TOWARDS HIGHER-DENSITY COMMUNITIES: A DISRUPTIVE TRANSITION? THE CASE OF NANHUAN NEW RESIDENTIAL COMMUNITY IN SUZHOU, CHINA (1106)

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Abstract. The Chinese National Government requires a sustainable use of resources since the 13th 5-year Plan. The Plan promotes also the transformation of the residential communities built before 2000. In this transition high-density is increasingly supported.

NanHuan community in Suzhou, Yangtze River Delta, was a pilot action of regeneration of an old community that demolished what existed and increased substantially its FAR. Despite the new urban environment is an upgrading of the existing housing and welfare conditions NanHuan is criticized by its inhabitants and the city officials, and was not repeated as a public-led process elsewhere in the city. This critique and its multiple reasons have been explored with both quantitative and qualitative methods, focusing on the planning process, the money spent and the social sustainability.

Keywords: High-density, regeneration, socially sustainable development, durability, China.

1. The background of the current regeneration attempts: the disruptive transformation of a rural country

The recent development guidelines issued by the Chinese National Government require an efficient use of resources for a sustainable development beyond mere growth. These guidelines promote also the transformation of the "old" residential communities, the ones built before 2000, which often are obsolete and do not offer what can be considered at present a good house in an increasing middle-class society. The indication of the National Government opens up a huge regeneration task in terms of built stock quantities, involving social, ecological and economic aspects.

After the Economic Reform and Opening-up Policy 改革开放 promoted in the early '80s to realize the socialist market economy, China started to address a challenge: how to build large and modern cities quickly. The issue was on dimension, quality and time. The attribute large can be expressed in the percentage of permanent population resident in cities: starting from the urbanization rate of 18 percent in 1978, the year before the opening up, the rate of the Country reached 63 percent in 2021. The increase in the

urbanization rate is combined with the concentration of population in large agglomerations: the number of cities with more than 1 million people in China skyrocketed since 1990 (World Bank, 2023). The plan of the national government is to keep raising the rate because the urbanization and the real estate development – meaning the built environment and mobility infrastructures – have been China's main driver of economic growth and source of revenues both for the public institutions and single citizens: the land is usually owned by the state and land leasing produces fiscal revenue, property prices have constantly increased until 2021, when the real estate sector experienced a serious crisis (The Economist, 2022).

If the idea of a large and quick development is straightforward – in the first stages of the opening up often the larger and quicker was the better – what makes a modern city had to be defined and the role of cities in the modernization of the Country (Roggeveen, 2017; Li, 2014).

In the second half of the '70s Deng Xiaoping promoted the 4 Modernizations to improve agriculture, industry, defence, science and technology in continuity with the spirit of the Communist Revolution, but only the opening up a few years later was a breakthrough in the interpretation of modernity. It implied radical change and an unprecedented role for urbanization in China, but indications on how urbanization had to happen were expressed only 10 years later in the meagre 1989 first City Planning Act of China, which set up a comprehensive urban planning system, but contained only very basic indication on urban forms and dimensions (City Planning Law, 1989; Ng and Wu, 1995).

The reform of China clearly identified industry as the main character of a modern Chinese city and the newly developed urban environment allocated the industrial production sites (Lin and Lin, 2011). As before the opening up the Country was almost completely rural, the industrialization and urbanization process was a radical transformation. After an initial phase of micro adjustments and small production realized where possible in the existing built environment, often it made *tabula rasa* of the existing countryside, villages and land morphology, to expand the existing cities and create new ones where the workforce can concentrate and live.

The starting action of demolition and replacement affirms the idea of the impossible coexistence of what is new and what is old, urban and rural, and is strongly related to the desire to develop as fast as possible: during the first decades of Chinese urbanization there was no will to ponder alternatives to the tabula rasa, no time to select what should be conserved and what should be deleted – approach strongly related to the limited diffusion of a robust theory on urban heritage –, little time to design site-specific solutions, and no appraisal of the layering of urban facts which are produced over the centuries (Benevolo, 1975). These design decisions differ substantially from the discourse on Urbanism carried out in Europe in the same years where the concepts of

integration of urban and rural, of limited consumption of fertile land, of variety of urban landscapes and mixed residential options, of the expanded meaning of heritage were mainstream and due to the shared goal to increase the sustainability of the built environment.

2. The case of Suzhou in the '90s: making an ancient city and its rural land an industrial hub

Suzhou 苏州 is an ancient city 80 km west of Shanghai, with around 12 million people plus the not-registered ones (Suzhou Municipal Bureau of Statistics, 2021). Suzhou is in the Yangtze River Delta Special Economic Zone established in 1985, and experienced a very successful economic growth: according to the local government in 2019 before the Covid crisis the city had a GDP of almost 200 billion yuan, which is higher than the GDP of Austria (Desjardins, 2017; SIPAC, 2015). The wealth of the city grew faster than in the Country: the median per capita disposable income in Suzhou in 2020 was 5.900 RMB a month, while in China 2.683 RMB (National Bureau of Statistics, 2020).

Suzhou was planned to be a *global city* in Factory China, as the Brookings Institution defined the areas able to concentrate economic activities because they house the competitiveness assets required to drive global growth. Suzhou, in fact, developed mostly since the second half of the '90s to be a manufacturing hub of mainly low-added value items (Trujillo, 2016). To accommodate industries the city was expanded over the adjacent rural land; particularly relevant is Suzhou Industrial Park, SIP, 苏州工业园区, a 278 sqkm new town realized making a tabula rasa of the existing rural land with the political and financial support of the national government and the cooperation of the government of Singapore, which exported its governance model to establish a stable business environment and attract foreign money and talents, and its urban design model, i.e. the phases of the implementation, the relevance of the mobility infrastructures in the development, the zoning together with the residential slabs inspired by the Modern Movement, the neighbourhood unit (Shi, Liu, Lin, 2011; Shatkin, 2013, L'Heureux, 2010). SIP offered a built environment as much as possible similar to Singapore and was able to attract over 4,500 enterprises from 96 countries, among which 84 are Fortune 500 enterprises (SIPAC, 2022); foreign enterprises include Bosh, Samsung, Hitachi, Microsoft, Philips, L'Oreal, Zeiss, Panasonic.

In SIP the evolution and ambitions of Chinese industrial development and urbanization are declared in the policies and implemented: the industrial town was built for export-oriented manufacture using mechanical power, result of a capital-intensive urbanization to attract foreign direct investment. This phase was replaced with advanced productions and tertiary activities. In recent years Suzhou has planned to upgrade its industrial structure to reach the highest level of the global industrial value chain: attraction of

private high-tech businesses with a focus on biotechnology and innovation-driven development.

SIP declared the ambition to be a Garden City, but realized very little of the original idea of sir Howard; especially the balance urban-rural was never in the agenda and low-density was not a target. The intention was a medium density city and a growing number of inhabitants.

The New Town is designed for car mobility supported by an extended grid of wide orthogonal roads. Of all Chinese cities Suzhou is among the first for car ownership per urban household with an annual car growth of 20 percent in the past booming years; the growing number of cars is causing problems for congestion, pollution and parking.

3. Recent developments in the planning direction: the regeneration of the old communities

The recent development guidelines issued by the Chinese National Government require an efficient use of resources for a sustainable development beyond mere growth. These guidelines promote also the transformation of the “old” residential communities, the ones built cheap and fast before 2000. The indication of the National Government opens up a huge regeneration task in terms of built stock quantities, involving social, ecological and economic aspects, because it refers to millions of units all over the country.

The spatial and environmental qualities the regeneration should achieve are not specified by the national guidelines, but according to our research one element is being changed: high-density urban forms are increasingly supported by some local governments (Su, Wei, Zhao, 2017). In addition to this radical change – attention to what already built, increase in density – some forms of participation of residents into the decision-making process in spatial planning are also introduced.

To investigate the regeneration of the old communities the research studied a residential community in Suzhou, NanHuan new community, that was a pilot action of regeneration and densification that in 2010 demolished one part of a resettlement village and tripled its FAR. This new urban environment – new morphology and building types: no super-blocks, mixed uses, underground parking, high-rises and linear commercial structures – was built as an upgrading of the pre-existing conditions, which were themselves an upgrading of the pre-existing conditions in the old town in the early ‘80s (Wu et al., 2019).

4. The condition of the old resettlements in Suzhou

When SIP was realized, the Chinese economy was booming, but the new neighborhoods

for dispossessed farmers and relocated urban residents from the old town were built cheaply and quickly to provide a decent house and solve the problem of resettlement in compliance with local regulations (Pellegrini, Chen, 2020; Jangsu, 1996). 20-30 years after their realization, we carried out qualitative research on the current conditions of the resettlement communities in Suzhou through direct observation and fieldwork from a contemporary perspective. The detailed analysis of the spatial features of the resettlement communities built in 1990s and 2000s highlights 3 kinds of obsolescence and allows us to recognize a short-term strategy in their features:

1. Obsolescence of the building structure: some buildings have structural issues and equipment and appliances are outdated: sewage, plumbing, heating and cooling systems, supply and consumption of electricity and water, soundproof installations should be updated, and thermal insulation should be added. When they were realized there was no requirement concerning the duration of the performance of the structures.
2. Obsolescence of the living standards inside the units and in the open space: units have no elevator, no heating, not enough parking space; in general, the units are not small (average minimum gross surface 65 sqm, average maximum 125 sqm), but no unit is designed to have a dishwasher nor a washing machine, nor two bathrooms.
3. Obsolescence of the urban design and image: the “copy-paste” prevails, that is to say, that the same materials, technology, façade design, uses, not site-specific design were used, offering approximately the same condition to everyone and limited privacy. Similar characteristics can be found in over 170 residential communities in Suzhou realized by the local government (Chen *et al.,* 2021).

5. One experiment of regeneration of the old communities: tabula rasa and densification

The first community of Nanhuan Village in Gusu, Suzhou, was built between the late '70s and the early '80s to relocate over 6000 inhabitants of some areas of Suzhou old town which were being demolished because their conditions were not providing a decent living environment (first relocation in the first stage of city modernization). The resettlement community was designed as usual in this kind of operation: a compact sequence of about 150 almost identical 4-6 floors residential buildings oriented east-west with no open space beyond the ones strictly needed between adjacent buildings. In 2010 approximately 80 percent of the community was demolished for its dangerous obsolescence and low living standards - such as foundation subsidence, house tilt, balcony collapse, road damage, and inadequate supporting facilities - and replaced by a completely different urban morphology and building types (second relocation for

regeneration in a mature phase of urbanization); the construction of 21 high-rises of 22 to 32 floors increased the Floor Area Ratio (FAR) from 1.5 to 2.6.

In May 2010 the demolition of 118 buildings on a total built area of 325,000 square meters began; in June 2011 the agreement for resettlement and compensation of 4,778 households was settled; in June 2013 the New Village was completed and 97 percent of the original residents moved back. The New Village required an investment of more than 2.3 billion yuan to build 559,800 square meters for 5,137 households, 2 schools, and one community centre, commercial spaces in one mall, and multi-functional commercial streets (Hua *et al.*, 2012). Now approximately 15000 residents live in the Nanhuan whole community. As the transformation involved only one part of the neighbourhood, Nanhuan Village allows a direct comparison of the original solution and with the high-density one, the New Village.

The Nanhuan case preceded the current national guidelines for regeneration by 10 years and attracted attention for its innovative proposal:

- it is the first regeneration of an existing resettlement neighbourhood planned, financed, and realized by the local government in Suzhou; the project was included in the government's annual list of crucial tasks and it was meant to be exemplary for communities in similar conditions;
- it included densification and residents' relocation in situ;
- it combined high-rises in small compact blocks and mixed uses, an unusual solution where mono-functional superblocks are the most frequent condition.

These new morphology and building types – no super-blocks, mixed uses, underground parking, high-rises and linear commercial structures – was built as an upgrading of the pre-existing conditions, which were themselves an upgrading of the pre-existing conditions in the old town in the early ‘80s (Wu et al., 2019).

Despite improvements in housing, public space and welfare provision, the new version of NanHuan is criticized both by its inhabitants and the city officials who promoted it, was labeled as a failure and – differently from the original intentions –was not repeated in its public-led process elsewhere in the city, even though private real estate companies are replicating similar transformations of replacement and densification (Webster, 2021).

This critique and its multiple reasons have been explored with both quantitative (sensor data, mapping and space syntax) and qualitative methods (surveys, in-depth interviews, questionnaires and meetings), focusing on the planning process, the money spent and the social sustainability of the process.

6. Conclusions

The NanHuan case shows that the radical transition is perceived as disruptive in relation

to the advantages obtained from the transformation and that socially sustainable practices must be improved. The case shows as well that a debate about the urban spatial qualities a moderate prosperous society - which is one of the main targets of the Chinese Communist Party - should have is needed. The demand for quality in all aspects of one's life is increasing while the society is less concerned with basic needs – a hint of this phenomenon is the Engel coefficient (the proportion of food expenditure out of all living expenditure) that decreased to 28.6 percent in urban residents, to 32.7 percent in rural residents in 2022 according to the National Bureau of Statistics of China. The environment where one lives is an essential component of life quality and in China what was built 40 years ago, cheap and fast under the pressure of urgent development, risks to not correspond to the newly acquired standards of a wealthy society.

The NanHuan case shows also how adaptivity is not an option if durability – in every sense: living standards, structural capacity, socio-political demands – is not conceived when the buildings are designed, but in a fast-changing society, as China is, the idea of durability does not seem to hold.

The NanHuan case shows that it is expensive to demolish and rebuild, and it is preferable to maintain the existing buildings and requalify them. The challenge of the renovated old communities is if they will appeal to the moderately prosperous society which is the goal of the national government. The "old" neighborhoods amount to a huge number of residential units, only in Suzhou there are 1,273 old urban communities with almost 600.000 residents (Suzhou, 2021). Will wealthy households keep appreciating these compact and homogeneous conditions? Will they require a less basic design of the building as well as of the open space? Will they require diversified housing types and neighborhoods for diversified lifestyles and households (large families, small families, singles, empty-nest couples, temporary city dwellers, and co-habitants)? Chinese urbanization usually avoids spatial plurality and urban complexity as well as individuality to be quick and deliver the same conditions to the masses, but also because of the simplified copy-paste approach, as an example providing over and over the same housing type and urban morphology.

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