

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences

Huub Fenten, 18-01-2023



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	Huub Johannes Fenten
Student number	5273129

Studio		
Name / Theme	Dwelling Graduation Studio: Global Housing	
Main mentor	Ir. Harald A.F. Mooij	Architecture and the Built Environment, Form, Space & Type
Second mentor	Ir. Frank R. Schnater	Architecture and the Built Environment, Architectural Technology
Third mentor	Dr. Ir. Nelson J.A. Mota	Architecture and the Built Environment, Form, Space & Type
Argumentation of choice of the studio	In 2020, the UN (United Nations) estimated the number of slum dwellers worldwide at one billion, and this number is still rising. Housing is one of the key human rights, though, creating housing for everybody is one of the major challenges of our generation. With the Global Housing studio, I hope to gain knowledge on how to contribute to solving this pressing issue.	

Graduation project	
Title of the graduation project	Development Parque Cocaia - architecture and safety in the irregular settlements of São Paulo
Goal	
Location:	São Paulo, Brazil
The posed problem,	São Paulo, the largest city in Brazil at 22.4 million inhabitants, is considered the country its economic center, though, it is also known for its housing problems (CIA, 2022; Marques & Saraiva, 2017). The number of households in favelas and settlements is estimated at almost four hundred thousand each and the slum dwellers made up 11.6% of the population in 2017 (Prefeitura de São Paulo, 2017; Marques & Saraiva, 2017). This situation brings forth social, economic, and environmental challenges for both the inhabitants and the entire metropolis (Walker & Alarcón, 2018)

	<p>At the same time, Brazil has been dealing with crime and violence for decades. As a data analysis by Murray et al. (2013) shows, there were 1 million homicides in Brazil between 1980 and 2010. In reaction to this, gated housing communities have gained popularity since the 1970s (Coy, 2006). This trend lead to further segregation of society though, as explained by Caldeira (1996).</p> <p>In Grajaú, a poor neighborhood in the southern periphery of São Paulo, inhabitants of 5000 irregular lots had to be relocated as part of the Cantinho do Céu project. To provide living space to these inhabitants, as well as to the constant influx of new citizens, the neighborhood is in serious need of affordable social housing. At the same time, safety conditions have led to a standard of 'enclavement' of public space. Chácara do Conde is the first newly-developed social housing project in Grajaú and follows this standard, adding to the segregation of the community.</p>
<p>research questions and</p>	<p>How can architectural design positively influence safety in the irregular settlements of São Paulo?</p> <ol style="list-style-type: none"> a. What forms of safety are there and how do they influence the lives of the inhabitants of the irregular settlements of São Paulo? b. How can urban patterns and amenities positively influence safety in the irregular settlements of São Paulo? c. How can the street profile positively influence safety in the irregular settlements of São Paulo?
<p>design assignment in which these result.</p>	<p>A design is made for <i>Parque Cocaia</i>, a ZEIS 4 area, meaning unoccupied land designated to develop social housing with environmental restrictions. The site is marked by low socio-economic values and a high density compared to the rest of Grajaú. On the site, social housing, urban amenities, and public space should be created.</p>
<p>Process</p>	
<p>Method description</p> <p>The first part of the thesis will be analytical, for which literature is reviewed, a comparative study of other transformation projects is made, and the site is analyzed. During the second part, the takeaways from these analyses are applied and tested in the design of a transformation project in Grajaú to answer the research question.</p> <p>For the literature review, books and articles on the relationship between architecture and safety from the 1960s until the present are dealt with. From these, an overview of design interventions is made, which can be tested in the design phase of the project.</p>	

A comparative analysis between five transformation projects in irregular settlements in São Paulo and Chácara do Conde (which can be considered the benchmark for future developments in Grajaú) will be made to determine how architecture influences safety.

During a field trip to São Paulo in October last year, these five cases and Chácara do Conde have been visited. At the sites, visual analyses have been made and interviews have been held. The visual analyses cover manifestations of public life, typical design features of the area, and safety measures taken by inhabitants. The interviews give an insight into how residents experience the projects. Though, with these interviews, biases and social limitations should be considered.

Literature and general practical preference

In the global north, a lot has been written on the relationship between architecture and safety. Jacobs her *The Death and Life of the Great American Cities* (1961), Jeffery his *Crime Prevention through Environmental Design* (1971), and Newman his *Defensible Space* (1972) all remain frequently quoted in research on the subject. Over the past decades, new research has mostly been on testing or elaborating these theories, like the works by Macdonald & Gifford (1989), Newman (1996), Tijerino (1998), Ham-Rowbottom et al. (1999), Brunson et al. (2001), Sennett (2019), and Cozens et al. (2019). Reynald & Elffers (2009) point out that Newman his defensible space theory still is largely ambiguous, especially when taking into account the amendments he made after applying the theory in three experiments in the United States (Newman, 1996). Furthermore, a critical review by Cozens et al. (2019) proves that architectural design based on Jeffery his theory is largely effective in reducing both crime and fear of crime in a community. The fact that CPTED (Crime Prevention through Environmental Design) guidebooks and classes are offered still, shows the lasting relevance of his work.

Urban areas in the global south, and more specifically São Paulo, present a context totally different from that of northern cities. Even terminology and fundamental societal processes should be reconsidered when trying to grasp this context, as argued by among others Caldeira (2017), Medrano and Recaman (2018), Lejano and Del Bianco (208), and Bhan (2019).

A combination of literature from authors from the global south and the global north should help provide the basis for the of design the newly-built neighborhood.

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

This graduation project focuses on the relationship between architectural design and safety in a social housing setting in São Paulo. Social housing in the global south is the key component of the Global Housing studio. Furthermore, as social housing makes up a large part of architectural development worldwide, it forms a crucial component of education in the architecture master track and AUBS master program.

Though a lot of research has been done on the relationship between architectural design and safety in northern cities, not much literature was found on this relationship in southern cities, nor specifically for the irregular settlements of São Paulo during the explorative phases of the project. Whether this is due to the language barrier, availability of Brazilian literature in Dutch libraries, or accessibility of online Brazilian databases from the Netherlands, this thesis aims to contribute to the collective knowledge of this relationship.

Furthermore, the design made for Parque Cocaía can hopefully inspire project developers operating in Grajaú to explore an alternative design for future developments. Ultimately, this involves a design that achieves similar safety levels as the Chácara do Conde project, without the public spaces being enclaved.

Sources

- Bhan, G. (2019). Notes on a Southern urban practice. *Environment and Urbanization*, 31(2), 639–654. <https://doi.org/10.1177/0956247818815792>
- Brunson, L., Kuo, F. E., & Sullivan, W. C. (2001). Resident appropriation of defensible space in public housing. *Environment and Behavior*, 33(5), 626–652. <https://doi.org/10.1177/00139160121973160>
- Caldeira, T. P. R. (1996). Fortified Enclaves: The New Urban Segregation. *Public Culture*, 8(2), 303–328. <https://doi.org/10.1215/08992363-8-2-303>
- Caldeira, T. P. R. (2017). Peripheral urbanization: Autoconstruction, transversal logics, and politics in cities of the global south. *Environment and Planning D: Society and Space*, 35(1), 3–20. <https://doi.org/10.1177/0263775816658479>
- Central Intelligence Agency. (n.d.). *Brazil - The World Factbook*. The World Factbook. Retrieved November 11, 2022, from <https://www.cia.gov/the-world-factbook/countries/brazil/>
- Coy, M. (2006). Gated communities and urban fragmentation in Latin America: The Brazilian experience. *GeoJournal*, 66(1-2), 121–132. <https://doi.org/10.1007/s10708-006-9011-6>
- Cozens, P. M., Saville, G., & Hillier, D. (2005). Crime prevention through environmental design (CPTED): A Review and modern bibliography. *Property*
- Ham-Rowbottom, K. A., Gifford, R., & Shaw, K. T. (1999). Defensible space theory and the police: Assessing the vulnerability of residences to burglary. *Journal of Environmental Psychology*, 19(2), 117–129. <https://doi.org/10.1006/jevps.1998.0108>
- Jacobs, J. (1961). *The Death and Life of the Great American Cities*. Random House.

- Jeffery, R. (1971). *Crime Preventions through Environmental Design*.
- Lejano, R. P., & Del Bianco, C. (2018). The logic of informality: Pattern and process in a São Paulo Favela. *Geoforum*, *91*, 195–205.
<https://doi.org/10.1016/j.geoforum.2018.03.005>
- MacDonald, J. E., & Gifford, R. (1989). Territorial cues and defensible space theory: The burglar's point of view. *Journal of Environmental Psychology*, *9*(3), 193–205. [https://doi.org/10.1016/s0272-4944\(89\)80034-9](https://doi.org/10.1016/s0272-4944(89)80034-9)
- Marques, E., & Saraiva, C. (2017). Urban integration or reconfigured inequalities? analyzing housing precarity in São Paulo, Brazil. *Habitat International*, *69*, 18–26. <https://doi.org/10.1016/j.habitatint.2017.08.004>
- Medrano, L., & Recaman, L. (2018). Space and society in the 21st century. The case of São Paulo. *Bitácora Urbano Territorial*, *28*(1), 71–83.
<https://doi.org/10.15446/bitacora.v28n1.56431>
- Murray, J., de Castro Cerqueira, D. R., & Kahn, T. (2013). Crime and violence in Brazil: Systematic review of time trends, prevalence rates and risk factors. *Aggression and Violent Behavior*, *18*(5), 471–483.
<https://doi.org/10.1016/j.avb.2013.07.003>
- Newman, O. (1972). *Defensible Space; Crime Prevention through Urban Design*. The Macmillan Company.
- Newman, O. (1996). *Creating Defensible Space*. Department of Housing and Urban Development, Office of Policy Development and Research.
- Pimentel Walker, A. P., & Arquero de Alarcón, M. (2018). The competing social and environmental functions of private urban land: The case of an informal land occupation in São Paulo's south periphery. *Sustainability*, *10*(11), 4160–4184.
<https://doi.org/10.3390/su10114160>
- Prefeitura de São Paulo. (2017, April 26). *Habitação*. habitaSAMPA. Retrieved November 16, 2022, from <http://www.habitasampa.inf.br/habitacao/>
- Prefeitura de São Paulo. (n.d.). *Sistema de Consulta do Mapa Digital da Cidade de São Paulo*. GeoSampa Mapa. Retrieved November 9, 2022, from <http://geosampa.prefeitura.sp.gov.br/>
- Sennett, R. (2019). *Building and Dwelling: Ethics for the City*. Penguin Books.
- São Paulo Data-Driven EnviroLab. Urban Environment & Social Inclusion Index. (n.d.). Retrieved November 11, 2022, from <https://datadrivenlab.org/urban/cities/sao-paulo/>

Tijerino, R. (1998). Civil spaces: A critical perspective of defensible space. *Journal of Architectural and Planning Research*, 15(4), 321–337.

United Nations Population Fund (UNFPA). (n.d.). *Brazil*. World Population Dashboard. Retrieved November 9, 2022, from <https://www.unfpa.org/data/world-population/BR>

United Nations. (2022). *The Sustainable Development Goals Report 2022*.