

FR1.45.01 Back to the Countryside! RECONFIGURING RURAL-URBAN TYPOLOGIES, RECOVERING CHINA'S AGRICULTURAL AND ECOLOGICAL LANDSCAPES

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Within the context of China's New Urbanization strategy, this paper examines the possibilities for China's agricultural and ecological recovery in the face of its previous Urbanization's deterioration of these landscapes, and their relationships to human settlement patterns and culture. While the Eco-city and then the low-carbon city project in China initially presented possible urban development models, which might address a number of issues of sustainability, they have actually undermined their actual landscapes. A recent shift in development policy has moved from urban focus to back to the countryside in village development, which offers new possibilities, and re-thinks with respect to typologies and human settlement patterns. This paper explores possibilities for landscape recovery through alternative building typologies and settlement patterns potential to create hybrid programs, which can create opportunities for urban agriculture. It does so through design research and analyzing selected case studies, including two urban design studios, which I have run. The first was collaboration between Chinese and US students that examined alternative methods for urban development using the Tianjin Chinese Eco-city as a lens to do so. The studio also re-examined the role of ecology in the design through integrated landscape and ecological planning as a methodology. The second studio conducted village-planning design in a village in Anhui province, located within the Huangshan region, an area under pressure for development from the high-speed rail linking it to Shanghai, as well as tourism. In conclusion, this paper offers possible new models for rural-urban building typologies addressing issues of food security and the recovery of China's agricultural and water landscapes, in addition to positing how these both provide new possibilities for re-inserting and re-embedding everyday social and cultural practices and processes in Chinese cities, as well as offer possibilities for alternative urban strategies through alternative typologies and renewed village settlement patterns.

FR1.45.01 Urban Spatial Form and Household Carbon Emissions: A Study of Fourteen Neighborhoods in Beijing

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Given that households contribute an increasingly significant share of urban carbon emissions in China, it is important to investigate whether and how urban spatial form affects households' carbon emissions for planning and developing low-carbon cities. This research selected 14 neighborhoods in Beijing and gathered households' carbon emissions data by using a door-to-door questionnaire survey. It then compared carbon emission characteristics of different types of neighborhoods in terms of spatial form. The extent of impact of spatial form on households' carbon emissions was examined by controlling social and economic variables. The study found that the 14 neighborhoods can be divided into five types and their household carbon emissions increase successively from the types of urban villages, the traditional hutong, danwei units, commercial housing to gated neighborhoods. It was also found that the impacts of socio-economic attributes on households' carbon emissions are stronger than neighborhood spatial form's, but the latter does demonstrate a significant impact on households' carbon emissions. Compared

with the studies in other countries, this study confirms the importance of spatial planning in developing a low-carbon city, even in an existing high-density and populous urban environment. The paper concludes with policy suggestions from the perspective of low-carbon spatial planning.

FR1.45.01 The Northern Environmental Education Regional Center of Taiwan: Interventions in Human Niche Construction

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Since 2014, the newly established Northern Environmental Education Regional Center of Taiwan (NEERC, <http://neerc.giee.ntnu.edu.tw/>), based at National Taiwan Normal University, is mandated to coordinate environmental education (EE) programs in northern Taiwan, a region that includes the metropolitan capital city (Taipei and New Taipei City) and three industrial cities (Keelung, Taoyuan and Hsinchi), with a total population of over ten million. Through networking education institutions and community organizations, the center's programs aim to enhance learning about the specific social-ecological relations within which the entities work. Strands of learning programs include river systems, ocean and coastal zones, green corridors and urban environment, each emphasizing environmental integrity, sustainability and responsible actions. Like its North American predecessors, the NEERC understands cities as evolving and adapting social-ecological systems, in which "children and adults can participate in constructing new ways of governing and designing the urban environment" (Russ 2015, p. 20). This paper conducts a sympathetic critique of the NEERC and related programs, highlighting the immense value of their work as well as the limitations within which they work, and suggesting greater emphasis on social dimensions of (in)equalities, environmental (in)justice and the nexus of property relations with decision-making power. Focus will be primarily on the last of these three social dimensions, and the need to bring urban environmental education more clearly into the service of expanding urban commons and strengthening social practices of commoning in cities. This is about taking seriously the construction of new ways of governing and designing urban environments: what may be called human niche construction. Russ, A. (ed.) (2015) Urban environmental education. Cornell University Civic Ecology Lab, North American Association for Environmental Education, and EECapacity project. <http://www.naaee.net/publications/UEE>

FR1.45.01 Factor Endowment, Environmental Regulation and the dynamics of Pollution-Intensive Industries in China

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Since 1978, China has witnessed remarkable performance of economic growth. Industrial transfer become the new trends of China's space growth in the period of economic transformation. Industry produced both products and pollution. Pollutants i.e. SO₂, Soot, are the main side product in a production process. Then as the industry transferring today, pollution would be transferred at the same time. The pollution-intensive firms have to pay much for their pollution which usually induce serious environment effect. The environmental costs leads to a relocation of dirty goods production from regions with stringent environmental regulation to those with lax environmental regulation (usually developing

regions), thus resulting in the so-called 'Pollution Havens Hypothesis' (PHH). However, Factor Endowment Hypothesis (FEH) believe that comparative advantages are responsible for industrial location. The pollution-intensive industries are usually capital-intensive industries, which will lead the pollution-intensive industries prefer to locate in developed regions with matched capital and technology comparative advantages. This paper apply Tobit models to explore how FE, Globalization and ER influence the spatial dynamics of pollution-intensive industries with The Annual Survey of Industrial Firms from 2002 to 2008. We found that that remarkable spatial dynamics of industries occurred during 1998–2008. FE and globalization were important influence factors on the spatial dynamics of pollution-intensive industries over ER. Capital and technology are the major factors affecting the spatial distribution of pollution-intensive industries. Pollution-intensive industries prefer the areas with more advance of capital and technology. Pollution-intensive industries sought market, raw materials resources to locate in developed and coastal area in China. ER had different impact on the different pollution-intensive industries, and different pollution emission also had different effect.