

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences



Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information		
Name	Jiaying Wu	
Student number	5345936	
Studio		
Name / Theme	Planning Complex Cities	
Main mentor	Gregory Bracken	Spatial Planning & Strategy
Second mentor	Claudiu Forgaci	Urban Design
Argumentation of choice of the studio	<p>The project stems from a reflection on the middle space between receiving only assistance and relying entirely on oneself. This issue was once a major dilemma for China, and is a choice that many countries in Africa are facing today. How are developing countries to stand firm in the wave of globalization? If it is difficult to avoid external forces, is there a win-win possibility rather than passive resistance? And in countless related choices and practices, these flows of resources, capital, products, people, etc., all the time exert their own influence on various scales from global to small town.</p> <p>In the case of Ethiopia, for example, the strong government chose to learn from the advanced experience of East Asian countries in developing their economies, but at the same time focused on guiding the endogenous development of its industries. On this basis, the role of industrial parks, a model that has contributed greatly to China's fast-growing economy and is now chosen by the Ethiopian government, would be explored in this project. With the construction of industrial parks, many enterprises and populations are attracted to the industrial parks and their surroundings, gradually forming special industrial towns. This spatial phenomenon is well worth studying in the present context of multilateral cooperation in the context of socio-economic impacts, spatial design and governance systems.</p> <p>Moreover, out of my personal ambition, I hope that this project will generate a discussion, even if only a little, among people from different fields and regions, which will</p>	

	<p>be an opportunity for us to reflect on whether the so-called "assistance" currently given to Africa around the world really has a sustainable and positive impact on its economic and social development. I hope that the people of Africa can really achieve their own integrated local development.</p>
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Graduation project	
Title of the graduation project	<p>The Power of Imperfection: China-Ethiopia Industrial Parks as the Medium for Local Vitalization The Case of Eastern Industry Zone, Dukem, Ethiopia</p>
Goal	
Location:	Eastern Industry Zone, Dukem, Ethiopia
The posed problem,	<p>Problem Statement: In the context of rapid urbanization, multiple forces have participated in the process of African industrialization, of which the cooperation between Ethiopia and China is increasingly closer and more interdependent. And the industrial park model, as an important form of spatial aggregation, is being widely applied in Ethiopia to attract foreign investment and promote employment. Take the China Eastern Industry Zone in Ethiopia as an example, which has created nearly 20,000 jobs since construction. The benefits generated in terms of agglomeration of production factors have shown both sides the potential of the industrial park for economic development, but at the same time, some problems have emerged.</p> <p>Due to differences in historical traditions, social culture, and religious beliefs between immigrant groups and local groups, as well as possible inequalities in economic strength and international discourse power, there are often negative situations where the two sides cannot communicate, understand or even trust each other. And as an important spatial carrier for economic-</p>

	<p>social relationships, the industrial park emphasizes production only; huge scale destroys the local fabric; imperfect systems of environmental standards and management regulations lead to environmental damage and operational inefficiencies.</p> <p>Furthermore, the overall industrial planning of the park is based on the industrial development plan formulated by the Ethiopian government, while the spatial planning is completely dominated by foreign developers after the government leases the land to them. Even if the idea of "integrating surrounding towns and designing a mixed special zone" is proposed, the current implementation process is almost without the participation of other stakeholders. This simple and short-sighted operation only serves rapid economic development, but in the long run, it is not conducive to a dynamic environment for social integration and co-innovation. When this boom passes and industries continue to move, the local area will lose its current advantages and opportunities.</p>
<p>research questions and</p>	<p>Main Research Question: How to exploit external opportunities in Ethiopia, taking Eastern Industry Zone as the medium, to achieve regional vitalization?</p> <p>Sub Research Question 1: What are the main challenges faced by Eastern Industry Zone area in achieving city-industry integration?</p> <p>Sub Research Question 2: What are the demands for development among different groups in Eastern Industry Zone area?</p> <p>Sub Research Question 3:</p>

	<p>What are the socioeconomic, spatial and governance capacities in Eastern Industry Zone area to promote regional endogenous development?</p> <p>Sub Research Question 4: How can industrial parks act as a positive medium to participate in the process of regional vitalization?</p>
<p>design assignment in which these result.</p>	<ol style="list-style-type: none"> 1. First, through scenario analysis, after fully understanding the challenges faced by the local area and the needs of different groups, a comprehensive vision is proposed, including spatial, socioeconomic, and governance aspects. 2. An assessment framework is constructed to assess the Eastern Industry Zone area's capacities to promote local endogenous development from the same three aspects. 3. Based on the above and other analyses, the design assignment is to design a strategic framework for the planning and implementation of the co-construction of industrial parks on a large scale, mainly including site selection and planning principles, industry selection guidelines, and suggestions for policy procedure optimization; to produce a master plan on a mesoscale, including infrastructure network, blue-green corridors, mixed land use layout, public facility layout, transportation network, interaction with related industrial chains, etc.; select 1 or 2 typical areas for pilot design on a small scale, paying attention to dynamics interactions between different types of activities and space.

In the project, qualitative (fieldwork, interview), conceptual (literature research, policy research), quantitative (statistical analysis), analytical (comparative, mapping, scenario, network approach), and design methods would be applied in different phases to answer the research questions. Since sufficient analysis is also required to support the advancement of research in the stages of defining the project and discovering problems, in this project, the proportion of analysis will be equal to that of design. A series of analyzes will guide through the research by design section. In addition, interviews and questionnaires would be likely to be conducted multiple times, at different stages of the research, in response to the changing needs of the authors.

Literature and general practical preference

Literature

Fei, D., & Liao, C. (2020). Chinese eastern industrial zone in Ethiopia: Unpacking the enclave. *Third World Quarterly*, 41(4), 623-644.

Boros, G. P. (2018). *How to Tame the Dragon: Understanding Ethiopia's Success in Attracting Chinese Private FDI* (Doctoral dissertation, Central European University).

Genc, O., van Capelleveen, G., Erdis, E., Yildiz, O., & Yazan, D. M. (2019). A socio-ecological approach to improve industrial zones towards eco-industrial parks. *Journal of environmental management*, 250, 109507.

Kaiser, M. F. (2009). Environmental changes, remote sensing, and infrastructure development: The case of Egypt's East Port Said harbour. *Applied Geography*, 29(2), 280-288.

Business, O. E. C. D., & Outlook, F. (2018). China's Belt and Road Initiative in the Global Trade. *Investment and Finance Landscape*.

Newman, C., & Page, J. M. (2017). Industrial clusters: The case for special economic zones in Africa (No. 2017/15). WIDER Working Paper.

Sullivan, J., & Cheng, J. (2018). Contextualising Chinese Migration to Africa. *Journal of Asian and African Studies*, 53(8), 1173-1187.

Tarrósy, I. (2020). China's Belt and Road Initiative in Africa, debt risk and new dependency: The case of Ethiopia. *African Studies Quarterly*, 19(3-4), 95-28.

United Nations Industrial Development Organization, World Bank Group, & Deutsche Gesellschaft für Internationale Zusammenarbeit. (2017). *An International Framework for Eco-Industrial Parks*.

Pairault, T. (2022). *Industrial Parks in Africa: Building Nests for the Chinese Phoenix*.

Sun, I. Y. (2017). *The next factory of the world: How Chinese investment is reshaping Africa*. Harvard Business Press.

Popkova, E. G., & Sergi, B. S. (2020). Social entrepreneurship in Russia and Asia: further development trends and prospects. *On the Horizon*.

Song, T., Liu, W., Liu, Z., & Wuzhati, Y. (2018). Chinese overseas industrial parks in Southeast Asia: An examination of policy mobility from the perspective of embeddedness. *Journal of Geographical Sciences*, 28(9), 1288-1306.

Gebre-Egziabher, T. (2009). The Developmental Impact of Asian Drivers on Ethiopia with Emphasis on Small-scale Footwear Producers. *World Economy*, 32(11), 1613-1637.

Tarrosy, I., & Vörös, Z. (2018). China and Ethiopia, Part 2: The Addis Ababa–Djibouti Railway. *The Diplomat*, 22.

Data

Ethiopia Mapserver

<https://www.ethiogis-mapserver.org/mapDownload.php>

OpenStreetMap

<https://www.openstreetmap.org/#map=7/52.154/5.295>

Land and Urbanization in ETH

<https://land.igad.int/index.php/documents-1/countries/ethiopia/urbanization-1?limit=20&limitstart=40>

The World Bank

<https://www.worldbank.org/en/home>

Africapolis

<https://africapolis.org/en>

Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

The basic starting points of Planning Complex Cities graduation projects are observations of disparities and conflicts arising from the distribution of spatial resources across communities and territories. Hence, in my project, I begin my analysis with the current situation and conflict, and in conjunction with contextual research, focus on the manifestations of inequity that exist around the Eastern Industry Zone. In subsequent research and analysis, formal institutions, such as policy delivery mechanisms, obligatory cooperation between governments and informal institutions, such as the voluntary engagement of communities in planning processes, would be explored through the studio approach. And the design focus will be on how to construct multi-scale design ideas, from strategic frameworks to master plans to pilot designs, to show the complexity among spatial, socioeconomic, and institutional dimensions, taking Eastern Industry Zone in Dukem, Ethiopia as the case.

And my choice of topic actually continues the original intention of my choice of this profession. I have always believed that spatial planners do not only focus on the spatial dimension, but that social, economic and institutional related issues also need to be considered together. This is the so-called "integrity" that Urbanism track demonstrates. I hope to enter as a planner to promote sustainable socio-economic development, positive transnational cooperation and spatial justice in the local context, while constantly reflecting on the extent of the planner's involvement and the boundaries of the planner's competence.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework.

I believe that this project can serve as a trigger to raise awareness and reflect on the real situation faced by third world countries in other regions, and to remind people in third world countries to reflect on whether the current development model is sustainable in the future. My project is just a starting point, but I believe that it is significant in that it has led me to rethink justice, development, institutions, top-down versus bottom-up, etc. The reason why this topic is so controversial is that most people have previously developed stereotypes about these regions, ignoring the fact that the actual situation is different from region to region, and that often times the solution strategies are proposed but not practiced. So I think incremental approach and iterative design process can be the direction to explore in order to promote real practical local vitalization.

From the scientific framework, research on industrial parks is usually conducted from the perspectives of industrial economics, industrial ecology, circular economy, and community integration. Especially in developing countries, the number of industrial parks has exploded since the 1990s, while the number of co-located industrial parks has also gradually increased, facilitating transnational cooperation. Since China proposed the Belt and Road Initiative, industrial parks have also become an important platform for cooperation between China and countries along the route. However, Chinese planners do not have a comprehensive consideration of the local role of industrial parks in each region, and most of them, like the planners of the Eastern Industrial Park, design it as a Chinese enclave, applying a simple and sloppy design model, which is negative for both sides. Therefore, this project is an attempt to challenge the already rigid and default approach of industrial park planning, and to regard it as a positive medium to promote local vitalization from spatial planning, socioeconomic integration, and governance optimization.

From the perspective of social relevance, the relations between industrial parks and local communities have gradually become a focus of sociological research. In addition, Eastern industry Zone has a rather special feature - there are a large number of informal settlements and markets around it. The impact of informal activities is also one of the hot issues of sociological research. In this project, the performance of the industrial park will be evaluated not only in terms of economic and employment data, but also in terms of its social impact. This is because based on practical experience, close-knit social communities are a significant factor behind the economic strength and sustainability of industrial clusters. (Pyke, Becattini, & Sengenberger, 1990) To achieve the transition from industry-city separation to industry-city integration, the process of interaction between space and society will be key.