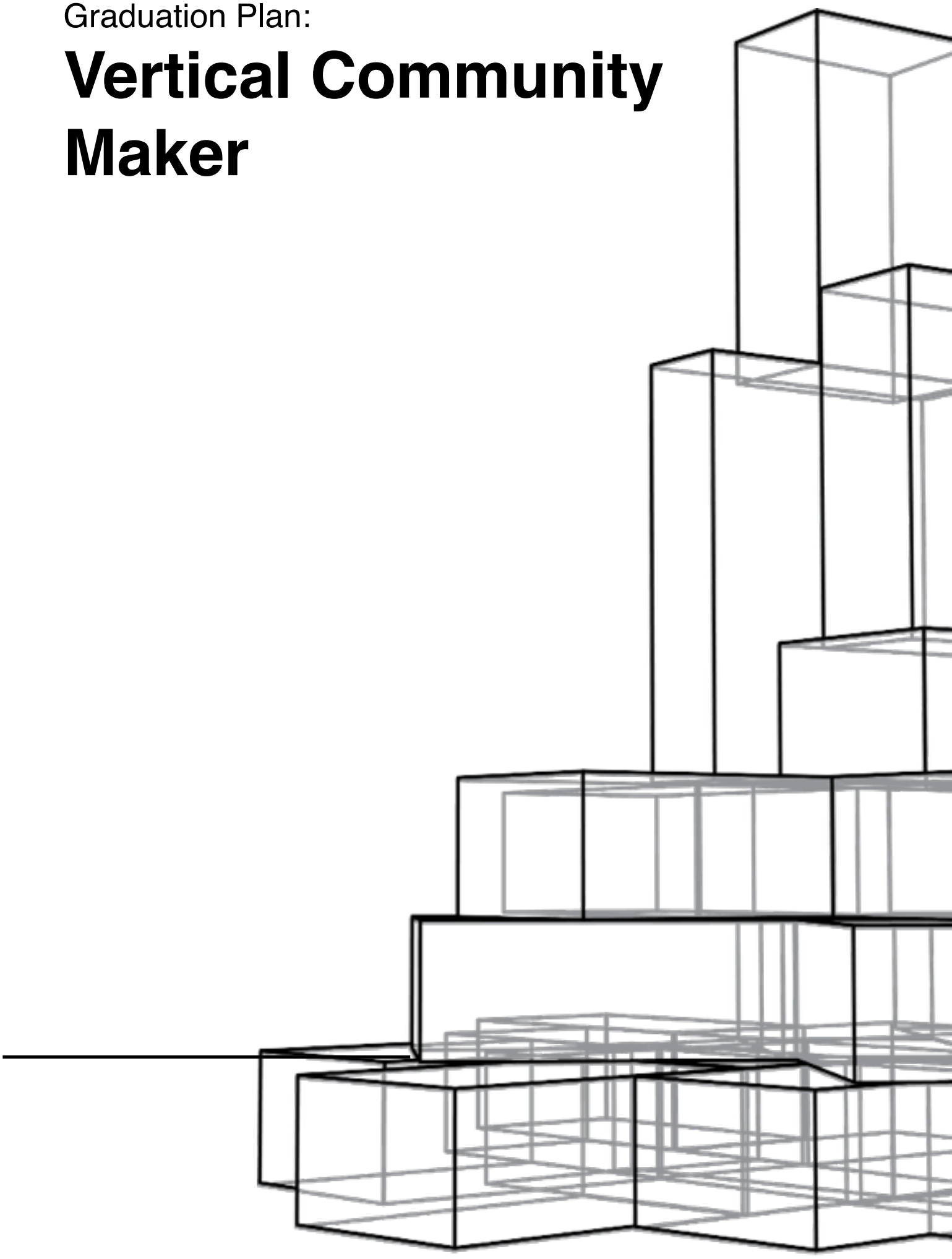
Graduation Plan:

Vertical Community Maker



Personal Information

Rudo Koot
1356844

Koornmarkt 48 e,
2611EH
Delft

+31 6 43 147 447
rudo.koot@gmail.com

Explorelab Graduation Studio - Skyscrapers, Computational Design

Architecture Mentor: Robert Nottrot
Building Technology Mentor: Huib Plomp
Research Mentor: Sander Mulders

Product

Context

Due to population increase and a general population shift from the countryside to the city, there is a great demand for sustainable densification strategies for the urban environment. Ebenezer Howard's, relatively old, Garden City scheme proposes a method of urban densification that seeks a balance between densely populated areas and nature rich areas.

Recently this idea has been gaining a renewed interest as a sustainable solution to urban sprawl, in the contemporary model the skyscraper plays an important role as a means of densification. This brings with it certain problems which are inherent to the skyscraper, one of the less frequently addressed problems is the weak social structures and overall low sense of community prevalent in many vertical living structures.

In order to avoid the mistakes of the modernist planning experiment, these conditions need to be addressed in the skyscraper design process in order for this building type to become the high quality density housing solution that it is often dreamed to be. In order to do this I propose that the tall building should learn from the traditional village.

Hypothesis

By identifying and quantifying parameters associated with social interaction, it is possible to devise a design script that is able to translate social conditions present in low density villages to a high density vertical organization system.

Research Questions

- What are the advantages of density?
- What are current trends in skyscraper development?
- How are horizontally organized communities constructed/developed. What are the main organizational principles that are present?
- How are vertically organized communities constructed/developed. What are the main organizational principles that are present?
- Which (spatial) parameters influence social conditions within communities, both positively and negatively?
- How can horizontal organization structures be translated to a form of vertical organization?

Goal

The goal of the graduation lab is to develop a scripted design process that addresses not only the physical, but also the social parameters necessary for creating a high quality, sustainable living environment.

This will be achieved through the study of already existing, well functioning, horizontal structures, in order to distinguish parameters that positively influence the formation of social bonds.

Method

Literature Review

For architectural strategies, as well as for insight into social interaction parameters I will conduct a literature review of the works of three well known architects that have focussed on social space in their works. These architects are:

- Herman Hertzberger
- Constant Nieuwenhuys
- Giancarlo Mazzanti

Plan Analyses

Parallel to this I will conduct several plan analyses of notable Tall buildings (both realized and unrealized) including, but not limited to, the following five mixed-use Tall buildings:

1. Millenium Tower Tokyo - Norman Foster
2. Unite d'Habitacion - le Corbusier
3. John Hancock Center - SOM architects
4. The Shard/London bridge Tower - Renzo Piano Building Workshop
5. De Rotterdam - OMA/Rem Koolhaas

In these analyses the focus will lie on infrastructure, function mixing, size and effect on surrounding urban fabric.

Numerical Analyses

Furthermore I will include a numerical analysis of the following two databases:

1. CTBUH Tall Building Database
2. CBS municipality statistics for Dutch Municipalities

The first database is analyzed to discover trends in worldwide skyscraper development, these trends will then be compared to the underlying motivations for worldwide skyscraper building.

The second database is analyzed to yield differences between different villages which perform both well and not-so-well in their social structures. By comparing/contrasting figures relating to their population make-up, wealth, facilities, etc. I hope to distill parameters which contribute to social interaction.

Literature

Cities/Density

Howard, E. (1960). Garden Cities of Tomorrow, Forgotten Books.

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Skyscrapers

Koolhaas, R. (1994). delirious new york. USA, The Montacelli Press.

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Haber, G. M. (1977). The Impact of Tall Buildings on Users and Neighbors. Human Response to Tall Buildings. R. P. Dober. Pennsylvania, Dowden, Hutchinson & Ross, Inc.

Community

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Villages

CBS Statistics Database

GBA (Gemeentelijke Basis Administratie)

Computation

Relevance

The relevance of this graduation project comes from its positioning within current urbanism theories, new design methods which are under development and current skyscraper design practices.

It tries to create a bridge between social elements, which are traditionally difficult to quantify, and rational design methods such as scripting. By taking the first steps in quantifying parameters which are influential to social interaction, and placing those parameters in a rationalized design paradigm, the project makes social interaction available to design processes driven by economic incentives.

The framework that is the result of this can be used by other designers, as well as further developed in further research in order to increase our understanding of, and capability to create, social structures. All of this incontrovertibly adds to the quality of living in dense urban areas, as well as offering a new view on how to sustainably develop the skyscraper type.

Simply imagine a world where the distinction between horizontal and vertical organization is no longer relevant to the implied living conditions. Where the physical qualities of living at higher altitudes are combined with the strong communities and pleasant social interactions of the small village, where density is no longer a synonym for reduced quality of life, but a symbol for vibrancy and joyful coexistence.

Planning

	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	Week 26
	2.8	2.9	2.10	Krokus	3.1	3.2	3.3
THEMA		Afronding Onderzoek	Implementatie en ontwerp		Implementatie en ontwerp	Implementatie en ontwerp	Implementatie en ontwerp
maandag	P2	Locatie Bezoek	Schetsontwerp Script		Schetsontwerp Script	Extra Data vergaren/Script Bouwen	Script Bouwen
dinsdag	P2	Locatie Bezoek	Schetsontwerp Script		Schetsontwerp Script	Extra Data vergaren/Script Bouwen	Script Bouwen
woensdag	P2	Locatie Bezoek	Schetsontwerp Script		Schetsontwerp Script	Script Bouwen	Script Bouwen
donderdag	P2	Locatie Bezoek	Schetsontwerp Script		Schetsontwerp Script	Script Bouwen	Script Bouwen
vrijdag	P2	Locatie Bezoek	Schetsontwerp Script		Thesis Uitwerken	Thesis Uitwerken	Thesis Uitwerken
	Week 27	Week 28	Week 29	Week 30	Week 31	Week 32	
	3.4	3.5	3.6	3.7	3.8	3.9	
THEMA	Implementatie en ontwerp	Implementatie en ontwerp	Implementatie en ontwerp		Implementatie en ontwerp	Implementatie en ontwerp	
maandag	Script Bouwen	Script Bouwen	Eerste Ontwerpresultaat	P3	Evaluatie Ontwerpresultaat	Scriptwijzigingen	
dinsdag	Script Bouwen	Script Bouwen	Eerste Ontwerpresultaat	P3	Evaluatie Ontwerpresultaat	Scriptwijzigingen	
woensdag	Script Bouwen	Script Bouwen	Eerste Ontwerpresultaat	P3	Evaluatie Ontwerpresultaat	Scriptwijzigingen	
donderdag	Script Bouwen	Script Bouwen	Eerste Ontwerpresultaat	P3	Scriptwijzigingen	Scriptwijzigingen	
vrijdag	Thesis Uitwerken	Thesis Uitwerken	Thesis Uitwerken	P3	Thesis Uitwerken	Thesis Uitwerken	
	Week 33	Week 34	Week 35	Week 36	Week 37	Week 38	
	3.10	4.1	4.2	4.3	4.4	4.5	
THEMA	Implementatie en ontwerp	Uitwerking Ontwerp / Assessment Methode	Uitwerking Ontwerp / Assessment Methode	Uitwerking Ontwerp / Conclusies Methode		Uitwerking Ontwerp	
maandag	Scriptwijzigingen	Evaluatie Ontwerpresultaat	Scriptwijzigingen	Scriptwijzigingen	P4	Scriptwijzigingen	
dinsdag	Scriptwijzigingen	Scriptwijzigingen	Scriptwijzigingen	Scriptwijzigingen	P4	Scriptwijzigingen	
woensdag	Tweede Ontwerpresultaat	Scriptwijzigingen	Scriptwijzigingen	Derde Ontwerpresultaat	P4	Scriptwijzigingen	
donderdag	Tweede Ontwerpresultaat	Bouwtechnologie	Bouwtechnologie	Evaluatie Ontwerpresultaat	P4	Bouwtechnologie	
vrijdag	Thesis Af	Bouwtechnologie	Bouwtechnologie	Bouwtechnologie	P4	Bouwtechnologie	
	Week 39	Week 40	Week 41	Week 42	Week 43	Week 44	
	4.6	4.7	4.8	4.9	4.10	4.11	
THEMA	Uitwerking Ontwerp	Uitwerking Ontwerp	Uitwerking Ontwerp	Presentatie voorbereiding en stress verminderingsoefeningen		Vrij/Werkloos	
maandag	Verslaglegging Script	Verslaglegging Script	Uitwerking Visualisaties	Presentatie voorbereiden	P5		
dinsdag	Verslaglegging Script	Verslaglegging Script	Uitwerking Visualisaties	Presentatie voorbereiden	P5		
woensdag	Verslaglegging Script	Uitwerking Visualisaties	Uitwerking Visualisaties	Presentatie voorbereiden	P5		
donderdag	Bouwtechnologie	Uitwerking Visualisaties	Uitwerking Visualisaties	Presentatie voorbereiden	P5		
vrijdag	Bouwtechnologie	Bouwtechnologie	Laatste Touches	Presentatie voorbereiden	P5		