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VISUAL TECHNOLOGICAL ENTHUSIASM: AN INDUSTRIAL URBAN SPECTACLE IN THE “TENTH ANNIVERSARY” COMMEMORATIVE ALBUMS OF CHINA

Haode Sun

Abstract

The nationwide industrialization in China initiated from “First Five Years’ Plan” in 1953, catalyzed the unprecedented boom of construction reshaping the urban space, and of photographic production that witnessed this movement. This paper focuses on a nationwide photographic survey and following albums organized by Ministry of Construction Engineering of China to widely demonstrate the achievement of industrialization and other constructions in commemoration of the Tenth Anniversary of China in 1959. Hence, within the collective and institutional system of architectural design and photography, this paper analyzes the photographic archive from two perspectives: new topography of layout and monumentality of architecture and space to discuss the interaction between new visualization and emerging industrial urban spectacle. It concludes that an underlying visual technological enthusiasm formed by the social and professional context, constitute a visual subject-matter in the initial industrialization in China.

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Written by Haode Sun

Introduction

“Smokestacks everywhere from the view of Tiananmen Gate Tower” – the notable statement vividly demonstrated the ambition of industrial development for modernization by Chairman Mao Zedong in 1950, which was also shared by Mao’s predecessor, Dr. Sun Yat-sen, in his plan for a modern China in the 1920s¹. Although this ambitious statement has been circulated numerous times, from propaganda use to academic study, until now, it still proposes a picturesque illustration of the aggressive modernization that embraced a comprehensive industrialization initiated by the “First Five-Year Plan” (“Plan” for short) for the People’s Republic of China in 1953. Apparently, it catalysed an unprecedented boom in construction industrializing the new nation and consequently provided a principal perception of urban space which was antagonistic to the Chinese tradition. Initiated by the 1953’s “Plan” originated from the Soviet Union and the following National Urban Construction Meetings in 1954 and 1955², a central policy to realize the ambitious modernization by building industrial cities was then established: 694 major industrial projects were to be built, central of which were the 156 projects supported by the Soviet Union³; 472 of them were located in the inland and 222 in coastal areas.

From that point on, not only did numerous projects occupy the urban space from central locations to the outskirts, they also created new towns and areas. According to the Ministry of Construction Engineering, the total area for new construction was approximately 520 million m². During the first decade since 1949, one third of that was dedicated to industrial facilities. Specifically, more than 2,100 industrial towns and areas were constructed, 167 of which were totally new⁴. In 1957, as the quota for the “Plan” was achieved and even exceeded in advance, a nationwide optimism was aroused. Together with the Tenth Anniversary of China that followed and a sophisticated domestic and international political environment, the Great Leap Forward (1958–1965) ensued, catalysing an even more aggressive wave of modernization in China.

In this circumstance, from an inceptive ideology envisioning comprehensive progress to an actual manifesto reflecting to individuals, it was urgent that the representative for industrialization,

¹ Xue, Charlie Q.L. and Ding, Guanghui. *A history of design institutes in China from Mao to Market*. London, New York: Routledge, 2018.

² Baihao, Xiutao Peng, and Li Huang. “A study on the history of city planning for Chinese new modern industrial city.” *Urban Planning Forum* 4, (2006): 84-92.

³ Many scholars have focused on the influence of the Soviet Union’s technological support, either comprehensively or for particular individual territories. For example Ji, Guohua. “The incursion of Soviet Socialist Realism and its influence on China’s architecture in the 1950s”. *Time Architecture* 5, (2007): 66-71. And Sun, Yuejie. “The research of the history and value evaluation of Luoyang’s industrial heritage cluster in the 1950s.” PhD diss., University of Tianjin, 2016. And Liu, Yanhong. *The Soviet Union experts aid construction of Baotou research (1954-1960)*. Master’s thesis, Inner Mongolia University, 2016.

⁴ According to resources from statistical data from the foreword to *Ten Years of Architecture from 1949-1959* and historic archives, such as Wang, Fu, and Zhixian Liu. *Record of Architectural Construction in New China (1949-1989)*. Beijing: China Architecture and Building Press, 1989. After the “First Five Year Plan” was eventually confirmed, numerous new industrial towns and zones were established for steel, iron, coal, vehicle, petroleum, etc. Lots of them were even originated from undeveloped land according to the specific needs.

which would thoroughly alter the urban spaces in her vast territory needed to be found. Namely, when “industry” is mentioned or used in most cases here, it refers to recognizable figures that signify general industrial activity, such as the form of architecture and urban space, the morphology of machinery or the array of mass production, rather than an intricate industrial procedure. As Bourdieu stated,

“The state may be defined as a principle of orthodoxy, that is, a hidden principle that can be grasped only in the manifestations of public order, understood simultaneously as physical order...A hidden principle that can be grasped in the manifestations of public order understood in both the physical and the symbolic sense. On where the new nation was based, not only the remaining monument standing for history but also another typology of physical transformation, a orthodoxy distinguished with past, an image, a symbol”⁵.

The smokestacks, echoing Mao’s vision, an image of industrialization embodying a totally distinguished symbolic figure, in contrast to the horizontal urban texture in the orthodox Chinese etiquette capital Beijing, replaced those pagodas and towers as a new visual and conceptual landmark to manifest the modernity, where this new state could be found to distinguish it from the past. Hence, photography with its objectivity, which had been representing figures of the constantly changing built environment in China for over a century, was enlisted as a loyal comrade in this campaign of visualization, in turn, to become an illustrated trace for historian to reveal the collectively mass production in architecture and its visualization. Serving to represent the physical transformation, specifically, an alternative urbanism which is not a mere phenomenon but a spectacle of the new established state, photography was thus endowed with a substantial function to visualize this motif both ideologically and practically. As such, here, a question is posed concerning what in fact drove this process, and what was the internal factor constituting the visual representation under the circumstance in that particular period?

1. Architectural photography: a collective transformation

Since the late Qing Dynasty, the emerging modern visualization in China brought physical objects, including architecture, to a stage that could be viewed miscellaneously via various approaches, such as personal expression, exhibition, mass media and professional circulation⁶.

Since the initiation of the modern architectural field participated by local architects in the 1920s⁷, architectural photography which was more thoroughly industrialized by Western and local pioneers in China had unsurprisingly become the defender of Chinese architects in the campaign for a self-consistent position of this profession and paradigm⁸. Photographic images to

⁵ Bourdieu, Pierre, Patrick Champagne, Rémi Lenoir, David Fernbach, Franck Poupeau, and Marie-Christine Rivière. *On the State: Lectures at the Collège De France, 1989-1992*. English ed. Cambridge, UK: Polity, 2014.

⁶ Pang, Laikwan. *The Distorting Mirror: Visual Modernity in China*. Honolulu: University of Hawaii Press, 2007.

⁷ During the peaceful decades from the beginning of the 1920s to the Sino-Japan War, the local architectural market emerged from the first generation of Chinese precursors, the majority of whom had studied architecture abroad. This ended the long-term monopoly by Western design companies, especially in Shanghai, Guangzhou, Wuhan and other concession cities.

⁸ Unsurprisingly, the first generation of Chinese architects embraced the photography medium after their studies abroad. A series of journals, like *The Chinese Architect and Builder*, constituted the initial communications of the field of photography to Chinese architecture as a principle material to convey their design proposals. Some of them, specifically the *Journal of Society for Research in Chinese Architecture*, used photography documentation in their research on traditional Chinese architecture as evidence and comparable material to trace the history.

be circulated, no matter for internal use or publication, were taken mostly by private studios which mainly undertook picturesque portraits for architectural scenarios before. Basically, those enlargements generally served as an isolated instrument used in the instruction of design, construction documentation or materials for advertisement.

Since the establishment of a socialist system, architecture in China and its photography partly inherited from the precursors but also developed much more substantial and modern content to adapt to a new political and cultural circumstance via a quite tortuous route — a centralized and collective system of the production, reproduction, circulation utilization of image to serve the mass construction⁹. To begin with, in parallel with mass reconstruction in the West after the War that had been based on a methodology and architecture of bureaucracy, one that had been criticized by Hitchcock¹⁰, bureaucratization in the Chinese architectural field was even more dramatic and thorough. A top-down reform took place in architectural practice since the beginning of PRC, such as “Public-private Collaboration Policy”¹¹. Private design offices, which mainly consisted of individuals who had practised before 1949, were merged into state-owned design institutes founded by local and central authorities to undertake designated tasks, ranging from overall urban planning to individual steel factories, from large-scale complexes to prefabricated housing units, for the “Plan”.

Hence, the architecture of genius turned into one of bureaucracy. Likewise, photographers trained via an apprenticeship in private studios were also absorbed into the collective workflow in particular architectural institutes or news agencies¹². Rather than completing random projects assigned to them by clients, they devoted their work more closely to the architectural design satisfying particular demand, namely, the “planned” campaign of modernization. As this was based on and operated by a collective consciousness, personal creativity and authorship was rendered anonymous, however, not an absolutely negative way. In one sense, a collective narrative, derived by an even more expressive photographic approach, was thus born.

Second, the usage of photographs had changed so that the hierarchy of viewing was even more concentrated and specialized. On one hand, photographs produced by institutional photographers as a technological reference and documentation were basically circulated within the institutes. On the other hand, nationwide professional publications, which were edited and organized by central or local governmental authorities, became the main sources that published those architectural images. As a result, a relatively internal circulation system was established that consisted of a much more professional production process, communication field, reader community and technology-oriented paradigm. That sets the stage, then, for the third reform, which transformed the architectural message by those images within the two ends of the spectrum. One was to merely serve the transfer of technical information, and the other was to

⁹ According to different resources from the memoir collections and internal archive of state-owned design institutes, such as Beijing Institute of Architectural Design and East China Architectural Design & Research Institute, as well as research on the history of this units, such as, Liu, Yishi. “Selected Historical Materials of Yongmao Architectural Company (Part 1): Establishment and Development, 1949-1952.” *Archicreation* 4, (2017):240-245.

¹⁰ Hitchcock, Henry-Russell. The architecture of bureaucracy and the architecture of genius. *Architectural Review* 1, (1947): 3-6.

¹¹ This policy was established in 1953 and reach its climax in 1956, ultimately merging private industry and commerce, including manufacture, retail, finance, etc., into a national or collective ownership and bureaucracy as a significant process of socialist reform.

¹² Tong, Bingxue. *History of Photo Studios in China (1859-1956)*. Beijing: China Photographic Pressing House, 2016.

realize the interaction between architecture and ideology within the bureaucracy. Architectural photography, in most cases, was thus endowed with dual context and catalysed to seek a stronger objective translation of figure but sensational expression of motif. To some extent, a new period of architectural photography in China occurred, and its operational system has even continued to the present time.

2. Nationwide photographic survey: the materialized imagery

The National Symposium on Architectural History, held from October 6th to 17th in 1958, marked a significant break-through for architectural research in China. Delegates nationwide decided to launch three research projects on Chinese architectural history for the Tenth Anniversary¹³. What was more important, amongst the projects, one named “Architectural Achievements since the Founding of the Nation” initiated a comprehensive and nationwide photographic survey of architecture, which was the first one in the history of architectural visualization in China. Those photographs directly served several emerging albums at that time, as detailed in the following paragraph. Edited by the China Academy of Building Research¹⁴, *Ten Years of Architecture from 1949 to 1959* was published in December 1959.

Its intro emphasized that this album was a collective intellectual work derived from central to local contribution by construction authorities from 15 provinces, cities and autonomous regions and from over 20 institutions of media, design and management¹⁵. Photographic, literal and graphical archives of representative constructions from over 40 urban areas were collected. Organized by territory, this volume demonstrated those well-developed cities, such as Shanghai, standing for socialist renovation of an “old”, capitalized metropolis, and it also highlighted many newly established industrial cities, such as Baotou, Karamay, Lanzhou, Zhengzhou, etc.

In the meantime, with achievements in surveying, another album, named *Ten Years of Architectural Design*, was published and edited by the Architectural Society of China. Compared with *Ten Years of Architecture*, the latter was organized by a typology that distinguished architectural functions: Industrial architecture comprised the first chapter, followed by civil structure and people’s communal spaces, demonstrating a more design-oriented arrangement, as the title indicated. Beyond these, similar photographic albums for particular areas were also published, like *Beijing*, edited and published by the Committee of Edition of Beijing.

Part of the reason that photographic albums, as media serving the collective consciousness and assignment were dedicated to visualize the retrospective achievements testifying the modernization movement, echoed Zimmerman’s claim that “architectural media in the

¹³ Wang, Fu, and Zhixian Liu. *Record of Architectural Construction in New China (1949-1989)*. Beijing: China Architecture and Building Press, 1989.

¹⁴ The Ministry of Architectural Engineering was founded in 1952 in order to comprehensively manage the construction tasks, especially those serving the “Plan”. The China Academy of Building Research was founded in 1953 as one of the subordinate institutes of the Ministry. It consisted of professional researchers, architects for making standard regulations and codes for design and construction, as well as for organizing research projects.

¹⁵ Except for the units mentioned above, during the process of editing *Ten Years of Architecture*, several groups of professional photographers and editors were sent to collect additional materials. To be specific, these included news agencies, such as Xinhua News Agency, China Pictorial News Agency, and Minority News Agency, research institutes, like the Heritage Department of Ministry of Culture, Forbidden City Museum, Department of Restoration of Ancient Architecture, Tianjin University, Nanjing Institute of Technology, Southern Institute of Technology Institute of Technology, Chongqing Architectural and Engineering College, and Harbin Architectural and Engineering College, and local design institutes and authorities, like the Architectural Design Institute of Provinces of Xinjiang, Jilin, Guangdong, Anhui, Beijing, and Zhejiang.

twentieth century enabled buildings to look modern even as they were produced traditionally ... for images that were more intensively industrialized than the buildings they imaged”¹⁶. Rather than satisfy a commercial model which lost the aura of art by mechanical reproduction in Walter Benjamin’s critique, on the contrary, those albums relied on mass production, comprehensive collection and internal circulation were designed to evoke an “aura” of symbolic sense.

Besides, from the cover to the photographs, aerial views, high angles, wide angles, panoramas, collages and colours, the albums standing for the highest level of at that time illustrated a visual testimony of the “reflection of national policy and culture in architecture” and the achievement since 1949 to respond to the “Tenth Anniversary”. In the graphic design for the cover of Ten Years of Architecture, although illustrated with incorrect proportion, the elevation collage for construction located in Chang’an Avenue demonstrated a sound image of the recognition of a new state. Amongst the identical monuments, an anonymous industrial figure was juxtaposed equally in scale with the Hall of the People, Minzu Cultural Palace, Monument to national heroes and Military Museum of the Chinese People’s Revolution. Here, it again confirmed the symbolic importance of industrial structure in an official imagination of modernization. Simultaneously, they also served as “guidebooks” for architects and administrative officers.

The photographs that illustrated the most significant character of architecture were comprehensively collected to present almost all kinds of construction in demand for the new state, and these were usually described by particular technical drawings reflecting the most significant architectural content. Anchored by a series of remarkable political events in architecture, those well graphically designed albums provide a look back at the process of modernization in China, in turn allowing us to retrospectively trace the particular path of the visualization of industrialization approximately 60 years later in a larger historical discourse. By delivering materialized imagery throughout the country via the highly bureaucratic system, these albums provide a canon of photographic representation to the stakeholders in this system: a materialized imagery that mediated the ideological value and essential technological information to serve the motif of modernization.

3. An emerging architectural visualization

Given an overall picture of its transformation and circulation, arguably, an emerging inseparable interaction between photography and architecture was thus built during that period of time. Hence, a question could be posed regarding how exactly that interaction, namely, a mechanism of “architectural visualization” realized by photography, functioned in this visual campaign of modernization.

During the first decade, a series of political instructions for accelerating industrialization were given by the central government, which eventually led to the “Great Leap Forward” movement in 1958. For instance, a first priority policy, “Technological Revolution”, which encouraged not only creativity but breakthroughs in materials, scale, design methods, and reductions of cost, became a principle guiding the architectural design to serve modernization, especially for industrial tasks.

¹⁶ Claire Zimmerman, “The Labor of Albert Kahn,” The Aggregate website (Not Peer Reviewed), accessed December 16, 2019, <http://www.we-aggregate.org/piece/the-labor-of-albert-kahn>.

Meanwhile, within the academic architectural field, swinging between Revivalism, which had been an eclectic response to Modernism since the 1920s, the grandiose narrative of Realism and Symbolism influenced by the Soviet Union and the fragmental collage of Classicism from Western architecture, a modern theoretical model that could serve the new state's modernization had been probing cautiously for years under the ideology and emerging bureaucracy in architecture¹⁷.

Where architects and government officials were exhausted by endless debate on the orthodoxy of modern architecture, even a potential political risk, it brought back an atmosphere of technology-oriented discourse. It led architects to return to a rational perspective from the debate on legitimacy of Chinese architecture—style, context, territory, etc. and to concentrate on technologically oriented messages conveyed by practical and essential structure.

So, too, within the collective partnership, the photographers to whom the new subject matter visualizing the advanced technology and modernity in architecture were given, to some extent, undertook the replenishment. Hence, in this circumstance, first, the accumulating objectivity of strangeness, mass-production, systematic work flow, etc. in China was isolated with the existing historical experience, so that it could and would have to develop a new system of technological code for modernity derived from discontinuities of history.

Second, influenced by the political atmosphere and practical requirements, industrial structures were extinguished from other types of architecture and endowed to provide an alternative path in both visual imagination and physical construction—unprecedented political worship by grandiose scale and territory, technology oriented and rapid duplication. Ultimately, a relatively independent system of architectural design and representation was urgent to be erected. Hence, photography, in fact, was assigned to decode the sophisticated political terminologies and to endeavour to legitimize the movement by assembly of industrial forms based on a technical logic distinguished by context.

Furthermore, there was no precedent for comprehending the social impact of the tremendous industrial movement as the “Plan” in China; no historical or cultural experience could be traced. However, having been experimented upon for decades in the Soviet Union before and after the War, this new architectural “language”, reflecting ideology, economy and social organization, was brought to this new state more rapidly and thoroughly.

¹⁷ The torturous path for architectural development in post-war China has been systematically researched by many scholars. See Lai, Delin. “Social View or Cultural View: Liu versus Liang in Historiography and Concepts of Architecture in China of the Mid-twentieth Century.” In *Sixty Years of Chinese Architecture (1949-2009): History, Theory and Criticism*. Edited by Jianfei Zhu. Beijing: China Architecture and Building Press, 2009. And Zou, Denong. *A History of Modern Chinese Architecture*. Tianjin: Tianjin Science Technology Publishing House, 2001; Rowe, Peter G. and Seng Kuan. *Architectural Encounters with Essence and Form in Modern China*. Cambridge, Mass: MIT Press, 2002. And Zhu, Jianfei. *Architecture of modern China: A historical critique*. London and New York: Routledge, 2009.



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In this case of China, as Ji has indicated, it was influenced mostly by Socialist Realism, which dominated mainstream art theory in the Soviet Union for 60 years. Ultimately, architecture in China acted as an issue of “class”¹⁸. Bourdieu stated that:

“Symbolic power, whose form par excellence is the power to make groups (groups that are already established and have to be consecrated or groups that have yet to be constituted such as the Marxian proletariat), rests on two conditions. Firstly, as any form of performative discourse, symbolic power has to be based on the possession of symbolic capital ... Symbolic capital is a credit; it is the power granted to those who have obtained sufficient recognition to be in a position to impose recognition ... Secondly, symbolic efficacy depends on the degree to which the vision proposed is founded in reality”¹⁹.

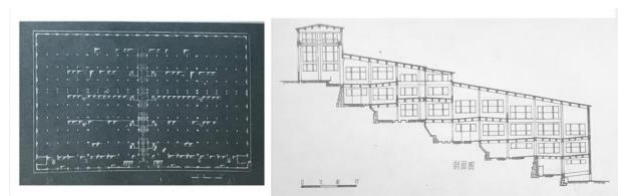
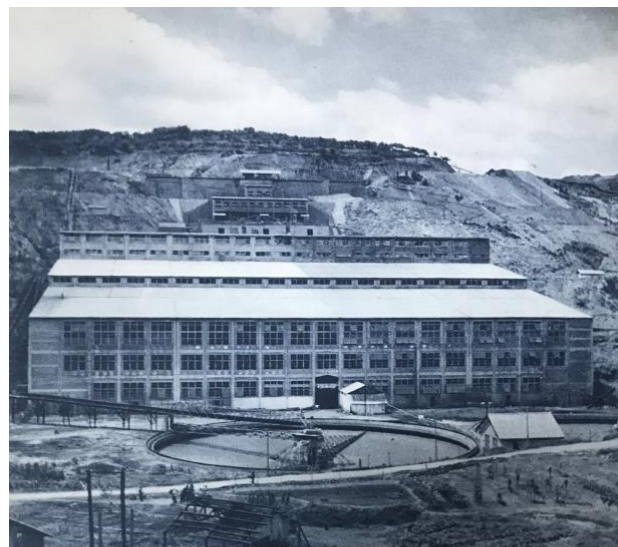
Bourdieu’s understanding of social space, on where a state was then founded, reveals the underlying symbolic power of the language that could be apprehended by particular groups of people. In turn, this interaction constitutes the identification of the group. From this point of view, industrial architecture and its photographic documentation, in fact, functioned perfectly as a recognition of a certain group of people — the emerging working class — as a base of the proletariat and opposition to the previous essence of production space, a new pattern for urban development and source of power for modernization before 1949.

¹⁸ Ji, Guohua. The Incursion of Soviet Socialist Realism and Its Influence on China’s Architecture in the 1950s. *Time Architecture* 5, (2007): 66-71.

¹⁹ Bourdieu, Pierre. “Social Space and Symbolic Power”. *Sociological eory* 7, no.1 (1989): 14-25.

Furthermore, the degree of “capital” and “reality” became a basic index to assess the interaction between the new visualization, tailored as symbolic resources energizing the social development, and the campaign for industrialization, such as the “Technological Revolution”. Since the national authorities existed, as did the bureaucracy of architectural photography, the following nationwide photographic survey and albums constituted the “capital” of symbolic production, a new established visualization mechanism constructed to emphasize the “reality”, which could be concluded or observed, for instance, as the industrial urban spectacle.

An emerging architectural visualization, an unprecedented phenomenon that mediated the modernization of China, thus, had been constructed by photography and its bureaucracy, the best comrade for architecture in this campaign. The interaction, including the translating, representing, circulating and conveying, was not only a system of technical logic and knowledge, as an approach for comprehending and legitimizing the industrialization, but also a collective recognition, as a symbolic power that aggregates the recognition of working class to be consecrated for the new state.



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4. “Tabula plena” of a new topography

For each individual project, the overall view or vantage point documenting the completed layout of the facilities played a key role as an essential motif that conveys achievement of technological revolution perfectly. Unprecedentedly, a large number of aerial views and panoramas were taken by assigned photographers who were keen to illustrate the

overwhelming transformation that altered the existing texture²⁰. Remarkably, those views shared a common character that enormous plants, assembled by elements standing for the complexity of function and the technological layout, manifested their most significant horizontally extending feature and shared no dialogue but contrast with the surroundings: There existed urban texture, mountains, rivers, plains and fields. *Tabula rasa*, as an overused universal metaphor for urbanism and preservation practices, in particular, the very methodology applied pervasively in contemporary urban development in China, seems to cause a resistance to itself as a cure for contemporary cities, with serious after effects even. It is intriguing that *Tabula Plena* was indicated to reconsider the accumulation of urban spaces, that arrangements could be traced and rearranged in this “game board left in mid-play”²¹.

Regarding the initial impact of industrialization on urban spaces in China, most sites originated from a literally blank “palimpsest”. However, this invertible industrialized process performed as a new physical principle, the game rule, the system of relationships of geography and space. In fact, what photography could present was a conclusion, a strictly intuitive reaction to industrialization power and its principal logic for urban space, rather than authorship for this mass development.

This contrast is even more emphasized in consideration of the plan drawings in those albums, which were well-designed to convey technological issues, as mentioned before. For instance, an aerial shot for a paper factory provides the whole figure of the plant situated in a mountain district along with a river. Meanwhile, the plan shows how this plant is inserted into the environment undisguisedly, with its overwhelming technologically oriented morphology. Due to practical requirements, this particular standard was applied almost in every project in order to document the layout as precisely and completely as possible.

The re-imagination of industrial spectacle, the chimney as a metaphor in Mao’s statement, one that permanently defeated the original texture as a new topography, became a reality. Within the planned economy, numerous new industrial areas were constructed for designated functions as the prioritized approach towards urbanizing old towns or blank spaces nationwide on an unprecedented scale. Ironically, many new plants at that time were constructed in remote locations in order to gain better access to natural resources and avoid disrupting existing urban areas. However, they became a critical burden for contemporary urbanization and renovation. Amongst all of the aerial views, the one of the Shijingshan Steel Factory (then the Capital Steel Factory) in east Beijing, showing the overall layout of the plant stretching from north to south, is highlighted by its comprehensive view. Horizontal factories serving the industrial process are connected to each other along the linear structure of the plant. Meanwhile, chimneys and blast furnaces constitute the vertical volume and act as tower-like landmarks, recalling the quote cited at the beginning. It seems that the plant stands still in a vast, isolated plain, and its shape forms a new topography as an archipelago. However, today the background space in the image is now the developed urban body of Beijing out along the 5th Ring Road, and the plant has become a huge obstacle to the city’s current expansion. Arguably, the initial images for those urban spaces

²⁰ According to interviews and reminiscences of photographers from state-owned institutes, a large number of overall views were required by architects. For instance, Photographer Hou Kaiyuan of Beijing Institute of Architectural Design recalled his personal experience when he was taking photos for Beijing Textile Factory and Mechanical Factory. In order to take an overall view, he climbed up a chimney, as there were very few vantage-points in Beijing at that time.

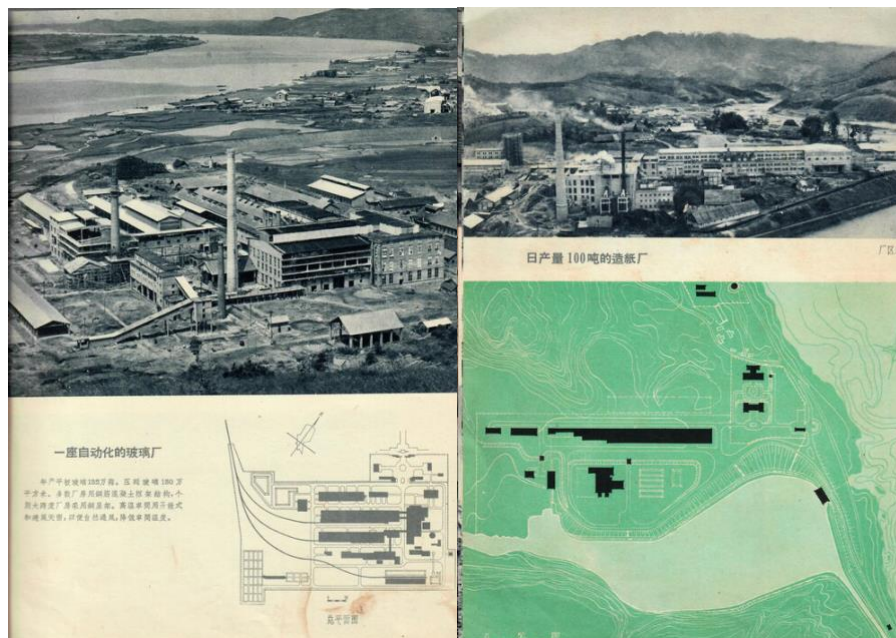
²¹ Roberts, Bryony. *Tabula Plena: Forms of Urban Preservation*. Baden: Lars Müller Publishers, 2016.

constituted the assembly of figures beyond experience and history, functioning as an agency that divorced the existing urban and natural texture to form a new topography, one acting as a determined tabula plena for all urban space afterwards²².

It defined an explicit approach for an alternative urbanism to modernize China through the visual rhetoric: What the industrial areas, as a prototype, to new industrial cities, was what the existed urban texture to traditional cities before 1949. Not by personal observation or experience, but the accumulating symbols of the assembly of technological figures as a fact, those facilities created a permanent identification functioning as the topography for this particular realm, overwhelmingly defining the morphology of the space, the urban and the symbol of modernity.

5. Monumentality of spatial symbols

Given the overall view of the architectural complexity, another motif in the survey was to represent the morphology of industrial structures, the functional complexity, the forms associated with structure and procedure as direct references for future practices in different projects. A particular colour image published in both of the aforementioned albums depicted a night panorama of the Ma'anshan steel factory. In the picturesque rendering, assembled by precise silhouettes of giant blast furnaces, chimneys, cooling towers and storage silos, the facility lies across the river with endless smoke diffusing in the sky and a lighting device illuminating the surrounding area.



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Through the solemn form of the facility, the delicate setting of the perspective and the dramatic atmosphere, the grandiose and unexperienced sense of industrial structure is rendered seemingly as a metaphor of the overwhelming movement, what is more, of the enthusiasm for the technological revolution, as a perfect defender of the basic policy, "Steel as principle, serving

²² Bonino, Michele, Maria Paola Repellino and Pierre-Alain Croset. "Learning from Places, as One of the Tasks of Urban Design". *Urban Design* 1, (2015): 44-53.

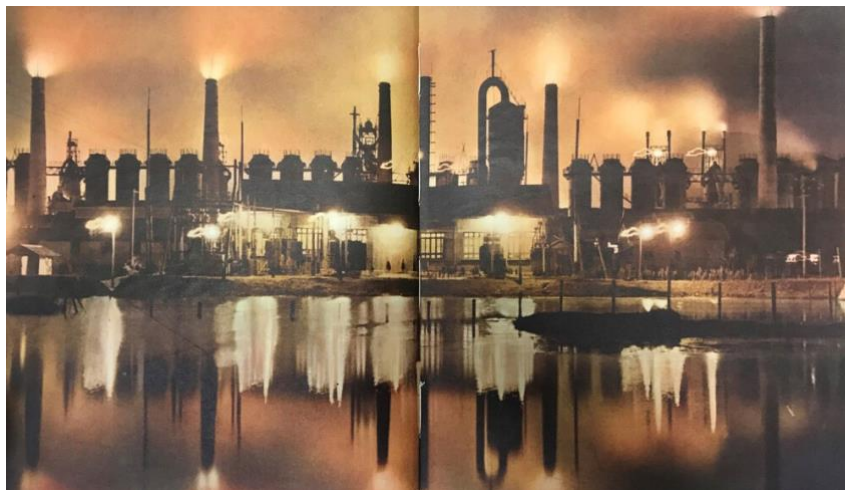
the overall Great Leap". The form, standing for certain technical logic, extracted and abstracted by the photograph, provides an extraordinary visual experience of a built environment that challenges the individual's experience.

Apart from the grandiose rendering of the exteriors, an acknowledgement of the spacious interiors of industrial structures was unprecedented in China. It constitutes a significant subject matter that evoked a sense of monumentality in the individual, the one who was then immersed in the realm not through physically experiencing it, but consciously viewing it. Series of wide-angle perspectives were taken to represent the symmetric or spacious sense of space, with even segmentation by structure and highly uniform machinery.

In a photograph of the Anshan Steel Factory, the depth of space is fully emphasized as well as the structural approach to create the space. Numerous profile steels occupy the space, as do repeated trusses, hanging tubes, even the light through the clerestory, all together emphasizing the linear perspective of structure. Here, the space is more a general functional device for modernization; it is a specific place housing the interactions between space and production, volume and form, rhythm and perspective, manifesto and modernity, collective and individual. A similar representation can be found in an interior view of Beijing's 2nd Textile Factory. In the perspective demonstrated by the photographer, every linear structure defined by beams and textile machines seems to stretch infinitely to a vanishing point.

With the absence of individual figures, which were common in stereotypical propaganda, one could tell that the photographers, instead, tried to convey the immersive strangeness of the industrial urban spectacle, serving as the narrators, rather than the directors, of the albums' core substance. Authentic collective activities and instantaneous states were sensitively documented in such a way of reinterpreting the everydayness echoing individuals' interactions within the facilities.

Industrial facilities represent a fundamental support of the state economy in a social perspective, enormous in scale compared to the human body, a physical space connecting the individual with the collective, but they are also symbolic subjects. Meanwhile, they evoke strangeness and objectiveness; they are super-scaled and morphologically isolated, with a historical context but also a strong indication in modernity. The essences of industrial structures have been sensitively captured by generations of international photographers, who brought the form of monumentality in visualization.



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In many cases, photographs served mass industrial construction, as a movement, or achievement for power, as new technology and a form of art, citing Hedrich Blessing's heroic representation of factories in America's radical development of manufacturing, Charles Sheeler's masterpiece on the Ford Rouge River Complex, one of Albert Kahn's designs from the 1910-40s²³ and also Albert Renger-Patzsch's abstraction highlighting the industrial elements of architecture and machinery, as well as natural figures remarking upon the New Objectivity in *Die Welt ist schon*²⁴.

Charles Sheeler's iconic photograph "Criss-Crossed Conveyors" of the River Rouge Ford plant, declared the "embodiment of manufacturing on an epic scale"²⁵ by dramatically translating the assembly into a photographic maze. Those factory facilities in his photographs and drawings

²³ Hyde, Charles K. "Assembly-Line Architecture: Albert Kahn and the Evolution of the U.S. Auto Factory, 1905-1940." *The Journal of the Society for Industrial Archeology* 22, No.2 (1996): 5-24.

²⁴ Simms, Matthew. "Just Photography: Albert Renger-Patzsch's *Die Welt ist schon*." *History of Photography*, 21 No. 3 (1997): 197-204, DOI: 10.1080/03087298.1997.1044382.

²⁵ Austin, Weber. "The Rouge: An Industrial Icon." *Assembly*, May 20, 2003. <https://www.assemblymag.com/articles/83966-special-section-the-rouge-an-industrial-icon>.

partly convey a sense of ritual for new urban spaces beyond their function²⁶. When it was completed in 1928, *Vanity Fair* described it as “America’s Mecca”, “the most significant monument in America”, echoing Bruce Barton’s documentation of Calvin Coolidge’s speech to the Amherst alumni: “The man who builds a factory builds a temple; the man who works there worships there”²⁷. It was also the case that industrial facilities constituted not only a place to work but also a site of ritual for public and collective life.

However, in contrast to the heroism of the stills of Albert Kahn’s design, figures in the survey presented a more authentic status²⁸. Abstracted and emphasized by photography, as an agency of the form of technological revolution to dissimilate the perception of the spaces consisting of extraordinary moments: assembly line machinery versus human labour, dynamic construction site versus permanent monument, super-scale space versus figures of workers, strangeness versus everydayness.

Translated by photography, the monumentality derived from the dissimilation of the form of technologically oriented figures constituted as a visual language, or manifesto, moreover, an interpellation of the self-consciousness, attributing oneself to the collective. To some extent, those industrial urban spectacles even replaced the existing or newly established public monuments as an extension of cultural context and acted as new landmarks, a compass for modernity for sociologically and physically comprehending the built environment.



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²⁶ Newhall Beaumont. *The History of Photography from 1839 to the Present Day*. New York: The Museum of Modern Art, 1982. And Sheeler, Charles. *Charles Sheeler: Paintings, Drawings, Photographs/ with an Introduction by William Carlos Williams*. New York: The Museum of Modern Art, 1939.

²⁷ Barton, Bruce. *Calvin Coolidge, a Man with Vision--but not a Visionary*. New York: Nabu Press, 2010.

²⁸ Hildebrand, Grant. *Designing for Industry: the Architecture of Albert Kahn*. Cambridge, Mass: The MIT Press, 1974.

6. Conclusion: the Visual Technological Enthusiasm

First, this paper reveals the changes in architectural and photographic production since the socialist reform. Both the architect and the photographer served in a newly established bureaucratic campaign to realize the top-down “Plan”, dealing not only with the technical issues of their respective professions but also with more sophisticated social subject matters. The architectural photography for the campaign served no individual architect or presses; rather, they served a much larger collective system, to which the sense of power conveyed by the visualized structure, especially industrial ones, contributed perfectly.

Second, to commemorate the Ten-Year Anniversary of China, the albums endeavoured to construct a collective recognition of the state’s achievements by a new circulation approach that identified the hierarchy of viewing. Driven by the ambitious “Plan”, the photographic survey not only satisfied the propaganda serving the event but also provided a trace in the visual history to unmask the operative mechanism of the modern visualization of industrialized urban space in China via two perspectives: as technical recorder and as social observer.

Third, rather than analyse the photographic approach, this paper examines the emerging architectural visualization captured by two dominating subject-matters: the new knowledge and principles of urban development that formed a new topography, as a *tabula plena* ever since, and the spatial symbol by emphasizing and abstracting the architectural elements’ technological expression to convey a sense of monumentality as an interpellation of collectiveness. Hence, the visual manifestos could be rendered as a systematic assembly of symbols demonstrating a dynamic, consistent and sensitive social context serving the recognition of the new state. The term technological enthusiasm, in fact, represents an ideological and practical preference of representation forged in this era as well as a recognition code for the collective, performed as a visual syntax, realizing the imagination of modernization that constructed the new state.

Indicated by Bourdieu, photography is an “essentially predisposed” approach to communication to serve the social functions: “It remains the case that the social uses of photography...define the social meaning of photography at the same time as they are defined by it”²⁹. Ultimately, “the individual personality is absorbed into the collective personality,” as stated by Judith Kapferer, “the aura of the tribe is re-created, with symbols, affects, and information being circulated and shared”³⁰.

²⁹ Bourdieu, Pierre, and Luc Boltanski. *Photography: A Middle-brow Art*. Cambridge: Polity in Association with Blackwell, 1990.

³⁰ Judith Kapferer, ed. *Images of Power and the Power of Images: Control, Ownership, and Public Space*. New York: Berghahn Books, 2012.



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Organized by the bureaucracy in architecture, the photographs that were collected from photographers, architects and journalists affiliating with different units and edited by particular authorities served uniformly as an authentic and circulated material for design practice reference and a legislation of the worship for the technological revolution. Hence, from where the photographs were anchored, the pattern, as a visual mechanism for those professional participants, stakeholders or administrative officers could continue to serve the development of the new state. To some extent, the pattern is still functioning now, though it is declining in the Market system.

Photography, consequently, as the symbol, affect and information, has played a role of mediator between the practical needs of technological knowledge transfer and the enthusiasm for the tremendous industrialization, from individual participation to collective consciousness, from social movement to physical development, from identification of a merging working class to professional bureaucracy.

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