Description graduation plan P2

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

<table>
<thead>
<tr>
<th>Personal information</th>
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<tbody>
<tr>
<td>Name</td>
<td>Kimberley Beimin</td>
</tr>
<tr>
<td>Student number</td>
<td>410237</td>
</tr>
<tr>
<td>Address</td>
<td>E. du Perroniaan 184</td>
</tr>
<tr>
<td>Postal code</td>
<td>2624 NB</td>
</tr>
<tr>
<td>Place of residence</td>
<td>Delft</td>
</tr>
<tr>
<td>Telephone number</td>
<td>0641072976</td>
</tr>
<tr>
<td>E-mail address</td>
<td><a href="mailto:kimberleybeimin@gmail.com">kimberleybeimin@gmail.com</a></td>
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</tbody>
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<tr>
<th>Studio</th>
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<tr>
<td>Theme</td>
<td>Affordable housing in developing countries</td>
</tr>
<tr>
<td>Teachers</td>
<td>Robert Nottrot, Gregory Bracken, Ype Cuperus</td>
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<tr>
<td>Argumentation of choice of the studio</td>
<td>Doing research in a toolkit for affordable housing in developing countries with the tropical rainforest climate</td>
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<td>Title</td>
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<tr>
<td>Title of the graduation project</td>
<td>Improving quality of life by making housing affordable at different scales</td>
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</tbody>
</table>

Product

Problem Statement
The posed problem, research questions and design assignment in which these result. This should be formulated in such a way that the graduation project can answer these questions. The definition of the problem has to be significant to a clearly defined area of research and design.

Goal
This section has to include what the intentions are of the graduation project.
Graduation plan: Improving quality of life by making housing affordable at different scales

1) Product

Problem statement
There are several fundamental things humans need in life, such as an adequate supply of water, food, clothing etcetera. There is a general consensus that also housing has a central importance to everyone's, because it helps us to improve our quality of life, health and it has an economic, social and environmental significance.

Yet, at present, a fifth of the world’s population are either homeless or live in very poor housing. The majority of them are the poorest people of the world’s developing countries. About 1.6 billion people live in substandard housing and 100 million people are homeless in a world with more than 7 billion people, comprising 20 to 40 million in the urban areas and about 60 million in the rural areas.¹ We can conclude that there is a housing shortage in especially developing countries.

The on-going political pressure on the government to overcome the housing backlog has resulted in a significant pressure on the housing delivery organisations to quickly deliver large quantities of houses to the lowest price as possible. This pressure has superseded quality and sustainability considerations, which in the long run may result in dwellings that are only marginal improvements from the existing shacks.² So the demand for affordable, sustainable housing in developing countries is growing. Most existing homes are not affordable, not sustainable and have a low quality. This does not at all contribute to a better quality of life.

Affordable housing applies to a wide range of housing types at varying costs that can meet the needs of a diverse community. The marketplace is generally capable of meeting the housing demands of the upper- and middle-income segment of the population. Therefore, the primary focus should be on mechanisms to increase the availability of affordable housing for lower-income through sustainable construction process.

Goal
According to my problem statement and previous studies about affordable housing by others and myself I set some goals and described my research questions and additional questions. Generally my research topic is about to improve the quality of life in developing countries through adequate and affordable housing at different scales (dwelling and urban scale)

Main goal/keypoints:
1) The main goal of my project will be to develop an affordable housing type for the low-income working group close to subsistence in developing countries with the tropical rainforest climate. The end product should not be a rethought existing housing typology with just the operation of decreased spaces, but it should be a new typology with qualities which will give more comfort to the user (minimum house, maximum comfort).

Many low- or even middle-income households build their own houses progressively over long periods as long as ten to fifteen years, or as is the case for the majority of the low-income population in many cities, they are simply tenants. Adequate housing is too expensive to own.

2) In order to cater for user changes in the future and their long-term consequences I want to find a way to make the affordable housing concept extendable and easy to build.

Additional goal:

Affordable housing can be created by (among other things) smart use of space (urban scale and the scale of the building), materials, and energy. But smart typology and a flexible construction which caters for different wishes (in space, height, material) of people, can also be part of making housing affordable. It will save in costs in all the effort that is taken over and over again on the question ‘how to make housing affordable?’ and it can be an outcome to provide the government of adequate housing. The concept can be used as a frame to make housing affordable in different developing countries with similar conditions. It can be used by individuals, housing associations, planners, contractors and policymakers.

3) My goal for the building technology part is reducing the cost of housing and the continuous energy costs by using nature. For example by using sun, wind and rain (more than enough available in Suriname, my research country)

4) In the end (after insights of affordable housing and a developed design tested on one location) I shall look at the possibilities of implementing the affordable housing concept on other developing countries with similar conditions (such as climate, living circumstances, economy). If possible, it should embrace a tool kit for developing countries to provide the poor of affordable housing with the option to extend the house in time. An extension as an option to cater for user changes in the future. Here the definition of ‘affordable’ depends on the economical capacity of the target group.

With a toolkit I mean: the parts/systems of the affordable housing concept that can be used to apply it in other developing countries to create affordable housing and the provision of examples what can be created with these parts/systems.

Main research question:

How to design an affordable housing type for the low-income working group close to subsistence level in a developing country with a tropical rainforest climate?

Sub questions:

a) Is it possible to implement this affordable housing type (which is mainly tested on Suriname) in other developing countries in the same climate zone? Or are only parts of the design use full for these other countries?

b) Looking at previous build affordable housing we see flats and traditional housing typologies which are applied to minimum measurements. Those houses lack in quality and thereby comfort. Besides that are most of these affordable derived housing typologies not even affordable for the low-income group but for the middle-income group. If other traditional housing typologies do not work to provide the low-income group in affordable housing we should probably look for a new housing typology.

• Is it possible to create a minimal dwelling for the low-income group with minimal space but with ‘maximal life’ (more comfort for less money)?

• How to create a new housing typology which can be part of making housing affordable? What are the do’s and don’ts of other precedents?

c) Looking at the bigger picture, how can the urban scale contribute to affordable housing? And the same question also applies to location.

d) Crime, maintenance, lack in policy, noise are problems in lots of districts in developing countries. How can a design anticipate on these issues and prevent neighbourhoods to turn into slums?
2) Process

Method description

The location Richelieu (Suriname) will be used to practise my research, this location will be the new satellite city of Paramaribo (capital city) to catch the housing shortage. Also other affordable housing projects in Suriname will be used for analysing and practise.

1. Literature
   Literature can help me to find information about previous built affordable housing, what kind of housing types do exist for affordable housing, the problems and difficulties to make affordable housing in developing countries, backgrounds about land of location and location itself, backgrounds about politics and the role of the government of making housing affordable for the low-income group. All this is needed to understand the problem of housing shortage for the poor in developing countries. This literature can be found in papers, books, articles from journals, websites, reports.

2. Analysis
   To test the affordable housing design I choose Surinam as the location of my research. Surinam has a tropical rainforest climate and is a developing country. I picked a location where at the moment a huge affordable housing project is set up. Analysis of the location have been made by the government in corporation with Dienst Ruimtelijke Ordening Amsterdam. These analyses can be used for my project. Also analyses about affordable housing in other developing countries can be used to pick out good and bad strategies to answer my research question. It can give me insight in affordable housing typologies, principles for affordable housing, measurements of the dwelling and the urban scale, building construction etc.

3. Case studies/practise/visitation
   Case studies can give me more insight in the do’s and don’ts of creating an affordable sustainable family housing concept and its implementation. Lessons can be learned from what is created before. What did work out and what not.
   January 17th I will be flying to Surinam to visit my project location (satellite town in Richelieu, East of Paramaribo) and other projects of affordable housing that has already been built to analyse it. Besides that I have appointments with contractors, housing foundations, NGO’s, non-profit organisations and I will interview the low-income group dwellers to find out their needs and wishes are. I want to understand the shortcoming of social housing.

4. Interviews
   Interviews are important for the practical experiences and the peoples feel on affordable sustainable housing. Interviews can be taken with the users of the dwellings, the government or people who are concerned with adequate affordable sustainable housing in developing countries. I already spoke to Lucien Lafour, a Surinam architect who has built affordable houses in Surinam and I spoke to Ruwan Aluvihare (Dienst Ruimtelijke Ordening Amsterdam) who made the plan: Spatial Development Strategy for housing in and around Paramaribo (Suriname). Also interviews with local people can give me more information about the needs of housing, what the problems are of today’s housing etc. Previous research and analysis will meet the practice.

5. Design
   Implement previous researches, interviews, findings by visitation and case studies to a design concept. The researches, interviews etc. should give me enough information to answer most of my sub-questions. Making studies of affordable sustainable housing (using the previous gathered information) answering different criteria, allows me to compare the studies and to polish the design concept. Making models, do research in typologies, sketch and redesign the project will be strategies to come to an affordable housing design for developing countries with the tropical rainforest climate.
3. Literature and general practical preference

**Literature**

- Stichting Volkshuisvesting Suriname (plans and facts)
- Stichting Sekrepatu
- Bureau voor Statistieken Suriname
- Volders, J.-L. (1966) Bouwkunst in Suriname; 300 jaren nationale architectuur, Hilversum, Uitgeverij G. van Saane
- Miloon, K., UN Press Briefing by Special Rapporteur on the Right to Adequate Housing, November 2005
- Affify, A.(2010) Sustainable Construction as Approach for Housing Affordability in Rural Areas in Developing Countries, paper SB10mad sustainable building conference

**Intent to consult:**

- Designs of affordable housing in Suriname (location Sekrepatu Kontren en Dyari) by Architect Lucien Lafour (Amsterdam)
- Analysis of spatial development strategy of housing in and around Paramaribo and the development plan of Richelieu of Dienst Ruimtelijke Ordening Amsterdam, contactperson Ruwan Aluvihare
- Stichting Surinaamse Volkshuisvesting Suriname (affordable housing designs by a housing foundation)
- Designs and urban plans of affordable housing projects of other developing countries
- Interviewing dwellers
- Site visit

3) **Reflection**

**Relevance**

The affordable housing design and the toolkit can help developing countries make adequate affordable housing for the people who live around subsistence level.

**Time planning**