

TITLE: URBAN RENEWAL WITH GREEN BASIS IN CHENGDU, CHINA

ISSUE AREAS

- ICT and SMART technology
- Sustainable mobility
- Land use and nature-based solutions**
- Clean energy
- Sustainable solid waste management
- Building energy efficiency
- Innovative urban governance**
- Behavioral change

OVERVIEW

As one of the major cities in southwestern China and the capital of Sichuan Province, Chengdu prides itself with its rich historical and cultural diversity dating back to at least 2,000 years ago. The long history of Chengdu's old towns, combined with the rapid industrialisation, meant that Chengdu had to strategically work on urban planning and regeneration for sustainable and balanced development. Chengdu has been doing extraordinary work on urban renewal practices. Similar to the other rapidly developing cities, Chengdu started the urban design, restructuring and planning process in the mid 1990s. The first city masterplan instituted in 1994 focused on industry relocation to suburban areas and expanded to the development of several new districts and towns in 2011 to cope with new growth opportunities. The second master plan targeted the renewal of the North Town, developing several programs, including redeveloping shanty towns around the railway station; relocating industries to designated industrial zones; and enhancing the functions of commercial centers and tourist sites, including historical heritage and traditional communities.

THE CHALLENGE - WHY HAS THE CITY TAKEN ACTION

Aging and dilapidated old residential areas and public settlements have been one of the obstacles for urban development and livability. Since old infrastructure and urban services could no longer meet the current needs given the rapid economic and population growth in Chengdu as one of the most populated cities in China. Therefore, the city hopes to reimagine the existing public space to make it more livable.

Rapid and uncoordinated city development led to urban sprawl and brought challenges to the core city districts and overall better planning. Urban sprawl induced travel demand, particularly by private automobiles, making high automobile ownership and traffic congestion another critical issue for Chengdu. While the newly built districts have clearer plans on their urban functions and zoning, the lack of coordination with the existing and older urban districts in terms of transportation corridors, satellite cities and inclusive social services. The challenge for Chengdu is merging the old and new development through a coordinated and coherent urban plan.

GOALS AND OBJECTIVES

Decades of experience on integrating ecological and natural capitals into urban development, brings Chengdu creative strategic planning. The Park City development strategy is an integrated, coherent and synchronized urban development and regeneration plan.

Green basis: Harmonizing nature with the built urban environment

Instead of addressing issues in silos at the sectoral or local-levels, Chengdu aims to harmonize the urban and natural environments emphasizing Chengdu's character and ideology, also known as the "Green basis". For instance, rivers were excluded from the city masterplan in the past but they are now considered as part of Chengdu's sustainable development. Hence, multiple approaches, like restoring river landscape, and improving water quality are undertaken. The 'livability' of the city is integrated by upgrading the riparian ecosystem as part of its effort to enhance urban resilience

Turning Chengdu into a Park City

Chengdu aims to 'build a city within a park', as envisioned in the Park City long-term development agenda, emphasizing on urban resilience, livability and collaborative socio-ecological sustainability. The integrated plan coordinates the different urban districts within Chengdu in implementation. The key objectives of the Park City plan are: 1) value and incorporate the natural capital and ecosystem services into sustainable urban development; 2) achieve restoration of natural assets, such as water and green networks; 3) apply people-centered design and incorporate green-blue infrastructure; and 4) transform the industrial and manufacturing practices to achieve carbon neutrality and climate resilience .

HOW DID STI PROVIDE A LOW CARBON AND CLIMATE RESILIENT SOLUTION?

(STI as a means of implementation)

- Improved decision making** **Offering a low-cost solution** **Inclusive decision making**
- Improved governance** **Behavioural change**

(STI as a direct technical solution)

- Cleaner/more eco-friendly infrastructure** **Cleaner/more eco-friendly equipment**
- Faster/better/larger data availability/processing**

- How was it innovative? (What enabling policies were employed? What were the local/national government's policy targets, goals and strategies? Were new S&T approaches developed or existing S&T approaches enhanced? Was the city's geography/culture capitalised upon?)

Urban renewal can be performed in various ways. Chengdu creatively applies it in multiple spatial dimensions. Firstly, *micro-renewal* is the essential approach used. The 'embroidery needles' metaphor indicates it is a way to upgrade communities without large-scale replanning and rebuilding but in-situ solutions, while the needs of residents are carefully considered. Similar concepts are also applied in other mega-cities in China, such as Guangzhou and Shenzhen with high migrant flow. Micro-renewal refers to small and localized solutions to meet the diverse living and housing requirements of local communities. For example, traditional houses are upgraded to meet the accessibility needs for the young children and the elderly. Furthermore, the surrounding neighbourhood is also equipped with community gardens and social gathering places for the senior citizens. The design and planning of the overall living environment are well thought of to cater for the young and old to live, work, study and play (He & Wang, 2016).

Following that, a niche vocation also began, known as *community planners*. These planners specialize in creating inclusive urban design and regeneration for different age groups at the community-level. In Yit's interviews (2021), new public settings are introduced by community planners, such as Cafe, a place not within the typical activity range of the senior residents' but a common meet-up place for the young. However, the community planners seek out micro-renewal opportunities to design inclusive cafes in the community. It considers the original environment into design, such as trees, sheds, benches, while building more accessible infrastructure to support people with reduced mobility. The Cafe is also used as a community gallery where grassroots works are revitalized.



Figure 1: An inclusive community Cafe in Chengdu (Source: Yit, 2021)

- What science and technologies were used? (What does it do? How does it work? How does it address the challenge?)

As part of the *Smart City Design*, Chengdu also embeds Information, Communication and Technology (ICT) in urban design and planning as a systematic means to digitize community management and engagement. The direct application of the ICT is transportation infrastructure design and improvement. It is now being piloted at the Tianfu New Town. Through ICT and application of big data systems, all data resources for local administration could be gathered into one platform, for better monitoring and planning (Fan, 2016). By dividing Chengdu into 1,814 transportation units, the system analyzes the carrying capacity of the road network and needs based on present and future demands to avoid rebuilding and redesign in the near future. Based on the analysis, the planners can decide the suitable number of parking units, road width and length in Tianfu New Town (Chu et al., 2020).

Inclusive design is another major component. People-oriented mobility planning is also adapted, a paradigm shift from the previous road-vehicle-focused transport planning. Instead, small paths,

safe crossroads, and sidewalks between building blocks are created to enhance walkability, safety, and the overall urban landscape. Wang (2016) conducted an analysis on the design of different intersections for pedestrians and the density of small paths. With this, a detailed plan for the road network in Tianfu is developed, as an inclusive approach to 'bring people back to the streets. Building on this practice, slow-traffic systems in old town areas were improved, taking walkability, unique landscapes, and tourist sites into account (Li et al., 2020). Children are especially prioritized in Chengdu's spatial planning, institutional design and social service provision. For instance, through participatory policymaking, the needs for children are also considered for business and urban development needs, from medical and children welfare, to child-friendly infrastructure at the neighbourhood, district and city-levels.(Zeng et al., 2020).

KEY AREAS OF CONSTRAINT/SUPPORT

- o INFRASTRUCTURE REQUIREMENT

N/A

- o POLICIES AND REGULATIONS

N/A

- o **THE SCALE OF THE PROGRAMME/PROJECT**

The Park City Development Strategy is applied to the whole Chengdu City. As presented in previous sections, different strategies have been used according to the status quo of each district and functional zones.

- o TECHNOLOGY CAPACITY

N/A

- o COST AND FINANCING /BUSINESS MODEL

N/A

- o HUMAN RESOURCE CAPACITY

N/A

- o **POLITICAL COMMITMENT**

Since early 2000s, Chengdu started a serial of policies and strategic plans on

- o historical community preservation (since 2003);
- o urban renewal (since 2011);
- o old neighbourhood preservation and regeneration through better infrastructure and service (since 2016);
- o revitalize old communities' by introducing different types of recreational activities and collective workplaces (since 2018);
- o urban 'micro-renewal' (since 2019); and
- o 'organic renewal' under the 'Park City' plan (from 2020).

The Decision on accelerating building a beautiful and livable Park City, the Chengdu Beautiful and Livable Park City Planning (2018-2035), the Decarbonizing Chengdu Strategy, are regarded as the green dimension of the city's Urban Development Plan (2016-2035). The political commitment of the Park City urban development is clear through the establishment of Park City Construction Bureau to implement a comprehensive, integrated, sustainable and innovative urban development plan.

o INSTITUTIONAL SET-UP

The whole urban renewal process is highly relying on the cross-departmental incorporation, while the Park City Construction Bureau is the command to mainstream this concept into urban development. The community planner mechanism is very unique to Chengdu. Based on the existing urban settings, community needs, and revitalization strategies to make 'the local community alive again', hundreds of communities in Chengdu are regenerated in various new elements. These innovative solutions support local residents to participate in the urban transformation comfortably, as well as create possibilities for new industries.

o KEY BENEFICIARIES

Chengdu residents are the biggest beneficiary of the urban renewal program. On the one hand, their living conditions are upgraded with better housing conditions and living environment. Furthermore, the new industries and businesses enter the communities, attracting new business opportunities from small companies to international multinationals.

TIMELINE

Timeline of Urban Renewal Progress in Chengdu

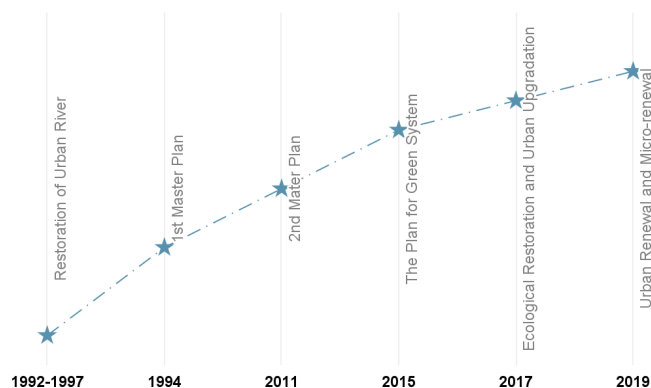


Figure 2: The timeline of the urban renewal process in Chengdu

IMPACTS

o CARBON REDUCTIONS

N/A

o RESILIENCE

Chengdu's experience shows several dimensions of urban resilience. Besides disaster risk reduction and climate adaptation through better blue-green infrastructure and planning, the renewal plan also brought socio and economical benefits.

o CO-BENEFITS (e.g. JOB CREATION, AIR POLLUTION REDUCTION ETC.)

This renewal program consists of systematic design, where there are several possibilities under the 'urban setting'. Many regenerated communities include shared workspace for small enterprises that

are affordable, centered, and flexible. The urban regeneration concept balanced the old and the new by avoiding total makeover and reconstruction that wiped off the rich history and at the same time, not overly conservative that the old neighbourhoods do not allow for contemporary development and ideas. This attracts Chengdu's young workforce to stay and work at the city instead of migrating to the more developed cities on the East coast.

FACTORS FOR SUCCESS

- A strategic political commitment and vision to build "a city within a park" under the overarching Park City development plan
- Development of a monitoring framework for investment into nature through natural capital accounting and ecosystem service valuation
- Building on Chengdu's experience in urban regeneration and renewal in a phased approach
- Engaging community and local experts to redesign and renew the urban areas, such as the community planners
- Strong support from the municipal government by establishing the Park City Construction Bureau to coordinate and implement the spatial plans

LESSONS LEARNED

- o OPPORTUNITIES, CHALLENGES, AND SCALING UP

N/A

- o **SUSTAINABILITY**

Urban renewal is a long-term and continuous process without full stop marks. It aims to meet the existing demands that come with city development, and also create possibilities for people to co-design the future of the city. At this stage, the vibrant community life in old districts and people-centered new district design, are two compelling elements. Public-Private Partnership (PPP) experience in Chengdu invites private partners and individual planners (such as the community planners), into the program design, management and development of historical community development projects.

- o **TRANSFERABILITY**

Chengdu's experience can be easily transferred to other cities, particularly the inclusive design aspects, micro-renewal, community planner. This will be very relevant for both old communities and newly developed or developing communities. It creates a more transboundary and solution-oriented working method on dealing with urban issues.

- o **EFFICIENCY/EFFECTIVENESS**

Most policies and plans from the renewal program are assessed through a common indicator framework with clear targets and action points, ensuring the effectiveness.

- o INSTITUTIONAL CONSTRAINTS/SUPPORTS

N/A

FURTHER INFORMATION / CONTACT

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