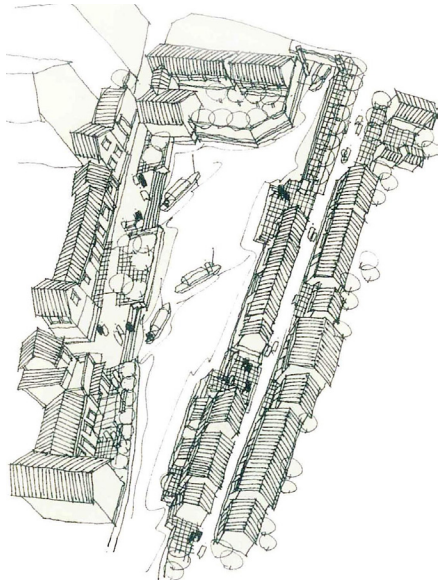# Infrastructure as a Transformative Cultural Project in the Post-industrial City: An Emerging Paradigm for Public Space in Suzhou

We have raised awareness that infrastructure has emerged as a cultural project within the contemporary discourse on urbanism. In the Heideggerian philosophical tradition, fundamentally, infrastructure is interpreted as an ontological practice and a spatial concept. Infrastructural artifacts throughout the history – such as the Roman aqueducts and the Grand Canal south-north across China – have always been emblematic not only as monumental objects and civic systems but also as cultural frameworks for public spaces.
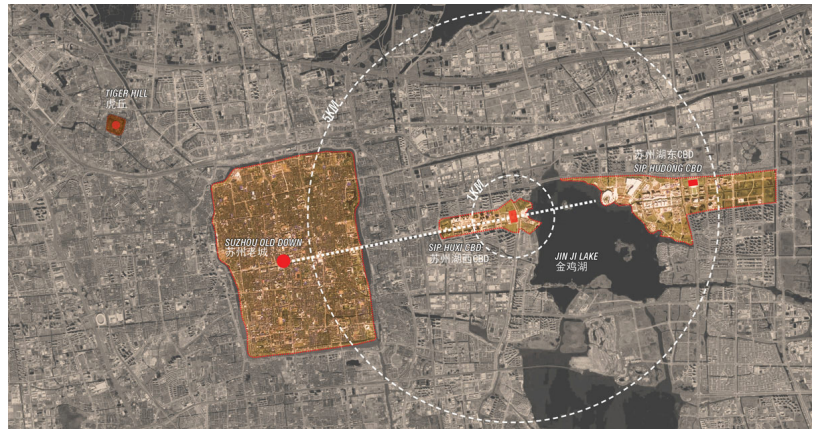
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In the contemporary technological world, temporal experience of urbanistic spheres has accelerated towards spontaneity and immediacy. In light of Everyday Urbanism, Informal Urbanism, and new forms of democratic approaches to urban design theories and praxis, we recognize that contemporary spheres of urbanistic action are determined more by urban participants than by physical urban form.[1] Physical elements of urban forms are becoming more adaptable to the everchanging conditions that are shaped by urban participants. During the recent decades, rapid and large-scale infrastructural development has been ubiquitous, especially in the developing world. How urban infrastructural elements can culturally frame urbanistic actions and contribute to interventions for public spaces has expanded a new dimension to today's urbanism.

Suzhou, the "Venice of the East", is paradoxically the first Chinese city that has developed high-tech industrial parks as a Sino-Singapore Corporation project since 1994. The rapid expansion of Suzhou in the past two decades has been driven by economic rationale that reflects the classic model of industrial urbanization – coined by the 19th century rationalist Ildefons Cerda. As a part of Cerda's plan of the extension of Barcelona in 1859, the grid became a paradigm shift from organic patterns of typical medieval European cities to a new scientific system of spatial orders and forms that were industrially rational and infrastructurally efficient. In comparison, the grid of the Suzhou historical city was originally built upon the Confucian hierarchical system, while the new

industrial grid imposes an unprecedented scale that almost surpasses the historical system of the inner city. The surrounding new urban grid connects the major streets of the historical Suzhou city in order to enhance the continuity of its expansion, although the connectivity between the two grid-systems works more at a political scale than as spatial experiences. As a similar result to Cerda's later proposal of ruralized-urbanization, in which gardens were inserted into the blocks of the city grid in order to surround the old city with healthy neighborhoods; in Suzhou, the city used to be surrounded by rice paddies and farmlands. During the rapid development, naturally, the undeveloped farmlands were converted or preserved as green parks and linear parks in between and along the edges of industrial parks, new commercial districts, and apartment towers. This ruralized-urbanization has been systematically carried out since the beginning of Suzhou's expansion, which is claimed as a fundamental principle of urban planning and design that integrates traditional, modern, and regional approaches in China. Integrating gardens into urban parcels has always been an intuitive design strategy for local planners, designers, and political leaders in the agrarian tradition. In order to attract ever-growing national and international investments and promote the culture of global connections, especially since it was initiated with the collaboration of the Singapore government-led corporations, this large-scale ruralized-urbanization was officially branded as a model of "the Singapore Garden City."

Emblematic of both the cutting-edge industrial parks and the best preserved historical city, Suzhou has continued its historical role as the most prosperous city along the Grand Canal – the longest man-made river of the world built since the 5th century BC. After two decades sprawling, Suzhou has expanded to three times its original metropolitan area -- driven by the rapid development of high-tech industrial parks, while preserving the artifacts of the inner city listed as UNESCO World Heritage Sites. Consequently, Suzhou is uniquely positioned as the model for new post-industrial cities in China and beyond. Taking Suzhou as an example, by examining its urbanistic potentials that interface with modern and traditional infrastructures, we can project a vision that infrastructural elements are not only ubiquitous networks forming the visible and invisible foundation of today's new post-industrial world--dominated by the placelessness of homogenization, delocalization, and dematerialization-- but also cultural products and generators of new public spaces rooted in regional culture.

The definition of public space in Suzhou is contextualized not only by its unique topography but also by its historical position as a perfectural city of the nation.

Figure 1: Tanzili Aerial, by Ruan Yisan.

Figure 2: Suzhou New CBD, Plan by SWA Group.

The state-centric and political-ethical system in China has always shaped its cities into an administrative network of one unified state since two millenniums ago.[2] In 2010, Suzhou became the nation's fourth largest economy by GDP, playing an essential role within this national administrative network. Therefore, public spaces are clearly defined, planned, and built according to a master plan controlled by the municipal government. These intentionally designed public spaces, in reality, are functioning as formal social spaces. Formal social spaces today are inherently institutional and serve dominating participants. A guarded park, a gated square, a walled courtyard, a civic center, and other formal open spaces with or without visible boundaries are strategically planned for administrative, political, ceremonial, and other forms of prescriptive social events. Formal public open spaces are hardly considered public space in Western traditional definitions rooted in Athenian democracy. On the contrary, informal social spaces are actively playing the role as inclusive social spaces for the public, and they are tolerant enough to allow temporary privatization and the freedom of use by the public, which are typically associated with diverse types and scales of commercial, entertaining, and casual individual or public activities -- for social gatherings, and exchanges of goods, services, and pleasure. These informal social spaces are

still perceived as public spaces in reality and are shaping today's cultural identities and physical urban environments.

The core concept of public space as a domain for temporal and spatial practices of individual freedom is adapted as the foundation for a series of design strategies that are intended to transform utilitarian infrastructural elements into culturally framed projects for public spaces in Suzhou.

1. Traditionally, public spaces in Suzhou were primarily experienced along linear elements of the city such as streets, bridges, and, especially, ancient canals, including the "Grand Canal." The culture of public spaces thus evolved in ways that coincided with the culture of streets and canals. Urbanistic and cultural

Figure 3:Kangxi Emperor's Southern Inspection Tour, Scroll Painting by Wang Hui in 1698.

interventions along countless underused industrial park canals—including interfaces with streets and overpasses, pedestrianization, and staging canal festivals—will trigger diverse urbanistic programs that shift the patterns of public spaces from their current focus on modern squares and parks to a new semi-autonomous field centered on once-marginal infrastructural elements.

1.a. Interfacing canals with streets and overpasses

Many canals in the industrial parks are currently underused and undervalued for both the industrial facilities and civic activities. They are mostly marginalized as parts of the inactive landscape features during the recent speculative planning and development of the new industrial parks. New infrastructural elements such as streets and road systems are focused on the speed and efficiency of a much larger traffic network, and surpassing the opportunities to connect existing canal network that was built at an incomparable scale of density far before the indus-

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trial era. These canals are not only physically detached from today's living environment but also distanced from everyday activities of the neighborhood.

In the past few years the Suzhou government started to promote the concept of developing a livable city that would preserve the value of the traditional culture. Optimistic potentials have emerged in the central areas of the industrial parks. New commercial projects have been constructed along the canals in order to revitalize the canals by integrating new pedestrian roads, bridges and commercial programs into the waterway system. Along a section of the canal running through the South Village (Nan Zhuang) towards the Jinji Lake on the west side, there are three new major roads (Xinghu Street, Huachi Street, and You'an Street) bridging over this canal at the pedestrian street level. These intersections are well spaced at walkable intervals of every two to four hundred meters. Between these intersections, two new pedestrian bridges were built for pedestrians to explore both sides of the canal more frequently and conveniently. Along the edges of the canal, stores and restaurants have become some of the most attractive destinations for both locals and visitors.

These emerging urban infrastructures shape a new physical form of public space that is effectively speculative, which promotes the images of the ideal public spaces of the new industrial city. Although in reality, great potentials as public spaces are still to be fully developed. The core issue is that the current commercial programs of this entire area are primarily dominated by state-owned and large corporations

Figure 4: Suzhou Yuanrong Times Square.

such as internationally and nationally branded chain stores, restaurants, and super-markets. In order to foster local and small businesses and diversify the ownerships of the retail spaces, the local government should start to look at alternative poli-cies to support and subsidize small local businesses. As one of the most prosper-ous cities in the nation, the sustainable growth of public spaces is inseparable from Suzhou's sustainable economic and infrastructural development.

1.b. Pedestrianization of industrial canal areas

In contrast to those overcrowded canal edges running through some of the histori-cal districts, most canals within the industrial parks are out of reach by the pub-lic. These canals act merely as the dividers of the industrial compounds. They also lack attractive programming features to support public activities since the nature of these sites is homogeneously utilitarian. Many industrial compounds were planned and designed based on a self-contained mode that reflected the agrar-ian tradition of the historical Chinese society. The advancement of technology is not necessarily associated with new concepts of the built environment. There are cutting-edge high-tech institutions such as Suzhou Institute of Nano-Tech and Nano-Bionics (SINANO), but their buildings and outdoor spaces are fully contained within the fenced compounds. Introversive and self-sustaining, each industrial compound today becomes a substitute of a plot of farmland that had existed for so long before the industrialization but at a much greater scale. A wall or a fence becomes the only relationship between each compound without a shared space to create a sense of community. In addition, the top-down and standardized plan-ning procedure overlooked each industrial compound's unique internal program. The internal building programming components are organized and classified strictly according to its production procedure and operational system – an auton-omy that is driven by a single-purpose of productivity and operative efficiency.

Gravitation toward post-industrialization does generate opportunities for these industrial park institutions to reorganize and shift the internal programs based on their physical relationship to the canal. Spatial and programming planning strat-egies could be learned from the local community. The historical morphology of Suzhou water towns is an invaluable reference, in which the transition from pri-vate to public spaces is based on the spatial adjacency to the canal: residential housing units concentrate along the edge of canals, and the public and semi-pub-lic spaces in front of these houses are all the way along the water edge; farm-lands for agricultural productions on the other hand are located at the backyard of these houses, which are clearly divided as private properties and stretching out towards the open farmland on the opposite side of the canal. The closeness to the water and the density of social activities along the canals create the very essence of neighborhood for the water town community.

 The transformation of Industrial compounds should start to open up their priva-tized portions of the canal and its adjacent landscape area, and develop them into semi-public or public territories. Reprogramming the industrial compounds as part of the process of post-industrialization should be in parallel with the formation of new public spaces. In reality, building programming components of each industrial compound are not necessarily homogeneous as private enti-ties. There are different degrees of publicity and privacy in each building pro-gramming element. For example, semi-public programs such as corporation educational facilities and staff amenities could be detached from the enclosed compound and relocated to areas adjacent to the waterfront. These semi-pub-lic programs and semi-public spaces could be readily converted into the public

domain. When adjacent industrial compounds can make a concerted effort along the water edge, it will gradually generate a continuously shared semi-public zone that can link each individual industrial parcel to create a public communal and social space. This will eventually form an emerging public space that is shared by both factories' employees and residents nearby. Simultaneously, new social and urban environments are part of urbanistic culture that would be supportive and constructive to the transition of post-industrialization of these corporations. A basketball court formerly inside of a Fire Marshal Department compound now is shared by two institutes nearby along a canal; staffs from these three compounds

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start to enjoy this communal place every day. Consequently, new shared service facilities will be provided to accommodate their needs for work-live-play.

Transforming semi-public programs into public programs along the canal edge will be a gradually developed along the process of post-industrialization. For instances, a conference center formerly owned by a design and research institute in the industrial park could be operated as an independent organization to serve for factories and other institutions nearby; both invisible facilities (such as WiFi) and physical facilities (such as leasable exhibition and lecture rooms) could also be utilized by the public for different events to serve for both social and personal purposes. Many companies encourage staffs to participate internal shareholding system that can also include small side businesses and additional investments. A factory internal canteen could be relocated at places outside of the fence; it can operate independently along the water edge and evolve into a series of small local restaurants owned by the company's staffs and their family members. These adaptive strategies for the current infrastructures would help industrial parks connect to each other and work urbanistically as a whole. These continuous public spaces allow the pedestrianization of areas along the current industrial canals; in return, diversified small local businesses would be along the walkable banks of the industrial canals.

1.c. Events along canals

Figure 5: Suzhou Water Town, Google Map.

OPEN CITIES: The New Post-Industrial World Order

There are traditional festivals such as Dragon Boat Festival, tourism festivals such as Suzhou International Festival, and city-level events such as the Penmen Gate Festival all year round in the city. Most concentrations of the leisure and recreation programs are now located in the historical and scenic destinations. As the population of the city metropolitan area has increased to more than 9.2 million, Suzhou citizens are experiencing changing lifestyles. New forms of recreational and leisurely spaces have been continuously explored by the locals increasingly. In order to activate the industrial parks beyond the eight-to-five working hours, some factories should also participate and host social events. For instance, CR Snow Brewery can also host carnivals along the industrial canal bank where it is located, in conjunction with the Paulaner Brauhaus beer festivals hosted in the leisure parks of the city center during weekends and holidays. Consumer-market-driven food and commodity product industrial plants soon would find themselves developing diverse post-industrial marketing strategies with a focus on hosting public events to promote commodity culture, which in turn would stimulate public activities along these industrial canals. On the other hand, some factories would need to adapt to more significant changes, such as the US Electronics Maker Knowles, it has reduced 80 percent of line workers and meanwhile doubled the number of engineers, technicians, and managers (Bloomberg Businessweek 12-19-2003, by Dexter Roberts: U.S. Electronics Maker Knowles Adapts to a Changed China); therefore, it is necessary to convert partial production facilities into new types of offices, commercial, and recreational spaces to facilitate white-collar staff's style of live, work and play. Post-industrial corporative culture would also promote and generate social activities along these industrial canals. The public domain will be gradually expanded by containing more corporative public events, and hosting district and city scale sports, recreational, leisurely, and other cultural and commercial events, such as bicycle racing, boat racing, lantern festival, and folk music boat festival. These events and temporal environments would continuously enhance Suzhou's unique and regional waterscape culture.

2. Public spaces in traditional Chinese cities are often perceived by westerners as formless, particularly at the human scale--the by-product of the thousand-year feudalist past that privileged hierarchical city form only in its totality. Authoritarianism, however, cultivates micro--freedom, flexibility, autonomy and independence--qualities associated with rich cultural identities and opposed the banality and placelessness of modernity. Locals find their public domains in the interstitial spaces between gated communities and factory compounds, optimizing and diversifying the potentials of infrastructures' urbanistic functions.

A pedestrian road along a canal in Kevin Lynch's sense is a Path, and in David Grahame Shane's definition is an Armature; however, in Suzhou, the Pingjiang Road plays multiple roles as an urban typological element. The central stone pavement of the road is frequently dominated by scooters and bicycles passing by; the brick pavement along the edge next to the street building façade becomes a linear enclave that is constantly negotiated by vending bicycle carts and the pedestrian flow; the brick pavement along the other side of the stone pavement next to the canal with a tree line is both an armature for the pedestrian flow and a linear enclave -- a sequence of resting and scenic stops and public social interactive places.

Currently, each built element of the industrial park serves for a single intended purpose by design, although it is also normally utilized for many other

unintended purposes from time to time in reality. Different people in the city's public realm frequently define temporal spaces for different purposes, given that there is a temporal and spatial freedom for people in Suzhou on a certain micro scale. A welcoming plaza in front of a factory main entrance would attract cart vendors who temporarily privatize a spot at an edge of the sidewalk or in front of a gate to set up their mobile kitchens, and cook and sell popular snacks. A paved garden at the entrance to a gated residential compound would host a farmer's market every morning, and later on would be crowded by vendors such as the ones who are making popcorn, selling ice cream, and displaying kites and toys in the late afternoons. A widened sidewalk next to an overpass at a residential and commercial neighborhood would be occupied by street vendors during the peak-times of the day, and filled by a crowd of self-organized "Sunset Dancers" from nearby apartments in the early evenings.

New infrastructures accelerate the diversity and frequency of the overlapping between temporal public spaces and the permanent structures of the city. In early 2013, the state authority announced a "smart city" plan. A list of cities including Suzhou and the industrial parks started to experience free WiFi in both business complex and public places. The Starbucks phenomenon of the city is soon super-seded by the new Neighborhood Center effect in the industrial park district, where people step out from their apartment compounds and socialize in these local and smaller scale shopping and service centers situated in the urban landscape.

There are fifteen Neighborhood Centers so far located within a walking distance to the residential blocks. They are designed to physically integrate with canals and linear green parks running across –based on the overall city planning poli-cies. The neighborhood centers not only provide community services, supermar-ket, and healthcare service, but also house community classrooms and startup incubators, which give the public more potentials to utilize these spaces for dif-ferent purposes. In addition to these built environments, the popularity of mobile devices used in the public places with free WiFi is shifting the visible and invis-ible boundaries of conventional working places; the territories of private work-ing places are receding and giving way to the public spaces that are becoming more inclusive as informal working places. In this case, the notion of public space is becoming more ambiguous; it is the freedom that enables the citizens to tem-porarily privatize the public space for their personal use that makes the public spaces really public.

3. In contrast to modern western concepts, there is no such dichotomy between nature and culture in ancient Asian civilizations.[3] Simply drinking a cup of tea is a complex cultural practice that manifests our diverse and personal experiences in contemplation with nature. Natural elements and cultural practices in the past were blended in sophisticated ways exemplified by the Suzhou Classical Gardens. Today, emerging and informal cultural, commercial, and leisure programs, sup-ported by local infrastructures would gradually evolve into new networks. These informal networks would not only potentially overlap and interact with ever-growing eco-corridors, but also connect modern parks that have been isolated, exclusive, and gentrified by the top-down design, management, and operation.

Interacting with nature through both sensory experience and imagination is one of the design philosophies of the Suzhou Classical Gardens; while returning to nature is inherently an essential Chinese traditional ethic that still shapes today's attitude towards the nature-culture relationship. Among the current guiding prin-ciples for the planning of the Suzhou city issued by the municipal government, the

preservation of natural environment along with natural and cultural resources has become mandatory for new urban development. Landscape and greenery areas are quantitatively preserved such as the zoning code of no less than 38% green coverage ratio. There are well maintained green zones as shown on the map within each gated typological compound, along the broad streets, and in front of commercial centers. However, these natural elements are neither accessible by most people nor perceivable at the human scale (other than being decorative at a city scale). In addition, green parks are disconnected from each other without forming a network of parkland accessible for citizens at large of the city.

Along new road, water, electricity, and communication systems that are constructed together with the new green parks, multi-functional structures or park pavilions should be built either with or without a building program, which allow the citizens to define and redefine the purposes of these structures from time to time. In 2012, a multi-functional communal garden was constructed near Hanlin Neighborhood Center in between a greenbelt and educational buildings in Dushu Lake (an educational district).[4] Diverse and temporal commercial and cultural programs in the park attract many residents and students nearby during different time periods of the day. Continuous paths at a pedestrian scale are essential to link these separate parklands and transform the parks into another layer of urban network. The public bicycle project in Suzhou has been successfully carried out; there is a dense network of public bicycle stations across the entire city today. Bicycle stations are located both at every subway stop and some major bus stops as well. Recently, the Suzhou city has introduced shaded bicycle stations.[4] These new urban infrastructural elements can potentially generate new communal programs at certain stops along the bicycle and walking paths, which would activate the parks and green areas as a sequence of temporal public spaces.

Urbanistic infrastructure—as an ontological practice—has complex spatial, temporal, and cultural qualities that connect it with emerging urbanistic dynamics. Consequently, design interventions—operating on infrastructural systems—are transformative forces for the democratization of public space, allowing cities to transition to the new post-industrial conditions, meanwhile, preserving and diversifying their cultural identities.

ENDNOTES

1. Kelbaugh, D. (ed.) and McCullough, K. K. (ed.) (2008). *Writing Urbanism: A Design Reader* (The ACSA Architectural Education Series), Oxon, Routledge.

2. Steinhardt, Nancy S.(1990). *Chinese Imperial City Planning*, Honolulu, University of Hawaii Press.

3. Descola, P. (author), Lloyd, J. (translator) (2013). *Beyond Nature and Culture,* Chicago, University of Chicago Press.

4. www.sipac.gov.cn.