Urban development of Santa Cruz de la Sierra
Compared with the general urban development of Latin American
cities from the Spanish colonisation until now

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History thesis

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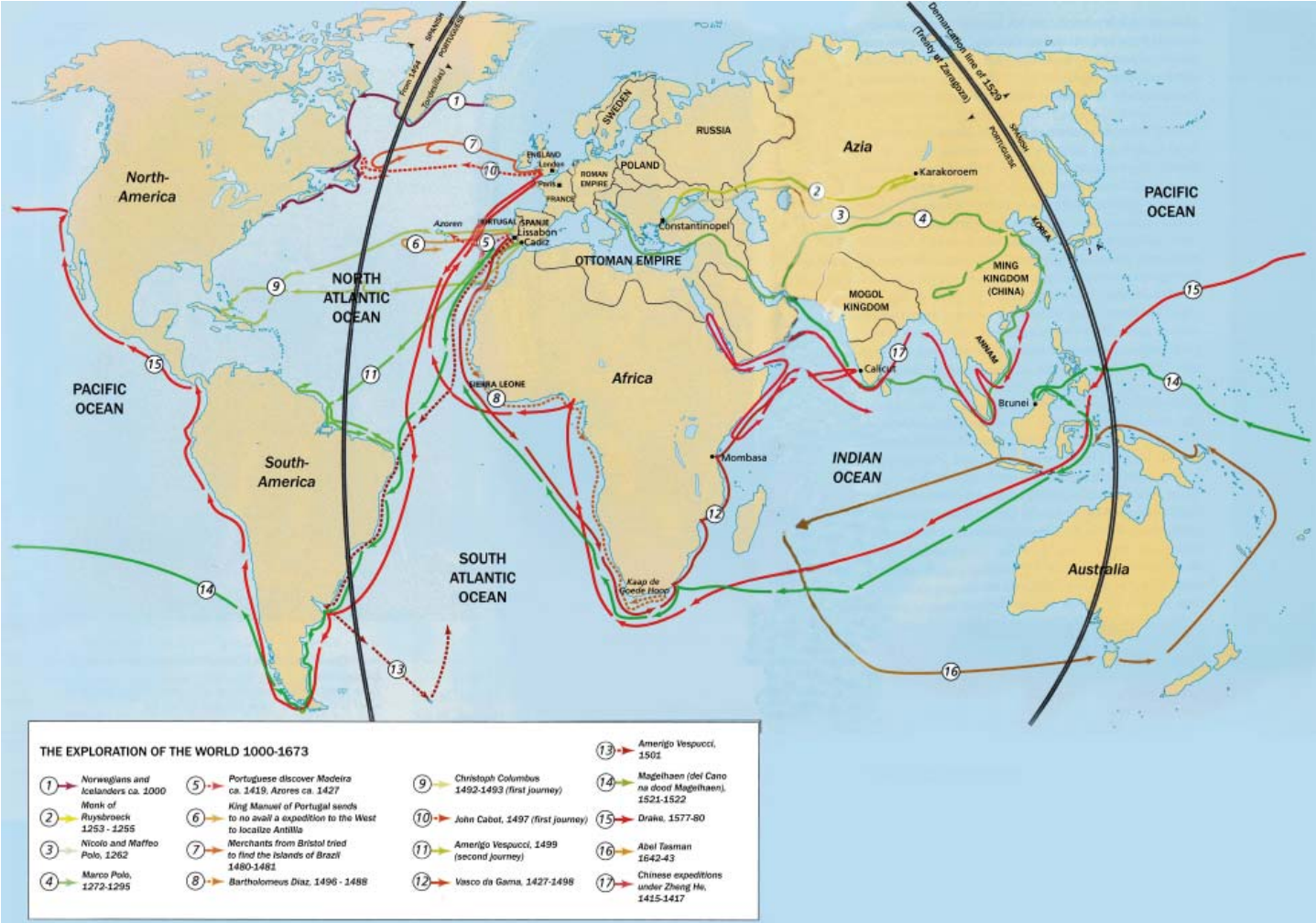Written by: Rinske Maria Wessels
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Discovery of new worlds between 1000-1673. [Santon, 2006]

Left: Fig. 1.1 Map of Latin America with the location of Bolivia and the map of Bolivia with its 9 departments and its capitals. [Ledo Garcia, 2002]

Fig. 1.2 Painting of the erection of Santa Cruz [Soy Santa Cruz]

1 Introduction

In this essay a literature research will be done into the urban development of the city Santa Cruz de la Sierra in Bolivia. The choice of this particular city is due to the fact that my architectural and building technology master thesis subjects are situated there. To better understand this city, a comparison will be made with the general development of Latin American cities.

During the colonisation period of Latin America, the Spanish developed the 'Laws of the Indies'. The most important part, which was officially introduced in 1573 [Morris, 1994], was the town planning section. Characteristic about this plan were the regular gridiron street blocks, centred on the main plaza, around which several major civic buildings were grouped. The great majority of the cities founded in the colonial period have grown into the present-day distorted versions of those town planning principles of the imperial period.

Santa Cruz de La Sierra was first founded in 1561 by Ñuflo de Chávez, a Spanish Captain. After conflicts with the indigenous population, the complete town was moved to a number of other locations. Finally, in 1622 the city was founded on its present location on the banks of Piraí River. Nowadays it houses more than 1,5 million people in a gridiron, but also radial and ring structured city. The main research question for this essay is:

"Is the urban development of Santa Cruz de la Sierra comparable with the general development of Latin American cities?"

To answer this question we first have to understand what the general development of a Latin American city is. Jorge E. Hardoy, a specialist in urban development of Latin American cities, defines six stages in his essay "Two thousand years of Latin American Urbanisation". [Hardoy, 1975]
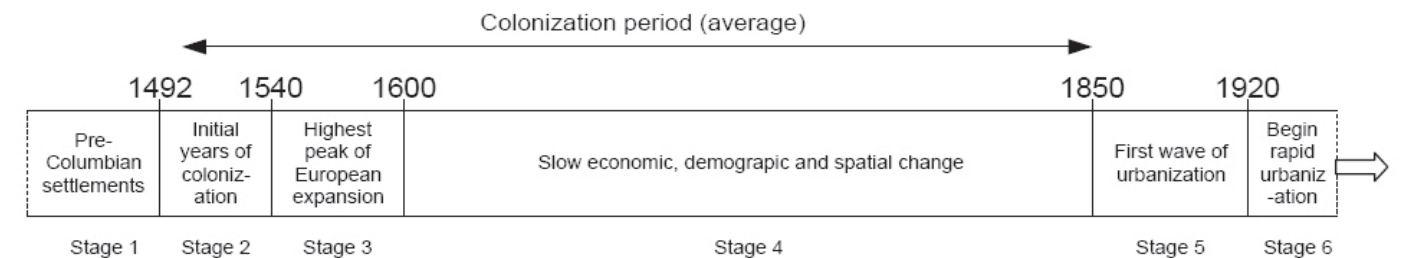

Fig. 1.3 Timeline of Latin American urbanization according to Hardoy (1975)[Fernandez-Maldonado,2002]

In this paper these stages will be used as a guideline. In every chapter the general Latin American city development of that period will be described first, followed by the specific development of the city Santa Cruz de la Sierra. In the end, all chapters will contain a short conclusion. Because Santa Cruz de la Sierra is not founded on a Pre-Columbian settlement, stage 1 is not taken into account. Stage 2 and 3 are taken together in chapter two. Stage 4 is described in chapter three and stage 5 and 6 in chapter four. In chapter five we will look at the present city; in chapter six the conclusions will be drawn; in chapter seven a future vision of Santa Cruz de la Sierra will be given.

Fig. 2.1 The Caribbean, the Gulf of Mexico and the Isthmus, locating the first Spanish settlements. [Morris, 1994]

Fig. 2.2 Spanish concurred area in Latin America after 1550. [Santon, 2006]
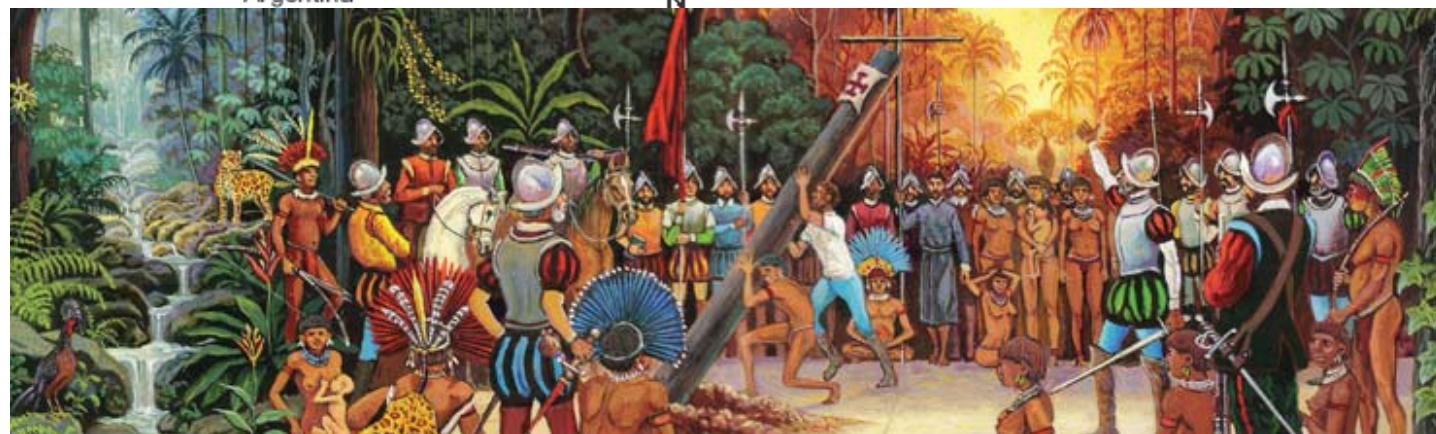
2 Colonisation(16th century)

In 1492 the colonisation of Latin America started with the discovery of "The New World" by Columbus. This colonisation led to the appearance of many cities in Latin America. This chapter treats the period from the first urbanisation until the peak of the classical Spanish grid model. In paragraph three and four we will zoom in on the city of Santa Cruz de la Sierra. In the last paragraph conclusions will be given on what the typical aspects of the development of Santa Cruz are in comparison with the general Latin American city.

2.1 Initial years of colonization (1492-1540)

In the initial years, the Spanish founded many dozens of forts, villages and cities on the Caribbean islands, the northern South American coast and the coast and interior of Panama. [Hardoy, 1975] Most of these settlements where of temporary use and abandoned after a few months or years. Nowadays, Santo Domingo and Santiago de Cuba are the only remaining cities that still exist at their original location.

Urban life in these towns was precarious, and the title of city was of legal figment. There was no economical base to sustain a white urban population which was not involved with production of agriculture. Certain settlements where built close to indigenous villages, so agricultural labour, washing of gold and building could be done by the indigenous people. Another advantage of the indigenous people living together was that they could easily be evangelized by religious orders like the Jesuits. Unfortunately, not many indigenous people lived together, so town building was difficult for the Spanish.

In November 1519 the Spaniards discovered Tenochtitlan, the political, military religious and cultural capital of the Aztecs, which they manage to capture in 1521. The Spanish reconstructed the city into the new capital of Spanish colonial America. This re-urbanisation process was essential to the subsequent urbanisation process. [Morris, 1994]

Various ports, mining towns and centres of conquest where founded. Two criteria were dominant for choosing their location. First the existences of indigenous cities close to, or on the same site and second the existence of dense concentrations of indigenous rural population. Almost all new settlements where based on the classical checkerboard grid with in its centre a vacant block, which was the main square. At the main square churches and houses of officials were placed and their facades formed the walls of the square. Still, only the cities constructed on old indigenous settlements presented an urban image, the other settlements where little more than camps.

2.2 Highest peak of European expansion (1540-1600)

Between 1540 and 1600, the principle cities have been founded, consolidating occupation of those territories, and establishing the maritime and land routes that would unite the colonies among themselves and with Spain. Trade was only permitted with Spain and almost did not develop between cities. Therefore, some of the cities developed specialisations in, for example, the silk, tobacco, ceramics, glass, weaving or ship industry. [Hardoy, 1975]
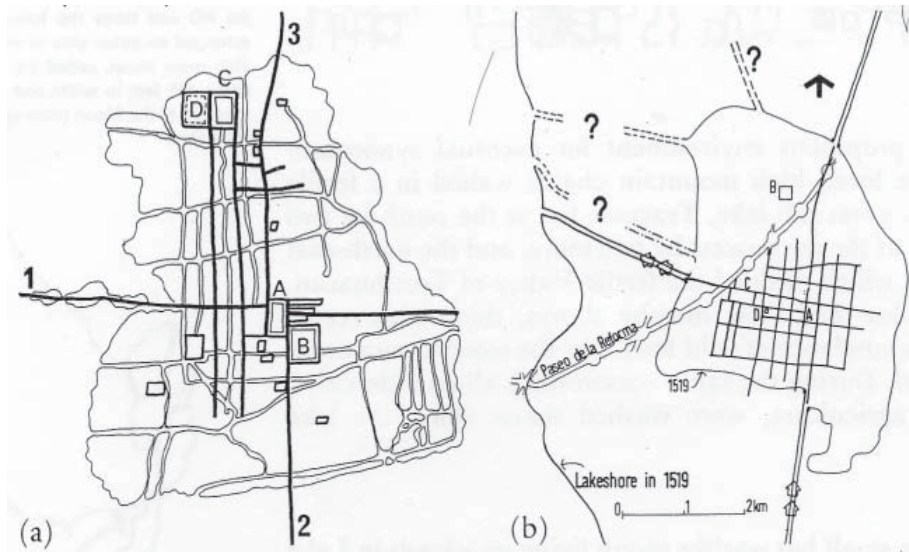
Fig. 2.3 Maps of Tenochitlan/Mexico

(a) - A reconstruction of the plan before the Spanish conquered the city. 1: causeway tio the western shore of Lake Texcoco; 2: causeway to the south; 3: causeway to the northern shore of the bay; A the Great temple of Technochtitlan; B: the palace of Montezuma II (leader of the Aztecs); C: the Great Temple of Tlatelolco; D: the market place of
Tlatelolco

(b) - Mexico City as rebuilt by the Spaniards showing the main street pattern, the lakeshore line of 1519 and the causeways. A: the Zocalo, the cities main square; with the cathedral in the northern side; B: the location of the Tlatelolco maket centre; C: the modern Almeda Park occupying the site of a Spanish market place where heretics were burnd during the Inquisition; D: the modern Latin American skyscraper. [Morris, 1994]
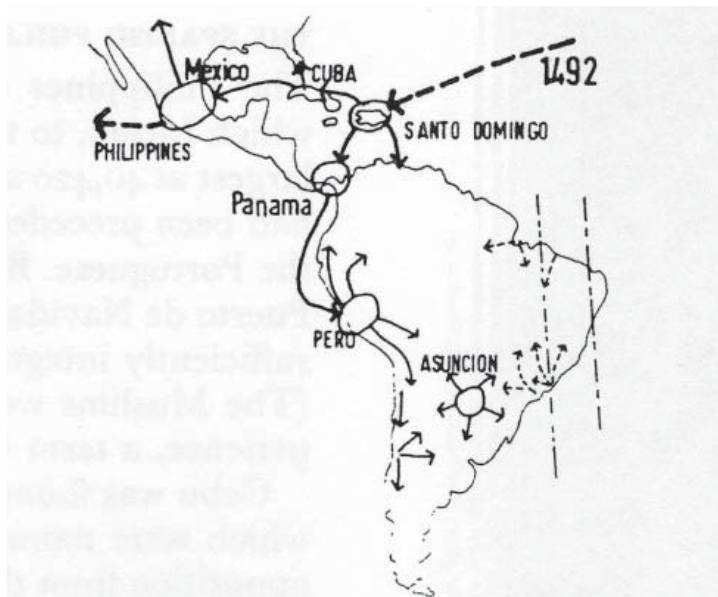

Fig. 2.4 The Spanish Latin American empire locating the sequential centres of conquest [Morris, 1994]
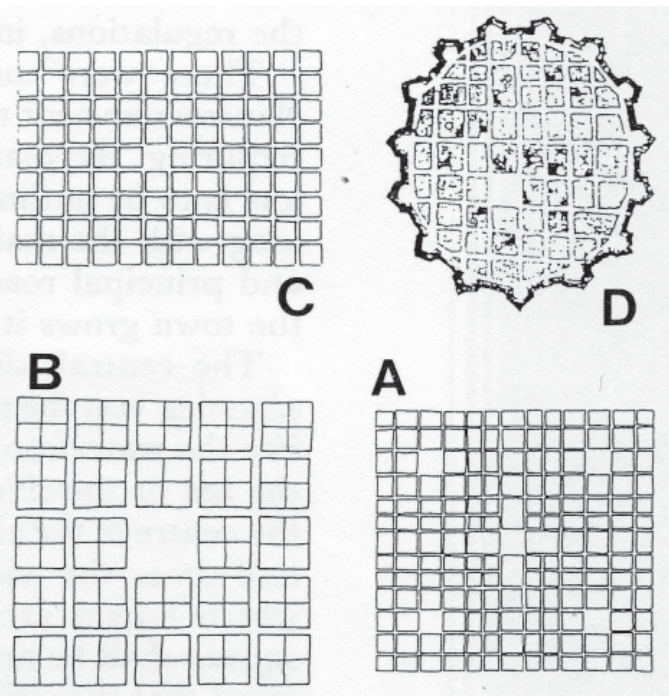

Fig. 2.5 The Laws of the Indies: four examples of minimalist city gridiron 'plans'.
A, Guatemala (1776); B, Concepcion (1765); C, Mendoza (1651); D, Trujillo (1760), which is an extremely rare (perhaps the only instance) of Spanish plan following the Italian 'ideal city' pattern.
[Morris, 1994]

In the same period, the Spanish started exploiting their most important mineral resources. In many cases, the mining industry gave rise to the establishment of some of the colony's most important cities, in terms of numbers of inhabitants. These big concentrations of mine workers required an improvement of the agriculture and livestock production. The best example is the exploitation of the silver mines at Potosi. It created the largest concentration of urban population in the Spanish empire. By 1630 the city counted some 140.000 inhabitants. In the early 18th century it had reduced in size to 30.000 inhabitants. [Morris, 1994]

The period was also characterized by a dramatic decline of the indigenous population. In Mexico, for example, around 25.200.000 Indians lived at the time of the conquest; in 1605 only 1.075.000 where left. Various factors may explain this decline: new illnesses, wars, implantation of the 'encomienda'[1] system, and consequent social disorganization. The new architectural works initiated by the Spanish, for religious or private interest, as well as the introduction of European cattle ranchers caused dietary change and hunger.

The urban classical model in the Spanish colonies in America was established in its definitive form: a generally square grid of approximately 100 meters, with streets of the same section in both directions. Just like many Spanish cities from that time, the town's life was centralized around the main plaza; an empty block in the grid surrounded by the main buildings: the main church, the palace of the main authority and the municipality. The strict spatial separation between Spanish and indigenous population was a characteristic of the model too. The areas built for the Indians, called "cercados" (literally walled cities) or "barrios de indios" (Indian neighbourhoods) where outside the regular grid. [Fernandez-Maldonado, 2002]

The classical model was supported by the document "Discovery and Settlement Ordinances" signed by the Spanish king Philip II in 1573. This document consisted of 148 articles of which one-third treated the regulation of the urban planning. Most of the urban planning articles where based on earlier urban planning instructions given by kings of Spain. In 1681 the "Laws of the Indies" were published, containing a part with laws about settlement of cities, based on the earlier published ordinances of 1573.

The classical model distinguished the waterfront towns from the inland towns by the position of the central square. The square for waterfront towns should be near the sea or river, whereas the central square should be in the centre of the city for the inland towns. The church also had distinguished locations; churches in waterside cities were to face the plaza directly and be of strong construction to serve as emergency fortifications. Interior city churches, in contrast, should not be placed on the perimeter of the square, but at such a distance as to appear free, separated from the other building so that it may be seen from every side.
[Morris, 1994]

1 Encomienda was a system of appropriation of land in Spanish-America. Conquistadores were granted trusteeship over the indigenous people they conquered. The maximum size of an encomienda was three hundred Indians. Indian lands were to remain in their possession. The encomenderos had the authorization to tax the people under their care and to summon them for labor, but they were not given juridical authority. In return, the encomenderos were expected to maintain order through an established military and to provide teachings in Catholicism. [Wikipedia]

Fig. 2.6 Map of Central America. Green part is the area of Gran Chaco. Bolivian part is sometimes called "el Oriente"

Although it looked like the Spanish prepared a well developed urban model, it rather was a certain appreciation for the practical advantages of a regular squared urban plan. Most of the cities founded in this stage where founded before the Ordinances of 1573. The cities were developed on the personal knowledge or earlier experiences of its founders and companions. The legislation only formalized a situation that was already perfectly defined in practice. [Hardoy, 1975] However, not all cities followed the classical model, many of the mining towns and some international ports where rather unplanned. [Morris, 1994]

2.3 The founding of Santa Cruz de la Sierra
The Spanish discovered the "Oriente" of Bolivia from two directions; One from the "Río de la Plata" and the other from the highlands of Bolivia. The Spanish king, Charles the Fifth, ordered the conquerors to colonize the "Río de la Plata" in 1534. In 1536 they funded Buenos Aires and one year later Asunción at the river Paraguay. The obsessive idea developed that in the north one could find silver mountains or wealthy, well populated cities. The conquerors called it the search for "El Dorado" (golden dream land or paradise) and many expeditions to the north-west where made. In 1548 and in 1558 Ñuflo de Chávez went to Lima to ask for permission to conquer this mystic territory. Only the second time did he get permission, because the Portuguese were coming closer to this still undiscovered territory.

From Charcas, lying in the highlands of Bolivia, several expeditions where made in east and south-east directions, to conquer a very rich king, who was supposed to be much richer than the king of Peru. From 1557 on Andrés Manso conquered an area what is nowadays called el Gran Chaco. (Fig. 2.6) Unfortunately, the conquerors of the Rio de la Plata worked in the same area, which caused some conflicts. In 1564 the chiriguanos, an Indian tribe, destroyed the city Andrés Manso founded and also killed him.

In 1560, the authorities named Garcia de Mendoza as governor of the province, while he was still in Chile. Ñuflo de Chávez became his Lieutenant and responsible for the province during the time Garcia was not there. The first thing Ñuflo de Chávez did is found the city of Santa Cruz de la Sierra, which means "Holy Cross of the Hills," in honour of his beloved native city in Extremadura, Spain.

The location of Santa Cruz was chosen strategically between the two big rivers Rio Grande and Rio Paraguay. These were connected to the amazons as well as Rio de la Plata, which ends in the Atlantic Ocean. When in the future they would find "el Dorado" they could easily transport its richness/treasures to Spanish main land. Santa Cruz de la Sierra, founded in 1561, laid at the foot of the hills Riquió and Turubó and formed a new base for new expeditions. Ñuflo de Chávez and his men expected that, because of "el Dorado", Santa Cruz would become a mining city and organized the city in the same way as all Spanish colonial cities, following the chess board pattern. Around 250 Spanish and 3000 Indians, who served the Spanish, lived in the city centre. In the "Encomienda"[1], a region 60 km around the city, 9000 natives where forced to work for the Spanish inhabitants. [Köster, 1983]
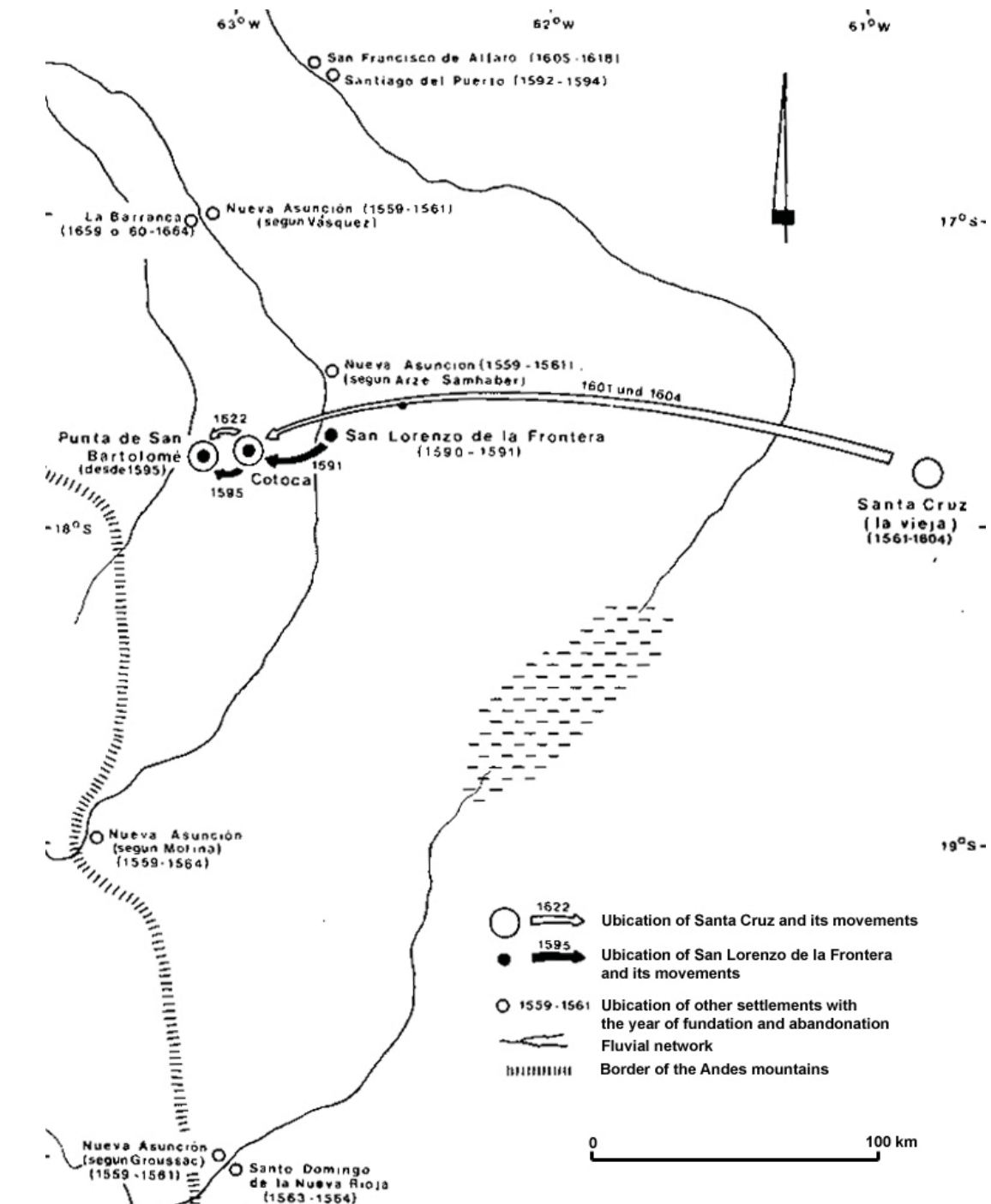
Fig 2.7 Founding of cities and movements in relation with the development of Santa Cruz de la Sierra [Köster, 1983]

2.4 Moving the city to its final destination.

The tribes around Santa Cruz de la Sierra, who were forced to work for the Spanish, started to plan small attacks, especially on the travellers to and from the city. In the east there were the Itatines, in the north the Chiquitos, in the west the Chiriguanos and Yuracarés and in the south the Morotocos. [Oviedo Quiroz, 2002] In 1568 Ñuflo de Chávez died and the attacks from the locals became heavier. Not only the attacks but also the climate presented difficulties. In the rainy season, the surroundings of Santa Cruz were flooded and nobody could reach the city. In the dry season, the roads where so dry and hot that is was impossible to walk there; almost no water was available along the road. The availability of water was also a problem for the inhabitants. The location of the city was chosen for logistic and economic reasons, not for liveability reasons. [Köster, 1983]

The Cruseños were not the only ones who were searching for the wanted "el Dorado". Lorenzo Suárez de Figueroa and his men also came to the valleys of Gran Chaco and funded the city San Lorenzo de la Frontera in 1590. From San Lorenzo, different expeditions where made. Like Santa Cruz, San Lorenzo also moved a couple of times and in 1595 it got its final destination. (Fig 2.7 shows the movements of San Lorenzo with black arrows and dots)

Santa Cruz de la Sierra became more and more isolated from the other Spanish cities. The inhabitants were suffering a lot, and between 1601 and 1604 the inhabitants moved their city 220 km to the west, where the city of Cotoca is situated nowadays. (Fig 2.7 shows the movements of Santa Cruz with white arrows and dots) Santa Cruz lost its privilege of capital city of the department of Santa Cruz, due to this moving, which it rewon only at the end of the 18th century. In 1621 the Cruseños decided to move to the city of San Lorenzo de la Frontera and in 1622 they joined the two cities into one. They called it San Lorenzo and Santa Cruz, but slowly only the name Santa Cruz de la Sierra was used.

By the time the cruseños joined San Lorenzo, the river Piraí flowed where you can nowadays find the first ring of the city. (Fig 2.9) The new Santa Cruz was also developed following the classical model described in section 2.2: The main square was surrounded by religious, judicial and administrative buildings. Besides the main square, another twenty blocks where reserved for the church, the local government and the monastery. The church and the local government where situated at the south of the square, where you can nowadays find the Cathedral and the Parliament Brigade. The monastery was situated on the west side, where nowadays the University UAGRM[2] is housed (Fig. 2.10). [Sandoval Rodriguez, 2003]

Around the regular centre of the city you could find the "Barrios de Indios" (Indian neighbourhoods), which where similar to many other Latin American cities. The materials used for constructing the houses and streets give information about the wealth of the city: this was a poor city, because they only used local available materials. Santa Cruz de la Sierra was situated around 150 meters from the river. The majority of the houses where made of adobe with a roof of palm trees. Some of the inhabitants had colonial roof tiles. The bigger the distance from the main square, the more spacious the parcels became and the simpler the houses where. [Gaya Ábrego, 2007]
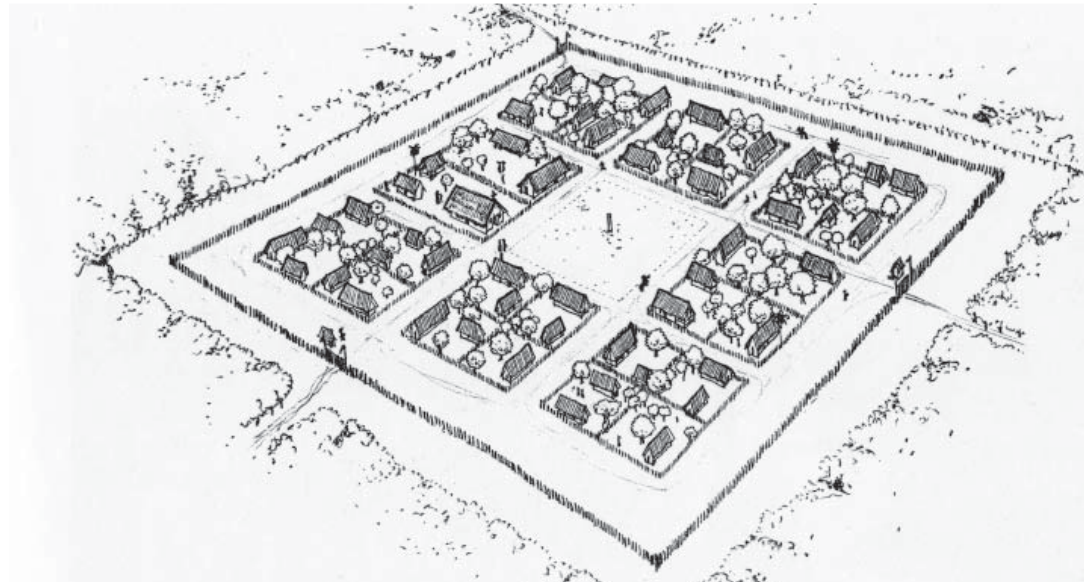
Fig. 2.8 An estimation how San Lorenzo should have looked like at the end of the 16th century [Limpiaz Ortiz, 2001]
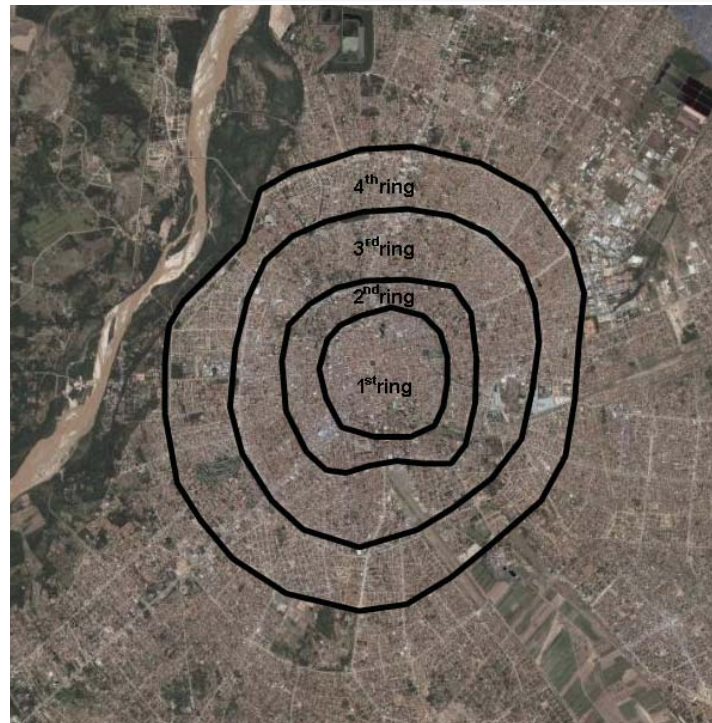

Fig. 2.9 Google-earth satellite photo of Santa Cruz from 2006 with the 4 rings. The river Piraí you see at the left now passing the 4th ring. In the 4 centuries the flow of the river moved 3 km to the west.

Fig. 2.10 Google-earth satellite picture from 2006 of Santa Cruz de la Sierra old city centre's 9 central blocks with the current main functions around the main square.

The Spanish constructed according to their Spanish cultural reference, not only the urban plan, but also in architecture. For the first constructions they made use of the local building materials, which forced them to build only simple rural huts. Because of a lack of economical development, the inhabitants of Santa Cruz where forced to continue constructing these huts, which not only functioned as a house but also as a church or meeting place for authorities. In a slow process the Spanish, indigenous and half-bloods developed a rural hut called the "pahuichi" [3]. [Limpias Ortiz, 2001]

The "pahuichi" was developed into three different typologies; the simple compact "pahuichi", the "pahuichi" with "punilla" [4] and the "pahuichi" with "punilla" in between. The simple compact "pahuichi" had one space. You could find this simple compact "pahuichi" with columns, with one meter high walls or with complete walls. They were used for living functions as well as for communal meetings or industrial activities.

In addition to a closed space, the "pahuichi" with "punilla" had an open space in front. This not only resulted in a fresher closed space, it also functioned as a social space for eating, relaxing and receiving invited people as well. A variant of this typology is the "pahuichi" with "punilla" in between, where the open space is in the centre. This open space functions the same as the "punilla" in the other typology, and functions as the entrance to the two closed spaces on its side. Nowadays you can still find these typologies in the rural areas of the department of Santa Cruz. [Limpias Ortiz, 2001]

Fig. 2.12 "Pahuichi" floor plan. First "pahuichi" with "punilla" then three forms of the simple compact "pahuichi", and last the "pahuichi" with "punilla" in between. [Limpias Ortiz, 2001]

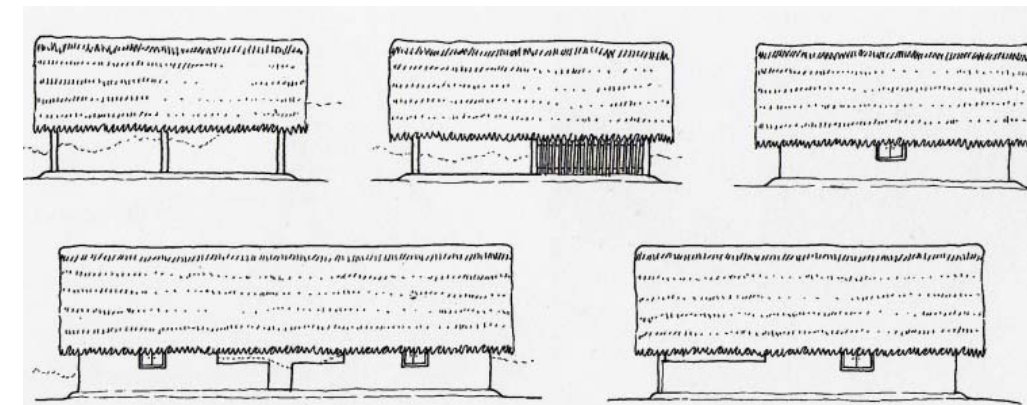Fig. 2.11 "Pahuichi" from a side view. First row the simple compact "pahuichi", second row left "pahuichi" with "punilla" in between and right "pahuichi" with "punilla" [Limpias Ortiz, 2001]
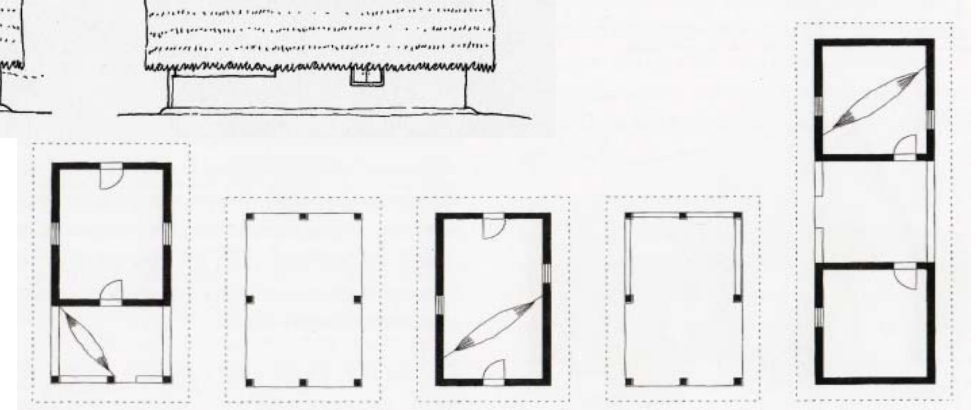
2 UAGRM: Universidad Autonoma Gabriel Rene Moreno
3 Pahuichi: a rural hut made with walls of adobe or loam and a roof of palm tree leaves
4 Punilla: open space in front of a closed space, both covered with the same roof

Fig. 2.14

Fig. 2.15

Fig. 2.13 - 2.15; three pictures of Potosi. First two of streets in the old city centre of Potosi and the last one a corner building.

Fig. 2.13

Fig. 2.14

Fig. 2.15

Fig. 2.16-2.18; three pictures of Santa Cruz de la Sierra. First two of streets in the old city centre of Santa Cruz de la Sierra and the last one a corner building.

2.5 Conclusion

Concluding from this chapter we can say that Santa Cruz had a typical colonial urban start. One surprising development is that of the location of the central square. Although the ordinances of 1573 already existed and the city is located close to a river side, the central square is located in the centre of the city and not at the river side. So the city is seen as an inner land city and not a waterside city.

Within the colonial cities you can define different types of functions: the water side city, the mining city or the strategic inner land network city. The type of city tells something about the people that it attracts and the type of economy that will develop. This will be reflected in its architecture, the more important and/or the wealthier, the more dominant its architecture.

In search for "el Dorado" the founders of Santa Cruz expected that the city would become a miner's city with great potential. In addition, the city should have become a strategic network city on the border of the Spanish colonial territories and administrative capital of the province. Unfortunately, the founders did not find "el Dorado" and it did not become a strategic city until the midst of the 19th century.

In contrast, Potosi, a mining city founded in 1545, flourished in the 16th and 17th century because of a big silver mine. In fig. 2.13-2.18 a current central street of Potosi and Santa Cruz de la Sierra are shown. In the difference of architecture you can feel the difference between the rich and the poor city from the colonial period. UNESCO declared the city of Potosí a world heritage site in 1987 because of its richness of history and colonial architecture.

Fig. 3.1 Latin American system of cities in 1800 (Source: van Lindert and Verkoren, 1994) [Fernando-Maldonado, 2002]

3 Slow economic, demographic and spatial change(17th till mid 19th century)

The urban development of Latin American cities between 1600 and 1850 are described in this chapter and compared with the city of Santa Cruz. What happened after the establishment of Latin American colonial cities? Did they develop, and if they did, how? How was life in these cities during the 17th and 18th century? Specifically, how was life in the city of Santa Cruz de la Sierra? Was it the same as the Latin American cities, or did it have a different development?

3.1 Latin American cities(1600-1850)

At the beginning of the 17th century, relations between Spain and its colonies, as well as the relations amongst the colonies themselves, had conformed to a system that did not permit major innovations. Spanish central administration was cumbersome and sluggish. For example, a permission was needed even for moving a small settlement. The acquirement of the permission took at least three years. [Hardoy, 1975]

The Spanish 'policy' was based on military control of the indigenous population. Therefore, Spanish Latin American cities were characteristically intended to subdue the local inhabitants. From the colonised cities the Spaniards conquered, controlled and indoctrinated the surrounding populations. The colonial cities were therefore planned in a chessboard grid in response to this military controlled approach. [Morris, 1994]

Although the urban plan of the colonial city was immediately understandable, it did not result in great architectural works or urban designs. This may be due to the fact that there was no court, nor royal or rich families interested in such works. There does not appear to have been great interest in embellishing the cities. Not only the spatial structure of the colonial cities, but also the infrastructure between cities, especially in the continent, showed almost no modifications. Lines of maritime and land transportations were badly maintained and not extended, reflecting reduced foreign and interregional trade. The continent was an immense void. [Hardoy, 1975]

The population of the Spanish colonies in America grew slowly. Between 1600 and 1800 it doubled or sometimes tripled, and the tendency toward population concentration continued in principal administrative cities, in ports of continental importance, and in most productive mining centres. Life during these two centuries was monotonous and barely interrupted. Sanitation was precarious and provision of potable water was uncertain in the majority of cities. This, and constant pestilences and plagues, together with general technological backwardness and limited production, were the reasons for the slow demographic and economical development. [Hardoy, 1975]

The cities of 1850 presented few differences from those of the late colonial period; population and size stayed the same. Their demographic growth depended upon natural increase, since migration from Europe scarcely existed. Additionally, the discouraged industrial investment caused population displacement and kept rates of urbanization low. [Hardoy, 1975]

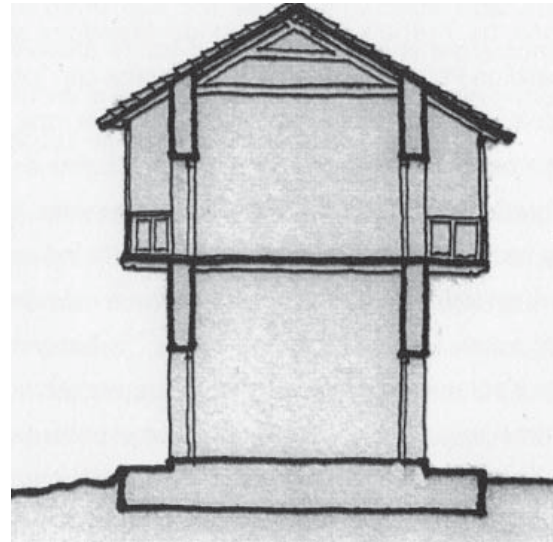Fig. 3.2 Main square of Santa Cruz in 1770. [Limpias Ortiz, 2001]

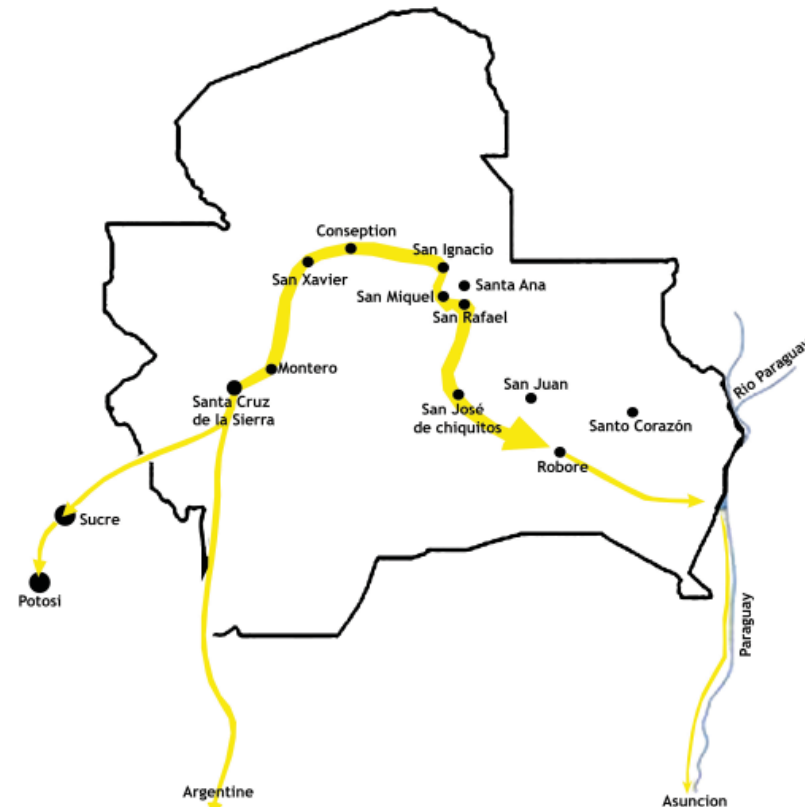Fig. 3.4 Section of a house with balcony
[Limpias Ortiz, 2001]

Fig. 3.3 Teritorial occupation by the Jesuits [IDH, 2004]

Fig. 3.5 House with a continuous balcony.
[Limpias Ortiz, 2001]

3.2 Santa Cruz de la Sierra

The inhabitants of Santa Cruz needed to fight against their seclusion from the continental and intercontinental trade network, because it was badly located geographically. In addition, no good road connections existed that permitted good connections with other cities. Almost no immigration of new Spanish blood occurred, and there was no big difference between the rich and the poor. The major part of the Santa Cruz population was a mix of Spanish and Indigenous people. It was a ethnically, but also culturally mixed society. [Oviedo Quiroz, 2002]

Until 1800 the city only contained, besides houses, four religious buildings built out of adobe and palm leaves. [Gaya Ábrego, 2007] Santa Cruz was a disconnected city and the people had to live with the products nature provided. Most products were produced by farmers for the consumption of the people living in the region of Santa Cruz. Only the sugar cane became an export product to the mining districts. There was no import from other regions. [Prado Salmon, 2005]

In the end of the 17th century, the Jesuits came into the region of Santa Cruz and started constructing mission villages in the surroundings of the city Santa Cruz (Fig. 3.3). The Jesuits did not only give catechization lessons to the indigenous people, but also helped to construct productive centres, with products that were exported to Peru and Argentina. [Prado Salmon, 2005] Due to the presence of Jesuits, and later on Franciscan orders, Santa Cruz did not lose its central function. The city became the centre for the distribution of indigenous products, it became a local centre. This is the reason why Santa Cruz survived its remoteness and extreme poverty. [Limpias Ortiz, 2001]

With the arrival of the Jesuits from Spain, the urban architecture of the Spanish mainland became more fashionable in the city of Santa Cruz. From the pahuichi (see section 2.4), the Cruseños developed their houses into a more urban typology. This typology is characterized by a compact body and a saddle roof. All the rooms are connected to each other and to the exterior to facilitate a good air flow. [Limpias Ortiz, 2001]

A second typology was developed with a second floor, characterised with a continuous balcony. (Fig. 3.4 + 3.5) It was a typology developed from the two story high buildings found in Charcas, Potosí and La Paz. Unfortunately, you will not find many of these examples in Santa Cruz, because a second floor was expensive and Santa Cruz has plenty of space. [Limpias Ortiz, 2001] Although the inhabitants of Santa Cruz spent much effort into creating a Spanish urban city, the city never got the urban atmosphere like Charcas, Lima, Santo Domingo or México. (Fig 3.2) [Limpias Ortiz, 2001]
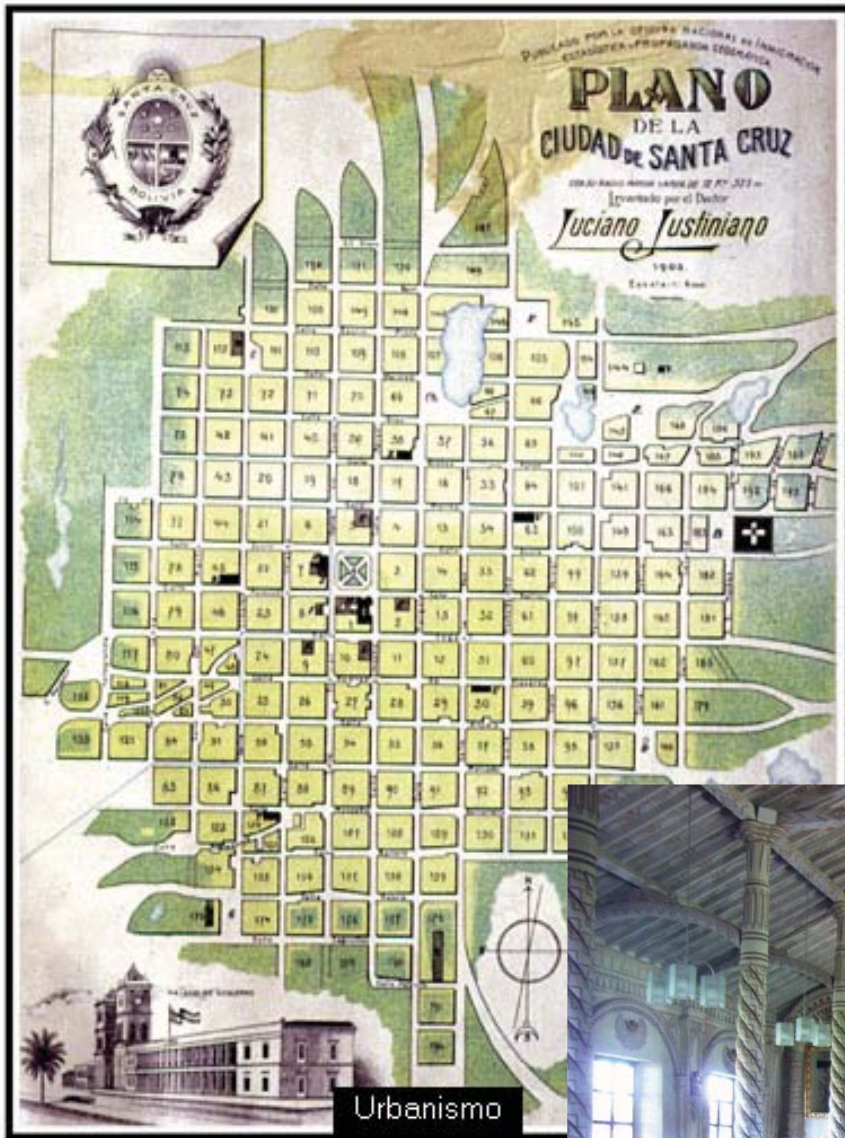
Up: Fig. 3.6 Map of Santa Cruz 1905 [Soy Santa Cruz]

Left: Fig 3.7 Interior of the Jesuit church in San Javier

3.3 Conclusion

In the important Latin American cities, which were mainly port cities, social and spatial differentiation was made between Spanish, creoles, half-bloods, indigenous and black people. In Santa Cruz, however, this was not the case; it was a biological and cultural mix. In the urban characteristics it is a Latin American city with a regular grid, but in its precarious and shabby way of building as well as in its dense vegetation, it was differentiated from the major part of Latin American cities.

During the 17th and 18th century, there was almost no urban development of the Latin American cities. The majority of the Latin American cities survived, because of trade with the Spanish mainland. Santa Cruz also did not develop (Fig. 3.6), but it was not an important trade city, and was disconnected with the Spanish mainland. It survived because of indigenous craftsmanship introduced by the Jesuits and Franciscans, which produced trade on a local scale. Santa Cruz was important on local scale, but not on continental scale.

The Jesuits introduced new ways of constructing, and constructed new villages in the surroundings of Santa Cruz. (Fig. 3.7) Inspired by the new constructions of the Jesuits, the inhabitants of Santa Cruz tried to improve their own houses to a more urban image, but rarely succeeded. In the 'Santa Cruz' way of constructing houses the remoteness and poverty was visible: people did not have big houses, and most houses were constructed out of locally available natural materials.

Fig 3.8 View on 17th century Mexico city

Fig 4.1 Buenos Aires by D. Dulin (French, 19th century)

Fig 4.2 Latin America in 1780. [Santon, 2006]

4 The 20th century urbanization (mid 18th till end of 20th century)

In this chapter, the development of Latin American cities after the independence from Spain is described. Additionally, the first industrialisation up to the developments in the 1980's will be treated. A closer look at the development of the city of Santa Cruz as well as a comparison with the general development will be given. Was Santa Cruz an important city in Latin America? Did Santa Cruz have a similar development as Latin American cities? What role did Santa Cruz play, and on what scale was Santa Cruz important?

4.1 First wave of urbanization in Latin America (1850-1920)

The 19th century was a period of great political changes due to the wars for independence from Spain, and the political unrest that characterized the first years after independence. The internal organization and formation of the Latin American nations went slowly. Civil wars and confrontations between groups formed a general picture that endured until the end of the 19th century. [Hardoy, 1975] The commercial activities of the English, the French and later on the US became dominant, and a new hierarchy of cities became apparent. Raw materials were exported to Europe, and manufactured goods were imported. [Fernandez-Maldonado, 2002]

Especially the southern cities of Latin America experienced a European immigration flow, accompanied by a wave of urbanisation. In 1850 the total population of Latin America was around 30 million and by 1900 the population had doubled. This growth was not only due to natural growth or European immigration, but also from forced immigration of African workers, and in some extent from Asian workers. [Fernandez- Maldonado, 2002]

In the mid 1880s the English and French introduced the railroad in most larger port cities. Until 1920 they expanded the network into the interiors of Argentina, Uruguay, Mexico, Chile, Cuba, Brazil and Peru; precisely the seven countries that had the largest port cities at the time. The railroad networks were mono centric, and centralized in the ports, with facilities for the exportation of the inner land products to Europe. [Hardoy, 1975]

The first World War isolated Latin America from Europe. Certain governments started encouraging the manufacturing of goods out of the raw materials, thereby initiating the first phase of industrialisation. Unfortunately, as soon as the European conflict ended, industrially powerful Europe resumed its control over Latin American markets. [Hardoy, 1975]

After the first Word War a new period of immigration to Latin America occurred. The expected destination of the immigrants was the country side, where they were to replace freed slave labour. Unfortunately, most accessible lands had already been conquered by large landowning groups and local governments did not have control over it. Therefore, most immigrants ended up in the cities. The immigration continued until the world crisis in 1930 confirmed the weakness of Latin American economies: the complete dependence upon the markets of the industrial powers. [Hardoy, 1975]

Fig. 4.3 Latin American system of cities in 1900 (Source: van Lindert and Verkoren, 1994) [Fernando-Maldonado, 2002]

As a consequence of European investment and immigration, profound changes occurred in the spatial structure of the important Latin American countries. Even though the basic urban centres of these national structures maintained their pre-eminence, the building of railroads, the opening up of new lands, the exploitation of coal and mineral resources and the administrative needs of new political subdivisions motivated the construction of thousands of new cities and towns. The majority of new cities founded, however, were simple service centres and transportation hubs for shipment of agricultural products to the ports. Only few of these cities achieved the population and importance of urban centres forming the old network inherited from the colonial period. [Hardoy, 1975]

4.2 Begin of the rapid urbanization in Latin America (1920-1980)

This period can be characterized by two urbanisation flows. First, from 1920-1950 the already important port cities, especially in the southern cone of Latin America, started to become industrialized and attracted many people from the country side to the city. The cities changed from Europe-orientated cities to US-orientated cites. In general, Latin American economies in the 1940's were predominantly agricultural, with high numbers of peasant population and weakly developed internal markets. [Fernandez-Maldonado, 2002]

Great changes in the world economy after 1945 completely altered this situation. Most countries in the region engaged in a process of import-substitution industrialization, at the hands of national bourgeoisie and foreign (mainly US) enterprises. The most favoured locations for establishment of new industries where the largest cities and the capital cities, because in that case the industries were close to the largest markets. This caused the second urbanisation flow from 1950-1980. Especially Caracas, Mexico City and Sao Paulo flourished in this period, due to oil revenues and the presence of a large industrial sector. [Fernandez-Maldonado, 2002]

Although the 1930 crises reduced the immigration of Europeans to Latin America, the cities grew even quicker than before. Because of the crisis, the rural population was forced to seek employment in urban centres, especially in those undergoing industrial expansion. The migrants appropriately assessed that life in the city offered them more hope for a better future than staying in the countryside, where opportunities were scarce. But the amount of industrial jobs was not high enough to provide employment to the large numbers of job seekers. [Fernandez-Maldonado, 2002]

The development of Latin American cities happened in two ways: the formal, and the informal city, which produced the disintegration of the classic colonial model. The formal city, created by the rich, continued developing along the most important avenues connecting the city to the most favoured areas: close to commercial areas, providing their residents who were living in the periphery of the traditional city with accessibility to high-level urban facilities and centrality. The American way of life had become the ideal of the high and middle-classes. The rich neighbourhoods were provided with all the necessary facilities and urban services and the houses increasingly resembled the North American one-family house. [Fernandez-Maldonado, 2002]

Fig 4.4 Traditional pahuichies from 1961. [Soy Santa Cruz]

Fig. 4.5 A view in one of the main streets of Santa Cruz in 1961 [Soy Santa Cruz]
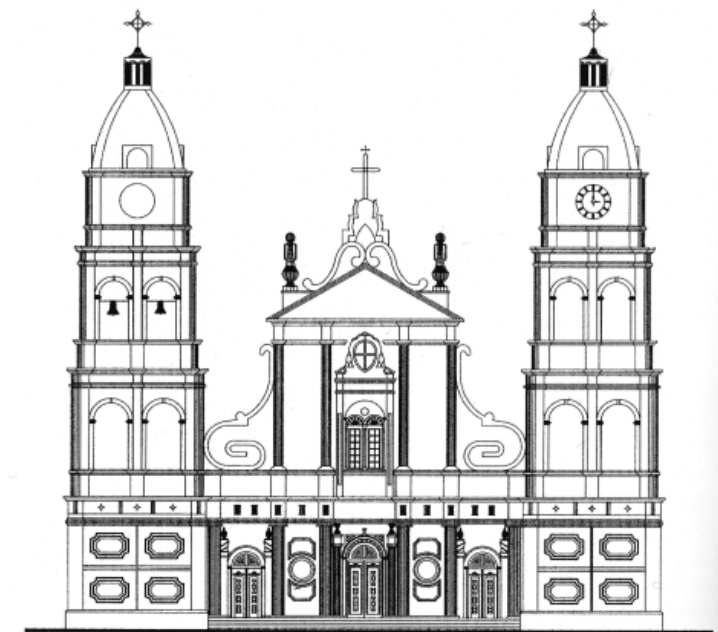
Up: Fig. 4.6 The Cathedral of Santa Cruz [Limpias Ortiz, 2001]

Right up: Fig 4.7 Example of eclectic architecture; Old market, nowa-days houses the municipality, 1899-1904 [Limpias Ortiz, 2001]

Right down: Fig. 4.8 repartitioning of "Gran Chaco" in the Chaco War [Wikipedia]

While the wealthy can afford legal and secure parcels with the appropriate infrastructure to build their dwellings and neighbourhoods on, the poor had to resort to survival and informal strategies to find a place in the city. The urban poor have resorted to two main strategies: to occupy the deep slopes or land reserved for urban facilities inside the older neighbourhoods, or to continue extending the urban boundaries in different informal ways. The informal areas have become important elements of the urban structure of the city and the major way of producing urban space. [Fernandez-Maldonado, 2002]

4.3 Extreme growth of Santa Cruz de la Sierra
After the independence war, fought between the 24th of September 1810, and the 6th of August 1825, Santa Cruz became the capital of the department with the same name within the republic of Bolivia. The following decades many legal fights took place about the ownership of land and new hierarchies of government. Not only the city Santa Cruz but the complete department stayed disconnected and less developed in comparison with the Bolivian departments in the Alti Plano. [Sandoval Rodriguez, 2003]

In the first years of independence the three typologies of constructing described in chapter 2.4 and 3.2 continued (Fig. 4.4 + 4.5). Only in 1830 did the rebuilding of the cathedral and the department government building start (Fig. 4.6). [Gaya Ábrego, 2007] From around 1850 till 1917 the rubber industry caused economical expansion. The European immigrants and rubber trade connections with Argentina and Brazil brought new building knowledge to Santa Cruz. The economical expansion and imported knowledge caused an architectural image change towards a neoclassical style (Fig. 4.7), but no structural urban change. Slowly, wooden construction materials were replaced by bricks and plasterworks. Although the building techniques changed, the distribution of spaces stayed the same. [Limpias Ortiz, 2001]

The rubber industry made Santa Cruz of bigger importance as well as making it become less isolated. The quality of public space was discussed and public buildings were renewed. Although there were economical possibilities to develop the city, the private sector realized more effective public services than the local government. The central government of Bolivia continued a neglective attitude towards the city and its department. [Limpias Ortiz, 2001]

From 1915 the rubber production declined, which affected the department of Santa Cruz economically. Finally, between 1932 and 1935 the region of Santa Cruz got national attention because of the "Chaco war", a war between Paraguay and Bolivia about the control of the "Gran Chaco" which was incorrectly thought to be rich in oil. (Fig 4.8) The war resulted in a promise from the central government for a railway connection with Argentine and Brazil as well as 11% of the oil production found in the department. This promise was marked and extended by Mervin Bohan, an economical development specialist from the United States. In his Plan Bohan from 1942, he describes the current economical Bolivian situation and proposed how Bolivia should develop. [Prado Salmon, 2005]

Up: Fig 4.9 Scheme of a Garden city by Ebenezer Howard 1901 [Limpias Ortiz, 2001]

Down: Fig 4.10 Proposal for the city San Pablo in Brazil 1930 [Limpias Ortiz, 2001]

Up: Fig. 4.11 Proposal Techint [Limpias Ortiz, 2001]

Down: Fig 4.12 The reconstructing of the streets in Santa Cruz following the plan Techint, 1964 [Limpias Ortiz, 2001]

Plan Bohan proposed a diversification of Bolivian economy from a mostly mining economy into an economy with primary focus on oil production and agro industry. The agro industry should produce for national consumption, while the oil industry should produce for international trade. The economical empowerment of Santa Cruz was one of the main topics and created new possibilities for development and realisation of new infrastructures and public services for Santa Cruz. [Oviedo Quiroz, 2002]

The effect on Santa Cruz de la Sierra of the "Chaco war", the Plan Bohan, the discovery of gas and oil and the structural changes for production of agricultural and industrialized products in Bolivia became visible. [Oviedo Quiroz, 2002] Santa Cruz de la Sierra counted 40.000 inhabitants in 1957, and did not have one paved street. The city had to be converted from an isolated traditional city into a modern development node. After several attempts it became clear the Bolivian government didn't seem to be interested in improving the urban qualities of Santa Cruz. [Limpias Ortiz, 2001]

In the fifties the local government started an urban committee for urban improvements. Unfortunately urban planning knowledge was missing and in 1958 a number of external offices were asked to make an urban proposal for Santa Cruz. The office Techint won the competition, with a plan inspired by the garden city and introduced a road structure of 4 rings and radials for better traffic connections. Besides a new structure, it also included drinking water, sewage system, electricity, telephone lines, street pavements and an industrial park. (Fig 4.9-4.11) [Limpias Ortiz, 2001]

> The urban plan of Techint was a radial-concéntric design, founded on a similar model as the urban design of San Pablo (Brazil) in 1930. The urban plan of San Pablo was based on the utopian idea of the "Garden city" from the beginning of the 20th century. The new expansion areas should function as autonomous neighbourhoods with centralized streets and neighbourhood functions. The main square should function as the heart of the city. The reason for choosing this model is not clarified in literature, but most likely is financial, good possible connection with the existing gridiron system and good distribution possibilities. Santa Cruz became an example in the sixties and seventies because of this plan.

The execution of the Techint plan took place in the sixties and seventies (Fig 4.12) resulting in CRE, a electricity company, and Saguapac, a drinking water and sewage system company. The migration from the altiplano and other regions as well as another immigration flow from Europe after the second World War, caused massive expansion of the urban area. Not only the urbanism, but also the architecture became influenced by global movements and a modernistic way of architecture became favourable. In the city centre the covered pedestrian streets started to disappear, and more highrise offices and apartment buildings appeared. Especially, many new public buildings were erected in a modern style. In the sixties and seventies the development and growth of the city was controlled by the department of urban planning. At the end of the seventies the urban planning department started losing control of the urban development, because of the enormous illegal ground owning and constructing by the poor migrants. [Limpias Ortiz, 2001]

Fig 4.13 Map of Santa Cruz de la Sierra in 1961 [Soy Santa Cruz]

Köster concludes in 1980 that the urban expansion of Santa Cruz is not only directed by the growth of the city, but also by the socio-economical development of the region and the Bolivian nation. The development and future of this city depends on the development of its district (production of agriculture, oil and gas) and the intervention of national government. Santa Cruz left its colonised and isolated image behind and became an important city on South American scale. [Gaya Ábrego, 2007]

4.4 Conclusion

Santa Cruz entered the Republic as an isolated, unimportant city. It was not connected to the network of cities at all, so it could not have any importance on trade level. Due to the discovery of rubber and oil, governmental change of vision and the investment of immigrants from Europe and de United States, the city became connected. Railways connected Santa Cruz with Argentine and Brazil and asphalted roads made the connection with Cochabamba and the rest of the country.

In comparison with the general development of Latin American cities, Santa Cruz is a laggard. The main port cities in Latin America got railway connections to the back land in the mid or late 19th century. Santa Cruz got these infrastructures in de midst of the 20th century. Latin American port cities expanded in the 19th century, because of big immigration flow and investments from Europe and the United States. Santa Cruz was badly connected, so the main immigration stream came after the second World War.

To realize these connections, the investment and focus from the government was important. Due to the discovery of oil in the grounds of Santa Cruz, causing the Chaco war with Paraguay, new connections were necessary. In the eighties Santa Cruz grew to a big modern city with similar problems as the Latin American cities, but on a smaller scale. The specific identity of Santa Cruz is the urban plan of Techint with its 4 rings and radial structure. The urban plan created the possibility to move from an isolated disconnected city, in a relatively small period, to a modern city. Additionally, the urban plan led to a controlled urban growth for at least two decades. In comparison with the Latin American cities, the development of Santa Cruz happened in a smaller time span. However, Santa Cruz is still not on the same level as the important Latin American port cities. (Fig. 4.13)
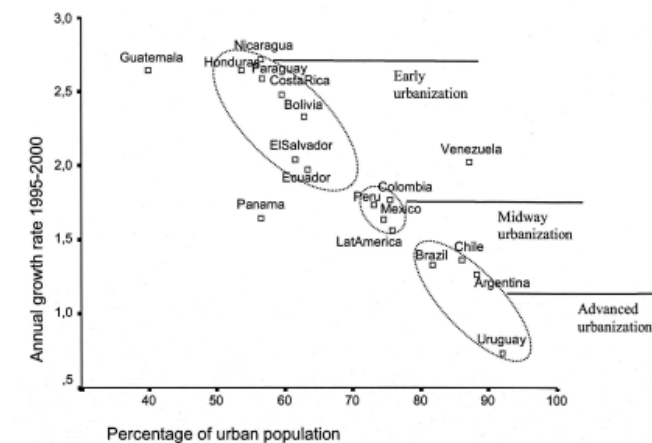

Fig 4.14 Urban growth in Latin-America [Fernandez-Maldonado, 2002]

Fig. 5.1 Latin America; Major Cities in 1995 [Ledo Garcia, 2002]

5 The current state

Hardoy's description about Latin American cities did not go further than 1975. After 1975 new developments occurred which are reflected in the urban structure. How did the Latin American cities develop the last three decades? How do the cities look nowadays and what are the general problems? Is the same development also visible in Santa Cruz de la Sierra or is its development slower?

5.1 Latin American cities

The last three decades have been characterized by radical transformations in the Latin American urban scene. New types of social interactions among urban actors have emerged, while new types and new locations of urban function have become visible. The transformations have resulted in new ways of production of urban space, characterized by peripheral and fragmented developments. [Fernandez-Maldonado, 2002]

In the 1980s, the so-called lost decade for Latin America, a strong economical crisis again occurred, which stopped the extreme growth of most of the cities. The IMF and the World Bank forced governments to change the economic model, and to adopt the Structural Adjustment Policies, prescribing radical public-spending cutbacks, reduction of the public sector, privatisation, deregulation and liberalisation of trade and finance. The new policies had drastic social effects in both middle and low-income sectors, resulting in an even larger inequality between the rich and the poor. [Fernandez-Maldonado, 2002]

The beginning of the 1990s witnessed a period of economic recovery in most countries, but is also known by the spectacular economical crashes. The Latin American economies remained dependent on foreign capital and were vulnerable to external crises, because of the openness of the national economies. At city level, the economic crisis meant low levels of, or no public investment, and almost no urban management, but an increased presence of foreign private capital in urban services. The old city centre is depopulating and high rise developments are visible in most big cities.

The rich becoming richer and the poor becoming poorer is not only visible in the formal and informal housing areas, but also in the public space. The socialeconomical status of the people is directly reflected in the spatial fragmentation of the city. Prostitution, drug dealing and crime increased, resulting in a insecure feeling in public areas. The elite developed "modern" enclosed spaces, which reduced the direct contact between elite and poor groups even more. These enclosed spaces, or "gated neighbourhoods", consist of large single houses or apartment buildings with a controlled access and a green area. Sometimes a swimming pool, sport facilities, restaurants and other recreational facilities are included. These small paradises created for the rich are not a typical Latin American development, you can find them in almost all large cities in the world.

In 2001 Latin America counted 2 cities with more than 18 millions inhabitants (Sao Paulo and Mexico City) and 5 mega cities of more than 8 million. 49 Latin American cities had more than a million inhabitants at the turn of the century. These cities house 43% of its urban population, confirming the preference of Latin Americans to concentrate in large cities. [Fernandez-Maldonado, 2002]
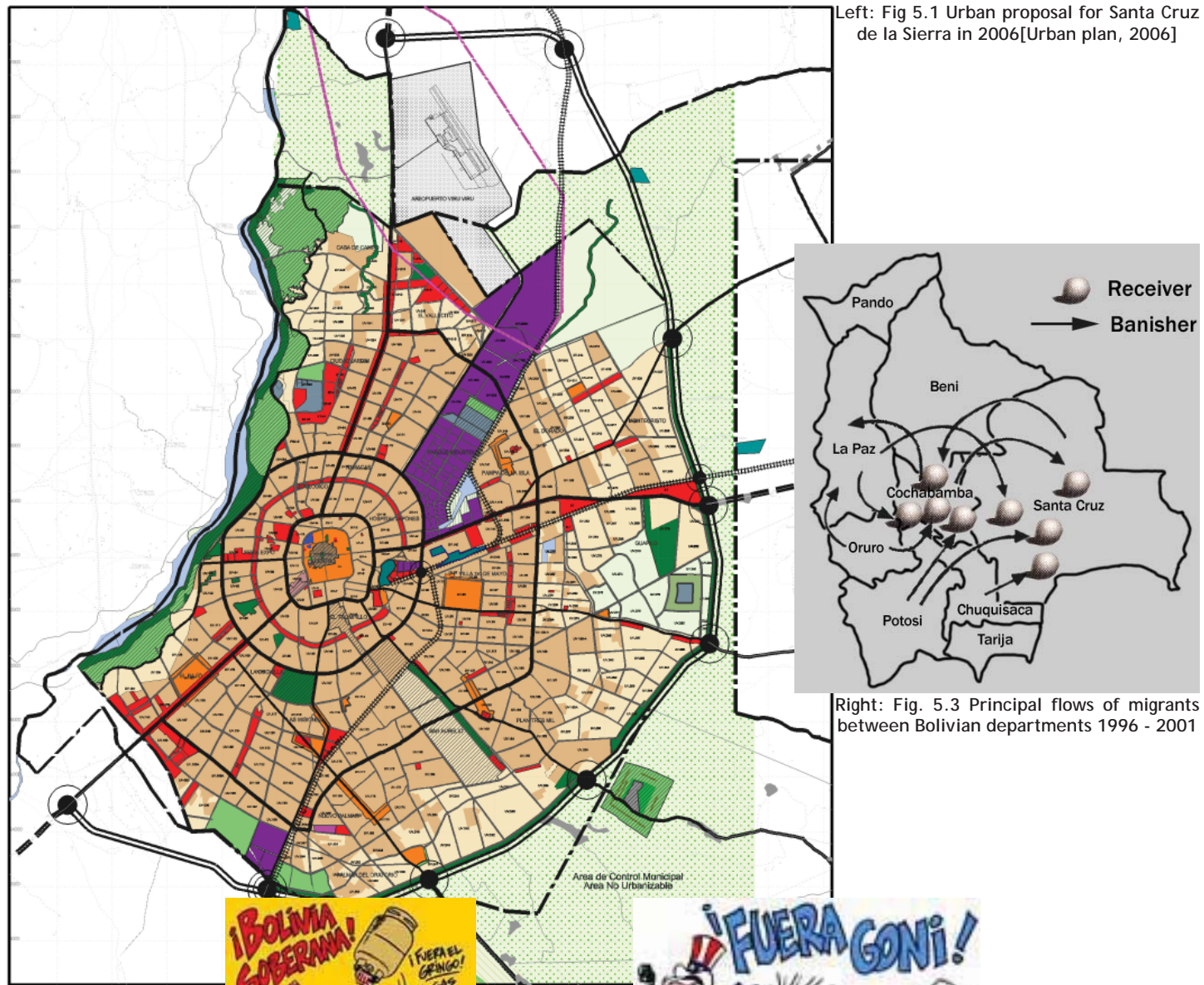
Right: Fig. 5.3 Principal flows of migrants between Bolivian departments 1996 - 2001

Fig. 5.2 Protest strip against private gas companies

5.2 Santa Cruz de la Sierra

The economical crisis of the eighties also reached Bolivia. In 1985 the president, Victor Paz Estenssoro, promotes a New Economic Policy with great spending cuts and privatization, implementing the Structural Adjustment Policies. This resulted in massive unemployment, especially in the mining areas Potosi and la Paz. However, the president stimulated the development of the largely uninhabited low-land regions by road building and the opening up of land for agriculture without harming the rain forest. [Armstrong, e.a., 2007] This resulted in migration of the miners to Santa Cruz to find and create new work. They started living on big parcels in the outskirts of Santa Cruz and developed small businesses and shops. Some became freelance workers; you can hire them for building constructions and cleaning houses. (Fig 5.3)

In the eighties Santa Cruz doubled in amount of inhabitants and tripled in physically used space. Because of the national economical and institutional crisis, almost no urban planning occurred. In 1983 a big flood made many poor migrated inhabitants homeless. The municipality dealt with this problem by buying a piece of land on the other side of the city and giving the land to the 3000 families without a house. This was the only effective urban plan of the municipality in the eighties, called Plan "3000". Unfortunately, most of these inhabitants still don't have their official land ownership papers. The inflation in the eighties was so heavy that the government couldn't pay for the ground. This is still an unsolved problem.

In 1990 gas is discovered in the department of Santa Cruz. Between 1993 and 1997 a second wave of political transformations into a neoliberal model were made, and all public companies where capitalized. These transformations opened the way to global external economies which produced an enormous effect on the region of Santa Cruz. The city of Santa Cruz concentrates all economical activities generated in the department. One can find industrial, commercial and financial activities, but also the exportation and importation of products, realized by the institutions that are seated in the city of Santa Cruz. [Prado Salmon, 2005] In the nineties the urban planning department became better organized due to the better economical situation. In 1995 a complete integrated urban plan, developed by a group of different specialists, was presented. In 1999 a plan on province scale was made to better understand the connection of the city with its region. The analyses and plans highlighted the complexity of this city and the difficulty of realising these plans. [Limpias Ortiz, 2001]

Fernando Prado Salmon explains, in an interview, some of the problems they experienced with executing the urban plans in the city of Santa Cruz. "The poor migrants occupy a piece of land that is not theirs. After constructing their houses they demand that the municipality facilitates the neighbourhood facilities. Most of the time spaces for neighbourhood facilities is not created and repartition of the parcels is necessary. The repartition occurs in discussion with the inhabitants. In these cases urban planning happens afterwards, not before. Most urban poor have access to drinking water, electricity, public transport and neighbourhood facilities, but their houses and sewage systems are an individual problem, not a communal one." [Prado Salmon, 2008]
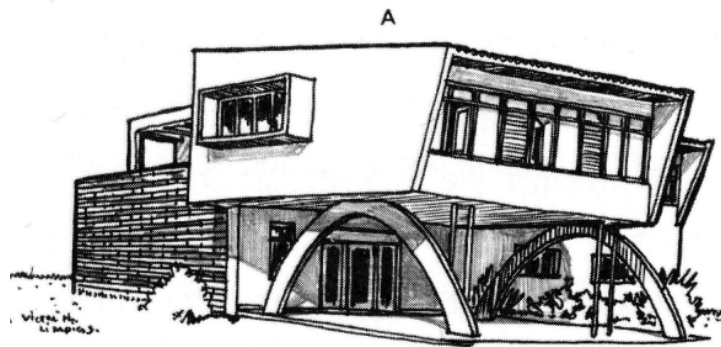
Fig 5.4 modern architecture designed house, 1996
[Limpias Ortiz, 2001]

Fig 5.5 Apartment blocks for the rich, 1988-90
[Limpias Ortiz, 2001]

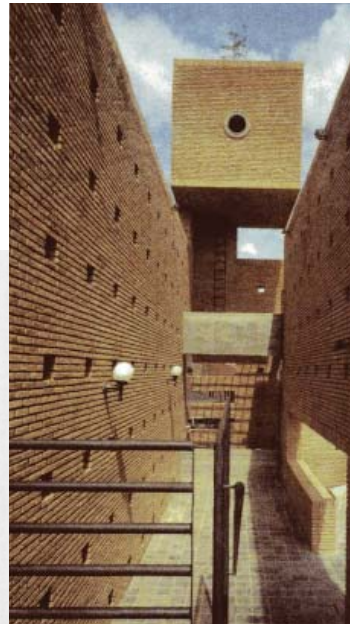Fig 5.6 High rises for offices, 1975-78
[Limpias Ortiz, 2001]

Fig 5.7 Monument by Mario Botta, 1996 [Limpias Ortiz, 2001]

Fig 5.8 neo-regionalism, tennis club 1992-97
[Limpias Ortiz, 2001]

Fig 5.9 Consulate of Honduras, 1995-97
[Limpias Ortiz, 2001]

After the two privatisation transformations, two protests mark a contra movement; the water protest in Cochabamba in 2002, and the gas conflict between Bolivia and Chile in 2003. Both dealt with the problems caused by the western owned private companies. The Bolivian people wished to turn these companies into national owned companies. The current government (MAS, movement to socialism) of Evo Morales is stimulating this process by nationalising gas and oil industries, telephone lines and water suppliers. Not all departments support Evo's centralism way of governing: Santa Cruz does not. Santa Cruz, now one of the wealthiest departments of Bolivia, wants more autonomy so more money can be invested in development of infrastructure, public services and urban space. [Prado Salmon, 2005]

The more globally connected and wealthier Santa Cruz obtained a more global architecture. This was especially reflected in public buildings and housing for the rich. Different styles are recognisable in the current architecture from Neo-regionalism to neo-modernism and deconstructive styles. Some styles are influenced by global movements, others by local architectonical typologies. The reintroduction of the covered pedestrian streets and the introduction of a traditionally styled barbeque are important changes into the urban ambiance of Santa Cruz. Constructing with wood and colonial roof tiles, and sometimes with palm leaves became fashionable building technologies. However, building with concrete and bricks remained important. (Fig 5.4-5.9) [Limpias Ortiz, 2001]

Not only the construction of public buildings and the housing for the rich developed, but also the urban poor developed their way of constructing. The migrants of the altiplano and the introduction of new materials by the urban rich causes new ways of constructing. In general, the houses of the poor develop slowly from 'non materialized', temporary constructions, into constructions with bricks and colonial roof tiles or fibre cement roofing. The houses of the poor develop depending on their wishes and demands and their financial possibilities. [Limpias Ortiz, 2001]

In the last 30 years Santa Cruz became the motor of the national economy of Bolivia. Nowadays, the city counts more than 1,5 million inhabitants and is the quickest growing and largest city of Bolivia. Despite the quick growth, the city continues to expand with a relatively low density and in a chaotic uncontrolled way, resulting in a fragmented city. In 2006 a new urban plan was proposed with similar implementation problems as in 1995. Only this time the construction of a border to stop the growth of the city is proposed, because Santa Cruz does not have strong natural borders that can stop this low density growth. [Limpias Ortiz, 2001]
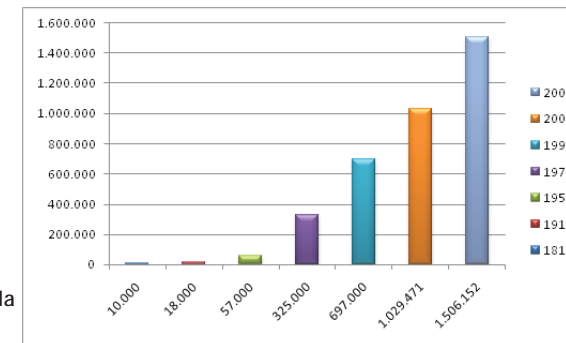

Fig. 5.10 Urban Growth of Santa Cruz de la Sierra between 1810 and 2008
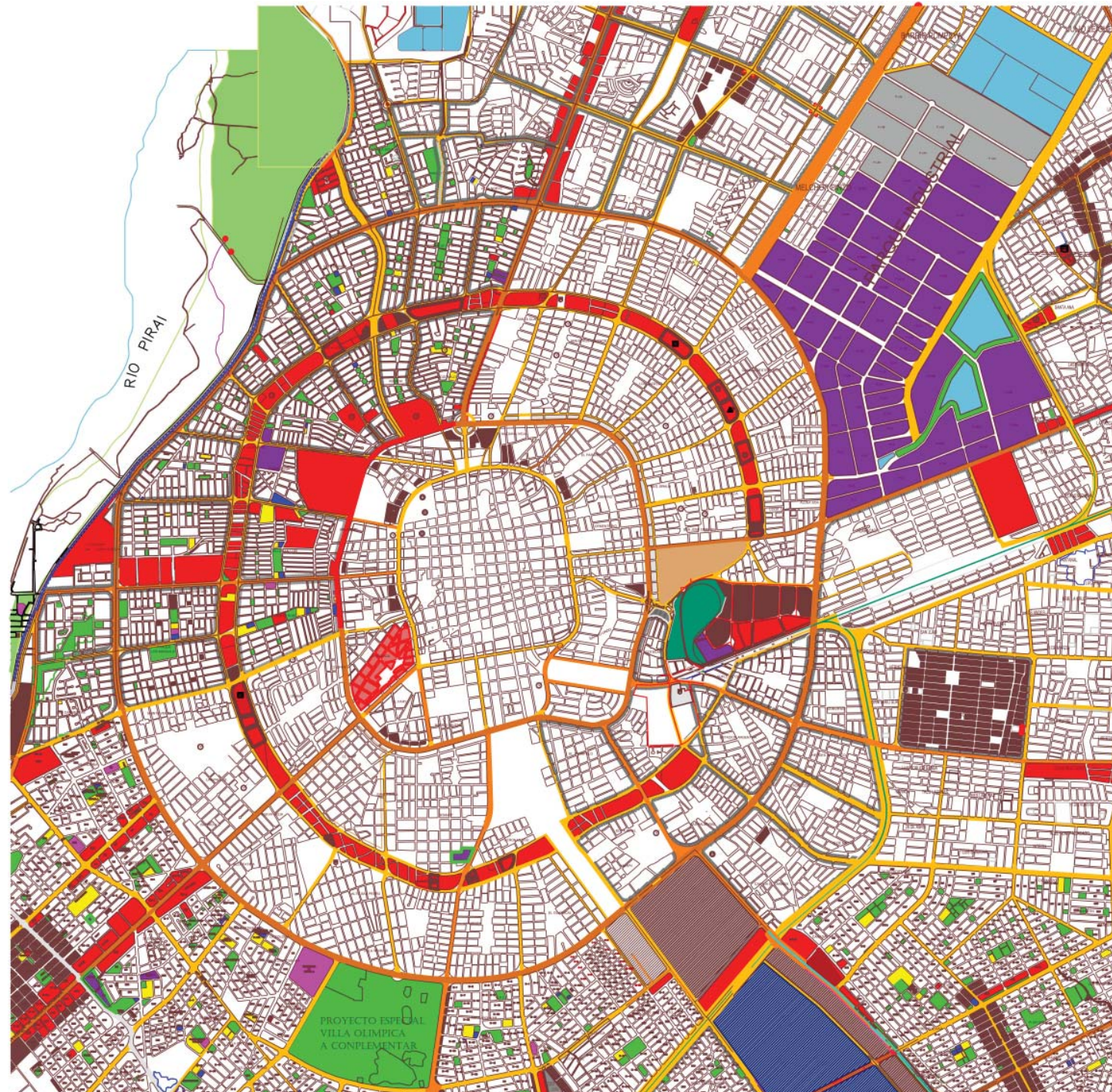
Fig. 5.11 Map of Santa Cruz of 2006 [Urban plan, 2006]

5.3 Conclusion

The big transformations in Latin America also reached Santa Cruz. Bit by bit Santa Cruz become a typical Latin American city with its characteristics and problems. The old colonial grid is still recognizable, whereas different modern architectural styles replace the colonial buildings. The big difference between the rich and the poor is a growing factor in these cities. The urban poor define a big part of the urban structure and part of the identity of the city.

The urban planning department tries to control the development of Santa Cruz, but the department has difficulties to reach its goal. The uncontrolled growth of the city since the eighties and the minimal financial possibilities, makes urban planning an almost unsolvable task. In addition, corruption and unavailability of people that are capable of executing plans cause a bad functioning of the urban planning department.

The massive migration and globalisation has deep impact on the culture of Santa Cruz. Coming from a small quiet, homogeneous population and now being a multi cultural cosmopolitan dynamic city is an extreme change. In the sixties the society was much more open, for example, in the evenings the people were sitting in front of their houses. Nowadays the inhabitants of Santa Cruz live between closed walls to protect their property and stay indoors when the sun goes down, scared as they are for the youth gangs.

Fig. 5.12 Historic Centre of Santa Cruz

Fig. 5.13 Housing for the Rich between 2nd and 3rd ring

Fig. 5.14 "Cheap" housing 12km from the city's centre

Fig. 5.15 Self construction on (il)legal parcel
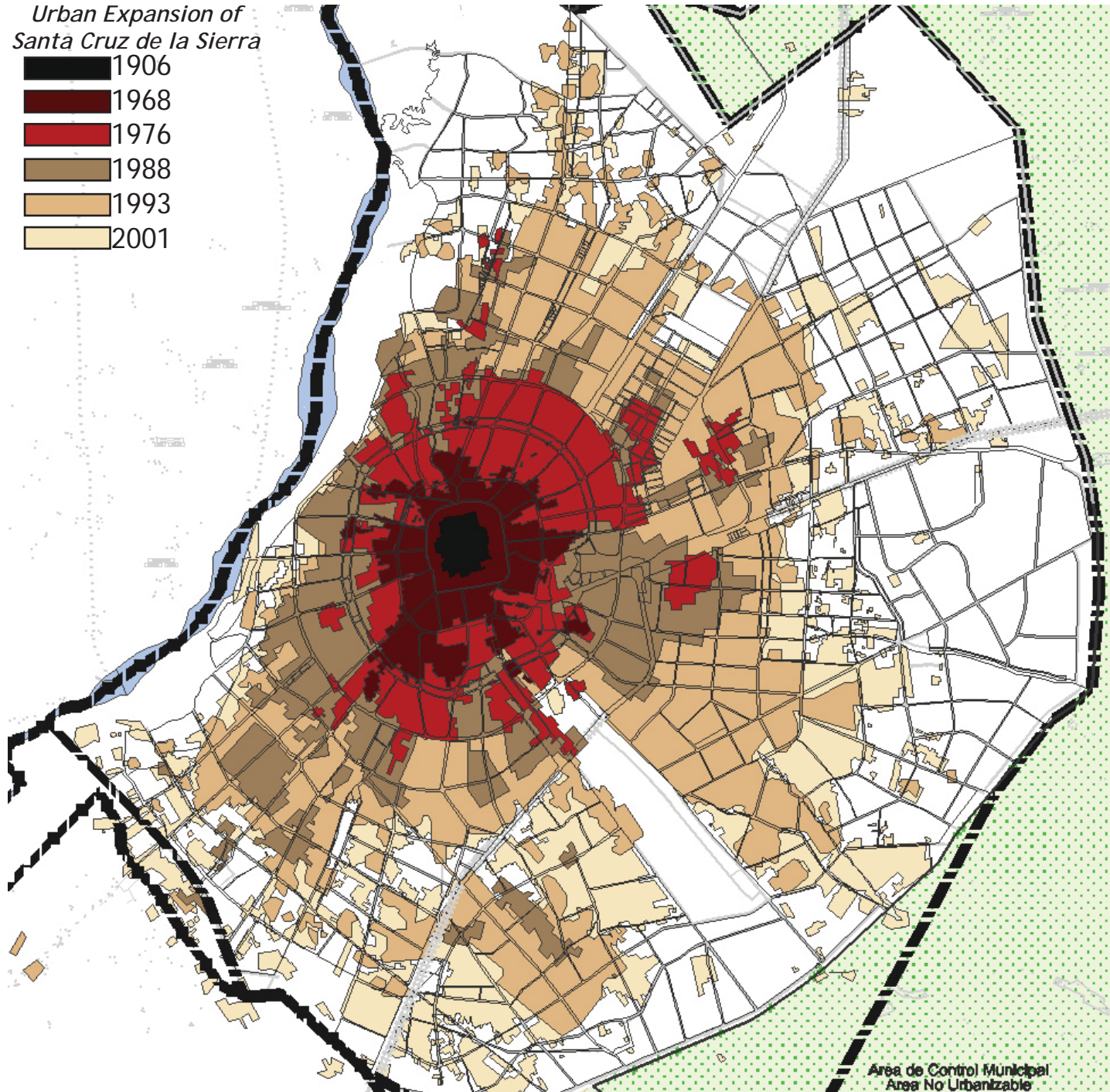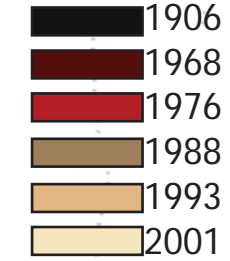
Urban Expansion of
Santa Cruz de la Sierra
1906
1968
1976
1988
1993
2001

Area de Control Municipal
Area No Urbanizable

Fig. 6.1 Urban growth between 1906 and 2001 [Urban Plan 2006]

6 Conclusions

Santa Cruz de la Sierra was an isolated, marginal and disconnected city for more than 400 years, from its establishment in 1622 until the 1950's. It did not have much influence on the economical and political development. The urban establishment of Santa Cruz was similar to the general Latin American cities, but architecturally it developed an own local and precarious way of constructing. While most Latin American city became important centres for trade with Spain during the colonization, Santa Cruz stayed undeveloped. The Jesuits, who immigrated in the 17th century, developed the region and kept Santa Cruz alive. However, the city stayed poor and underdeveloped.

In the 19th century, the beginning of the Republic period, many Latin American cities became important trade centres; first with Europe and later on with the United States. The size of the cities exploded due to migration and immigration. Santa Cruz was not part of the existing network of cities and stayed disconnected. The introduction of the rubber industry was the first attempt to become more visible, but Santa Cruz did not succeed.

The 20th century is marked by big political and spatial changes. The influence of the United States increased and immigration from the west was substantial. The introduction of industries made cities more attractive and the poor country side became less populated. The rich immigrants and the poor migrants constructed the cities. On one side you get the American style closed urbanisations, populated by the rich, with all urban facilities included. On the other side you get the urban poor, who construct illegal neighbourhoods without facilities. This contrast becomes bigger and bigger.

The changes of the 20th century also became visible in the dynamic, modern Santa Cruz de la Sierra. In a much quicker process than the general Latin American city, Santa Cruz explodes. The gas and oil industry, as well as the agricultural industry, became very important from the fifties on. In 60 years this city changed from an isolated unimportant village into a global city with more than 1,5 million inhabitants generating almost 30% of the national income of Bolivia. Interestingly, the urban development has a similarity with the colonial cities of the 16th century. In the city centre the rich people (mostly from Europe and the USA) live in structured and organized houses, while the poor people (mostly indigenous inhabitants) live in less organized neighbourhoods in the periphery with their self built houses.

In general, Santa Cruz is a Latin American city with the same main problems as other Latin American cities. Because of its location its development came much later. The capitalist system favours central locations, as remote locations imply higher transportation costs for products to reach the markets. The construction of highways and railways helped to overcome this problem. A change in accessibility is the most important condition for a change in functional structure.
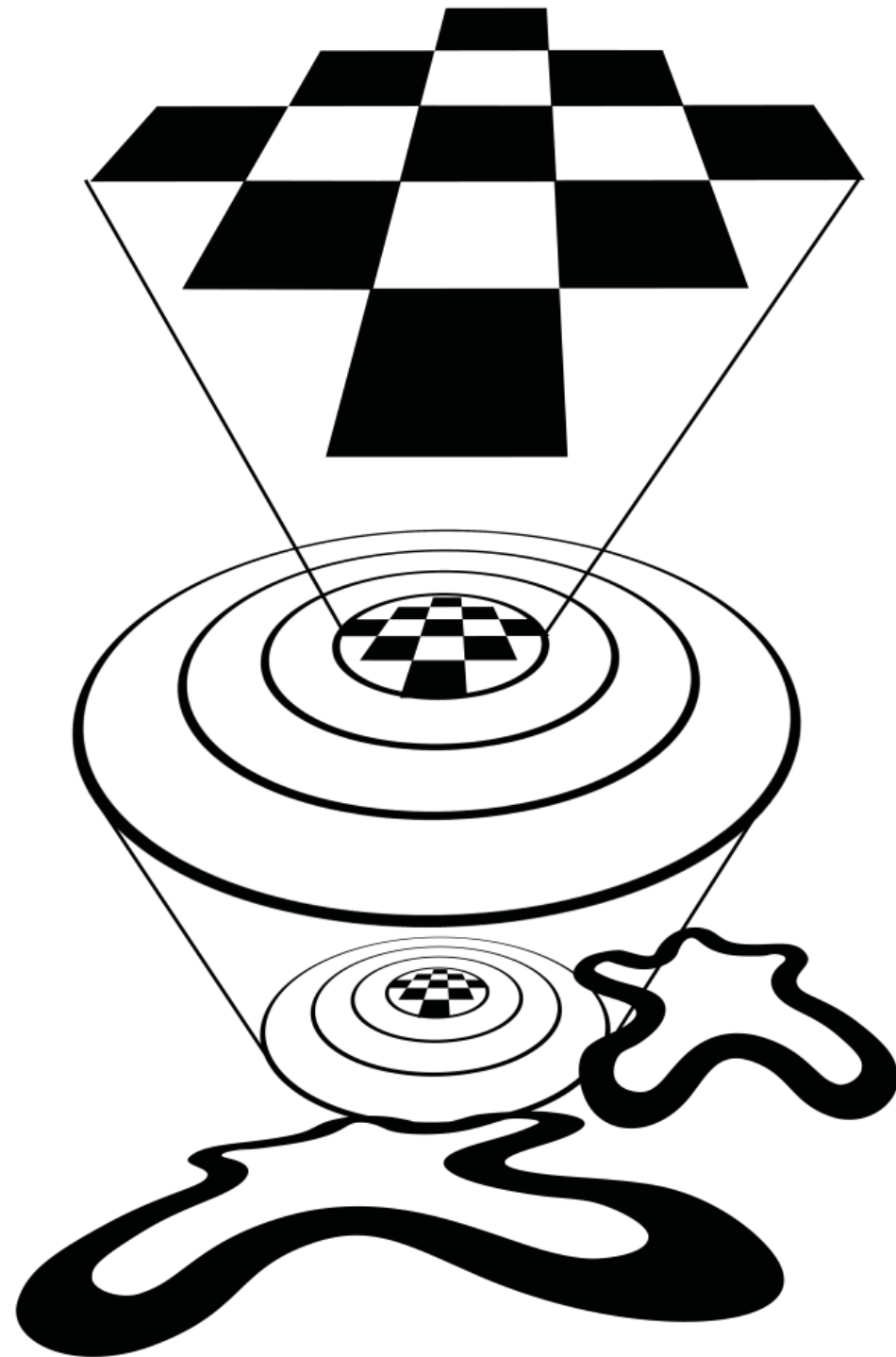
URBAN DEVELOPMENT OF SANTA CRUZ DE LA SIERRA

Spanish introduced ches patern urban plan in the colonial period 16th century.

With the introduction of plan Techint four radials are introduced that mark the city. 1950 -1970

Huge immigration causes uncontrolled extensions. The city is now growing uncontrolled with a low density, because natural borders are not present.

Fig. 6.2 Simple presentation of the urban development of Santa Cruz de la Sierra

There are also typical aspects that mark the identity of Santa Cruz. The introduction of the plan Techint made Santa Cruz into an urban example in the sixties and seventies. This structure is still visible in the city and for the inhabitants the rings serve as a reference for orientation and navigation. Besides, Santa Cruz is a tropical city which is obvious from the large amount of green in the city. In general, low density is mostly seen as a disadvantage for a city in terms of public transport, water, electricity and sewage services, however, the inhabitants of Santa Cruz see it as a quality. You live in the city, but still have the spatial comfort of living in the county side.

The autonomous image of the people living in Santa Cruz also is a quality the cruzeños like to promote. They prefer a more decentralized governmental system and want to become more independent from the west, a current tendency in many Latin American countries. When they are able to build up an own economy, will they be able to develop an own architecture and urban planning style? Or will globalisation stop the development of individual styles?

Fig. 6.3 Two buildings at the main square of Santa Cruz de la Sierra promoting the autonomous attitude of the department of Santa Cruz.
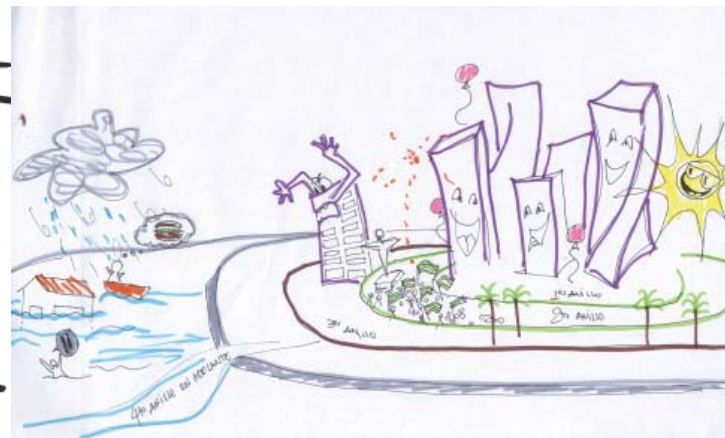
Fig. 7.1 Skyscraper city [UAGRM, 2008]

Fig. 7.2 Rich versus poor inhabitants [UAGRM, 2008]

Poorer area | Concentration of the rich | Old city centre | Concentration of the rich | Poorer area
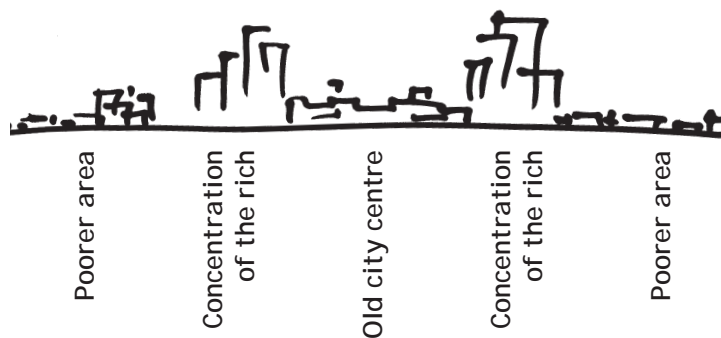
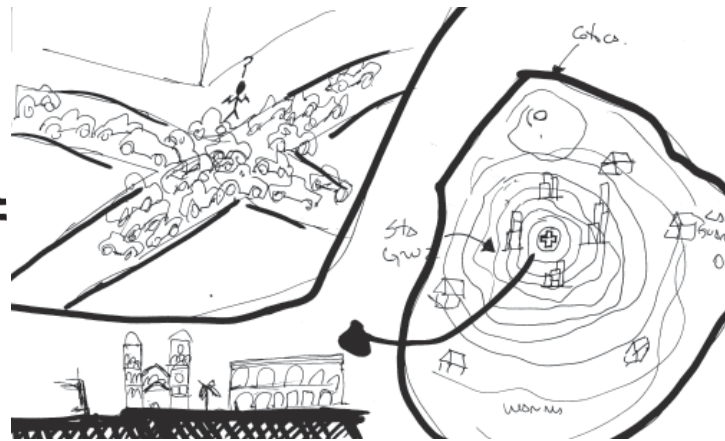Fig. 7.3 Section through the city [UC, 2008]

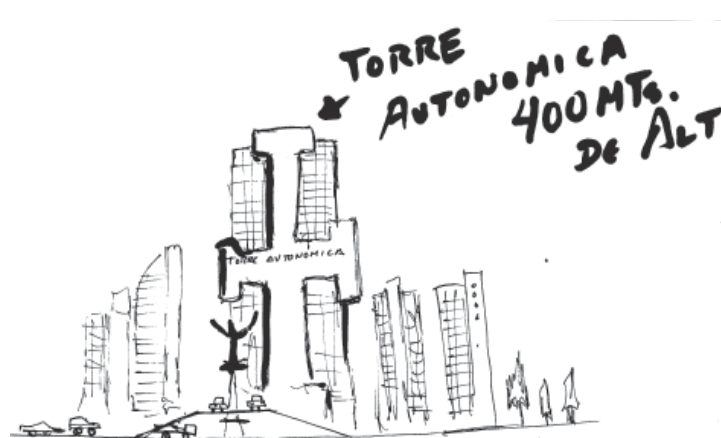Fig. 7.4 Continuous growth and more chaotic traffic [UPSA, 2008]

Fig 7.5 High rise (tower of autonomy, 400m high) and different infrastructure for cars and pedestrians. [UAGRM, 2008]
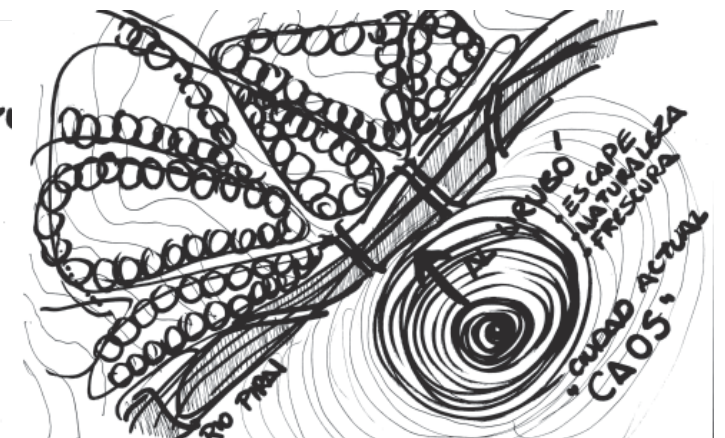

Fig 7.6 Extension of the city also on the other side of the river [CASCZ, 2008]

7 Epilogue

After the description of Santa Cruz's development, it is interesting to look at its future. The (im)migration to this city will probably continue, therefore I asked 5 architects and 50 architectural students in Santa Cruz:

"How do you think Santa Cruz de la Sierra will be in five years?"

The city will continue growing. Someone believes that in 5 years 3.000.000 people will live in Santa Cruz. To improve this city, better urban planning and control of building laws is necessary. Autonomy will imply a better control over the resources of Santa Cruz. These resources will be used for better public areas, better and more education, more transparency and no corruption. This can result in less drugs and alcohol misuse and a more secured city. Santa Cruz will become a city that is in balance on all its different aspects.

The expansion of the city should not only happen in horizontal direction, but also in vertical way. The construction of skyscrapers for offices as well as for housing is crucial the coming years. Santa Cruz's centre will become full of skyscrapers and it will be known as skyscraper city. Unfortunately, the expansion and growing migrated population will also signify a loss of traditions.

The growth in the number of inhabitants will stand for increased polution and trash. The chaos will continue. So the preservation and extension of green areas, like parks and squares for recreation, sports and fresh air, is important to keep the city liveable. Not only the polution, but also the amount of traffic will grow, so the investment in infrastructures for cars, public transport and pedestrians, but also the introduction of metro lines and more paved roads is necessary.

The contrast between the rich and poor will become bigger when the city continues to grow. Corruption, drug dealing, prostitution and violence will become an even bigger problem. It is important to deal with it now. Create basic services for everyone, for rich as well as for the poor so poverty will be diminished. The industries should grow so more work will be created. No child should be working, they should go to school. The city will have better educated people with a higher quality of life. Urban growth and the economical growth should be developed at once. Santa Cruz should become a more modern and cosmopolitan city and the potential centre for South of America

The future image drawn by the students and architects of Santa Cruz may be a bit too promising. To change a city that is constructed by two main players, the urban rich and urban poor, into a coherent city where everyone is happy, would be a dream come true for all the world. However, it points out what the current main problems are and how the future architects and urbanists think to resolve them.

Whether the city of Santa Cruz de la Sierra will develop in the way the students and architects in Santa Cruz explained me, nobody knows, but it may be clear that if these future views will be realised, the city should know which mechanisms construct the city, both directly and indirectly. As Köster already concluded in the 1980's, Santa Cruz's development depends on its region. Therefore, not only the mechanisms within the city, but also the surroundings of the city should be analysed. With these aspects the urban development plan should be drawn. Not only the urban planner but especially the political and economical system should create possibilities for implementing the new structures in the city.

Besides looking at it's own development a look into neighbouring cities with the same or even heavier problems should give new ideas. As was explained in the concluding chapter, Santa Cruz is still not at the same development level as a city like Buenos Aires. A city like Santa Cruz can now learn from their development and mistakes. Will Santa Cruz de la Sierra become a mega city or super mega city like Mexico City and Sao Paulo?

8 Literature

Books

[Armstrong, e.a., 2007] Kate Armstrong, Vesna Maric and Andy Symington, *Bolivia*, Lonely planet, April 2007, 6th edition

[Fernandez-Maldonado, 2002] Ana Maria Fernandez-Maldonado, *Changing spatial logics in Latin American metropolises*, October 2002

[Gaya Ábrego, 2007] Daniela Gaya Ábrego, *Historia y folklore de los barrios cruceños*, Editorial El Pais, Bolivia, 2007

[Hardoy, 1975] Jorge E. Hardoy, Urbanization in Latin America, Approaches and Issues, Anchor Press, doubleday, garden city, New York, 1975

[Köster, 1983] Gerrit Köster, *Santa Cruz de la Sierra, desarrollo, estructura interna y funciones de una ciudad en los llanos tropicales*, Instituto de ecología y centro pedagogico y cultural portales, La Paz y Cochabamba, Bolivia, 1978

[Ledo Garcia, 2002] Maria del Carmen Ledo Garcia, *Urbanisation and Poverty in the Cities of the National Economic Corridor in Bolivia; case study: Cochabamba*, Delft University Press Sience, 2002

[Limpias Ortiz, 2001] Victor Hugo Limpias Ortiz, *Santa Cruz de la Sierra, Arquitectura y Urbanismo*, Imprenta Landívar, Santa Cruz de la Sierra, Bolivia, 2002

[Morris, 1994] A. E. J. Morris. *History of urban form, before the industrial revolutions*, third edition, Longman Scientific & Technical, England, 1994

[Oviedo Quiroz, 2002] Freddy Oviedo Quiroz, *Santa Cruz de la Sierra, Ciudad Íntima, Homenaje al 441 aniversario de su fundación*, Fondo Editorial Municipal, Bolivia, 2002

[Prado Salmon, 2005] Fernando Prado Salmon, *Santa Cruz y su gente, un visión crítica de su evolución y sus principales tendencias*, ABC Producciones Ltda., Santa Cruz de la Sierra, Bolivia, 2005

[Sandoval Rodriguez, 2003] Isaac Sandoval Rodriguez, *Historia de Santa Cruz, Desarrollo historico social, Impreso en Indusrias Gràficas*, Sirena color, Santa Cruz, Bolivia, 2003

Urban analyse

[Urban plan, 2006] *Plan de ordenamieto urbano territorial*, gobierno municipal de Santa Cruz de la sierra, 2006

Interviews and workshops

[Prado Salmon, 2008] Interview with Fernando Prado Salmon at 13 March 2008

[UPSA, 2008] Workshop held on 22nd of April 2008 with 10 students at the faculty of architecture part of the Private University of Santa Cruz de la Sierra (UPSA)

[UAGRM, 2008] Workshop held on 30nd of April 2008 with 30 students at the faculty of architecture part of the Autonomic University of Gabriel Rafael Moreno (UAGRM)

[UC, 2008] Workshop held on 28nd of April 2008 with 10 students at the faculty of architecture part of the Catholic University (UC)

[CASCZ, 2008] Workshop held on 16nd of May 2008 with 5 architects of the College of Architects of Santa Cruz de la Sierra (CASCZ)

Website

[Wikipedia] www.wikipedia.com

[Soy Santa Cruz] www.soysantacruz.com.bo