CHINAMADE BRIEF

New Grounds: Infrastructuring the Central Plains of China

Leonardo Ramondetti, August 2020

Figure 1. Road under construction in Zhongmu County (Source: © Leonardo Ramondetti 2019)

Since 2016, my research has focused on the process of urbanization occurring in the Central Plains of China, in Henan province. My study starts from the premise that understanding urbanization requires investigating how physical spaces, especially infrastructure, are designed, built, practiced and used there. It sets out to provide a synthetic interpretation of this process based on detailed descriptions of the relationships between the current policies, economies and societies, and transformations affecting the physical space and the infrastructural systems. This interpretation seeks to instigate a debate regarding what Chinese urbanization reveals about building and living in contemporary cities both in and beyond the Chinese context. To achieve this, I consider the past urban conditions of the area, their current state and ongoing transformations. This investigation has been conducted by examining official data and current literature on the process of urbanization in China and, more specifically, in Henan province. At the same time, between January 2016 and May 2019, I carried out an empirical study over

three periods of field research in China. Drawing on the data collected in these investigations, I developed an analytic that builds on theoretical frameworks in fields such as architecture, urban studies, and geography to consider contemporary physical spaces and urbanization processes occurring worldwide. In particular, I focus on: the processes of suburbanization in North America (Phelps, 2015; Rowe, 1991; Thün et al., 2015), urban diffusion in Europe (De Geyter, 2002; Sieverts, 2003; Viganò et al., 2016) and studies of contemporary infrastructure and logistic spaces (Brenner, 2014; Easterling, 2016; Koolhaas et al., 1995). As with the present urbanization of the Central Plains of China, the 'city' resulting from these three processes appears to be elusive at first glance. However, the resulting landscape interpretations have established a shared language through which to understand how different spatial systems work in terms of relations between physical spaces and socio-economic and political conditions (Duncan & Duncan, 2010).

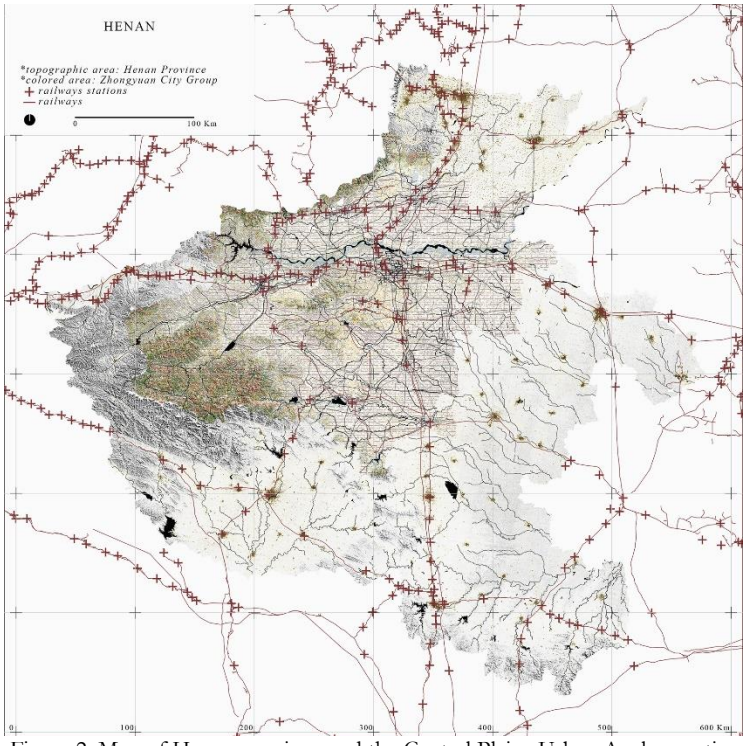

Figure 2. Map of Henan province and the Central Plains Urban Agglomeration (Source: © Leonardo Ramondetti 2017)

The adoption of such a methodological strategy is twofold: on the one hand I try to move beyond the exceptionality of Chinese urbanization (Governa & Sampieri, 2019), and on the other I seek to re-materialize the subject of study (Amin & Thrift, 2002). While most of the literature on Chinese urbanization primarily focuses on demography, economy and policies, I argue that this process cannot be regarded merely as an 'above ground' phenomenon impacting the socio-economic sphere (Armstrong & McGee, 1985). On the contrary, the ground of Chinese cities is a densely constructed new space hosting novel artefacts and infrastructure that need to be investigated: new economies are closely linked to new infrastructures, logistic platforms, industrial areas, tourist sites, new housing, and areas for leisure, wellbeing and cultural activities; and new policies address the need to preserve farmland, curb pollution, and capitalize on specific sites (Bonino et al., 2019; Oakes, 2019). In light of this, the current infrastructuralization of Chinese cities offers a unique opportunity to investigate a process of urbanization in the making. Furthermore, the new infrastructural systems have constitutive technical dimensions that can be engaged regardless of the cultural perspective (Lyster, 2016). Of course, this does not mean regarding infrastructure as a sort of 'neutral network' capable of obliterating all local specificities thought standardization (Ben-Joseph, 2005). On the contrary, these 'sociotechnical mediums' reflect socio-economic contingencies, political ambitions and cultural values while shaping new modes of living, constructing, occupying and consuming the land (Corner, 2014; Graham & Marvin, 2001).

I focused my study on the Central Plains of China because of the radical transformations in progress which are dramatically changing this space. Although this is still a little-studied region, it is now one of the main test beds for local governments, urban planners and developers to experiment with new urban policies and new ways of organizing the land. Like most of the territory of inland China, the Central Plains

used to be largely characterized by minor agglomerations built over a long period of time and made up of small-scale infrastructures that supported a diffuse urbanization. Due to the process of large-scale territorial infrastructuralization, that is the construction of transport, ecological and energy infrastructure as drivers of a process of urbanization and landscape restructuring, in the last three decades this area has been drastically transformed: high-speed railways, highways, canals, parks, airports and grids have been built. As a result, the Central Plains is now a regional-level urban agglomeration, the so-called Zhongyuan City Group, one of the most densely populated areas in the world: an area of 58,400 square kilometers made up of nine prefecture-level cities, 23 cities and 413 townships. The space produces 3.06 percent of China's GDP and is home to 45.5 million inhabitants (3.39 percent of the population of China) of which 30 percent (13.7 million) are considered 'urban population' (Fang & Yu, 2016). Today, inside this area, a great process of spatial restructuring is gaining momentum. The current policies aim to urbanize 4,902 square kilometers (an area four times the size of New York City) to host new inhabitants, new economies and to promote new ways of living and social constructions. This process is supported by an ever denser and diversified network of infrastructure which is radically changing the way in which spaces are designed, constructed, inhabited and perceived.

Figure 3. Redraw of the masterplan per Zhengbian New District by ARUP (Source: © Leonardo Ramondetti 2017)

This is particularly evident when investigating the area of the Zhengbian New District: a new urban development promoted by Henan province and the municipalities of Zhengzhou and Kaifeng to unify the two cities (Wu, 2015). The plan, drafted in 2010 by the international firm ARUP, envisages a linear city along the main infrastructural axes and ecological corridors (ARUP Engineering Consulting Company et al., 2010). This wide-area system aims to distribute a large variety of urban materials and land-uses over a linear distance of 80 kilometers and to reorganize a total area of 40 square kilometers, which is currently populated by 4.5 million inhabitants (Zhengzhou Municipality, 2009). In the last decade, the plan has been progressively implemented, driven mainly by the construction of new infrastructure. As an example, in the area of the Zhengzhou municipality, the total kilometers of roadway built per year has increased from 1,272 kilometers in 2010 to 2,101 kilometers in 2018; consequently, the overall paved area for infrastructural uses has risen from 29,220 to 58,210 thousand square meters. Over the same time period, the water supply system has also been expanded, passing from 2,360 to 4,420 kilometers (Zhengzhou Municipal Statistics Bureau, 2018). Most of this improvement occurred in the area of Zhengbian New District.

The result of this infrastructure-driven urbanization is an extremely dense landscape composed of heterogeneous urban materials positioned next to each other. This loose, deformable space is capable of containing anything and everything: airport cities, university towns, Economic Technology Development Zones, logistics hubs, technical spaces for agricultural production, Central Business Districts, and leisure

areas. However, due to the novel conditions of this landscape, these cannot be considered merely technical spaces for production, as they play host to a myriad of diverse functions; for instance, 300,000 people both work and live in the Foxconn Science Park, producing 500,000 mobile phones a day at a rate of 350 phones a minute (China Labor Watch, 2019). Similarly, the university town in the Zhengdong New District contains more than twelve campuses to accommodate about 200,000 people that work and live in an area of more than 13 square kilometers (Li et al., 2010).

Figure 4. Research center in Zhengdong New District (Source: © Leonardo Ramondetti 2019

In the same way, the new infrastructure is radically altering how spaces are inhabited. New housing is being built everywhere, promoting new practices and ways of occupying the land. This is particularly evident when investigating the fringes of the Zhengbian New District. In these agricultural areas, which are to be preserved as an ecological corridor for agrarian production, there are not just ancient and modern agricultural villages, but also newly-built agricultural towns developed by the New Socialist Countryside program, and compounds built by real estate companies. These settlements manifest a shift in imagining how people inhabit rural areas. This is clearly visible not only in the new housing typologies adopted, but also new the facilities and welfare spaces, such as schools, hospitals, parks and areas for sport activities (Lee, 2016).

This brief description highlights the complexity and contradictions of the landscape transformations occurring in the Central Plains of China. This upheaval leads to further questions and conflicts that can reveal a great deal regarding the contemporary city, and have, still, largely to be explored. Above all, the

Figure 5. Open-air theatre in Zihuan Road, north of Zhongmu County (Source: © Leonardo Ramondetti 2019)

relationships this new infrastructure-driven urbanity establishes with pre-existing settlements, national and international trading routes, Chinese and global labor systems may shed light on the multi-scalar logics that characterize the urban realm. Hence, it is possible to reconceptualize the Chinese city, not as unique, but as just one of the multiple spaces that compose today's urban realm. Similarly, understanding how new infrastructure organizes and structures the landscape can help us to build new discourses and projects on the city, and open up to new imaginaries for designing the living environment.

Leonardo Ramondetti is an architect and urbanist working at the intersection of urbanisation theory, design and geospatial analysis. He received his Ph.D. in Urban and Regional Development from Politecnico di Torino and Università di Torino in June 2020. His recent work includes contributions in the research CeNTO (Chinese New Town) and the publication *The City after Chinese New Towns* (M. Bonino et al., Birkhäuser, 2019). He holds a master degree in Architecture Construction City at Politecnico di Torino with highest distinction in 2014.

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