BELO HORIZONTE

to create a beautiful horizon

for the inhabitants of the favela

Pedreira Prado Lopes

P.C. van de Kamp
Preface

This book contains a research, made during my graduation at the faculty of Architecture on the university of Delft. This graduation is done in the ExploreLab, a research driven graduation-laboratory for exploration of fascinations in the profession of building sciences, in a broad sense.

Fascination
Slums and people from other countries have always awoken my interest. Especially they from Brazil, because I have lived there for some years. More than two years ago, I have visited Brazil when I worked for an organization which help people who live in the slums. I was aware of the problems of the favela’s. I saw the impressive mass of the slums. It gave me an impression how people live over there in the broadest sense of the word. The hard contrast between the favela’s and the city is incredible.

Project
In the period in which I have worked for the organization (YWAM) I have met some good friends. Their goal is to help people in one of the most dangerous slums in Belo Horizonte, Pedreira Prado Lopes. Therefore, they really need a center where they can help them towards a transformation in the spiritual, physical, emotional, intellectual, social and economic areas of their lives. This plan inspired me to develop a graduation project in which this fascination and architecture is combined.

To design and realize a communitycenter for this vulnerable target group, is trying to give a positive impact to the negativity of a slum. I don’t have the illusion to save the world, but trying to make lives better. I would like to help by giving the people a building which have the focus on the wishes of the users: the favelados.

It was a great pleasure to work on this research and hopefully you will enjoy reading it.
## Contents

Preface 3

Introduction 7

1. Research area 8
   1.1 Introduction 8
   1.2 The history of the favela 8
   1.3 The urbanization problems in Brazil 9
   1.4 Slum developing in Belo Horizonte 11
   1.5 The favela Pedreira Prado Lopes 11

2. Research 13
   2.1 Introduction 13
   2.2 Research question 13
   2.3 Approach 13

3. Urban analysis 15
   3.1 Introduction 15
   3.2 Social diagnose 15
      3.2.1 Characterization of the population of Pedreira 15
      3.2.2 House conditions 22
   3.3 Urban diagnose 26
      3.3.1 Physical context 26
      3.3.2 Category of accesses 31
      3.3.1 Physical context 26
      3.3.2 Category of accesses 31
3.3.3 The grid 44
3.3.4 Obstructions and de-continuities 46
3.3.5 Critical zones of risk and un-healthiness 53
3.3.6 Consolidations and no-consolidations 56
3.3.7 Functional analyses 60

4. Theory 62
4.1 Introduction 62
4.2 Private, public and collective space 62
4.3 The phenomenon of place 65
4.3.1 Space and context 66
4.3.2 The sensation of place 68
4.3.3 The spirit of place 73
4.4 Conclusion 77

5. Application 78
5.1 Introduction 78
5.2 Private, public and collective space 78
5.3 The phenomenon of place 80
5.3.1 Space and context 81
5.3.2 The sensation of place 86
5.3.3 The spirit of place 91
5.4 Conclusion 100

Conclusion 102

References 105

Annex – pictures of the slum Pedreira Prado Lopes 108
Figure 1
An example of the contrast
Source: Internet
Introduction

Subject
Slums are noncities in big cities. They are illegal. The slums represents the worst of urban poverty and inequality. Almost 1 billion people, or 32 per cent of the world’s urban population, live in slums, the majority of them in the developing world. Moreover, the locus of global poverty is moving to the cities, a process now recognized as the ‘urbanization of poverty’. Without concerted action on the part of municipal authorities, national governments, civil society actors and the international community, the number of slum dwellers is likely to increase in most developing countries. And if no serious action is taken, the number of slum dwellers worldwide is projected to rise over the next 30 years to about 2 billion (UN-Habitat 2003).

Structure
This research starts with a short introduction (chapter 1) about the problems of urbanization and the consequences on slum-developing. In chapter 2 the research-question will be launched, which will be the structure of this research. In chapter 3 the field of research (the slum Pedreira Prado Lopes) will be analyzed, which gives a good reflection on the problems of this slum. Chapter 4 is a theoretical chapter, which gives theoretical answers on the research question. In chapter 5, these solutions will be applied in the slum, where a clear answer will be made on how the treat the slum in the hole context of the city. Chapter 6 is a conclusion on the discussed chapters before.
1 Research area

1.1 Introduction
We know from television how bad life can be in the slums. But what do we know about Brazil, Belo Horizonte, the slum Pedreira Prado Lopes or better, what do we know about slums in general? A century ago, we had never heard of slums and slum dwellers. That means that in one century, there has been changed a lot in urban, economic and social areas. Not only in Brazil, but in many countries in the world.
A general view on different levels of ‘slum developing’ creates a better base for further understanding of this project. The first section contains general information about the slums in Brazil and its history. In the second section the cause of slum developing in Brazil will be explained. Because Belo Horizonte is the place of study, the third section zooms in on the slum developing in Belo Horizonte and how the city is dealing with it. The last section zooms in to the field of study, which is the slum Pedreira Prado Lopes.

1.2 The history of the favela
Many big cities in Latin America contains a sizable population of squatters, slum dwellers who have illegally erected shacks on private or public land, and who, because of the chronic inability of these cities to provide more adequate housing, have become a permanent part of the urban scene. In Brazil, squatter settlements are called favelas and their inhabitants favelados. The precise origin of these communities in these cities is not known, but in Rio, for example, some of these squatters were apparently ex-slaves who began settling hill sites after they were freed in 1888 (Groot 1991, p. 11: my transl.).

The favelas are thought to have been formed largely by migrants to the city, people in many ways still rural in habits and outlook, who were thrust into urban living by the prevailing poverty of the countryside’s. The growing slums are the visible manifestation of problems which are otherwise easy to ignore while living in a city. The ubiquitous favelas form a constant reminder of the economic difficulties of Brazil as a whole (Evenson 2003).

It would appear that within the favela population there is considerable variety. Although many favelados are recent immigrants, favelas often contain long-term stable population, sometimes having housed several generations of the same family. Some favelas are regarded as hideouts for criminals and the most irresponsible elements of the city, while others appear to contain basically law-abiding and economically productive citizens, highly organized in terms of community and family. Although there is some range
in the economic level of favelados, generally they represent the poorest people of the city, with a high rate of unemployment and underemployment, and it is reported that more than 50 percent of the people receiving public assistance are favelados (Evenson 2003).

Among cityplanners, there has been no lack of concern about the favelas, but there is frequent disagreement about how to treat a problem which is as complex as the problem of poverty itself. Even if the cities were able to rehouse every present favelado, the economic pressures which produce migration from depressed rural areas would continue to operate, and new favelas would likely spring up (Evenson 2003). Opinion has been divided regarding the desirability of rehabilitating existing favelas as opposed to relocating the inhabitants. Justification for rehabilitation has been based on the circumstance that favelas frequently embody a complex and well-organized internal community structure, together with established economic ties with adjoining parts of the city. The locations of many favelas are convenient to employment, and thus, commuting costs for inhabitants may be reduced or eliminated. Furthermore, within the favela itself, there is opportunity for small unregulated business enterprise. There are opportunities, when it is based on good research and agreements. Because of the well-organized internal community structure, Brillembourg & Klumpner describes a slum as follow: ‘This is not a mountain full of houses, but a house as big as a mountain’ (Brillembourg & Klumpner 2007).

1.3 The urbanization problems in Brazil

In the year 1500 the Portuguese seaman Cabral discovered in the South of the Atlantic Ocean a large, mass of country. Where he looked at, there were dense forests with colourful, never-seen plants and animals. The new country had never knew cities and trade, it was one large jungle (Groot 1991, p. 11: my transl.). And now, more then 500 years later, Brazil is the fifth largest country of the world with a population of 186 million people; 2,8% of the world population (Wikipedia.com - figure 1.1).

![Figure 1.1](image_url)
Figure 1.2
Urban, rural and total population of Brazil

Source: UN 2006

Figure 1.3
Brazil and Belo Horizonte

Source: Google Earth

Table 1.1
Population of the 4 biggest urban agglomerations in Brazil

<table>
<thead>
<tr>
<th>Agglomeration</th>
<th>Population of urban agglomerations (thousands)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brasilia</td>
<td>36   137  525   1.293  1.559  1.863  2.257  2.746  3.341  3.938  4.282</td>
</tr>
</tbody>
</table>
Figure 1.2 shows the dramatic growth of the urban population in Brazil. It is not difficult to understand, why the big cities in Brazil are exploding. The urban population of Brazil is growing faster than the total population of Brazil. With a failure of housing policies, laws and delivery systems, as well as of national and urban policies it is not strange that a lot of the urban population are living in favelas (UN 2006).

1.4 Slum developing in Belo Horizonte
The municipality of Belo Horizonte, which is the capital of Minas Gerais state, is located in the Southeast of Brazil (figure 1.3). It occupies an area of approximately 330 km², is divided into 9 administrative regions and has a population of some 2.2 million people (Brazilian Statistics Bureau – IBGE 2000).

As the municipality is the centre of a metropolitan region which is home to almost 6 million people and, like other Brazilian cities, Belo Horizonte experienced an accelerated growth during the last decades (Table 1.1). Approximately 400,000 inhabitants (20%) of this population live in areas called vilas and favelas, in which social and urban vulnerability is rife. Belo Horizonte currently contains some 180 areas considered to be slums and shanty towns (World Bank Document).

The dramatic growth of the cities of the developing world has become something of a cliché. Yet this growth is a basic fact which city planners and managers must come to terms with if they are to have any impact on the situation. That’s why they create the MDG’s; the Millenium Development Goals. A universal framework for development and a means for developing countries and their development partners to work together in pursuit of a shared future for all (figure 1.4). The results in Belo Horizonte presented that there have been some gains, and that success is still possible. But they also point out how much remains to be done (UN-Habitat 2006).

1.5 The favela Pedreira Prado Lopes
Pedreira Prado Lopes is a slum in the northeast region of Belo Horizonte (figure 1.5 – 1.7). Pedreira is considered as one of the most violent areas in the capital of Minas Gerais. A sociological study about this area founded theories which defends the idea of the emergence and consolidation of high rates of violence and criminality in decaying poor neighborhoods in the big urban centers as a direct or indirect consequence of the way a series of historical, socio–economic, geographical, cultural and structural factors inter-relate (Nascimento 2004).
Figure 1.4  LEFT
Municipio Belo Horizonte
and the administrative regions

Figure 1.5  RIGHT
Municipio Belo Horizonte
and the administrative regions with barriers

Source: Google Mapas (maps)

Figure 1.7
The favela Pedreira Prado Lopes

Source: Google Earth
2 Research area

2.1 Introduction
The favela can been seen as an non-existing part of the urban structure. ‘Since the slums were considered to disrupt urban order and their population was viewed as alien to the urban society, the government policy for favelas was simply to remove them from areas near the ‘formal’ city’ (Segre 2008, p. 1). In other words: ‘The urban poor are trapped in an informal and ‘illegal’ world — in slums that are not reflected on maps, where waste is not collected, where taxes are not paid and where public services are not provided. Officially, they do not exist’ (UN-Habitat 2003).

The favelas were in the beginning invisible. They did everything in secret. Then, in the 1940s, the favelas have become more an important part of the city. They are visible for the whole world. You can see them now socially and politically. They are a manifest now. But, in the ‘meanwhile, the articulation of the formal city with the ‘informal’ city (favelas) was still yet to take place. Attention had not been paid to improving, developing and transforming the public spaces of the favelas, which continued to exist as discarded ‘ghettos’ of the city’ (Segre 2008, p. 2).

The favelas are called informal, illegal, ghettos and favelados are called aliens. They do not exist. Favelados are shutted out of the inhabited world and they feel a gap between the favela and the ‘real’ world; the city. Enough reasons for improvement. Therefore, it is necessary that the city intends to integrate the favela into the formal city, absorbing one million inhabitants — who are currently excluded from municipal services — as full citizens. And if the concept of the city disintegrates, as the architect Rem Koolhaas claims, it is up to architects to come up with answers’ (Brillembourg & Klumpner 2007).

2.2 Research question
The favela (Pedreira Prado Lopes) must be connected with its surrounding areas. Those areas must embrace the favela, like a friend. This problem is gathered in the next question, which shows the research of this graduationproject:

‘How to integrate the informal city into the (formal) city with architecture as a powerful tool?’

2.3 Approach
The research contains 3 parts. The first part (chapter 3) gives a social and an urban analyses of the favela Pedreira Prado Lopes. Through these analyses, a representation can be made of the social situation and of the physical condition of the Pedreira. This gives a
solid base for further activities which will be made. The second part (chapter four) is a theoretical approach, which brings the knowledge of many architects and urban planners who analysed cities. The theory gives tools to analyze the ‘where’ and ‘in which way’ the integration process could be started from outside towards the Pedreira. The third part, the last one (chapter 5) is the application of all the previous chapters in one chapter to find an answer on the research question. The previous chapters contain their own connection with the Pedreira and/or the research and in this chapter will everything be applied into the Pedreira. The application will give a well-based answer in how to integrate the informal city with the formal city in the best possible way.

Figure 2.1
The favela Pedreira Prado Lopes and its surrounding areas

Source: Google Earth
3 Analyses of the favela

3.1 Introduction
The analyses of the place contains two subjects; a social and an urban description. Through those two descriptions a representation can be made about the social situation in the Pedreira Prado Lopes (Pedreira) and about the physical condition of the Pedreira. The description gives a solid basis for the development of the program of requirements and the further analysis of the site. This description is supported by a research which is done by the government of Belo Horizonte (PBH), a regional (ARNO) and an urban company (URBEL) of Belo Horizonte.

3.2 Social description
The social description is divided in two parts:
- the characterization of the population
- the house conditions

3.2.1 Characterization of the population of Pedreira
The number of inhabitants counted 6936 inhabitants in 1991 (IBGE), in 1998/’99 the Pedreira counted 8900 inhabitants (URBEL) and in 2004 the favela counted 12000 inhabitants. The latter number is received from an study which aims at analyzing social factors which are directly or indirectly involved in the sprouting and consolidation of high rates of violence and criminality in small villages and slums in the urban centers (Nascimento 2004, p. 11). Within this number of persons, the distribution of male and female was respectively 47% and 53% in 1991.

In relation to the origin of the inhabitants, mainly all the responsible came from the inland (rural) of the state, Minas Gerais. A representation which becomes more clear when the ages of the responsible becomes more higher. And this is a clear aspect of the Pedreira. The real origin of the Pedreira is started with poor people who came from the rural areas to find better life-conditions and established themselves in the Pedreira. The data (table 3.1) also shows the constant continuation of the migration to the Pedreira during the decennia. It became more less, because the percentage (30%) of youth responsible (18 till 40 years) who came from the rural areas, is lower than the percentage (70%) older responsible (higher than 40 years). This means that the majority of youth responsible are borned in the Pedreira, while the older responsible came from the rural areas.
Table 3.1
Origin of responsibles

<table>
<thead>
<tr>
<th>Age</th>
<th>Municipal BH</th>
<th>R.M.B.H.</th>
<th>State M.G.</th>
<th>South-east</th>
<th>South</th>
<th>Centre-west</th>
<th>North</th>
<th>North-east</th>
<th>Foreign</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-17</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>18-25</td>
<td>69,7</td>
<td>0</td>
<td>30,3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>26-40</td>
<td>62,9</td>
<td>0</td>
<td>32,5</td>
<td>1,3</td>
<td>0</td>
<td>0</td>
<td>0,7</td>
<td>2,6</td>
<td>0</td>
</tr>
<tr>
<td>41-64</td>
<td>33,1</td>
<td>0,5</td>
<td>61,4</td>
<td>2</td>
<td>0,5</td>
<td>0</td>
<td>1</td>
<td>1,5</td>
<td>0</td>
</tr>
<tr>
<td>&gt;64</td>
<td>14,6</td>
<td>0</td>
<td>81,2</td>
<td>2,1</td>
<td>0</td>
<td>0</td>
<td>2,1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>44,2</td>
<td>0,2</td>
<td>51,3</td>
<td>1,6</td>
<td>0,2</td>
<td>0</td>
<td>0,9</td>
<td>1,6</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 3.1
Number of persons per residence

Figure 3.2
Group of ages

Source: Ubel 1997
It is able to perceive that the number of persons per residence coincides to an average which is common in Brazil, the majority of the residences (63.7%) counts 2 to 5 occupants (figure 3.1). However, the dwellings which count more then six occupants (26.4%) is also significant. The graphic of the group of ages shows that the population of the Pedreira is young, 58.8% possess the age till 25 year (figure 3.2).

Referring to schooling, there is observed a very low level of education in the Pedreira, mainly the oldest one, who didn’t have access to education in the past. Today, the Pedreira offers schools in his entorno (the ring around the Pedreira), which probably attend to the first grade (primary school). However, the number of persons who have followed the second grade (secondary school) is very low, which refers to the possibility that youth in the Pedreira don’t visit school frequently and interrupt the study in the first grade (figures 3.3 and 3.4).

![Pie chart of responsible's schooling](image1.png)

**Figure 3.3**
Schooling of responsibles

![Pie chart of other occupants' schooling](image2.png)

**Figure 3.4**
Schooling of other occupants

Source: Urbel 1997
The graphics of profession show the preference of the inhabitants for low qualification, linked to the decrease of schooling: cleaners, builders, house employees, general service assistants, guards, etc. Concerns to the profession, it's necessary to observe the large number of housewives, who are dedicated to the domestic activities (figures 3.5 till 3.8).

Table 3.5
Professions of responsible

<table>
<thead>
<tr>
<th>Profession</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housewife</td>
<td>33.4</td>
</tr>
<tr>
<td>Cleaner</td>
<td>6.6</td>
</tr>
<tr>
<td>Assistant of general services</td>
<td>4.9</td>
</tr>
<tr>
<td>Housemaid/-employee</td>
<td>4.5</td>
</tr>
<tr>
<td>Builder</td>
<td>4.0</td>
</tr>
<tr>
<td>Trader, merchant, businessman</td>
<td>3.7</td>
</tr>
<tr>
<td>Laundry women</td>
<td>2.7</td>
</tr>
<tr>
<td>Cook</td>
<td>2.5</td>
</tr>
<tr>
<td>Vigilant</td>
<td>2.4</td>
</tr>
<tr>
<td>Shop assistant, seller</td>
<td>2.4</td>
</tr>
<tr>
<td>Others</td>
<td>9.5</td>
</tr>
</tbody>
</table>

Source: Urbel 1997

Figure 3.6
Professions of other occupants

<table>
<thead>
<tr>
<th>Profession</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student</td>
<td>59.6</td>
</tr>
<tr>
<td>Housemaid/-employee</td>
<td>3.9</td>
</tr>
<tr>
<td>Housewife</td>
<td>3.4</td>
</tr>
<tr>
<td>Assistant of general services</td>
<td>2.8</td>
</tr>
<tr>
<td>Cleaner</td>
<td>2.7</td>
</tr>
<tr>
<td>Assistant</td>
<td>2.0</td>
</tr>
<tr>
<td>Office boy</td>
<td>1.7</td>
</tr>
<tr>
<td>Mason assistant</td>
<td>1.6</td>
</tr>
<tr>
<td>Odd-job man</td>
<td>1.4</td>
</tr>
<tr>
<td>Odd-job man</td>
<td>1.1</td>
</tr>
<tr>
<td>Dustman, roadsweeper</td>
<td>9.5</td>
</tr>
<tr>
<td>Others</td>
<td>18</td>
</tr>
</tbody>
</table>

Source: Urbel 1997
The graphics refer to the occupational situation, which is to understand through the high index of persons who work for their own (20%), with odd jobs, outstanding characteristic of the population of vilas and favelas. It perceives also a large number of unemployed responsibles, 8,7%. However, this number must be higher, because a part of the people who live of the odd jobs, must include with the unemployed, which occurs many times due the absence of opportunities in the formal market. The index of unemployment in the Northwest region is 12%, against 12,4% in BH, where the index in the vilas tends higher, where the inhabitants presents the lowest level of qualification and schooling.

Table 3.7
Employment situation of responsibles

<table>
<thead>
<tr>
<th>Situation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee legal</td>
<td>27,8%</td>
</tr>
<tr>
<td>Employee illegal</td>
<td>8,7%</td>
</tr>
<tr>
<td>Employer</td>
<td>12,1%</td>
</tr>
<tr>
<td>Owner</td>
<td>29,4%</td>
</tr>
<tr>
<td>Unemployed</td>
<td>0,2%</td>
</tr>
<tr>
<td>Retired</td>
<td>0,2%</td>
</tr>
<tr>
<td>Household</td>
<td>59,1%</td>
</tr>
<tr>
<td>No work</td>
<td>1%</td>
</tr>
<tr>
<td>Others</td>
<td>1%</td>
</tr>
</tbody>
</table>

Source: Urbel 1997

Figure 3.8
Employment situation of other occupants
The collected data of the population of Pedreira shows professional activities of a low qualification and payment as well for the head of the families as for the relatives through a very low salary level of the population. A comparison with the city (Belo Horizonte: BH) and the region gives the next result. The medium income of the ‘head of the family’ in BH is R$ 872,29 and the medium income of the ‘other occupants’ is R$ 1307,68 and in the Northwest region, where the Pedreira is placed in, it is respectively R$ 677,63 and R$ 1096,35. In the Pedreira, 66% of the families have an income of 0 till 3 times the minimum salaries, which is till R$ 390,00. For comparison; till R$ 390,00 is EUR 130,00. The conclusion is that the Pedreira are constituting themselves to a part of extreme poverty and social exclusion (figure 3.9 and 3.10).

The Administration Northwest presents a smaller income than BH, perhaps this can be attributed to the large number of vilas and favelas which belongs to that area. It’s still able to perceive, that the income of the inhabitants in Pedreira is still below the income of the other vilas of BH. For example, the present facts in PROPAM (Programa de Recuperação e Desenvolvimento Ambiental da Bacia da Pampulha) shows the following figures. The vilas of BH present the following medium wage: 40% of the responsibles receive a salary till the minimum and 78,5% receive till three times the minimum salary. These facts beat the average wage of the vilas which join the Program: 38% of the responsibles have to live with the minimum salary and 80 % till three times the minimum salary. In the vila Califórnia, which also belongs to the Northwest region, 74% of the responsibles receive till three times the minimum salary. Meanwhile, in the Pedreira, 60,8% of the responsibles have to live with the minimum salary and 88,3% (60,8% + 27,5%) till three times the minimum salary. Also these figures show the poverty in the Pedreira.

**Figure 3.9**
Family income of Pedreira

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Till 1 S.M.</td>
<td>29,0%</td>
</tr>
<tr>
<td>1-3 S.M.</td>
<td>36,6%</td>
</tr>
<tr>
<td>3-5 S.M.</td>
<td>19,5%</td>
</tr>
<tr>
<td>5-10 S.M.</td>
<td>12,9%</td>
</tr>
<tr>
<td>&gt;10 S.M.</td>
<td>2,0%</td>
</tr>
</tbody>
</table>

**Figure 3.10**
Income of other occupants in Pedreira

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Till 1 S.M.</td>
<td>60,8%</td>
</tr>
<tr>
<td>1-3 S.M.</td>
<td>27,5%</td>
</tr>
<tr>
<td>3-5 S.M.</td>
<td>8,5%</td>
</tr>
<tr>
<td>5-10 S.M.</td>
<td>3,0%</td>
</tr>
<tr>
<td>&gt;10 S.M.</td>
<td>0,2%</td>
</tr>
</tbody>
</table>

Source: Urbel 1997
Drugs is generating money, but drugs traffic also introduce homicides. During the first nine months of 2007, fifty persons had been murdered in the Pedreira. Which is an average of one dead person in five days in the streets of one of the most densely populated areas of Belo Horizonte. These numbers shows that, between January and September of 2007, the Pedreira has got a rate of 4,16 homicides by each group of thousand inhabitants. For a comparison, during the same period, the hole city of Belo Horizonte recorded around 900 homicides, according to statistical research carried out in 2007 by the ‘Divisão de Crimes Contra a Vida’ (DCCV) da Polícia Civil. (‘Division of Crimes Against the Life’ of the Civil Police) Statistically, a rate of 0,45 murders by each group of thousand inhabitants. It is able to affirm, therefore, that in the Pedreira Prado Lopes, in 2007, there were ten times more homicides then in the remainder of the city (Nascimento 2004).

Figure 3.11 and 3.12
Frequent police violence in favela's

Source: Internet
3.2.2 House conditions

By the data about the use of the residences in the Pedreira, we are able to observe that the number of commercial establishments inside the Pedreira is low (figure 3.13). However, the high index of unemployment in the Pedreira and the big population of the vila needs a bigger internal commercial development, which would be extremely beneficial and would generate jobs and income for the location. It indicates that there is a demand for commercial growth in the area, despite of the entorno of the vila, which offers good commerce and service.

There should be more sources of income in the vila, like the traffic of drugs and other informal activities. In that way, the commercial development would be a form of generate income and a fight against the traffic of drugs. However, the absence of space constitutes a big barrier for this commercial development, which already exist for the house constructions, provokes high declivity and the presence of multifamily houses (figure 3.13).

Figure 3.13
Use of residences

Source: Urbel 1997

The Pedreira possesses services, like communal equipments, and it is relatively well attended (figure 3.14). The Pedreira possesses a healthcare centre inside the area, recently concluded, beyond the Hospital Odilon Behrens, situated at the border (nr. 14). It possesses a crèche and a municipal garden, which also fulfil the function of crèche, but probably do not attend all the demands of the vila (nr. 6 and 7). The education is accommodated in two schools, which are placed in the border of the Pedreira, beyond an other school, which possess vocational education inside the Pedreira (nr. 1 and 8).

There is also a Civil Police department in the closeness and in spite of no existing bus lines in the Pedreira, there is an exceptional offering of public transport in the closeness with the Avenida Antônio Carlos, an important arterial road of BH (figure 3.15).
Figure 3.14
Communal equipments in the Pedreira

LEGENDA

01  LIMITE DOS BAIRROS
02  LIMITE DA VILA PRADO LOPES
03  ESCOLA
04  POSTO DE SAÚDE
05  IGREJA
06  CENTRO COMUNITÁRIO
07  CAMPO DE FUTEBOL
08  CRECHE
09  JARDIM DE INFÂNCIA
10  ESCOLA
11  IGREJA
12  ALBERGUE
13  IAPI
14  ESCOLA PROFISSIONALIZANTE
15  ESCOLA MUNICIPAL
16  HOSPITAL ODILON BEHRENS

Source: Urbel 1997
Figure 3.15
Itinerary of the bus

Source: Urbel 1997
The majority of the population (57.4%) resides for more than twenty years in the Pedreira and a big majority of the houses is property (93.1%), which indicates a high rate of consolidation of the population (figure 16). Beyond that, the percentage of dwellings which exist less than 10 years is very low, which indicates the very diminished growth of Pedreira. The most recent dwellings should constitute, for the most part, floors of other already existences, by the absence of space in the Pedreira, characterizing the vertical growth.

![Figure 3.16](image)

**Figure 3.16**
Occupation of residences

Source: Urbel 1997

Sector 1 is the sector with the highest density of the Pedreira. This signifies that this sector grew more than the others in the last years and this growth is responsible for the high density of population and housing in this area. Sector 5 is the most recent sector of the Pedreira, with a lower number of houses which exist more than twenty years.
3.3 Urban description
An urban description of the slum Pedreira Prado Lopes is a description of the physical area of the slum, which contains the standards of habilitation, accessibility and risk.

3.3.1 Physical context
The favela Pedreira Prado Lopes is not a very big slum with its lengths of ca. 600 m. and 700 m. and an area of 142.000 m² (Nascimento 2004 - figure 3.17). The location of the Pedreira is an exceptional one, because it’s located in the middle of the city Belo Horizonte, 2 kilometers from the city-centre (figure 3.18), where other favelas are almost situated at the border of the city, on a mountain. The morphology of the space gives us a well-impressed image of the mountainous landscape (figure 3.19 and 3.20). Because of this mountainous landscape, the Pedreira can be seen in different levels. For a better explanation of the context of the Pedreira, it is divided in 5 sectors (figure 3.21).
Figure 3.18
Distance to the city
Figure 3.19
The morphology of the space

Legenda
- declivity higher than 47%
- declivity between 30% and 47%
- declivity between 25 and 30%
- declivity between 15 and 25
- declivity lower than 15%
- drainage direction
- pedreira: barrier/ difference in height
- mine of water
- mass of vegetation
- piping

Source: Urbel 1997
Figure 3.20
The morphology of the slum with sections

Source: Urbel 1997
Figure 3.21
The sectors

Legenda
- sector 1
- sector 2
- sector 3
- sector 4
- sector 5

Source: Urbel 1997
3.3.2 Category of accesses
This subsection describes the physical conditions and use of the road system in the five different sectors.

Sector 1:
This sector has got a bigger territory and a bigger population. It is situated at the bottom of Pedreira and it has two important axes which penetrate and connect the city (figure 3.23).
It is Rua Carmo do Rio Claro where the circulation of the vehicles confirms their present use. The street contains a passage with geometrical characteristics, which contains also a minimum of parameters for vehicle circulation, in two directions and a passage in one direction of which the width must be broadened to connect the ruas Pedro Lessa and Avenida José Bonifácio (arrow nr. 1).
An another possibility of external access is given by the rua Dr. João Carvalhais de Paiva. It contains potential circulation to rua Carmo do Rio Claro, which would be able to provide a circuit of traffic (arrow nr. 2).
An important connection would be the Beco do Bento, which present the circulation of pedestrians, but it is also accentuated by dangerous hills. This street could be a connection of rua Araribá and rua Carmo do Rio Claro, cutting an big area and subdividing block 8 (arrow nr. 3).
The rest of the road system remains alleys, where the restrictions and hills stops the circulation. 68% of the alleys barely permits the circulation of pedestrians, committed by obstruction or diverse strangulations (figure 3.24).

Figure 3.22
A view of sector 1
Source: vd Kamp
Figure 3.23
Accessibility of sector 1

- Roads type I - passage in two directions + pedestrian
  width $\geq 6.0$ m; declivity $\leq 25\%$

- Roads type II - passage in one direction + pedestrian
  $3.5 \leq$ width $< 6.0$ m; declivity $\leq 25\%$

- Roads type III - critic passage for vehicles + pedestrian
  width $< 3.5$ m; declivity $< 25\%$ or $> 25\%$

- Roads type IV - pedestrian
  $1.2 \leq$ width $< 3.4$ m; declivity $> 25\%$

- Roads type V - critic for pedestrian
  width $< 1.2$ m; declivity with steep stairs

Place where picture is taken: figure 3.22

Source: Urbel 1997
Figure 3.24
Accessibility of sector 1

- Green: Obstruction points and/or discontinuity
- Red: Terrible accessibility

Source: Urbel 1997
Sector 2:
This area doesn’t have roads for penetrations. It contains only Rua Guapé, which is a road with a potential of circulation in one direction, despite of comfortable hills (figure 3.26, arrow nr. 1) The rest of the road system is composed by alleys, they do not present functional connections and they are barely attended by the inhabitants. 40% of the alleys contains the circulation of pedestrians, due the excessive narrows of the streets (figure 3.26 and 3.27).

Figure 3.25
A view of Rua Guapé, sector 2

Source: vd Kamp
Figure 3.26
Accessibility of sector 2

- **Roads type I**
  passage in two directions + pedestrian
  width $\geq 6.0$ m; declivity $\leq 25\%$

- **Roads type II** -
  passage in one direction + pedestrian
  $3.5 \leq$ width $< 6.0$ m; declivity $\leq 25\%$

- **Roads type III** -
  critic passage for vehicles + pedestrian
  width $< 3.5$ m; declivity $< 25\%$ or $> 25\%$

- **Roads type IV** - pedestre
  $1.2 \leq$ width $< 3.4$ m; declivity $> 25\%$

- **Roads type V** - critic for pedestrian
  width $< 1.2$ m; declivity with steep stairs

Place where picture is taken: figure 3.25

Source: Urbel 1997
Figure 3.27
Accessibility of sector 2

- Obstruction points and/or discontinuity
- Terrible accessibility

Source: Urbel 1997
Sector 3:
This sector treats itself as a more higher placed area of the Pedreira, with a big slope to Rua Mendes de Oliveira, one of its border streets. The only road of penetration in this sector is the continuation of Rua Guapé (of sector 2) to Rua Escravo Isidoro (figure 3.32, arrow nr. 1). It permits the circulation of vehicles and pedestrians. The rest of the road system is formed by road for pedestrians with comfortable hills, except the becos Garças e N. Sra. De Fátima (figure 3.32, arrow nr. 2). 29% of the alleys are restricted for pedestrians, because of excessive narrowness of the streets (figure 3.32 and 3.33).
**Figure 3.32**

**ABOVE**

Accessibility of sector 3

- Roads type I - passage in two directions + pedestrian
  width $\geq 6.0$ m; declivity $\leq 25\%$

- Roads type II - passage in one direction + pedestrian
  $3.5 \leq$ width $< 6.0$ m; declivity $\leq 25\%$

- Roads type III - critic passage for vehicles + pedestrian
  width $< 3.5$ m; declivity $< 25\%$ or $> 25\%$

- Roads type IV - pedestrian
  $1.2 \leq$ width $< 3.4$ m; declivity $> 25\%$

- Roads type V - critic for pedestrian
  width $< 1.2$ m; declivity with steep stairs

Place where picture is taken: figure 3.28 - 3.31

**Source:** Urbel 1997

---

**Figure 3.33**

**UNDER**

Accessibility of sector 3

- Obstruction points and/or discontinuity

- Terrible accessibility

---

**Notes:**

- Roads types I-V are categorized based on width and declivity.
- Figure 3.28-3.31 shows the location where the picture is taken.
Sector 4:
This sector is situated in the pended slope to Avenida Antonio Carlos, between ruas Marcazita, Serra Negra and Araribá. It is the sector with less irrigated alleys. It contains two main roads of penetration, known as: Rua Araribá and beco São Lourenço.
Rua Araribá (figure 3.36, arrow nr. 1) is a passage in one direction, besides the high rate of hills. It is an axis of fundamental importance in the circulation system of the Pedreira. Therefore it has a big interface with sector 1 and enables an access to the city. It is the only possibility of interconnection between the sectors 2 and 3 with the sectors 1 and 4. However, it presents a physical obstruction; there exists an unevenness between the beco Araribá and the confluence of Rua Araribá and São Lourenço. It will be necessary to do a special handling in the road system to permit this connection (figure 3.36 and 3.37, circle).
Rua São Lourenço is a passage in one direction, with the possibility for two directions (figure 3.36, arrow nr. 2). There is a connection possible between the border of Rua Serra Negra with the interior of the Pedreira. 36% of the alleys restraints the stream of the own pedestrians, due the size of the streets and/ or the accentuated hills.
Figure 3.36
Accessibility of sector 4

- **Roads type I**
  passage in two directions + pedestrian
  width $\geq 6.0$ m; declivity $\leq 25\%$

- **Roads type II**
  passage in one direction + pedestrian
  $3.5 \leq$ width $< 6.0$ m; declivity $\leq 25\%$

- **Roads type III**
  critic passage for vehicles + pedestrian
  width $< 3.5$ m; declivity $< 25\%$ or $> 25\%$

- **Roads type IV** - pedestre
  $1.2 \leq$ width $< 3.4$ m; declivity $> 25\%$

- **Roads type V** - critic for pedestrian
  width $< 1.2$ m; declivity with steep stairs

Place where picture is taken: figure 3.34, 3.35 and 3.38 - 3.41

Source: Urbel 1997
Figure 3.37
Accessibility of sector 4
- Obstruction points and/or discontinuity
- Terrible accessibility

Source: Urbel 1997

Figure 3.38 and 3.39
A view of Rua Araribá

Source: v.d. Kamp

Figure 3.40
A view of Rua Araribá

Figure 3.41
A view at the end of Rua Araribá

Source: v.d. Kamp
Sector 5:
This sector is not really connected to the Pedreira, but it is separated by Rua Marcazita (figure 3.46, arrow nr. 1). It situated itself in the area, dropped at the end of the slope, near to Rua Araribá and Avenida Antonio Carlos (figure 3.46, arrow nr. 2). This sector treats itself like a part of the city in the formal city. Two roads are important for the penetration in this sector. It is the continuation of Rua Serra Negra and Rua E, the latter is partially invalid (figure 3.46, arrow nr. 3). These roads permit the circulation in one direction. The rest of the alleys are roads for pedestrians with some accentuated hills. 22% presents restrictions, even for pedestrians (figure 3.47).

Figure 3.42  ABOVE LEFT
A view of Rua Marcazita

Figure 3.43  ABOVE RIGHT
A view of the corner of Rua Araribá and Avenida Antonio Carlos

Figure 3.44  UNDER LEFT
A view of Rua Araribá

Figure 3.45  UNDER RIGHT
A view of the continuation of Rua Araribá

Source: vd Kamp
Figure 3.46
Accessibility of sector 5

- Roads type I
  passage in two directions + pedestrian
  width $\geq 6.0$ m; declivity $\leq 25\%$

- Roads type II
  passage in one direction + pedestrian
  $3.5 < \quad$ width $\quad < 6.0$ m; declivity $\leq 25\%$

- Roads type III
  critic passage for vehicules + pedestrian
  width $< 3.5$ m; declivity $< 25\%$ or $> 25\%$

- Roads type IV
  pedestre
  $1.2 < \quad$ width $\quad < 3.4$ m; declivity $> 25\%$

- Roads type V
  critic for pedestrian
  width $< 1.2$ m; declivity with steep stairs

Place where picture is taken: figure 3.42 - 3.45

Figure 3.47
Accessibility of sector 5

- Obstruction points and/ or discontinuity
- Terrible accessibility

Source: Urbel 1997
3.3.3 The grid

Figure 3.48 shows the accessibility of the road system in the Pedreira towards the surrounded ring. The characteristics of the grid (streets and alleys) are the following:

**Rua Guapé and Escravo Isidoro**: Main axis of penetration of the sectors 2 and 4 and for the connection between the North and the South part of the Pedreira. Use: passage in one direction (arrow nr. 1).

**Rua Carmo do Rio Claro**: Main axis of penetration of the sector 1, cutting sector 1 in two parts. It permits the connection of Avenida José Bonifácio with Rua Pedro Lessa, important roads for circulation. Use: passage in two directions in the street Pedro Lessa to beco E and G, passing of vehicles is critic by narrowing the streets (arrow nr. 2).

**Beco N. Sra. do Carmo; continuação da Rua Garças**: The only connection between sector 3 and Rua Mendes de Oliveira, no circulation possible. Declivity limit of 25.9% for vehicles. Needs necessarily improvement of the rail (arrow nr. 3).

**Beco São Lourenço**: Use: critic for vehicles. It is an access between beco Araribá and Rua Araribá in the north and the more higher part of the Pedreira. Passage in one direction (arrow nr. 4).

**Rua Araribá**: Access road to the sectors 1, 3 and 4, despite of the physical obstruction. Potential for the most important circuit of connection between the lower and the higher parts of the Pedreira. Use: passage in one direction and critic for vehicles, because of the hill (arrow nr. 5).

**Rua Marcazita**: Street with characteristics and standards of the formal city, which divides the sectors 1, 2, 3 and 4 of sector 5. It is an important axis for circulation, possess traffic of the collectives. Use: passage in two direction (arrow nr. 6).

**Rua João Carvalhais de Paiva and Rua Rodrigues Alves**: This circuit reveals itself of special interest, especially for the flow in the lower part of PPL. Therefore is a connection of strategic points in Avenida José Bonifácio and Rua Pedro Lessa. Use: passage in one direction (arrow nr. 7).

**Continuação da R. Serra Negra and rua E**: this continuation is essential for the circulation of the inhabitants of sector 5, since they were cut off of the environment of the Pedreira. It is a road with formal standards needs to be unblocked from its extremities. Use: passage in one direction (arrow nr. 8).
Figure 3.48
Internal prominent connections with the ring (entorno)

Source: Urbel 1997
3.3.4 Obstructions and de-continuities

There are barriers which cause a discontinuity of the physical space and a segregation of the sector.

The most visible barrier, even when you walk on the surrounding roads of the Pedreira, is the pedreira, a massive hillside which divides the Pedreira in a lower part (sector 1) and a higher part (sector 2 and 3) with an unevenness of approximately 20 meters (figure 3.49, red circle). Beyond the physical barrier, those sectors present outstanding differences in the density per quadra (district), in the quality of the accesses and even in the infrastructure, having lower conditions in the higher part then in the lower part.

The longest site of the border of the pedreira contains a hill of approximately 5 meters high with geological risk, where occupation by dwellings is not possible (figure 3.50 - 3.52).

The conditions of access to the roads are injured due obstructions in the passage and/ or the high existing unevenness in the same road. In the case of Rua Araribá, from beco S. Caetano, the circulation of vehicles becomes critic (figure 3.53, circle nr. 1 and figure 3.54). In the same street, some meters above near to beco S. Lourenço (figure 3.53, circle 2; figure 3.54 and figures 3.55 and 3.56), there is a barrier, a constructive wall with staircase and ramp, which obstruct the street to a de-continuity, which invite you to pass through beco Araribá (figure 3.53, arrow nr. 3).

Sector S4, in general, presents a big quantity of beco's without continuity (observe road system of block 45), which limited the possible connection between blocks and roads (case of becos do Osvaldo, do Murilo, José da Horta, do Jesus and others).

**Figure 3.50, 3.51 and 3.52**

The pedreira, the massive hillside

Source: Urbel 1997
Figure 3.49
The Pedreira, the massive hillside
Figure 3.53
Accessibility of sector 4

- Roads type I
  passage in two directions + pedestrian
  width $\geq 6.0$ m; declivity $\leq 25\%$

- Roads type II
  passage in one direction + pedestrian
  $3.5 \leq$ width $< 6.0$ m; declivity $\leq 25\%$

- Roads type III
  critic passage for vehicles + pedestrian
  width $< 3.5$ m; declivity $< 25\%$ or $> 25\%$

- Roads type IV - pedestre
  $1.2 \leq$ width $< 3.4$ m; declivity $> 25\%$

- Roads type V - critic for pedestrian
  width $< 1.2$ m; declivity with steep stairs

Place where picture is taken: figure 3.55 - 3.56

Source: Urbel 1997
Figure 3.54
Accessibility of sector 4

- Obstruction points and/ or discontinuity
- Terrible accessibility

Source: Urbel 1997

Figures previous page
A view of the same corner with physical obstruction (white wall)

Figure 3.55  LEFT
A view of the corner from beco São Lourenço

Figure 3.56  RIGHT
A view of the corner from Rua Araribá

Source: vd Kamp
There are cases like in Sector 1, becos do Bento (figure 3.58, arrow nr. 1) and Arminda Alves (arrow nr. 2), where previously the connection was made of two roads of important access, rua Carmo do Rio Claro (arrow nr. 3) and rua Araribá (arrow nr. 4), and nowadays the alley was invaded by dwellings, blocking the connection completely (figure 3.59).

The branch of a road system of small accesses is connected to a high rate of population density, to verticalizing, to hills, to precarious conditions of infrastructure and the narrow streets, which complicate the consolidation of inhabitable spaces in acceptable technical levels, by generating the high rate of unhealthy and the impossibility to regulate the ground on juristic way, divided in minimal and precarious public and private space.

The barriers generate a break in the continuity of the local physical space, but they do not create a de-continuity of the physical space as a whole. The connections of sectors should be stimulated by finding new accesses before it will happen that there are different detachments in the eternal area of the Pedreira.

**Figure 3.57**
An example of declivity, precarious conditions of infrastructure and narrow streets

Source: vd Kamp
Figure 3.58
Accessibility of sector 1

- **R**oads type I
  - passage in two directions + pedestrian
  - width $\geq 6.0$ m; declivity $\leq 25\%$

- **R**oads type II - passage in one direction + pedestrian
  - $3.5 \leq$ width $\leq 6.0$ m; declivity $\leq 25\%$

- **R**oads type III - critic passage for vehicles + pedestrian
  - width $< 3.5$ m; declivity $< 25\%$ or $> 25\%$

- **R**oads type IV - pedestre
  - $1.2 \leq$ width $\leq 3.4$ m; declivity $> 25\%$

- **R**oads type V - critic for pedestrian
  - width $< 1.2$ m; declivity with steep stairs

Source: Urbel 1997
**Figure 3.59**
Accessibility of sector 1

- **Obstruction points and/or discontinuity**
- **Terrible accessibility**

Source: Urbel 1997
3.3.5 Critical zones of risk and un-healthiness

There are houses which can remain in the Pedreira, without the need of interventions (areas where has been worked underground, which decreased the hills with a declivity more then 47%) and houses which are going to be removed, since there is no possibility and/ or feasibility to work on the area (figure 3.62).

They were identified in the settlement which, by physical conditions (declivity, geomorphology) and/ or by the results of disorganized conditions of the occupation and by the precarious installed infrastructure, were considered unhealthy from sanitary viewpoint.

Figure 3.63 brings a morphological analysis of the Pedreira, which contains the number of declivity, the structure of relief and the main lines of drainage.

Despite of the daily collection of trash in the main streets, the interior of the quadras is constantly accumulated with trash. The packaging of the trash is inadequate, therefore the concentration points remain dirty, even after collection and it demands the use of spades for cleaning.

Figure 3.60 and 3.61
The unhealthiness of the Pedreira

Source: vd Kamp
Figure 3.62
Risk and declivity

Source: Urbel 1997
Figure 3.63
The morphology of the space

Legenda
- declivity higher than 47%
- declivity between 30% and 47%
- declivity between 25 and 30%
- declivity between 15 and 25
- declivity lower than 15%

— drainage direction

pedreira: barrier/ difference in height

mine of water

mass of vegetation

 piping

Source: Urbel 1997
3.3.6 Consolidations and no-consolidations

The area of Pedreira Prado Lopes is one of the biggest densities in towns of Belo Horizonte (BH) (figure 3.65). The average of the housing density in shanty towns of BH is 290.73 hab/ha, where the average in the Pedreira is around the 627 hab/ha\(^1\).

Other complicated factors found in the Pedreira are high rates of declivity in the majority of the blocks, even 50%, and the average of the ‘fração ideal’ (ideal distribution of area) is decreased to lower than 60 m\(^2\) (figure 3.66). ‘Fração ideal’ is the portion of area (square meters) that each building represents in the whole quarter (‘quadra’). So, if in a specific quarter the ‘fração ideal’ is high, this means that the quarter density isn’t so high.

Beyond that, the road system reached a level of regular quality to very bad (figure 3.67). The pattern of paving is divided between the polyhedral and cemented in almost 95% of the slum, leaving only an excerpt on asphalt in the Rua Carmo do Rio Claro, in sector 1, and other small portions of alleys in stairways, rocky outcrop and land. You could say that the slum has a good coverage of completion but this is in bad conversation status. The average size of the vehicle system revolves around the 5.0 meters and the circuit of pedestrians indicates widths and reduced between the 1.0 and 1.5 meters.

---

\(^1\) hab/ha = habitantes/ hectare (Portuguese)
inhabitants/ hectare (English)

---

**Figure 3.64**
Cozy, but heigh densely populated

Source: vd Kamp
Figure 3.65
Housing density

LEGENDA
- LIMITE DA VILA
- SISTEMA VIÁRIO
- PEDREIRA
- 0 a 216 hab/ha
- 217 a 432 hab/ha
- 433 a 675 hab/ha
- 676 a 1000 hab/ha
- 1001 a 1350 hab/ha
- acima 1350 hab/ha

Source: Urbel 1997
Figure 3.66
Ideal distribution of area per quarter

Source: Urbel 1997
Figure 3.67
Pavement of the roads

LEGENDA
- asphalt
- polyhedral
- cemented
- earth
- staircase
- stone/ rock

Source: Urbel 1997
3.3.7 Functional analyses

The Pedreira contains mixed concentrations of uses which can be stimulated, maintained or restricted.

To stimulate:

**Testada da Av. José Bonifácio**: Area with a big potential of commercial use, already utilized by the small enterprising of the Pedreira. Excellent accessibility by the Avenida José Bonifácio (figure 3.68, circle nr. 1).

**The square of the Health Post**: This area presents a big affluence of persons who frequently visit the health centre and negotiate with the outskirts of the plaza. It is also a point of entrance for the higher part of PPL. It stimulates the existing commercial uses and it makes the accessibility and urban qualification of the space better (circle nr. 2).

**Rua João Carvalhais with corner of Beco São Domingos**: This corner is a small commercial nucleus that should be maintained and diversified in the sense of a better service for the population who lives in the under sector of PPL (circle nr. 3).

**Beginning of Rua Guapé (corner of Rua Pedro Lessa)**: This passage possesses a big circulation of persons because of the entrance to a higher part of PPL. It would be better to control the stimulus of the commercial use, only in the corner of Rua Pedro Lessa (circle nr. 4).

To maintain:

**Rua Serra Negra between the becos São Lourenço and Rua Escravo Isidoro**: Already in the limit of the formal city, this area should be maintained with its present commercial potential (circle nr. 5).

**Beginning of the Rua Carmo do Rio Claro (corner of the R. Pedro Lessa)**: This passage should suffer an urban-requalification especially in patron of the road system.

There is no stimulation needed of the commercial use, because it is sufficient. It’s better to revitalize and diversify the different kind of commercial establishments in this corner (circle nr. 6).

To restrict:

Only the demarcated areas of imminent risk are restricted to any kind of building.
Figure 3.68
Uses

LEGENDA
- red: residential
- blue: commerce
- green: service/facility
- light yellow: public service use
- pink: industry
- orange: mix 1 (r + c)
- purple: mix 1 + industry
- yellow: mix 2 (r + s)
- black: mix 3 (r + i)
- gray: without use

Source: Urbel 1997
Theoretical Approach

4.1 Introduction
To find the answer on the research question, is to understand the city of the 21st century. To bring two different kind of ‘cities’ together, is to know how the city nowadays works. There are a lot of architects and planners who analyzed cities, to make theories and proposals for creating better cities. That’s why the theory is so important in this case, where the urban thinking has to change.
The application of the theory started with the notion that one excluded urban-area must be connected with the included world. The connection could be seen as an integration process, with the inhabitants as targets. The inhabitants of different life-areas must be brought into one area to start a process of integration between those people. The theory brought the knowledge which was needed to find specific answers on what to find, where to find and how to fill in a specific area to start the integration process.
This chapter contains four sections. Next section (4.2) will explain the different kind of spaces and which space will contribute to an integration process. Section 4.3, after determining the space, will discuss the phenomenon of place. This phenomenon can be divided in three subsections. In the first subsection (4.3.1) the place of interaction should be found and therefore the space and context should be analyzed, because space in relation to architecture is an urban question. The question is where to find the best place. The second subsection (4.3.2) describes the sensation of place. It describes the way of using a place. It’s to know how to present and use the place by different users. The third subsection (4.3.3) treats the spirit of place. It explains why human beings would like to identify and orientate a certain place. This subsection formulates what a place needs to colonize users.
Section 4.4 is the conclusion, which gives a succinct answer on how to integrate the noncity into the formal city. This answer will be based on the theory which is used and formulates the foregoing subsections into a compact urban proposal.

4.2 Space: private, public and collective space
The individual and the collective don’t meet each other anymore through the traditional relations, like the church, society, café and in the modern time they have to appear to each other in another way. This is not possible without the platform of publicity.
The public domain is the stage on which people appear. Without a certain community every individual stays in his own individuality, in his own, pure, personal experience. People remain individuals, if their plurality can not be heard of seen.

The spaces
First, we have to discuss the term ‘public domain’ in relation to public space. Between those two terms, there is a strong link. But
they do not coincide. The idea of the public domain alights above the concrete public space. The public space itself can be defined in different ways. The first meaning is possibly one which contains a space which is accessible for everyone. The streets and squares in a city, which links the private domains with each other. Like de Solá-Morales says: “To give public urban character to the buildings and places that without it would be only private, that is the function of the public spaces; to urbanize the private: that is to say, to turn it part of the public” (Solá-Morales 1992: p. 2).

The private domain is not accessible for everyone, it’s for specific users. In this sense, public and private are a dichotomy. One can not exist without the other. Public and private often indicates a question of property. You can say, being the private is a private property and the public space a property of the collective, of the society in its whole.

Furthermore, the terms public and private contains the use of space and thereby the meaning of this space. Public space is, principally, the place where public living takes place, like private living takes place in the private space. Privacy is something what remains inside. Private space is therefore the atmosphere of the intimate, of the private. However, some things of our live belong to the public, which is not possible without publicity. For example the political living. Without a debate what can be conducted in the public, only a dictatorship can exist, no democracy. The public space is an essential aspect of the publicity. The public space is the place where the individual shows himself to the world and where the world appears to the individual.

Two comments concerning these descriptions of public versus private. It should be clear that these descriptions do not always coincide. A space which is collective property, can be private in use. Vice versa, some private spaces are public in use and meaning, like shopping malls and stadiums. Manuel de Solá-Morales says that the durability of both categories states under pressure. It would be better for the future of the city to focus on a ‘interval’: the collective space. He says: “The categorie of the private and the public are diluted to us, they serve already less. Also certain by excellence public spaces as the Jaume Square or the Ramblas (figure 4.1 – 4.4), fully public for their significance and domain, become collective by the appropriation that of them different individuals do freely” (Solá-Morales 1992: p. 3). Public living takes place more and more in the collective places, private buildings contributes to the structure of a ‘good city’.

As already is noted, the collective space is much more and much less than public space. But what is collective space exactly? How can collective space be described? De Solá-Morales described the collective space as follows: “The morphological, urban, architectural and civil wealth of a city is that of its collective spaces, that of all the places where the collective life develops, it is represented and is remembered” (Sola-Morales 1992: p. 3).

It is not always clear what is public and what is private. But it is not possible to talk in binary terms about those two terms. Public and private are a more continuum in Hertzberger’s words: “houses and streets are complementary” (Hertzberger 1991: p. 254). And Hertzberger continues: “If the houses are private domains, then the street is the public domain. Paying equal attention to housing and street alike means treating the street not merely as the residual space between housing blocks, but rather as a fundamentally complementary element, spatially organized with just as much care so that a situation is created in which the street can serve
Figure 4.1 - 4.4
The Ramblas, Barcelona, Spain

Source: Internet
more purposes besides motorized traffic. If the street as a collection of building blocks is basically the expression of the plurality of individual, mostly private, components, the sequence of streets and squares as a whole potentially constitutes the space where a dialogue between inhabitants can take place. The street was, originally, the space for actions, revolutions, celebrations, and throughout history you can follow from one period to the next how architects designed the public space on behalf of the community which they in fact served. So this is a plea for more emphasis on the enhancement of the public domain in order that it might better serve both to nurture and to reflect life in the community. With respect to every urban space we should ask ourselves how it functions: for whom, by whom and for what purpose. Are we merely impressed by its sound proportions or does it perhaps also serve to stimulate improved relations between people” (Hertzberger 1991: p. 254).

Hertzberger sets out some interesting aspects of the public space. The public space must contain the dialogue between inhabitants and to reflect life in the community. De Solá-Morales is also talking about the expression of the agreed values of a coherent society. He reflects it on the public by saying that the condition of the public as the excellent form of the social.

**Conclusion**

The collective space is the new spot of exchange. It is the undefined spaces where the public form of the city is the commitment of the game. Undefined, because private and public are diluted to us, they serve already less. The Jaume Square or the Ramblas are perfect examples of excellence public spaces and it becomes collective spaces through the appropriation of different individuals who do/ move freely. The collective space is the space where the collective life develops and where a dialogue between inhabitants can take place. The collective space is a plea for more emphasis on the enhancement of the public domain in order to nurture and to reflect life in the community. Besides its proportions, it has to serve and to stimulate improved relations between people.

4.3 The phenomenon of place

The question is how to integrate the noncity with the formal city. It already introduced the collective space, which is previously discussed. The next question is to find out whereof this collective space must be exist. What should be the conditions to create a collective space? This leads to the term ‘genius loci’. The introduction of the ‘genius loci’ as a architectural theoretical concept is due to the Norwegian architect/ author Christian Norberg-Schulz (1926–2000). In his book Genius Loci: Towards a Phenomenology of Architecture from 1980 he builds upon the work of thinkers as Edmund Husserl, Gaston Bachelard en Martin Heidegger. Phenomenology is both a philosophical design current in contemporary architecture and a specific field of academic research, based on the physical experience of building materials and their sensory properties (also used by Rossi in 1966). Every place is a space with it’s own character, he suggests in his book (Norberg-Schulz 1980).

Norberg-Schulz explains this phenomenon in three points. First, the phenomenon of place can be seen from the **structure of the place**, the fundamental base of the place (4.3.1). The second is the **sensation of the place**, which describes the way of using a place (4.3.2). And the third is the **spirit of the place**, which gives the place an identity (4.3.3 - Norberg-Schulz 1980).

This clarification of the phenomenon of place will be used in the next description, ‘to know how to give a space it’s own character (phenemonon)’.
4.3.1 Space and context
The background of the articles that I selected for my research, the reference point, is always the city. The problem of space, of public space in relation to architecture, is an urban question. To see what a certain place exactly is, is to know what that place is. And to know, to imagine what place and space is, we must return to the basis, the geography of the city, to the context of a specific urban area.

One of the most important architects who related context to architecture is Aldo Rossi. Also Rossi, an Italian architect and designer, accomplished the unusual feat of achieving international recognition in three distinct areas: theory, drawing, and architecture. He became extremely influential in the late 1970s and 1980s as his body of built work expanded and for his theories promoted in his books The Architecture of the City.

Rossi has always been an apostle of the imagination. Imagination towards the historical background of the city. Aldo Rossi wants to go back to the geography, history, topology (all layers) of the city, instead of following modernity or naive functionality. Rossi argues that the New technological systems can not be the urban future (Rossi 1976). Conform Rossi the technique is striving towards efficiency, which eliminates the surplus. But maybe this surplus is essential. Technology refers only to itself and can only be a standard. De city needs, however, a political and cultural perspective, which doesn't refer to itself, but alights above itself. Rossi quotes Saverio Vertone in his article in the Turin magazine ‘Nuova Società’ in November 1975. The beauty of the city, Vertone says, is basically and unknown. But is it, a person, a thing, a city, possible to be beautiful on its own if it indicates to itself or its own, personal use? Isn’t it the beauty of the place where several contents and meanings meet each other?

Instead of the technique, Rossi puts the imagination forward. Only through imagination we can define and influence the future of the city, not by using the newest technological systems (Rossi 1976).

To know what a place is through imagination, we have to go back to the context of the city, the geography. The philosopher Heidegger goes deeper into this with his statement: “spaces receive their being from locations and not from space” (Norberg-Schulz 1980: p. 12). Norberg - Schulz, the one who quoted Heidegger, says it in his own words: “In general any enclosure becomes manifest as a ‘figure’ in relation to the extended ground of the landscape” (Norberg-Schulz 1980: p. 12). If a space doesn’t have a relationship with his extended ground, it is losing his identity. Then it is corrupted.

And this all happens between earth and sky, between the inside and outside world. Norberg-Schulz says that the inside–outside relation contains a varying degree of extension and enclosure. He translates extension with a varied, but a continuous extension, where the settlements are enclosed entities. Landscape and settlements have a figure–ground relationship (Norberg-Schulz 1980: p. 14). Let's zoom in into the terms landscape and settlements. There are a lot interpretations possible, but Heidegger uses concrete terms. A landscape can be seen as the main designation of natural places. Within the landscape there are subordinate places and natural things, such as trees. These things contains the meaning of the natural environmental. Settlements are the man-made parts of the environment. settlements can be houses, farms, villages and towns, but also paths which connect the settlements (Norberg-Schulz 1980: p. 15).

In his writings Rossi criticized the lack of understanding of the city in the architectural practice. He argued that a city must be studied
and valued as something constructed over time; of particular interest are urban artefacts, which have permanence; the primary elements that withstand the passage of time. Man-made things are, conform Rossi, *artefacts*. Throughout his book, *Architecture of the City*, he enrols his argumentation about the urban artefact. Rossi distinguishes urban artefacts between permanent and non-permanent elements. Permanent elements are those of primary importance like monuments, squares, and dwelling area, whereas the individual dwellings are described as non permanent. Of central importance for the city are the elements which are of dominant nature: primary elements. They are supposed to serve as nuclei of aggregation and characterize the city by participating in its evolution over time in a permanent way. Many elements can be described as primary: That is why not only ‘fixed activities’ like stores, public buildings, commercial buildings, universities, hospitals, etc belong to the category of primary elements, so do the plan, streets, monuments and important events. In general Rossi is pointing on those elements, which have an impact on the process of urbanization and spatial transformation of the city. Here he distinguishes between primary elements having a ‘propelling’ or a ‘pathological’ effect on the city. The propelling element is still tight to the vitality of the city and is able to adapt to possible changes, while a pathological element is detached from the actuality and hinders urban development (Rossi 1982).

In order to understand Rossi’s argumentation it is important to notice, that the configuration of the city is not limited to its material dimension. He explains that the importance of primary elements is disconnected to their function, they posses a value on their own which will remain throughout possible functional changes. That is why their purpose goes beyond a functional dimension.

In Rossi’s opinion the study of the city should be accompanied by historical research. He introduces the ‘historical method’ looking at the city as a man made object containing traces of time. He recommends to not limiting the research on the classical archaeological view, seeing the artefacts as historical text to read in, but to add information contained in the collective memory of the city (Rossi 1982).

Since the Second World War, there is in reaction on modernism all kind of studies and manifests which plead in for local and regional characteristics as a source for architectural concepts and like a motor for the development of that same place.

In the last decennia is a thought like that placed into the front through Alexander Tzonis and Liliane Lefaivre, and supported by Kenneth Frampton, in their plea for a ‘critical regionalism’. They

---

**Figure 4.5**

Scheme of Rossi’s Architecture of the City

---
coined the term ‘Critical Regionalism’. They introduced this term, because the reality they have known no longer existed. In their article ‘Why critical regionalism today’ they explain: “This new regionalism shares a commitment to ‘placeness’ and a use of regional design elements as a means of confronting a universalist order of architecture that is seen as dominating or oppressive” (Tzonis and Lefaivre 1965: p. 486). It is against the lack of meaning in Modern Architecture, the modern and technological systems where Rossi was proclaiming about. It is critical to regionalism and to products of globalization. But it doesn’t exclude them.

The objective is to provide an urban architecture that would reflect the local creative potential. This objective is the same as what Heidegger, Norberg-Schulz and Rossi says in their own words. Any enclosure must become a manifest as a ‘figure’ in relation to the extended ground of the landscape, otherwise the relationship is corrupted.

**Conclusion**

To create a public domain, it is the game to know what that specific space means. If a certain space doesn’t have a relationship with his extended ground, it is losing his identity. The extended ground is made of a landscape with subordinate places and natural things. These things are artefacts and contains the meaning of the natural environment. Artefacts are the departure point of the application of the city to the contemporary condition. An operation which has to take place in periphery of the city too. It’s obvious that, with the accent on the existed, the artefacts and the monuments, the geography is important for the future of the city. And besides the geography, the context contains local, creative potential. And to reflect that is also using the context as a basis for a well created public space.

**4.3.2 The sensation of place**

Besides the questions what kind of place and where should the location be placed, the next question is how to use a place and how to present a place to users. Should it totally be programmed or should it be more open for applying the fantasy of the users? However, the place must have the attractive power to embrace people of different kind of origin.

**Space forms our live**

The French Sociologist Marc Augé assumed that many places are programmed in a way that we don’t have to think anymore in what we do. They are programmed in such a way, that we can buy a lot, get in and get out as quick as possible, to pass the incheckpoints in the most efficient way, and so on (Augé 1995). All the ingredients of the street scene are geared to a clear and standardized use. This needs a reaction, according to Geuze, a landscape architect from Holland: “City dwellers are no longer pitiful victims, but they have become intelligent, well-equipped and endlessly inquisitive explorers” (Geuze 2000: p. 256). City dwellers impose their own fantasy on the environment. Geuze: “The annexation of the Maasvlakte (Rotterdam, figure 4.6 – 4.9) demonstrates the changed perception of the city and of nature” (Geuze 2000: p. 255). People don’t want pre-programmed facilities, but anarchy, exploration, self-expression. Geuze proclaims to create a space where people can colonize in their turn and the new place must provoke, disorient and expose preconceived behaviour. For an example of all this, he uses several aspects of his design (redevelopment) of the Schouwburgsquare in Rotterdam (figure 4.10). The space and the experience of the space are a conscious step, a choice. Besides it is a podium, it lend itself to flexible use. According to Geuze: “The square provokes the city dweller and demands an active attitude. It gives city dwellers
Figure 4.6 - 4.9
The Maasvlakte, Rotterdam, The Netherlands
The annexation of the Maasvlakte

Source: Internet
back their fantasy and identity” (Geuze 2000: p. 256).

Geuze designed the Schouwburgsquare in Rotterdam with the intention to provoke an active attitude by the people. But there is one problem: the square doesn’t provoke and doesn’t demands an active attitude, because there is nothing to be provoked with. The square doesn’t have the environment for self-expression (figure 4.11 - 4.16).

The square is too big, empty, without attributes to explore with. There are some attributes, like the big, red lamps, movable by using a panel. But even this doesn’t satisfy, because moving the lamps doesn’t go very fast. Only the borders of the square have the attributes to enjoy and answers the question of bringing people together. But the border of the square is a very little part of the total. The experience of the space is the trip from one side to the other side of the square. It isn’t a conscious step, but one conscious trip to leave the square as fast as possible. The square doesn’t give us what we would like to have by visiting such a place like this.

The Schouwburgsquare is one example, but there are more examples. An other example is the Mercatorsquare in Amsterdam. It contains three parts, one with some urban furniture, one part without any furniture and one part with many furniture. The last part
Figure 4.11 - 4.16
The Schouwburgsquare; nowadays

Source: vd Kamp
provokes people to sit, talk and enjoy (figure 4.17 - 4.19).

From the examples of the Schouwburgsquare in Rotterdam and the Mercatorsquare in Amsterdam can be concluded that it is important how the place is explored and how we can express our selves in a specific place. It’s important for our expression to the outside world, what a place gives us. The French philosopher Foucault expressed this in other words: “Our epoch is one in which space takes for us the form of relations among sites” (Foucault 1987: p. 26). We do not live inside a void, we live inside a set of relations that delineates sites which are irreducible to one another and absolutely not super imposable on one another. The environment of the city makes the man a city-dweller, ruled by rules of social traffic (Foucault 1987). There is a strong connection between place, city-dweller and society. The sensation of the place is important for our expression to the outside world, but that outside world determines in how, in what kind of way, we express our selves. In his article Foucault describes some examples of this reality. The first type is the utopia. Utopia are sites without a real place. Foucault described the utopia as follow: “They are sites that have a general relation of direct or inverted analogy with the real space of Society. They present society itself in a perfected form, or else society turned upside down, but in any case these utopias are fundamentally unreal spaces” (Foucault 1987: p. 26). But, Foucault continues, “there are also real places, places that do exist and that are formed in the very founding of society, which are something like counter-sites, a kind of effectively enacted utopia in which the real sites all the other real sites that can be found within the culture, are simultaneously represented, contested and inverted” (Foucault 1987: p. 26). These places are called ‘heterotopias’. That is the second type. Foucault describes this phenomenon by using six principles. Not all the six principles are useful now, so I would like to point out some characteristics.

A heterotopia obviously take varied forms and there is absolutely no universal form. For example the cemetery. A heterotopia can make an existing heterotopia function in a very different fashion. The cemetery is placed in the border of the city and constitutes the other city, where each family possesses its dark resting place.

It can also juxtapose in one single real place, several spaces. For example the theatre, which brings on stage, one after the other, a whole series of places that are foreign to one another.

The heterotopia always presuppose a system of opening and closing that both isolates them and makes them penetrable. In general, the heterotopia is not freely accessible like a public place. For example the sauna where the purification appears to be purely hygienic, as in Scandinavian saunas (Foucault 1987: p. 27).

A heterotopia is a place within a place. Places which can be entered before a certain action is performed. You have to do something, before entering the place. You may say that we need places, city-dwellers, live in a world where spaces rule our life.

Conclusion
The street scene is geared to a clear and standarized use. People are almost robots, hypnotised by the pre-programme routes. This needs a reaction, because city dwellers are no longer pitiful victims. They have become intelligent and well-equipped explorers. People don’t want pre-programmed facilities, but anarchy, exploration, self-expression. The space must be created in such a way, that people can colonize in their turn and must provoke, disorient and expose preconceived behaviour.

But this doesn’t means that a place contains nothing, like the Schouwbrugsquare presents. This subsection is called ‘the sensation of the place’. The sensation is an attractive power to motivate people to do something or an attractive power to bring people together.
This can be done in a way like the Mercator square (the part with urban furniture) in Amsterdam, not like the Schouwburg square. A place must provoke and attract people. And this all happens in a more public ambiance. Within this, we enter a set of relations among sites. That is where our epoch is connected with. This means that the environment of the city makes the man a city-dweller ruled by rules of social traffic. A place rules our life.

4.3.3 The spirit of place

It’s important to create conditions for a collective space, discussed in section 4.2, where people feel themselves comfortable, or in terms of this subsection ‘feel at home’. Otherwise the collective space isn’t a space of the collective, but only for some individuals. So what brings people together and what does a place need? A place needs something mysterious, which is an very old term; genius loci, which means the spirit of a place. How must a place translate this genius loci into something physical to bring people together?

Orientation and identification

The term ‘genius loci’ is introduced and Aldo Rossi used it yet in 1966. Aldo Rossi described urban artefacts (4.3.1) as man-made things (Rossi 1982). The singularity of an urban artefact is determined by its ‘locus’, the unique combination of place, event and form. As the urban artefact does not have a particular scale, the locus can be limited to a street corner or as well be a whole city. Between the artefact and the location consists a singular and universal relationship which probably arose through a particular event. The identity of the locus therefore is not of functional importance, it is determined by the topographical singularity, by memory, form and event. The form of the artefact materializes the particularities of the locus and manifests it for further generations. Rossi clearly differentiates between the concepts of locus and context. Whereas the concept of locus includes immaterial contents, the concept of context is limited to look at the city as scenery and concentrates purely on functional purposes (Rossi 1982).

Genius Loci is a Roman concept. Norberg-Schulz explains it as follow: “According to ancient Roman belief every ‘independent’ being has its genius, its guardian spirit. This spirit gives life to people and places, accompanies them from birth to death and determines their character or essence. The genius thus denotes what a thing is, or what it wants to be, to use a word of Louis Kahn” (Norberg-Schulz 1980: p. 18). To understand this more fully, Norberg-Schulz introduces the two psychological functions, called orientation and identification, combinuted with the words space and character. “To gain an existential foothold man has to be able to orientate himself; he has to know where he is. But he also has to identify himself with the environment; he has to know how he is a certain place” (Norberg-Schulz 1980: p. 19). Norberg-Schulz refers to Kevin Lynch: “whose concept of node, path and district denote the basic spatial structures which are the object’s of man’s orientation” (Norberg-Schulz 1980: p. 19). The relationship of these elements creates an environmental image. A good environmental image gives a possessor an important sense of emotional security. Every country, city, developed systems of orientation. If a system is weak, the image becomes difficult and a possessor gets lost. Identification and orientation are aspects of one relationship, they create one totality. It is possible to orientate, without identification and identification is possible without orientation. But, “true belonging presupposes that both psychological functions are fully developed” (Norberg-Schulz 1980: p. 20).
Identification means that a human has to become friends with a particular environment. He has to identify with man-made things, such as streets and houses. For example a child gets acquainted with the environment in which he lives and develops a schemata which determine all future experiences. The identity of a person is defined in terms of the developed schemata, because they determine the world which is accessible. That’s why an inhabitant of New York says: ‘I am a New Yorker’ or someone from Rome says: ‘I am a Roman’. Norberg-Schulz refers to Heidegger, who says that we are ‘things’. Besides a spatial structure where we can orientate ourselves, we have to identify with the environment, with concrete objects of identification. According to Norberg-Schulz: “Human identity presupposes the identity of place” and he continues by saying: “Identification and orientation are primary aspects of man’s being-in-the-world. Whereas identification is the basis for man’s sense of belonging, orientation is the function which enables him to be that homo viator, which is part of his nature” (Norberg-Schulz 1980: p. 22). Herman Hertzberger continues by adding the term responsibility, care and love. If there are more suitable areas for specific uses, there will be more appropriation. When users are more responsible for a specific area, there will be more care and love for that. In this way, users become inhabitants of a specific place. It is to form a public space. When it is suitable, the local community feels responsibility. One member of the community contribute in his or her own way and relate to and identify him- or herself with the environment (Hertzberger 1991).

In subsection 4.3.2 I have quoted the French Sociologist Marc Augé. He talked about pre-program facilities, but also about ‘placelessness’. And placeness has everything to do with orientation and identification. Augé assumed that a larger part of our live performs in ‘non-places’. He interpret with this analysis to places who are not placed into the urban fabric and therefore places without an history. These places are places without identity. (Augé 1995). That one who enlarge the term placeness are Tzonis and Lefaivre, already introduced in 4.3.1 with the term Critical Regionalism. Critical Regionalism is using regional design elements against placeness. It supports place-defining elements and incorporates them strangely rather than familiarly. It incorporates strangely to support, physical or conceptual, the human contact and community. It makes a place sense which is in still contrast with placeness, what dazzled a person or even a group. It tries to forge the identity and it is pricking the conscious. It achieves a consciously, critical partaking in the universal, which develops man (Tzonis and Lefaivre 1965). And this approach applies the man as a free person. Identity and orientation must bring the man in a free position. In the 50th years, the philosopher Martin Heidegger has given a lecture about ‘Building, Dwelling, Thinking’. In this lecture he was asked to give his view upon the housesneed which Germany had attained after the end of the Second World War. But, Heidegger said, it isn’t the problem that there is not enough houses. The real problem is, that we can not dwell anymore. To dwell is totally abandoned with the historical context, totally abandoned with the real essence of dwelling. The word to ‘dwell’ has several connotations. Firstly it ought to be mentioned that ‘dwell’ is derived from the Old Norse dvelja, which meant to linger or remain. Analogously Heidegger related the German ‘wohnen’ to ‘bleiben’ and ‘sich aufhalten’. Furthermore he points out that the Gothic wunian meant ‘to be at peace’, ‘to remain in peace’. The German word for Peace, Friede, means to be free, that is, protected from harm and danger. This protection is achieved by means of an Umfriedung or enclosure. ‘Friede’ is also related to zufrieden (content), Freund (friend) and the Gothic frijon (love). Heidegger uses these linguistics relationship to show that dwelling means to be at peace in a protected place. The German word for dwelling, Wohnung, derives from das Gewohnte, which means what is known or habitual. ‘Habit’ and ‘habitat’ show an analogous relationship. In other words, man knows what has become accessible to him through dwelling. Thus he points out that the Old English and High German word for ‘building’, buan, meant to dwell and that
it is intimately related to the verb to be. The old word bauen, to which the bin belongs, answers: ich bin, du bist, mean: I dwell, you dwell. The way in which you are and I am, the manner in which we humans are on earth, is buan, dwelling. Dwelling means belonging to a concrete place. To be free presupposes belonging (Heidegger 1986).

Men dwells when he is able to concretize the world in buildings and things. Architecture helps the man to dwell. Architecture comes into being when a total environment is made visible. In general, this means to concretize the genius loci. This is done by means of buildings which gather the properties of the place and bring them close to man. Norberg-Schulz concludes: “And the man is an integral part of the environment and that it can only lead to human alienation and environmental disruption if he forgets that. To belong to a place means to have an existential foothold, in a concrete everyday sense” (Norberg-Schulz 1980: p. 23).

Conclusion

The spirit of a place gives life to people and places, accompanies them from birth to death and determines their character or essence. The ‘genius loci’ denotes what a thing is, or what it wants to be. And ‘to be’ contents the terms ‘orientation’ and ‘identification’. To gain an existential foothold man has to be able to orientate himself; he has to know where he is. But he also has to identify himself with the environment; he has to know how he is a certain place. The concept of node, path and district denotes the basic spatial structures which are the object’s of man’s orientation. The relationship of these elements creates an environmental image. A good environmental image gives a passer an important sense of emotional security, otherwise he gets lost.

Identification and orientation are aspects of one relationship, they create one totality. It is possible to orientate, without identification. And identification is possible without orientation. But, true belonging presupposes that both psychological functions are fully developed. ‘To be’ is intimately related to the High German word for ‘building’, buan, which meant ‘to dwell’. Physically translated it means that human identity presupposes the identity of place and this can be achieved by making ‘suitable’ places. Suitable places, where people can identify with, creates responsibility, care and love. The place must have the same spirit as the people have, only then we can dwell a place.
4.4 Conclusion

This theoretical research is done because of the notion that one excluded urban-area must be connected with the included world. This conclusion gives an answer on an urban-level.

To include an excluded urban-area (informal city) with the formal city is bringing different kind op people together. Because the public domain is the stage on which people appear, the connection must be found in the public domain. In section 4.2 is the collective space introduced. The collective space is a new domain of exchange. Collective urban space is a complex social phenomenon that goes beyond the traditional notion of the public by incorporating private elements. It is the undefined spaces where the public form of the city is the commitment of the game. Undefined, because private and public are diluted to us, they serve already less. The Ramblas is a well known example of an excellence public space which becomes collective through the appropriation of different individuals who do/ move freely. The collective space is the space where the collective life develops and where a dialogue between inhabitants can take place. This space is a plea for more emphasis on the enhancement of the public domain in order to nurture and to reflect life in the community. It has to serve and to stimulate improved relations between people.

The collective space can be seen as a tool in the integration process between the informal city (excluded urban-area) and the formal city (included world). The next quest was to find out whereof this collective space must be exist. The objective was to create a collective space with it's own character. Norberg-Schulz says that every place is a space with it's own character and he explains this in three points. The structure (4.3.1), the sensation (4.3.2) and the spirit of the place (4.3.3). In section 4.3 this clarification of the phenomenon of place is used.

The structure of the place will primarily be formed by the structure of the context in which the place is situated. It’s important for the collective space to have a relationship with the context. If the collective space doesn’t have a relationship with his extended ground, it’s losing its identity. The extended ground is made of a landscape with subordinate places and natural things. These things are artefacts and contains the meaning of the natural environment. Artefacts are the departure point of the application of the city to the contemporary condition. An operation which has to take place in periphery of the city too. It’s obvious that, with the accent on the existed, the artefacts and the monuments, the geography is important for the future of the city. And besides the geography, the context contains local, creative potential. And to reflect that is also using the context as a basis for a well created collective space.

The collective space must have a relationship with its extended ground. But the collective space must also have a relationship with its users. The collective space must have the power to attract people so they will visit the collective space. The place must contain sensation. But the street scene is geared to a clear and standarized use. People are almost robots, hypnotised by the pre-programmed routes. Geuze proclaims the need of a reaction, because city dwellers are no longer pitiful victims. They have become intelligent and well-equipped explorers. People don’t want pre-programmed facilities, but anarchy, exploration, self-expression. The space must be created in such a way, that people can colonize in their turn and must provoke, disorient and expose preconceived behaviour. The two squares in Amsterdam and Rotterdam are two perfect examples that show how a square has to work and how doesn’t. The
Schouwburgsquare in Rotterdam contains nothing, so it doesn’t have the attraction to colonize people. The Mercatorsquare in Amsterdam is divided in three parts; one with some urban furniture, one big part without furniture and one part with many furniture. The last one has the attraction where city-dwellers are waiting for. To have a sensational collective space, is creating a space which is related to its extended ground and reacts on the needs of the users. The collective space is a balance between everything (pre-programmed facilities) and nothing (because well-equipped explorers find their own way).

Besides this completion of the collective space, it also gives some rules. The extended ground of the collective space is placed in a set of relations among sites. Because of its public and private property, the collective space will be ruled by rules of the society with its social traffic, where every city-dweller has to deal with.

The objective of the collective space is to accommodate many people. To achieve this, the collective space must have a relationship with its extended ground and reacts on the needs of the users (as it is discussed above). But besides the point of programming the collective space (the sensation), the space needs also an other important thing. That’s the ‘genius loci’, which means the spirit of a place. The spirit of a place gives life to people and places, accompanies them from birth to death and determines their character or essence. The ‘genius loci’ denotes what a thing is, or what it wants to be. And ‘to be’ contents the terms ‘orientation’ and ‘identification’. The collective space has to gain an existential foothold where man has to be able to orientate himself; he has to know where he is. But he also has to identify himself with the environment of the collective space; he has to know how he is a certain place. Basic spatial structures (node, park and district) are the object’s of people’s orientation. They create an environmental image, which gives a passerby security, without lost feelings. Orientation and identification can be seen separately, but true belonging needs both, fully, developed functions. Because human identity is the identity of the place. The place needs the same spirit as people have, only then we can dwell (‘to be’) a place. So the collective space must have a relation with its extended ground, must reacts on the needs of the users and must be a place where a passer can orientate and identify himself with the environment. Only then the collective space will be fully functioning, otherwise it will be not. And the result will be a space where the collective life develops and where a dialogue between inhabitants can take place and will serve and stimulate improved relations between people.
5 Application

5.1 Introduction
The Pedreira Prado Lopes (Pedreira) needs to be integrated with the formal world, which has all the supplies to survive. To apply the urban-analysis and the theoretical research on the Pedreira Prado Lopes, an answer can be made by means of a proposal. The application is structured conform the described sections of chapter 4. In the first section (5.2) I will anticipate into the collective space, which is determined in the previous chapter (4.2) as a new domain of exchange. The quest is where to find space in the Pedreira to create optimal conditions for making a collective space, where integration is possible of different kind of people. The space will be the Pedreira itself.

The second section (5.3) treats the phenomenon of the collective space. This phenomenon is divided in three subsections. In the first subsection (5.3.1) the answer will be found on the quest where to find the best space to transform it into a collective space. Therefore the Pedreira should be analyzed, which means an analysis of several layers. After determining the place, the sensation of the collective space (5.3.2) will be treated. It describes the way of using that specific place in the Pedreira. It’s to know how to present and use the place by different users; the inhabitants of the Pedreira and the inhabitants of the areas around the Pedreira. The third subsection (5.3.3) will discuss the spirit of the place. It explains why human beings would like to identify and orientate a certain place. This subsection formulates what the collective space in the Pedreira needs to bring people together.

The fourth section (5.4) is the conclusion which gives a succinct answer on how to integrate the Pedreira Prado Lopes (the noncity) into the structure of the city around the Pedreira (the formal city). This answer formulates the foregoing subsections into a compact urban proposal. And this compact urban proposal will be supported by drawings or illustrations to visualize the mentioned proposal.

5.2 Space: private, public and collective space
To integrate the Pedreira with the formal city, the collective space is introduced (section 4.3) as a new domain of exchange. Collective urban space is a complex social phenomenon that goes beyond the traditional notion of the public by incorporating private elements. It is a undefined space, because private and public are diluted to us. The collective urban space can be seen as a space where the collective life develops and where integration is possible, because conversations (communication) between inhabitants can take place.
Figure 5.1
Proposal for integration of the Pedreira with the formal city
To integrate the Pedreira as an informal part of Belo Horizonte (BH) with the formal city, I thought at the beginning of my graduation process about a space between the Pedreira and the centre of the city, because the centre is the perfect example of a formal city. I have illustrated this in my graduation proposal (figure 5.1). The intention was to bring the inhabitants of the Pedreira into a specific area to integrate them with the inhabitants of the surrounding, formal parts of the city. A space which has to be a domain of exchange. But how do people appear to each other nowadays?

By creating a collective space between the city and the Pedreira, the inhabitants of the Pedreira have the possibility to escape their visual prison. But what can they do over there? It is difficult to give an answer on this question, but the more important statement is the humiliated return of the inhabitants to their own place after visiting the collective space. There is a possibility to place them out of their prison (favela), but there isn’t a possibility to place them in a continuing un-isolated place. It’s better to transform a place in the Pedreira into a collective space. Within this, the Pedreira can be transformed into a better place, which creates advantages for many people. Herman Hertzberger describes this in other words, but the objective is the same. According to Hertzberger, the collective space is a plea for more emphasis on the enhancement of the public domain in order to nurture and to reflect life in the community. The collective space constitutes the space where a dialogue between inhabitants can take place (Hertzberger 1991: p. 254). The collective space nurtures the life in the community, what stimulates integration.

Conclusion
To embrace the vulnerable inhabitants of the Pedreira through inhabitants of the surrounded area of the Pedreira is to have a collective space. The collective space is the new spot of exchange, where integration is possible. To have a dialogue between inhabitants and a dialogue between different groups of people, the threshold to meet each other must be very low. To reflect the life of the community in the collective space, it’s important for the inhabitants of the Pedreira to be there as long as possible. Otherwise a dialogue between inhabitants can not take place. And the need to be present in the collective space must be a normal, daily activity. A reason to escape from their vulnerable life. Therefore, it’s important to create conditions for a collective space in the Pedreira itself. Otherwise, if the collective space is somewhere else, the inhabitants of the Pedreira have, daily, an humiliated return to their own place after visiting the collective space. If there are conditions to transform the Pedreira into a collective space is giving is giving them a continuing un-isolated place. Within this, the Pedreira can be transformed into a better place, which creates advantages for many people.

5.3 The phenomenon of place
In the previous chapter the quest is answered in how to integrate the Pedreira with the formal city around the slum. The answer introduced the collective space. To create a situation of developing collective life, the collective place should be situated in the Pedreira, to destroy the isolated feeling of the inhabitants of the Pedreira. The next question is to find out whereof this collective space must exist. In the previous chapter (4.3) I have introduced the theory of Norberg-Schulz. In short, this means that every place is a space with it’s own character.
In the next three subsections I will applicate that theory (three points) with the collective space into the context, the Pedreira. In the first subsection (5.3.1) I will analyse the context, the slum Pedreira, to know how the Pedreira is build up and (through this knowl-
edge) to know where a place can be transformed into a collective space in the Pedreira. The second subsection (5.3.2) discusses the sensation of the place, which can be translated in how to use the collective space in best way. The third subsection (5.3.3) talks about the spirit of the place, which has to give the collective space an identity, it's own character (phenomenon).

5.3.1 Space and context
Space and context must have a relationship with each other, otherwise it's losing it's identity. To give the collective space an identity, it must have a relationship with it's extended ground, the context. To know the extended ground, is to know what the Pedreira is and how it is build up.
To analyse the Pedreira it's important to know where it consists of. Rossi spreads the city out in various layers, equal or more important. The structure of the place (a part of the city) consists of the sum of it parts, where Rossi distinguishes between the physical structure of the city containing all natural and constructed artefacts. Artefacts contain the meaning of the natural environment (see also 4.3.1). Let's combine this with the data of the Pedreira (chapter 3).

Physical context
Subsection 3.3.1 talks about the physical context and, as you can read and see, the Pedreira is an exceptional slum. The Pedreira has a different and similar character with the other favela's in BH. The difference is that the Pedreira is situated in the middle of the centre, where other favela's are almost situated at the border of the city. The similarity is that the Pedreira, despite of its location, is also located on a small mountain like all the other favela's do on bigger mountains outside the city. The small mountain has morphological inequalities (see also figure 3.19 - the morphology of the space). This inequality is the reason for a tremendous separation of levels in this slum.

Between the right and the left side of the Pedreira is a clear height difference visible. Between the left and the right side is an height difference of 45 meters and with the top of the slum 80 meters (see also figure 3.20 - the morphology of the slum with sections). There are two obviously, visible areas in the Pedreira, schematically shown in figure 5.2. Those two levels separate the Pedreira in a higher and a lower part. The Pedreira considered from sectors, means that sector 1 is located in the lower part of the Pedreira (see also figure 3.21 - the sectors). This is a morphological separation of sector 1 with the other sectors. It's important to bring this conclusion into the setting of the collective space in the Pedreira, seen from a social point of view.

Grid
The Pedreira can been seen as an excluded area, because the inhabitants are vulnerable (section 3.2), the Pedreira is considered as a slum (section 3.3) and the surrounded area can not be seen as a slum. But from a traffic point of view, the Pedreira is surrounded by a well accessible grid (figure 5.3 and 5.4). This is a welcome fact given the objective to integrate the inhabitants of the Pedreira with the inhabitants of the surrounded area. There is no barrier to bring the inhabitants of the surrounded area to the border of the Pedreira. But how is it inside the Pedreira? Is there also a good accessibility for the different inhabitants in the Pedreira?
Figure 5.2
Unequality
Figure 5.3
Access - grid

Figure 5.4
A view of the big avenue: Avenida Pres. Antônio Carlos
In the urban analysis of chapter 3, the category of accesses in every sector is analysed (3.3.2). The expectation of the road system in a slum can be regarded as ‘not very good’. Even so in the Pedreira. But, in the Pedreira there are some roads which have an important significance for the circulation, which encourage transit through the Pedreira.

In sector 1 it is Rua Carmo do Rio Claro where the circulation of the vehicles confirms their present use (figure 5.5, arrow nr. 1). In sector 2 it is Rua Guapé, which is a road with a potential of circulation in one direction (arrow nr. 2, the bottom half). Sector 3 contains the continuation of Rua Guapé to Rua Escravo Isidoro. It permits the circulation of vehicles and pedestrians (arrow nr. 2, the upper part). In sector 4 are two main roads of penetration, known Rua Araribá, a passage in one direction (arrow 3) and beco São Lourenço, a passage in one direction, with the possibility for two directions (arrow 4). Sector 5 is not really connected to the Pedreira, because it is separated by Rua Marcazita. It treats itself like a part of the city in the formal city. Therefore, the accessibility of this sector doesn’t have a important significance for the circulation in the Pedreira.

The collective space in the Pedreira should accommodate different people. People from the Pedreira and people from outside the Pedreira, otherwise a dialogue with the formal city can not take place. To bring these people into the collective space, a well presented road system is an important significance. Given figure 5.5, these 4 roads are from an important significance, are well accessible and stimulate the circulation. Therefore, conditions should be create (or found) to transform these 4 roads into collective spaces or close to these 4 roads.

Volumes – artefacts
This slum contains, besides a roads system, volumes or like Rossi says; artefacts. The volumes are buildings and there are a lot of buildings. The Pedreira is a densely populated district, it is even one of the biggest densities in towns of Belo Horizonte (BH). This is not a frightening fact, because this is quite common in slums, where the dilapidated houses are built close to each other. The housing-density (see also figure 3.65 – housing density) in the Pedreira is high. The average of the housing density in shanty towns of BH is 290,73 hab/ha, where the average in the Pedreira is around the 627 hab/ha.

By comparison, the most densely populated municipality in the Netherlands is The Hague, with a density of 5.794 inhabitants per km², which is 5.794 inhabitants per 100 ha. (CBS 2008). The Pedreira has got a housing density which is more than ten times bigger than the municipality The Hague.

The high density in the Pedreira is a complicated factor to find a good place for the collective space. Another complicated factor is the ideal distribution of area per quarter (fração ideal). It is the square meters that each building represents in the whole quarter. So, if in a specific quarter the ‘fração ideal’ is high, this means that the quarter density isn’t so high. In the Pedreira is the average of the ‘fração ideal’ (ideal distribution of area) decreased to lower than 60 m² (see also figure 3.66 – ideal distribution of area per quarter). This average is very low, which means there is not many free space left besides the houses. The spaces that are free are dealing with risk and declivity (see also figure 3.62 – risk and declivity). Especially the ‘pedreira’, which devides the favela in two levels (quadra 24). It is the most visible barrier, which is also a risky area. The longest site of the border of

1 hab/ ha = habitantes/ hectare (Portuguese)
inhabitants/ hectare (English)
Figure 5.5
Important roads
this slope contains a hill of approximately 5 meters high with a geological risk, where occupation by dwellings is not possible. The Pedreira is a slum which is one of the most biggest densities in towns of Belo Horizonte, doesn’t have many free space left and if there is free space left, it has to deal with declivity and risk. The only possibility to give access to interaction and contact between different people is the accessibility of the road system. The only space which has the capacity to accommodate a collective space is the road system which is discussed above.

In the section 4.2 de Sola Morales comes with perfect examples of the collective space; the Jaume Square and the Ramblas (see also figure 4.1 - 4.4 - the Ramblas) in Barcelona, Spain. These spaces are perfect examples of excellence public spaces and especially the Ramblas is located in a street. The similarity with the Pedreira is made quickly.

The road system has the best conditions to present and accomodate a collective space. The benefits are already visible in the Pedreira. The roads are already in use as space where the inhabitants meet each other. The roads are the place to meet each other, because in this way everybody can enjoy and participate in the social atmosphere. Furthermore, and probably the most important one, is that the road system is circulating through the hole slum. To transform some roads into collective spaces is changing the bad image of the Pedreira. Is cleaning the negativity.

To transform the hole road system into a collective space is not reachable. Many roads are alleys, many roads has to deal with declivity and other roads have some obstructions. The urban analyses (3.3) come up with two roads that are the two most important roads of the Pedreira. These roads are well accessible from the ring around the Pedreira, have the proportions for mobility, don’t have a high declivity and those two roads connect different sectors with each other, which stimulates the penetration through the Pedreira. Those two roads are the Rua Guapé to the Escravo Isidoro and the Rua Carmo do Rio Claro. There are more benefits to choose those two roads. The Rua Guapé to the Escravo Isidoro is the main axis of penetration of the sectors 2 and 4 and for the connection between the North and the South part of the Pedreira. The Rua Carmo do Rio Claro is a main axis of penetration of the sector 1, cutting sector 1 in two parts. It permits the connection of Avenida José Bonifácio with Rua Pedro Lessa, which are important roads for circulation. Those two ways are the main axis’s in the Pedreira, centrally situated and accessible for everyone, as well for the inhabitants of the Pedreira as for the inhabitants of the surrounding area’s. Those two main axis’s have to become collective spaces (figure 5.6). Within this, the context will be used and the power of the Pedreira will be shown for everyone.

The two roads reflect the local potential, which is also a critical regionalism, used by Alexander Tzonis and Liliane Lefaivre. The objective to transform these two roads into collective spaces is the same as what Heidegger, Norberg-Schulz and Rossi says in their own words. Any enclosure must becomes a manifest as a ‘figure’ in relation to the extended ground of the landscape, otherwise the relationship is corrupted.

5.3.2 The sensation of place
The two main axis’s in the Pedreira should be transformed in collective spaces. The next quest is to find out how to present the collective space to the users. Should it totally be programmed or should it be more open for applying the fantasy of the user? The guidance
Figure 5.6
Proposed collective spaces in Pedreira
must be the place, which have the attractive power to embrace people of different kind of origin.

Space forms our live
In section 4.3.2 is noticed that it is important how to fill in a public space. Augé assumed that the street scene is geared to a clear and standardized use by pre-programmed facilities. The result is that we have become almost robots, without any reactions on what happens around us. Geuze responds on that by saying that people are no longer pitiful victims, but that we do what we want to do. He uses the Maasvlakte as an example, where people explore and provoke themselves. Simply said, people don’t want pre-programmed facilities anymore. A nice example of his statement is his own design (redevelopment) of the Schouwburgsquare in Rotterdam. The square must provoke and the user must explore the square by itself and demands an active attitude.

I have visited the square and the square is doing nothing with the passers. The square rather reacts to run away. The square contains nothing, so it doesn’t have the attraction to colonize people. So this is one example how the collective space in the Pedreira should not be filled in. On the other hand, I have visited the Mercatorsquare in Amsterdam and it contains three parts; one with some urban furniture, one big part without furniture and one part with many furniture. What I have seen is that the middle part is not used, the first part is used by some persons and the last (third) part is used by many people. The last one has the attraction where city-dwellers are waiting for. From the examples I have used here, I can see that having a sensational collective space, is creating a space which is related to its extended ground and reacts on the needs of the users. The collective space is a balance between everything (pre-programmed facilities) and nothing (because well-equipped explorers find their own way).

Related to the slum Pedreira, it is important for the expression of the inhabitants of the Pedreira and the inhabitants of the surrounded area what the Pedreira gives them and more important, what the collective space in the Pedreira gives them.
One of the first things is watching what the collective spaces have to offer. The proposed axis’s as collective spaces contains only houses and a bad pavement. Only the axis of Rua Guapé to the Escravo Isidoro contains a square (figure 5.7, black circle). This square brings only some more space with it, to play and to sit with each other. Summarized, these two axis’s add nothing special, which could be important for the expression of the inhabitants in these collective spaces.

Watching to the equipment of the Pedreira and the area’s around it, there can be seen some more interesting things (see also figure 3.68 – uses). There are many little shops situated at the border of the Pedreira. Given the fact that the grid around the Pedreira is perfect accessible (5.3.1 – grid), it is not a strange appearance that many shops are placed at this grid. It is a logical consequence from the fact that the Pedreira is an excluded area, in many faces.
To give an answer on this, there must be more equipments (uses) in the Pedreira than is present nowadays. It is like Foucault expressed: “Our epoch is one in which space takes for us the form of relations among sites” (Foucault 1987: p. 26). If the space Pedreira doesn’t give something to form relations, people are going to other spaces to create relations. To create collective spaces in the Pedreira, it’s important to know what they need, to give people something to form their relations. According to this, it is necessary to have the same equipments, as they exist at the borders of the Pedreira. To divide, or create similar shops is retaining existed and creating new relations for the inhabitants in and outside the Pedreira. The award of these shops can be seen in figure 5.8, where in
Figure 5.7
The square

SÃO CRISTÓVÃO
Figure 5.8
Future uses
the collective space is placed many shops. Red is showing the axis’s, transformed in collective spaces, the blue axis is a street which has the characteristics of a collective space nowadays, due the present of many uses (as already is noted: figure 3.68 – uses). The frequency of the shops must be related to the importance of the expression of the inhabitants. The street must not be geared to a clear and standardized use. People must explore themselves and want to visit the collective spaces.

5.3.3 The spirit of place
The two most important roads of the Pedreira can be transformed into collective spaces by representing uses, like shops, that bring people (inhabitants and non-resident citizens of the Pedreira) from outside to the inland of the Pedreira. The collective spaces achieve this by having a strong relationship with the Pedreira itselfs and react on the needs of the users. But the collective space must also have a relationship with the users (passers). This all leads to the term ‘genius loci’, which means the spirit of a place.

The genius loci has to do with orientation and identification. So, the genius loci of the collective spaces in the Pedreira has also to with these two terms. According to Norberg-Schulz, identification and orientation are aspects of one relationship (4.3.3), so I would like to discuss these two terms at the same time in relation to the context, the Pedreira and it’s collective spaces. The objective is to bring different people (inhabitants and non-resident citizens of the Pedreira) into the two main axis’s to create collective spaces in the Pedreira. In the previous subsection the sensation of the collective space is discussed and the objective is to place shops along the entire axis’s. These shops are necessary, because they are already exist at the border’s of the Pedreira and they are functioning well. To replace some shops and/ or place new shops, is moving the people from the border through the Pedreira. But in this case, there exists a problem. The problem is that the environment of the Pedreira is not the same as the environment at the border’s of the Pedreira. The border’s of the Pedreira has an environment of a formal nature and the Pedreira has got one of an informal nature. Inhabitants of the formal area will never enter the Pedreira, because they can not identify themselves with the environment of the slum. What we have to achieve is a collective space wherein different people, of different positions, can identify.

Norberg-Schulz says that the identity of a person is defined in terms of the developed schemata, because they determine the world which is accessible. That’s why an inhabitant of New York says: ‘I am a New Yorker’ or someone from Rome says: ‘I am a Roman’ (4.3.3). In the case of the Pedreira, it is only accessible for the inhabitants of the Pedreira. The schemata of the inhabitants of the Pedreira differs from the schemata of the inhabitants of the surrounded areas. To reduce this difference, the two main roads in the Pedreira have to transform in such a way that the proposed collective space fits in the schemata of the different users.

Given the conditions of the Pedreira, it will be not difficult to understand that the inhabitants of the Pedreira would like to have an area which has better conditions. It will be a logical decision to transform these roads into conditions which are common in the formal city, than to transform the area around the Pedreira into the condition of the Pedreira. The proposal is to change the character of the streets to give conditions for the people to make the space their own. In this case, the inhabitants of the Pedreira will develop a schemata (for the collective space) which will be the same as the usual schemata of the formal city. A dream will be come true; living in a better world. But what is the usual schemata of the formal city? That is a formal nature. And a formal nature are well
Figure 5.9 - 5.12
Appearance of the Pedreira
Source: vdKamp

Figure 5.13 - 5.16
Appearance of the formal nature: a shop, waste bins, urban furniture, trees and streetlights
Source: vdKamp
constructed houses, paved roads, urban furniture, streetlights, trees and more. And that are things which are not seen often in a slum like the Pedreira (figure 5.9 - 5.16).

The man's orientation is the concept of node, path and district, which creates an environmental image. This environmental image can be seen in combination with the realisation of the formal nature in the proposed collective space. In the previous paragraph is noted that the formal nature consists of well constructed houses, paved roads, urban furniture, streetlights, trees and more. This nature consists the environmental with the a node, path and district.

The two roads in the Pedreira must be transformed into a formal nature to create the collective spaces. In the previous subsection the sensation of the place is discussed by placing shops frequently along the two axis's to give people a reason (sensation) to visit the Pedreira. Besides this, the informal nature of the roads must change into a formal nature so people can identify and orientate themselves with the environment of the proposed collective space. Figure 5.17 shows the transformation of the two axis's into collective spaces with a formal nature. The changed environment is more visible in the figures 5.18 and 5.19, where the transformation of one of the axis's is visible at the beginning of Rua Guapé.

The Pedreira, however, is larger than only the proposed collective spaces, created in the two most important axis's in the Pedreira. Regarding the orientation, it's important where you are positioned in the Pedreira or at the border's of the Pedreira. In subsection 5.3.1 (grid) is noted that the collective space is accessible very well by the grid around the Pedreira. Figure 5.20 shows the accessibility of the collective spaces (black arrows). But what if you want to access the collective space from inside the Pedreira, for example two roads away (figure 5.20, yellow arrow)?

To access the collective space from the yellow arrow (figure 5.20) is not that easy. It's better to create more roads with an important significance, but they are denoted to secondary roads by obstructions or discontinuities. With some adjustments these roads can also be seen as important parts of the road system and for a better circulation through the Pedreira. In subsection 3.3.2 a description is made of the accessibility of the road system in the Pedreira towards the surrounded ring (see also figure 3.48 - internal prominent connections with the ring (entorno).

The little red arrows are roads with an important significance, because they ensure a access towards the inside of the Pedreira. But there is no continuation from one red road to another, which prevents a better circulation from axis to axis, from collective space to collective space. Figure 5.21 shows some possibilities, which ensure a well circulated road system. It creates a good flow of the crowd from space to space and a better orientation. Some roads needs some adjustments:

_Beco N. Sra. do Carmo; continuação da Rua Garças:_ The only connection between sector 3 and Rua Mendes de Oliveira, no circulation possible. Declivity limit of 25.9% for vehicles. Needs necessarily improvement of the handrail and the stairs (figure 5.21, arrow nr. 1).
Figure 5.17
Totality
Figure 5.18
Rua Guapé, nowadays
Figure 5.19
Rua Guapé, in the future
Figure 5.20
Accessibility collective spaces
Figure 5.21
A better circulation
Continuation of Rua Araribá: Access road to the sectors 1, 3 and 4, despite of the physical obstruction. Potential for the most important circuit of connection between the lower and the higher parts of the Pedreira. For a better access from sector 4 to 3, the obstruction needs to removed and the road must be made accessible (arrow nr. 2).

Continuation of Rua João Carvalhais de Paiva and Rua Rodrigues Alves: This circuit reveals itself of special interest, especially for the flow in the lower part of PPL. Therefore a connection is needed from Rua Carmo do Rio Claro to the gathering of Rua João Carvalhais de Paiva and Rua Rodrigues Alves (arrow nr. 3).

Continuation from Rua Carmo do Rio Claro to Rua Guapé: This circuit is from very import for a direct circulation from collective space to collective space. This road needs some improvements in the road system, especially by the pedreira, which contains a declivity of 5 meters (arrow nr. 4).

These roads may contribute to a better circulation and for a better orientation, because these roads will have a more formal nature than the others. For a optimal orientation, the entrances of the roads will also have landmarks, which will continue in eventually
5.4 Conclusion
The creation of conditions for a collective space in the Pedreira is in this research processed in three ways, based on the theory of Norberg-Schulz. In the first way there is looked at the space and context. This means that the place greatly depends on the context, the slum Pedreira Prado Lopes itself. Contiguously, there is looked at how to fill in the collective space, so there can be a match between space and users. It goes about the sensation of the place. And in the last way there is looked at the spirit of the collective space. The spirit says something about how the place can colonize users. In which way people feel themselves comfortable, or ‘feel at home’ at that specific place(s).

First, finding a place to transform into a collective space depends on how the Pedreira is built up. The place is very important for the integration of different people. If the collective space doesn’t have a relationship with his extended ground (the Pedreira), it’s losing his identity. The extended ground is made of a landscape with subordinate places and natural things. These things are artefacts and contains the meaning of the natural environment. Artefacts are the departure point of the application of the city to the contemporary condition (Rossi 1982). Or, the context of the Pedreira is the departure point of the application to the collective spaces. The Pedreira is surrounded by a well accessible grid. From this grid, it’s possible to enter the Pedreira in different places. The accessibility of these places differs greatly from each other by the present of a bad road system. The road system suffers on a bad pavement, obstructions, discontinuities and declivities. But besides these disadvantages, the road system contains two important axis’s, which connect the grid from outside with the road system inside the Pedreira. Those two axis’s are blessed with good sizes and continues from one side of the area to the other side. It connects the borders with the inland and without obstructions and declivities, these two axis’s are the most obvious possibility to transform into collective spaces. Certainly, because of less, free public space and morphological disadvantages.

Second, the sensation of the place. The sensation is what a place gives the citizen to create the collective environment. The sensation must have the skills to integrate the different citizens in the form in which social cohesion can be normal. Geuze describes that we, people, don’t want pre-programmed facilities. But a place must provoke the city dweller and demands an active attitude (Geuze 2000). His example of the Schouwburgplein in Rotterdam is not a good example, because the square doesn’t provoke an active attitude. The Mercator square in Amsterdam is a better example, because it’s divided in three parts. The first part consists some urban furniture, the second part is a empty big square and the third part contains many urban furniture, which is architecture and it serves a social purpose. These example shows that a place must give us something, instead of nothing, to provoke an active attitude. It is important for our expression to the outside world, what a place gives us (Foucault 1987).

The inland of the Pedreira doesn’t offer very much, but the borders of the Pedreira offers more. It’s saying a lot that the border of the Pedreira offers commercial functions and the inland doesn’t. Also in this situation the barrier is present to except the Pedreira as a part of the formal setting. To abrogate this barrier, the idea is to create and to divide the commercial uses from the borders into the two main roads of the Pedreira to create conditions for collective spaces. To place these uses frequently over the two important axes, there will be no accumulation anymore at the borders of the Pedreira. The proposed diffusion of commercial uses will stimulate the flow from the borders through the Pedreira in the main roads, which create a collective road.
According to Foucault, our epoch is one in which spaces take for us the form of relations among sites. The city makes the man a city-dweller, ruled by rules of social traffic. So, the commercial uses are replaced and divided into the roads, but people will be ruled now by the rules of the social traffic which is common in the Pedreira. Because the Pedreira is still informal, people don’t want to be linked with the Pedreira. It is not the world who they know and want. That’s the third problem.

Third, the spirit of the place. The spirit of the place goes about the genius loci, a Roman concept. Norberg-Schulz explains that this spirit gives life to people and places, accompanies them from birth to death and determines their character or essence. The genius thus denotes what a thing is, or what it wants to be (Norberg-Schulz 1980). This can be translated into the two terms: orientation and identification. People have to orientate themselves, they have to know where they are. But they also have to identify themselves with the environment, they have to know how they are a certain place. Orientation and identification are aspects of one relationship, they create one totality. It is possible to orientate, without identification and identification is possible without orientation. But, true belonging presupposes that both psychological functions are fully developed (Norberg-Schulz 1980). Therefore, the ideal schemata must be create. The identity of a person is defined in terms of the developed schemata, because they determine the world which is accessible. That’s why someone from the Pedreira says ‘I am Pedreira’ and someone from the surrounded area doesn’t. The Pedreira is only accessible for the inhabitants of the Pedreira. To give access for also other inhabitants (from the surrounded areas) is transform the Pedreira in such a way that the Pedreira fits in the schemata of the inhabitants of the surrounded areas. The Pedreira will be transformed into an area which is an ideal area for the inhabitants of the Pedreira, which is a dream for them; living in a better world.

The usual schemata of the inhabitants of the surrounding areas is a formal nature. And a formal nature are well constructed houses, paved roads, urban furniture, streetlights, trees and more. And that are things which are not seen often in a slum like the Pedreira and the proposal is trying to give them these ‘formal things’, which often only belong to the inhabitants of the formal city.

The man’s orientation is reinforced by the concept of node, path and district, which creates an environmental image. This environmental image can be seen in combination with the formal nature, the usual schemata of the inhabitants of surrounded areas. To create a genius loci, orientation and identification can be combined, because the missing formal nature in the Pedreira can also be seen as tools for orientation. So, the two important axis’s in the Pedreira must be transformed with a formal nature into collective spaces.
Conclusion

This investigation is written for Pedreira Prado Lopes, one of the most dangerous slums in the Brazilian city Belo Horizonte. The special feature of this slum is its location in the middle of the city Belo Horizonte. But functionally, it's actually located outside the city. It's excluded from the rest of the world, while this area is yet clearly to see. It becomes visible, of course, by the fact that this area is a slum. And a slum isn't naturally, not usual, it's just a bit different. It's a not formal part in a more formal setting. The question is how this can happen and whether there is something what can be done about it.

There are enough reasons for improvement. Therefore, it's necessary that the city intends to integrate this slum into the formal city as full citizens. And if the concept of the city disintegrates, as the architect Rem Kollhaas claims, it's up to architects to come up with answers (Brillembourg & Klumpner 2007).

This problem was gathered in the next question and has always guided this investigation. The quest was formulated as follows:

‘How to integrate the informal city into the (formal) city with architecture as a powerful tool?’

The Pedreira Prado Lopes is a one of the most densely populated areas of Belo Horizonte. The Pedreira is actually a noncity, because it consists of poor people, which are low schooled with low-qualified professions, living in illegal settlements in poor houses. Furthermore, they live in a very dangerous neighbourhood, where drugs traffic and murders are quit ‘normal’ (Urbel 1997 and Nascimento 2004). All this means that the inhabitants of the Pedreira are poor and vulnerable and constitute themselves to a part of extreme poverty and social exclusion. A gap consists between the inhabitants of the Pedreirea (informal city) and the inhabitants of the surrounding areas (formal city).

This gap can be reduced by a social and urban planning approach. Socially, the formal city must embrace the excluded, informal part of the city. To lose its informal character, the Pedreira should be connected with the formal world. This connection could be seen as an integration process, with the inhabitants as targets. The inhabitants of the Pedreira should classificate themselves on the same level as the inhabitants of the surrounding areas. And how do you bring, integrate different people together? Through the public stage. The individual and the collective meet each other by using the platform of publicity. The public domain is the stage on which people appear. And the collective space is the new spot of that exchange. It’s the undefined spaces where the public form of the city is the
commitment of the game. Undefined, because private and public are diluted to us, they serve already less. The collective space, like the Jaume Square and the Ramblas in Barcelona, are perfect examples of excellence public spaces and it becomes collective through the appropriation of different individuals who do (move) freely. The collective space is the space where the collective life develops and where a dialogue between inhabitants can take place. The collective space is a plea for more emphasis on the enhancement of the public domain in order to nurture and to reflect life in the community. Besides its proportions, it has to serve and to stimulate improved relations between people (Sola-Morales 1992 and Hertzberger 1991).

Transforming space into collective spaces in the Pedreira, instead of outside, is trying to generate a continue change in the structure of the slum. This change eliminates the negativism out of this district and tries to make a way for a positive effect.

To create conditions for collective spaces in the Pedreira is in this research processed in three ways, based on the theory of Norberg-Schulz. In the first way there is looked at the space and context. This means that the place greatly depends on the context, the slum Pedreira Prado Lopes itself. Contiguously, there is looked at how to fill in the spaces to create collective spaces, so there can be a match between space and users. It goes about the sensation of the place. And in the last way there is looked at the spirit of the collective space. The spirit says something about how the place can colonize users. In which way people feel themselves comfortable, or ‘feel at home’ at that specific place(s) (Norberg-Schulz 1980).

First, finding a place to transform into a collective space depends on how the Pedreira is built up. The place is very important for the integration of different people. If the collective space doesn’t have a relationship with his extended ground (the Pedreira), it’s losing his identity. The extended ground is made of a landscape with subordinate places and natural things. These things are artefacts and contains the meaning of the natural environment. Artefacts are the departure point of the application of the city to the contemporary condition (Rossi 1982). Or, the context of the Pedreira is the departure point of the application to the collective spaces.

The Pedreira is surrounded by a well accessible grid. From this grid, it’s possible to enter the Pedreira in different places. The accessibility of these places differs greatly from each other by the present of a bad road system. The road system suffers on a bad pavement, obstructions, discontinuities and declivities. But besides these disadvantages, the road system contains two important axis’s, which connect the grid from outside with the road system inside the Pedreira. Those two axis’s are blessed with good sizes and continues from one side of the area to the other side. It connects the borders with the inland and without obstructions and declivities, these two axis’s are the most obvious possibility to transform into collective spaces. Certainly, because of less, free public space and morphological disadvantages.

Second, the sensation of the place. The sensation is what a place gives the citizen to create the collective environment. The sensation must have the skills to integrate the different citizens in the form in which social cohesion can be normal. Geuze describes that we, people, don’t want pre-programmed facilities. But a place must provoke the city dweller and demands an active attitude (Geuze 2000). His example of the Schouwburgplein in Rotterdam is not a good example, because the square doesn’t provoke an active attitude. The Mercator square in Amsterdam is a better example, because it’s divided in three parts. The first part consists some urban
furniture, the second part is an empty big square and the third part contains many urban furniture, which is architecture and it serves a social purpose. These example shows that a place must give us something, instead of nothing, to provoke an active attitude. It is important for our expression to the outside world, what a place gives us (Foucault 1987).

The inland of the Pedreira doesn't offer very much, but the borders of the Pedreira offers more. It's saying a lot that the border of the Pedreira offers commercial functions and the inland doesn't. Also in this situation the barrier is present to except the Pedreira as a part of the formal setting. To abrogate this barrier, the idea is to create and to divide the commercial uses from the borders into the two main roads of the Pedreira to create conditions for collective spaces. To place these uses frequently over the two important axes, there will be no accumulation anymore at the borders of the Pedreira. The proposed diffusion of commercial uses will stimulate the flow from the borders through the Pedreira in the main roads, which create a collective road.

According to Foucault, our epoch is one in which spaces takes for us the form of relations among sites. The city makes the man a city-dweller, ruled by rules of social traffic. So the commercial uses are replaced and divided into the roads, but people will be ruled now by the rules of the social traffic which is common in the Pedreira. Because the Pedreira is still informal, people don't want to be linked with the Pedreira. It is not the world who they know and want. That's the third problem.

Third, the spirit of the place. The spirit of the place goes about the genius loci, a Roman concept. Norberg-Schulz explains that this spirit gives life to people and places, accompanies them form birth to death and determines their character or essence. The genius thus denotes what a thing is, or what it wants to be (Norberg-Schulz 1980). This can be translated into the two terms: orientation and identification. People have to orientate themselves, they have to know where they are. But they also have to identify themselves with the environment, they have to know how they are a certain place. Orientation and identification are aspects of one relationship, they create one totality. It is possible to orientate, without identification and identification is possible without orientation. But, true belonging presupposes that both psychological functions are fully developed (Norberg-Schulz 1980). Therefore, the ideal schemata must be create. The identity of a person is defined in terms of the developed schemata, because they determine the world which is accessible. That's why someone from the Pedreira says 'I am Pedreira' and someone from the surrounded area doesn't. The Pedreira is only accessible for the inhabitants of the Pedreira. To give access for also other inhabitants (from the surrounded areas) is transform the Pedreira in such a way that the Pedreira fits in the schemata of the inhabitants of the surrounded areas. The Pedreira will be transformed into an area which is an ideal area for the inhabitants of the Pedreira, which is a dream for them; living in a better world.

The usual schemata of the inhabitants of the surrounding areas is a formal nature. And a formal nature are well constructed houses, paved roads, urban furniture, streetlights, trees and more. And that are things which are not seen often in a slum like the Pedreira and the proposal is trying to give them these 'formal things', which often only belong to the inhabitants of the formal city.

The man's orientation is reinforced by the concept of node, path and district, which creates an environmental image. This environmental image can be seen in combination with the formal nature, the usual schemata of the inhabitants of surrounded areas. To create a genius loci, orientation and identification can be combined, because the missing formal nature in the Pedreira can also be seen as tools for orientation. So, the two important axis's in the Pedreira must be transformed with a formal nature into collective spaces.
References

Literature
Non-places, introduction to an anthropology of supermodernity, Londen: Verso Publishers
Informal City: Caracas Case. London: Prestel UK
De Brazilianen: geschiedenis van 1889 to nu, Muiderberg: Coutinho
Two Brazilian Capitals, Architecture and urbanism in Rio de Janeiro and Brasília, New Haven and London: Yale University
Illegal Cities: Law and urban change in developing countries, London & New York: Zed Book Ltd
Bouwen Wonen Denken. Delft: Oase
The Public Realm. In: M. Miles, T. Hall and I. Borden (eds), The City Cultures Reader. London and New York: Rotledge
*Cities in Transformation: The Urban Squatter Problem of the Developing World*, St. Lucia, Queensland: University of Queensland Press

*The Favela-Bairro Project: Jorge Mario Jáuregui | The Sixth Veronica Rudge Green Prize in Urban Design*, Cambridge, Massachusetts: Harvard University Graduate School of Design


*Urbanisation and Planning in the 3rd World, Spatial Perceptions and Public Participation*, Croom Helm: London & Sydney


*Public Spaces/ Collective Spaces*, LaVanguardia


UN-Habitat (2003).

URBEL, PBH and ARNO (1997).
*Plano Global Específico vila Pedreira Prado Lopes Belo Horizonte*. Belo Horizonte

**Articles**

Crime in Belo Horizonte

*Criminalidade na região metropolitana de Belo Horizonte: uma análise espacial* (pdf)
(www.ceedplar.ufmg.br/diamantina2004/textos/004A016.PDF)

Inter-American Development Bank

*Brazil: Belo Horizonte Environment Restoration Program* (pdf)
(www.iadb.org/exr/doc98/apr/b1563e.pdf)
Pedreira Prado Lopes

*Violência e criminalidade em vilas e favelas dos grandes centros urbanos: um estudo de caso da Pedreira Prado Lopes* (pdf)
(www.crisp.ufmg.br/teses_felipezilli.pdf.pdf)

UN-Habitat (2006).

*Localizing the Millennium Development Goals in Belo Horizonte* (pdf)
(www.unhabitat-rolac.org/anexo%5C1212200615181541.pdf)


*World Population Prospects as Assessed in 1963*, New York: UN


Universidade Federal de Minas Gerais

*Determinantes da Criminalidade no Município de Belo Horizonte* (pdf)
(www.cedeplar.ufmg.br/economia/dissertacoes/2003/Betania_Totino_Peixoto.pdf)

World Bank

*Belo Horizonte Urban Upgrading and Inclusion Project – ‘Vilas Urbanizadas’* (pdf)
(www-wds.worldbank.org/.../21/000011823_20050321154853/Rendered/PDF/RP3000CD0v10BH1amework0exec0summary.pdf)

Internet

The Favela-Bairro Project

www.web.mit.edu/urbanupgrading/upgrading/case-examples

YWAM, Youth With A Mission

www.bhcentro.ywambrazil.org
Annex
pictures of the slum Pedreira Prado Lopes
Nr. 3

Nr. 4
Nr. 47

Nr. 48