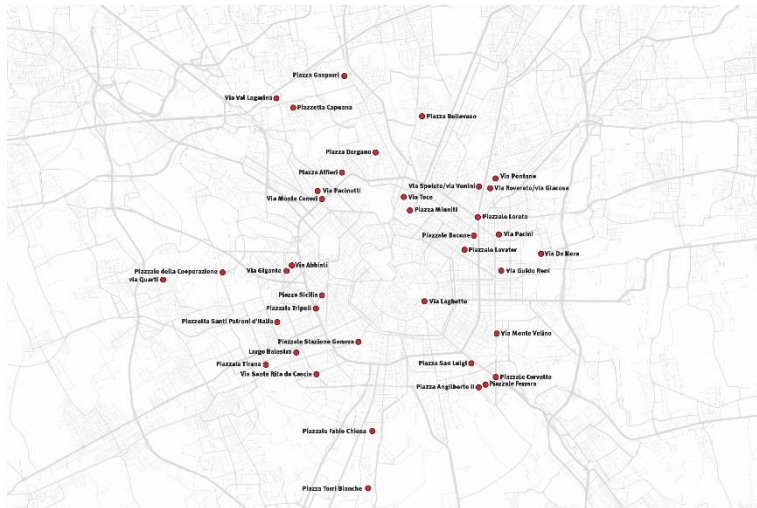
Important time node	Content of actions
September 2018	Launch of Piazza Dergano e Angilberto II—the first piazze to be implemented as part of a collaboration with Bloomberg Associates, Global Designing Cities Initiative, and Comune di Milano
2019	13 piazze implemented
September 20th - November 20th, 2019	Open call for “piazze aperte in ogni quartiere” (Open Squares in every neighborhood) proposals receives 65 proposals distributed in 57 positions from 200+ associations and 800+ citizens
January 2020	Open call presentation and workshop
2020-2021	Implementation of 22 piazze
2022	Release of Piazze Aperte Report and announcement of the new phase of the Program. As of May 2022, the Municipality of Milan has now implemented almost 40 tactical interventions and continues to plan new ones—with one in two Milanese residents now living within 15 minutes (800 meters) of a piazza aperta (Fig.24).

Source: Author

TACTICAL URBANISM MEASURES FROM 2018 TO 2021			
2018	2019	2020	2021
Piazza Dergano - 1	Piazzale Stazione Genova - 4	Piazzale Loreto - 17	Via De Nora - 35
Piazza Angilberto II - 2	Piazza Gasparri - 5	Via Pacini - 18	Piazza Torri Bianche - 36
Piazza San Luigi - 3	Via Spoleto / via Venini - 6	Via Laghetto - 19	Piazzale Bacone - 37
	Piazza Belloveso - 7	Via Toce - 20	Piazzetta SS Patroni - 38
	Piazzale Lavater - 8	Piazzale Ferrara - 21	
	Via Guido Reni - 9	Piazza Sicilia - 22	
	Piazzale Corvetto - 10	Via Monte Velino - 23	
	Piazzale Cooperazione - 11	Via Val Lagarina - 24	
	Via Rovereto / via Giacosa - 12	Piazza Minniti - 25	
	Via Abbiati - 13	Via Pontano - 26	
	Via Santa Rita da Cascia - 14	Piazzetta Capuana - 27	
	Via Gigante - 15	Piazzale Tripoli - 28	
	Piazza Alfieri - 16	Piazzale Fabio Chiesa - 29	
		Largo Balestra - 30	
		Piazzale Tirana - 31	
		Viale Monte Ceneri - 32	
		Via Pacinotti - 33	
		Via Quarti - 34	
Suggestions submitted in response to the Call for proposals applications "Piazze Aperte in ogni quartiere"			
Pilot projects			
Local Initiative projects			

Fig.23. List of Piazze Aperte in Milan

Source: Piazze aperte - A public space program for Milan



*Fig.24. Positions of Piazze Aperte in Milan*

*Source: Piazze aperte – A public space program for Milan*

## 4.2 Description angle: Process and practitioners of street experiments

From the angle of street experiment, Piazze Aperte can be broken down into three cyclic stages of "practice - test - optimize – practice again" (Tab.10).

The strategies of the project are mainly divided into three phases:

The first cycle, the "exploration cycle", is to explore the working framework of street experiments, adopting temporary actions like colorful graphics on the ground and moveable street furniture to test the effects of street experiments.

The second cycle, the "proposal cycle", is to invite the public, artists and professionals from the society to join in the project. For example, in the project of Piazza Loreto, artists are involved into the design of artistic pattern on the floor. At the end of 2019, the City of Milan launched "Piazze Aperte in ogni quartiere" to call for proposals from the public.

The third cycle, the "fixity cycle", is to conduct more permanent changes to maintain the benefits from the previous stages, this phase tends to call for a longer construction period and more resources invested.

*Tab.10. Decomposition of the three cycles of Piazza Aperta*

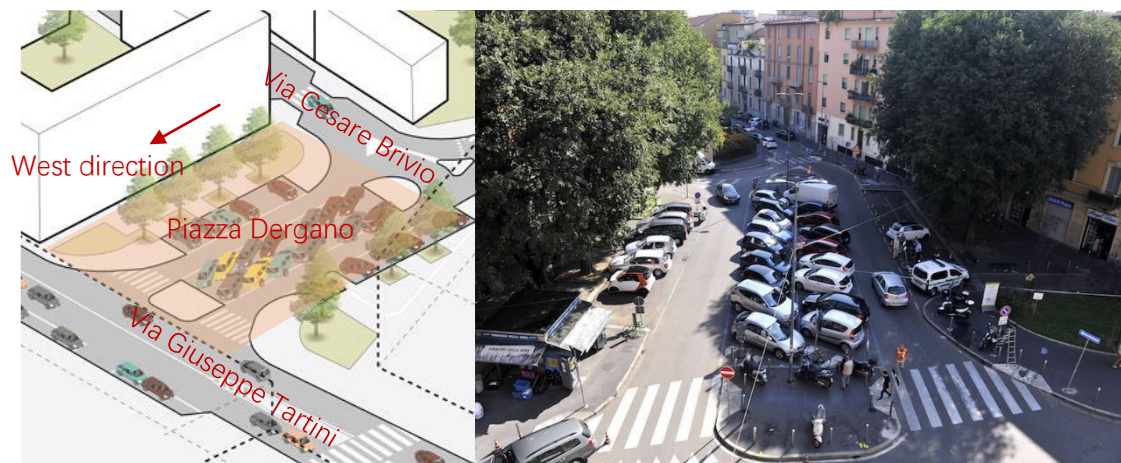
Phase of cycle	Implementation Session	Evaluation Session	Modification Session
Exploration cycle	Temporary intervention attempt	To record the changes before and after intervention	To confirm the effective parts of the previous intervention
Proposal cycle	Proposals calling for the public and professionals	To record the changes before and after intervention	To summarize the basic Collaboration Agreements as a guide
Fixity cycle	More permanent intervention for the previous projects	To record the changes before and after intervention	To conclude a complete and replicable mechanism

*Source: Author*

#### 4.2.1 Exploration cycle: An attempt to adopt street experiment tool in Milan

The temporary nature of tactical urbanism allows cities to try out solutions that can be reversed if needed before investing time and resources into permanent infrastructure. Interim, simple, fast, and economical solutions can produce immediate benefits, test experimental solutions, help in making the right choices, and support future decision-making on permanent solutions.

Piazza Dergano was the first implemented “Piazze Aperta” in Milan, which is of great demonstration significance. Piazza Dergano was located in a peripheral area in the northwest of Milan, in the Dergano neighborhood.



*Fig.25. The scene of Piazza Dergano before the street experiment*

*Source: Author & Internet*

Before September 2018 when the project hadn't been launched (Fig.25), this area was once occupied by parking cars. The square was cut by two motorized lanes in east-west directions, offering four lanes for parking. Pedestrians were allowed for passing safely in the periphery



*Fig.26. Proposal of the transformation of Piazza Dergano in Milan*

*Source: Piazze aperte - A public space program for Milan*



of the square. When people walked along Via Giuseppe Tartini, they needed to pass through two zebra crossings, which added a lot of unstable and unsafe elements. In this case, the flows of mobility appeared to seriously contradict the flows of pedestrians. Furthermore, the flows of mobility also faced a lot of complexity considering the limitations of driving directions and the number of intersections. Therefore, one of the main goals of this intervention is to adjust the relationship of pedestrians, cyclists, and car owners in such a complex context.

The first phase is from September 2018 to November 2020. The construction period took just three days. The schedule of completion is as follows (Tab.11):

*Tab.11. Timeline of transformation of Piazza Dergano*

<b>Node</b>	<b>Content</b>
September 3rd, 2018	Start of changes to the road network, construction of new signage, and installation of 3 new racks
September 17th-20th, 2018	Installation of 30 planters, 10 benches, 2 ping pong tables, and picnic table. Collective painting event in the new square
September 22th, 2018	Opening party on the occasion of the "World Car Free Day"
November 13th, 2018	Public meeting for updates about the feedbacks after intervention with the municipal councilors.

*Source: Author*

The flows of traffic undergo a lot of changes. The northern sidewalk is connected with the square area, making the northern bars more accessible to people in the square. The northern single-direction lanes are transformed into a part of the square. The southern and eastern streets keep one-way direction, which means the traffic amount surrounding the square could be less. The flows of slow mobility and pedestrians are also considered in the plan.

The square is divided into various layers from north to south based on the speed of activity (Fig.26). These are the colors of the circles, like yellow, red and white, painted on the asphalt of the square which, together with other elements of street furniture, have changed its face and livability. The very northern part is composed of greenery, seating features, and a newsstand, providing a relatively stable and quiet environment for communication. The middle layer has mainly functioned as a playground for children, a passage for passers, a sports venue for exercises, equipped with ping pong tables and hopscotch patterns on the ground. The southern layer contains bike racks and a new BikeMi station, helping the cyclists involved in the square, adding a kind of soft segments together with potted plants, and discouraging irregular parking on the pavement (Fig.27).

About the eliminated parking spaces, solutions are also studied to receive the 20 lost parking spaces, recovering them in the adjacent streets, and also creating timed parking lots to allow easier access to the commercial activities in the square.

In the following period, activities with or without associations are held: guided tours of the neighborhood, ping pong tournaments, boxing demonstrations, magic shows, musical performance, food trucks, and so on. Since the square is created by arranging furniture and equipment in "temporary" positions, it means that further changes can be made in case of unexpected problems.

The implementation of this phase successfully put the reconfiguration of the traffic flows and functional layout into action, which means a lot especially when this is the first “piazze aperte” project conducted which performs a good example for the following experimentation. A structured and low-cost project is susceptible to adjustments during construction based on the needs and habits of the inhabitants: in this regard, the councilors confirmed that a meeting would be scheduled in November 2018, two months after the inauguration to discuss problems or positive values that emerged from the experiment with the residents.



*Fig.27. Before and after the transformation of Piazza Dergano*

*Source: Internet*

The monitoring of the first 40 days of the experimentation on Piazza Dergano, carried out through videos and inspections, concerns the comparative analysis of vehicle, cycle and pedestrian flows, travel speeds, and ways of using public spaces and has already produced the first results during the public meeting. In addition, the Municipality, supported by the Bloomberg team, has prepared and has already carried out about a hundred sample interviews on the population to understand the first guidelines.

In particular, as regards Dergano, the comparison of the data collected before and after the experimentation shows a 50% increase in the flow of pedestrians along the adjacent Via Tartini. 86% of the interviewees expressed their opinion in favor of pedestrianization, 72% said they frequent the square more, 84% would be happy if the experimentation became permanent. 35% said they spend more than an hour a day in the square, which has become a landmark for the neighborhood. The main concern (51%) concerns the maintenance of cleanliness and maintenance, while there is a great demand (89%) to increase the green and play areas in the final phase. Some citizens have suggested repositioning the ping pong tables and extending

the colored pavement close to the trees.

#### 4.2.2 Proposal cycle: The involvement of more people as subjects of intervention

After various demonstration projects in 2018 and 2019, in which the city tested the new methodology, at the end of 2019, the City of Milan launched a call for proposals entitled “Piazze Aperte in ogni quartiere” (Open Squares in every neighborhood), with the aim of identifying new spaces to be transformed, receiving over 60 suggestions.



*Fig.28. The design of Piazza Loreto with the help of artist*

*Source: Internet*

The working framework of this period is composed of seven steps.

0 Ideas: To come up with some ideas about the interventions through proposals collected from the public. The City plans to scale the program to all city neighborhoods. For this reason, it invites citizens, local associations, and Councils to suggest new places fit to be revitalized through similar projects at a dedicated e-mail address ([piazzeaperte@comune.milano.it](mailto:piazzeaperte@comune.milano.it)). The City is looking to expand its ability to find local partners for each project and work with them, planning the space and making sure that it is used by as many people as possible.

1 Involvement: To build territorial, policy, and technical support from different departments and social groups.

2 Rating: To begin the assessment of the feasibility of projects and share with municipalities by technicians and professionals.

3 Co-design: To develop projects from proposals (The proponents and the administration refine the objectives of the intervention and the tool kit of the project - Cooperation between administration and proposers to come up with identified technical solutions - A drafted proposal). In the project of Piazza Loreto, artist was specially invited to create the pattern for the floor, which grasps the letter of Loreto as the inspiration (Fig.28).

4 Public notice and approval of the project: To be improved through critics from the public, professionals, and municipality and to be approved by the official to gain administrative support.

5 Implementation: Signing agreements of collaboration among groups – Guiding the mobility and signposting - Furnishing and coloring of the new square - Inauguration of the renewed square.

6 Maintenance and evaluation:

To maintain the quality of the transformed squares, organizing events according to people's needs and improved when necessary and to evaluate the effects of the projects for the final design proposal.

Through "Collaboration Agreements" – a written tool through which the City of Milan and its residents define the aims, objects and expected results of the "Piazze Aperte" program – active citizens, informal groups, associations, educational institutions, committees, foundations, and companies promoting "corporate maintenance" can collaborate with the Administration to implement programs that address the management, maintenance, improvement, and activation of various forms of urban commons (Fig.29).



*Fig.29. Piazza Sicilia before and after the intervention*

*Source: Piazze aperte - A public space program for Milan*

#### 4.2.3 Fixity cycle: Intervention in response to a longer term



*Fig.30. Piazza Dergano after the second round of transformation*

*Source: Internet*

After a twelve-month (at least) experimentation and a positive comparison with the inhabitants of the neighborhood, the intervention of Piazza Dergano moved to the definitive arrangement, integrating it with structural works and expanding the redevelopment to the neighboring streets, where the flooring will be redone flush in continuity with the square. After the first stage of experimentation and evaluation, the second phase started in November 2020, taking almost 10 months for the construction process. Now the established square has been put into use.

The main task of this stage is to maintain successful parts tested in the experimentation period more permanently. The Municipality, working with citizens, will subsequently develop a project for a permanent square to be built using durable materials and identifying a definitive layout (Fig.30).

To be specific, after experimenting with the pedestrianization of Piazza Dergano, the municipality of Milan approves the redevelopment of the area by creating wider and more usable pedestrian spaces by raising the former streets to sidewalk level; redesigning the flowerbeds of the trees located north of the square; redevelopment of flooring with higher quality materials; insertion of new elements of street furniture such as benches, flower boxes and trees. The concrete curbs of the existing flower beds will be uniform, replaced with others in granite. The flooring will be in stone cubes except for the areas provided for green or concrete. The road passage between via Tartini and via Conte Verde will be maintained with a 2.75-meter-wide road which will also allow access to the only street with a driveway on this side. The road will be protected by new trees in the flowerbed and with "Parisian". Further trees will be inserted north of the square and the curbs of the existing flower beds will be uniform. The redevelopment of piazza Dergano also involves moving the bike-sharing station on the west side, towards via Tartini, to facilitate access for cyclists and give the area more safety. The ATM stop of line 82 which opens onto via Tartini, in the south-north direction, will be moved as a result of the widening of the sidewalk. In via Tartini, the sidewalks will be

widened for greater road safety.

### 4.3 Evaluation angle: Effectiveness and feasibility of intervention

The evaluation has been done through direct observations and review of documents mainly published by the official. The main topics I concentrate on are the effectiveness and feasibility of intervention, which emphasizes both the outcomes and process of the intervention.

#### 4.3.1 Evaluation disciplines including effectiveness and feasibility

The concept of street experiments originates from the combination of tactical intervention and experimental thinking. Correspondingly, when testing the outcome of its experimental progress, it is necessary to synthesize the effect of spatial intervention and the way the street experiment is managed. On this basis, this passage further subdivides the criteria under each dimension and establishes the following evaluation system (Tab.12).

Since the author is based in Shanghai, the study of this case mainly adopts the methodology of literature research.

*Tab.12. Dimension, criteria and method for the evaluation of street experiments*

Evaluation based on the results of street experiments			Evaluation based on the process of street experiments		
Dimension	Content	Methodology	Dimension	Content	Methodology
Spatial Environment	To enhance the quality of the environment	Literature research	Follow up and assessment	Feedback approaches and tracking mechanisms	Literature research
	To increase community vitality			Periodicity and professionalism of the assessment	
Spatial Consensus	To strengthen social interaction		Optimized Abilities	Resilient adjustment and evolution	
	To develop local identity				

*Source: Author*

#### 4.3.2 Effectiveness: The influence of intervention

A Spatial environment: environmental quality / community vitality

- The improvement of spatial environment after the intervention is obvious

In the transformation of Piazza Dergano, new pedestrian spaces are identified through planters, bike racks, bike-sharing stations and artistically painted surface treatments. Fixed and movable chairs, benches and tables, as well as playground equipment including ping-pong tables and hopscotch patterns, are inserted to enrich the functions.

The environment is more welcome to pedestrians, more eco-friendly and more of fun. Many kinds of activities are held here. Residents are more willing to spend time in these new squares

for resting, exercising and chatting. A more vivid community atmosphere is appearing (Fig.31).

B Spatial consensus: social relationship/ sense of community



*Fig.31. The performance operated in Piazza Dergano on October 10th, 2021*

*Source: Author*

- Community relationships are becoming closer through cooperation and interaction

The graphic floor design can not only establish the community identity, but also help create closer relationship between local residents. In the implementation process, local residents from the Dergano community are encouraged to finish the graphic painting by themselves. Through such a process, people can cooperate with their neighbors to improve their community environment together and get the opportunity to know each other, which would greatly help to establish their common sense of community (Fig.32).



*Fig.32. The local residents work together to paint patterns in Piazza Dergano*

*Source: Internet*

What's more, the intervention itself also creates space for people to take a rest and new interaction opportunities become possible. In the transformation of Piazza Sicilia, the space in front of a primary school has been reorganized and it promotes interaction between parents when they are waiting for their children. Kids after class also obtain a safe space to continue to play with classmates.

#### **4.3.3 Feasibility: The process of intervention**

A Follow-up and assessment: Feedback tracking/ assessment system

- There is a pretty clear sense and system of tracking the effects of intervention

Take the tracking of Piazza Dergano as an example, the public are invited to attend the conference where councilors will report the usage of the transformed environment and are free to express their opinions and convey feedbacks to the organizers. Other more objective ways to inspect the usage like videos are also adopted, which shows a relatively mature system of tracking and assessment.

B Optimized Capabilities: Resilient Adjustment and Evolution

- Duplicable mode of street experiment help intervention spread fast

Since Piazza Aperta project adopt standardized urban furniture, intervention ways and procedures, the mode how Piazza Dergano is transformed is easy to spread and improve more communities with similar demands in Milan. What's more, the project of Piazza Dergano



emphasize the goal of a longer-term and more permanent influence, which ask for retransformation based on the temporary changes, which demonstrates the potential of evolution of street experiments.

## **5 Conclusions from comparison and suggestions for practice in China**

The comparison between two experiences conducted in different countries and in equally different socio-cultural and institutional contexts, shows how the background of practice would influence the effects and mechanism of street experiments, providing some guidance appropriated for development of street experiments in China.

In this chapter common features and differences are introduced based on the comparison of existing practices from the angle of implementation outcomes and process.

### **5.1 Common characteristics**

#### **5.1.1 Emphasis on the process of the renewal**

Besides the outcome of renewal, the two cases both stress the significance of the process of transformation, which is gradual and needs more time to complete.

Instead of publishing a finished transformation outcome, Piazza Aperta needs to adopt temporary intervention to test the effectiveness and One Square Meter Action involves local residents to take part in the proposal, design and implementation part.

With more people involved and more time tested, the function of intervention could then meet the demands of the majority and perform better when facing uncertain events like the pandemic.

#### **5.1.2 Bottom-up initiation, top-down support**

Unlike conventional community projects that are "top-down driven and bottom-up responded", both cases adopt the path of "bottom-up initiation and top-down support" to stimulate more diversified proposals that reach more people.

Local residents and social associations are encouraged to make proposals. Meanwhile, the government and official provides supports of policy, subsidy and professionals to create a free environment.

#### **5.1.3 Construction of replicable mechanisms**

Through control of standardized urban furniture, selection criteria of proposals and uniform management procedures, Piazza Aperta has formed an effective mechanism for duplicability. In the last three years, 38 projects has been completed in Milan which brings about 2200 square meters of new pedestrian spaces, 250 benches, 310 potted plants, 380 bike racks, 35 tables and 32 ping-pong tables.

Likewise, in Xinhua Community, the core of the practice is to explore a mechanism which can unite different groups of people and continuously support micro renewal projects in the future. With the completion of these real renewal in one square meters, the mechanism has been gradually updated and improved.

The pursuit of replicable mechanisms make both cases sustainable and competitive in a longer term.

### **5.2 Differences and reasons behind them**

#### **5.2.1 Features of position**

In terms of the position of intervention, the projects of One Square Meter Action are relatively

inserted along roads limited in Xinhua Community and most of them are removable. On the contrary, Piazza Aperta could obtain the rights to transform part of the streets involving driveways and parking lots and the position ranging from squares, schools, markets, green spaces, commercial streets, tunnels to gathering spaces. The intervention is also relatively fixed and the scale can be larger compared to the former. Thus, the typologies of proposed interventions of Piazza Aperta are also more diverse, including the creation of new squares and pedestrian areas, activation of underused public spaces, extension of pedestrian spaces, reuse of parking areas as parklets, etc.

The reason may be the stricter policy on the management of roads which driveways and pedestrians are clearly distinguished except some special circumstances like pedestrian streets such as East Nanjing Road. And the control of cityscape is also stricter in China and any intervention appearing on the public streets needs to be approved.

### **5.2.2 Focus on the sustainability of activities or the duplicity of spatial transformation**

Even if both of the projects aim at exploring replicable mechanisms, the inner driving factor differs. One Square Meter Action aims at the creation of platform and teams which can support the management of community activities. On the contrary, Piazza Aperta emphasizes the actual improvement of physical space. Therefore, the majority of its work focuses on how to make the transformation approach efficient, effective and implementable, which creates a series of more standardized transformation paradigm.

### **5.2.3 The involvement of the social institutions**

The support from the consultant institution, Big Fish Community Building Center, is definitely important for the success of One Square Meter Action. At the very beginning, it is Big Fish which employed by the local official that proposed the idea of 1square meter, invited cooperative organizations, designed the procedures, promoted the actions, tracked and published the activities, etc. The whole event relied much on Big Fish in the first year. With the growth of local strength, Big Fish gradually moved behind the scene as a supporting platform. Instead, Piazza Aperta do not rely on a single social institution so much.

The problem of the working mode of One Square Meter Action could be the large investment from the social organization in the beginning and unstable because of relying on a organization from society too much, which argues for some other ways to adopt street experiments in China.

## **5.3 Suggestions for practice in China in the future**

From the analysis of the two cases, it can be found that street experiment experience in Western social environments is useful but not fully adapted to China due to the context of the domestic policy, planning environment and management mechanisms. Thus, Chinese characteristics should be retained and considered in the learning process combined with appropriate adjustments to existing domestic policy.

### **5.3.1 Attempts to partially break and temporarily adjust the legal road red line**

At present, the planning of boundary line of roads, defining the land use of roads where no permanent structures are allowed to be built, is an effective way to guide the design and management of road space with legal rights. The street experiment encourages the temporary closure of motorized traffic or expand part of the pedestrian area onto the original

car space for flexible time-sharing usage, which challenges rights of the current road red line. The proposal needs to assess the impacts of temporary street closure or changes in red line locations through full research on land use and traffic flows of the target area, so as to provide a sufficient basis for launching street experiments.

### **5.3.2 Starting from pilots, to explore ways adapted to the specific context of China**

For the time being, intervention like the ground artistic painting treatment and closure of streets for public activities has not been popular in China from my observation. It is necessary to establish a gradual process of introducing and adjusting street experiment tools adapted to the public's perceptions in China. It is recommended to start from some spots as experiment.

### **5.3.3 Shift from single-dimensional spatial evaluation index to a spatial-social-economic multidimensional dynamic assessment system on the outcome of urban renewal**

The traditional management of road design emphasizes the quantitative control of spatial indicators, such as width of road red line, setback distance between building and road, street section design, building sticker rate, the amount of greenery, etc. Its focus is concentrated on the preliminary construction stage. To reach the indicators of spatial construction is the main work of road construction.

However, during the use of streets, the demands from the public are always changing, which corresponds to the functions streets could offer. Therefore, street design needs continuous dynamic adjustment and the assessment of streets cannot stop at the stage of construction. A multi-dimensional monitoring and evaluation system of streets in terms of space, society and economy should be established, taking into account multiple factors such as the attractiveness of streets to the public, the operation of local business, the use of minority groups, the diversity of cultural activities, etc.

### **5.3.4 To create environments for companionship planning and to promote continuous follow-up in the daily management of streets**

The street experiment pays special attention to the testing and optimization after the spatial intervention, which means the professional planning and design team need to be more responsible, not only providing technical service in the preliminary decision, but also guiding post-design management and operation. In the process of accompanying planning, the planning team is advocated to provide support and suggestions in terms of continuous tracking, dynamic adjustment and activity design to serve the dynamic needs from the public.

### **5.3.5 Considering the different background of each community, to ensure equity in the selection of experimental targets**

Different communities have different abilities to obtain social resources. Wealthy communities have the stronger economic power or policy support to attract social organizations to conduct spatial renewal in the area. After achieving certain outcomes, they are more likely to be officially recognized and further tilted to their resources. Meanwhile, in the reality, there are quite a few disadvantaged old communities in high demand for pedestrian-friendly public space, but lack of financial or professional support, which needs the help of low-cost street experimentation more than those rich communities.

In response to such paradox, the government needs to establish certain policies to pay attention to the equity factors in the selection of communities to be transformed.

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