THE URBAN GROWTH PROCESS IN PERU

by

RONALD OSWALDO VILLASANTE

B.Arch. Universidad Nacional San Antonio Abad,Cusco. 1978
Dipl.Arch. Universidad Nacional San Antonio Abad,Cusco. 1980

A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF REGIONAL AND COMMUNITY PLANNING

Department of Regional and Community Planning

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1982

Approved by:

Major Professor

TABLE OF CONTENTS

THIS BOOK CONTAINS NUMEROUS PAGES WITH THE ORIGINAL PRINTING BEING SKEWED DIFFERENTLY FROM THE TOP OF THE PAGE TO THE BOTTOM.

THIS IS AS RECEIVED FROM THE CUSTOMER.

THIS BOOK CONTAINS NUMEROUS PAGES WITH DIAGRAMS THAT ARE CROOKED COMPARED TO THE REST OF THE INFORMATION ON THE PAGE.

THIS IS AS RECEIVED FROM CUSTOMER.

LIST OF GRAPHS, MAPS AND PLANS

ACKNOWLEDGEMENTS

INTRODUCTION

This report studies the morphology of the representative urban centers in Peru and the forces that contributed to its formation and development throughout history. To this end, the physical structure, lay-out and clustering pattern and land use distribution are investigated for specific cities at different stages of their development.

A brief description of the country followed by the highlight of the process of urbanization until the present is presented first. Then, the physical structure of the selected cities is analyzed using a three-period historic approach. The first period goes from the early presence of the aboriginal human settlements to the arrival of the Spaniards in the 1500's. The second period extends roughly to the turn of the present century, that is, the colonial period. And, finally, the third period covers the present century when cities adopt a complex pattern. In each case a relation is established with specific events that contributed to tipify each stage.

In each period the chosen urban centers are studied in terms of primarily four physical elements: size of the settlement, land use distribution and allocation, lay-out and finally urban features, that is, plazas, open spaces, and so forth.

The point of view with which this study is undertaken then, is that of a physical urban designer concerned with the formation and development of the morphology of the Peruvian cities which, ultimately, will be his working element.

An undertaking of this type of study for Peru is of particular relevance to the author because of his concern about the development of the urban pattern in

1

his native country, and also because most of the studies dealing with cities in Peru, and in South America, have been generally done from a strict social science approach i.e. urban anthropology, urban sociology etc: but few from the urban designer's approach. As Jorge E. Hardoy states "Urbanization has been presented as evidence of Latin American societies' modernization process and also of their political and economic development, yet, it is a topic about which much has been written, very little research conducted, and still no formal thought given."

It is the desire of this report to provide a point of departure for the study of the physical aspect of urbanization in Peru as a dynamic dimension in the overall development process of the country.

C H A P T E R 1

THE PROCESS OF URBANIZATION IN PERU

Throughout this study, different terms will be used to convey specific ideas that refer to different modifications of the forms in which human habitation takes place. For this reason, some basic definitions will be attempted in the following paragraphs in order to establish a basis for the analysis.

DEFINITION OF TERMS

First of all, the term Human Settlement will be used to refer to any form of physical evidence, man made or otherwise, showing the presence of human use for habitation and survival. This term has been widely accepted since 1976 when the United Nations organized the Habitat Conference in Vancouver (Canada) to study the characteristics of the forms of human habitation throughout the world. This category does not have any implied characterization as to the activities or organization of people residing in any area. There is no reference in this definition as to the rural or urban role in habitation patterns.

Village refers to a human settlement in which the inhabitants are part of a basic societal organization, have certain elements in common and share certain services. It is mostly understood that village inhabitants are devoted to agricultural activities primarily, as well as to hunting and gathering for survival. Since very few people hold specialization in terms of productive activity, the village is associated with the early states of development of a society.

3

<u>City</u>, refers to a human settlement in which specialization of productive activity takes place in order for the inhabitants to survive. The occupation of most of the people is no longer mainly agricultural but transformative. The patterns of organization of the physical structure of the city follow certain concepts for the provision of internal circulation, and the hierarchization of land uses.

According to Max Weber, a city is analagous to a market, in which product exchange activities take place in a collection of "separated yet relatively concentrated dwellings."[1] Louis Wirth indicates that a city is a "permanent establishment relatively large and thickly populated by heterogeneous individuals...to classify a community as urban on the sole basis of its size is totally arbitrary."[2] Gideon Sjoberg sees a city as contrasted to a village as "having greater size, density and heterogeneity and including a wide variety of non-agricultural specialists among the most significant are the <u>literati</u>.[3]

For Harland Bartholomew , (urbanist), the city "...is a permanent establishment, relatively dense and large, occupied by people engaged in different economic activities."[4]

Ralph Linton states, "The difference between the city and the village is described by the city as a community of people whose survival depends on the exchange of products and services for food and raw materials."[5] Le Corbusier very briefly indicates that the city is "...an object to be used, a center of intense life and activity";[6] Finally, Jorge E. Hardoy establishes that "...the concept of city changes with time and place, conditioned by the environment, socioeconomic structure and technological level of the observer's own society."[7]

It is obvious then, that the concept of City may become very elusive,

according to the different approaches that could be taken to define and study it. All would appear to vary somewhat, but essentially some characteristics remain constant. For this reason, we agree with Hardoy's statement that the interpretations of the City change according to the observer's perception of the environment. Furthermore, he states that "...the city is the center of government, and the military; a market place for all the products manufactured by its inhabitants whose subsistence depends on agricultural activities in which they do not participate directly; a place where the population lives and works and which serves as a center for technological progress and services; exchange and innovation for its surrounding rural area; a social phenomenon inhabited by a heterogeneous society which had developed a different psychological attitude; a core from which the future cities radiate with growing social interaction; a focus for the development of a distinct way of life."[7a]

The term <u>Town</u> will have a very loose meaning, because it refers to a state of development rather than a final product in the urban history, therefore its applicability will range in this study to denote early colonial settlements as well as current settlements that have been constant for a period of time in their size, population and density.

ELEMENTS OF STUDY IN THE MORPHOLOGY OF URBAN AREAS

Once basic characteristics of urban areas have been set, more specific determinants and elements must be established in order to undertake the systematic analysis of the development of the urban structure. Four main categories are:

-Size

-Land Use

-Urban Features

<u>Size</u>: It refers to the physical size of the settlement although it does not constitute an element of urban characteristic in itself. It is in conjunction with other elements that it should be examined in order to arrive at valid conclusions as to the morphology of the area.

<u>Land Use</u>: The different uses to which land is allocated in the city is considered important due to its direct effect upon the morphology.

<u>Layout</u>: Layout refers to the spatial organization and distribution of land uses in an urban area, thus, it constitutes an important element in the study of the morphology of the city.

<u>Urban Features</u>: There are some specific features that characterize cities of different cultures, that is, that make them peculiar. This peculiarity often stems from the way these features are organized, presented and connected to the city as a whole . The urban features to be analyzed are:

-Plazas: Open public or semipublic spaces used for social

gathering or as ceremonial centers.

-Streets: Transportation routes within the city whose

importance varies according to their intended use as evident

in the physical characteristics.

-Parks: Open spaces with similar characteristic to plazas,

but devoted primarily to recreational uses. Landscaping

elements are usually used heavily in parks.

OVERVIEW OF THE COUNTRY

Peru has quite a long history in terms of the presence of urban areas in America. Some areas of the country have been found to be inhabited as early as 7,700 years ago, although not very many remains of this age can be found at the present. There are certain cities that have been continuously inhabited for some 800 years.

Peru is located in the western part of South America and is bordered by Ecuador and Colombia (North), Brazil and Bolivia (East), Chile (South) and the Pacific Ocean (West). According to the latest published census information, the population was 13,538,208.[8] The area of the country is 1,285,215 sq km (496,223 sq mi). Lima is the capital city with a population of 3,158,417, which represents 18.76% of the national population; other major urban centers are Arequipa (304,653), Trujillo (241,882), Chiclayo (189,685), Chimbote (159,045), Piura (126,702), Cusco (120,882), Huancayo (115,693) and Iquitos (111,327)

The country has a peculiar geographic form due to the presence of the Andes Mountains which cross the territory in a north-south fashion. Thus three eco-geographical areas are formed vertically. The Costa (Coast) is formed along the Pacific Ocean and is defined between the litoral and the foothills of the Andes. Its width varies from 16 to 160 km (10 to 100 miles). It has some 50 valleys that cross it perpendicularly with rivers flowing from the Andes to create propitious areas for human settlement. The area of the Costa comprises 11% of the total area of Peru. Lima and the five largest cities in the country are located in this area. The transportation system along the Costa is achieved easily due to the flatness of the land and the presence of the Panamerican Highway.

The Sierra (highlands) is the area immediately east of the Costa, and runs along the Andes Mountains forming a continental divide for the country. It is formed by three Coordilleras (mountain chains) running in the north-south direction, converging at two nodes, one in the central part of the country and the other in the southern part. The tallest peak of the country Mount Huascaran, is located in the central part of the country and has a height of

6,768 m (22,205 ft). The <u>Sierra</u> covers 26% of the national area. The <u>Sierra</u> habitat is varied, from the low <u>Sierra</u> where the climate and the agricultural potential provide appropriate conditions for the development of human settlements to the high <u>Sierra Puna</u> where it proves to be inhospitable.

The <u>Selva</u> (jungle) east of the <u>Sierra</u> covers the remaining 63% of the territory. Most of this area is not settled yet, and remains mostly in a natural state. This area of the country forms part of the Amazon area which extends across Brazil.
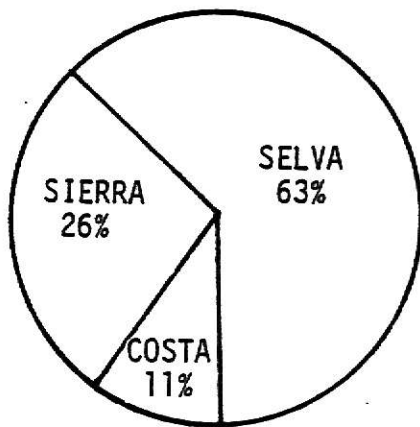
Graph 1
Territorial extension of the
three natural regions
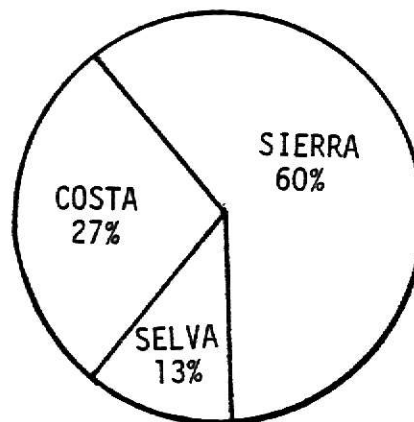
Graph 2
Population distribution by
natural region

Approximately 27% of the population lives in the Costa, of which 75.6% is concentrated in urban areas. Although 60% of the national population is in the Sierra, only one third is located in urban areas. The remaining population is in the Selva with only 27.7% in urban areas. According to official standards, urban areas are defined as places with over 2,000 people or as District capitals.[9] The annual rate of urban growth is over 5%, which is approximately double the rate of national population growth. Overall, nearly 60% of the population lives in urban areas.
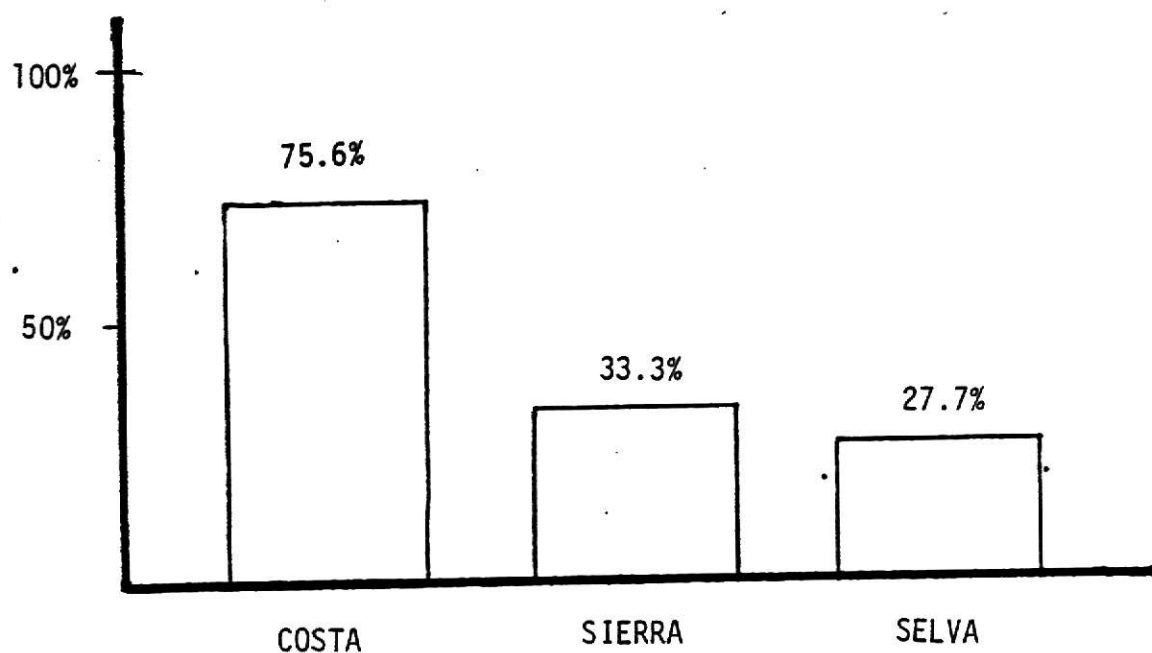
Graph 3
Population concentration in urban
areas by natural region. (percent)

This unbalanced population distribution is exacerbated by the migration patterns to urban areas. The typical trend starts in the Selva and/or Sierra and continues to the Costa, and in most of the cases ultimately in Lima. Lima quadrupled its population in the period between 1940 to 1971.

The political organization of the country is a democratic system.

According to the constitution the President is elected every four years in general and mandatory elections. Along with the President, Senators, and Diputados (representatives) are elected for the higher and lower chambers of the legislature. The Government is organized in Executive, Legislative and Judicial branches. Peru has recently adopted a new Constitution (1980) replacing the 1930 Constitution. The current President was sworn into office in 1980, after a Military Junta had been in power since 1968.

During the military regime substantive changes in policies regarding land ownership, the educational system, industrial production, resource allocation, and public services were implemented. The nationalization of natural resources and the restrictions on foreign capital were intended to build up a national economy on the basis of import substitution; political activity was banned officially.

The return to the democratic system in 1980 constituted a great political change whose economic consequences are yet to be studied.

THE PROCESS OF URBANIZATION

The presence of large human settlements in this part of South America is a phenomenon that dates from long before the discovery of America by the Europeans. When Christopher Columbus discovered the New World in 1492, there were already some cultures which were in quite advanced stages of development. The Aztecs and the Mayas in Central America, and the Incas in South America were the most advanced and representative of these cultures. However, even before the emergence of the Incas, there were other South American cultures that achieved levels of development which puzzle many scientists.

11
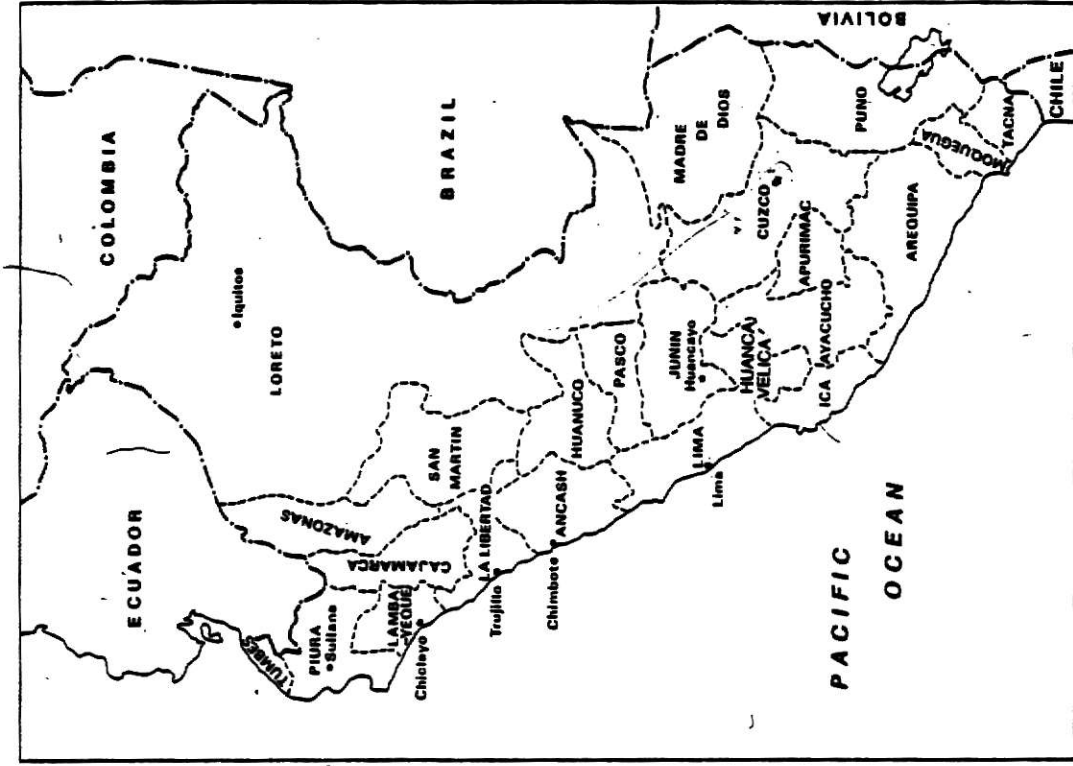
Map 2
Peru: Political Division
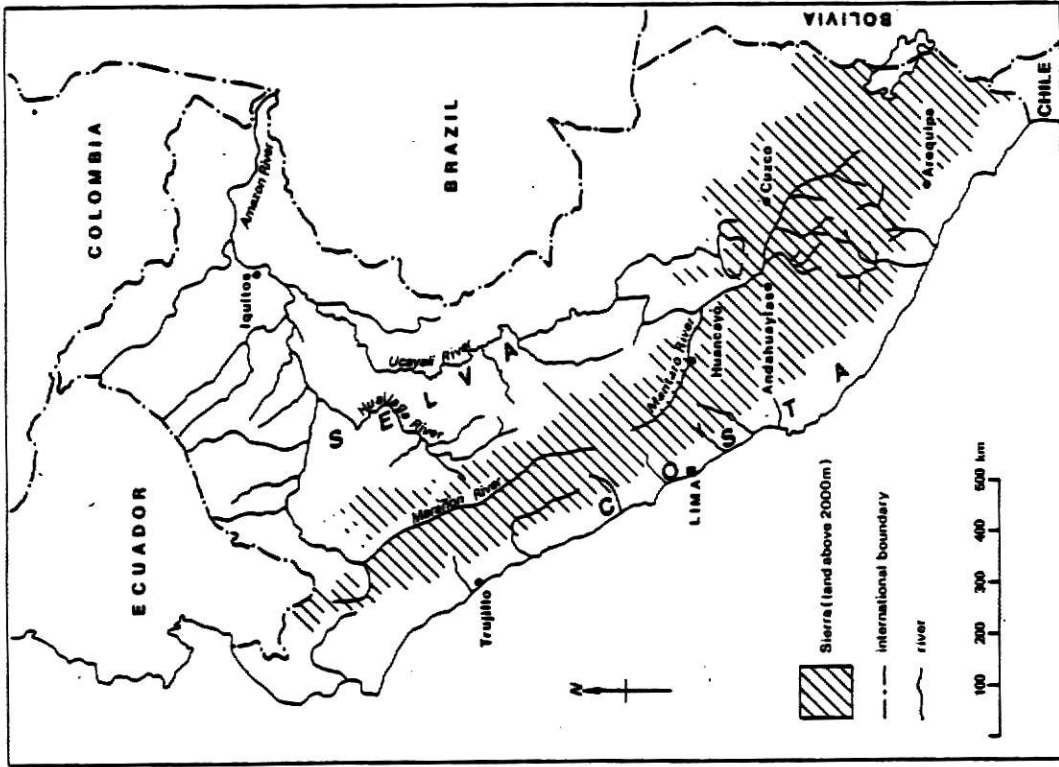
Map 1
Peru: Physical

There were a number of isolated cultures that developed in the coastal area of Peru whose remains are still being discovered and researched. La Paloma, the oldest human settlement known to date in America, is located in the central coast of Peru. It was discovered in 1965 by a French Archaeologist, Frederic Engel. It was not until 1981 that through the use of Carbon-14, analysis of the remains, including human skeletons and artifacts, has determined its age to be approximately 7,700 years. Because of its compounding elements, it is considered the oldest human settlement in America. Evidence of dwellings, ceremonial centers, food storage areas, and tombs have been excavated. As of yet, there are no calculations of the total population that may have lived there, nor is there a clear idea regarding the characteristics of the activities of these people. Apparently, archaeological work is still in progress at the site and therefore no graphic representation of the distribution of the buildings has been published.[10]

According to established archaeological chronology[11] La Paloma belongs to what is called the Pre-Ceramic period, that is, the period of development until around 2500 B.C. in which the earliest ceramic remains have been found in this part of America. There are some archaeological sites that have been studied and researched dating this period, but in general they constitute isolated constructions that are not relevant to the purposes of this study.

It is during the Ceramic Period[12], which extends from 2,500 B.C. until the arrival of the Spaniards to Peru in 1535 that most of the important human settlements, and therefore the initial process of population concentration, inherited from these cultures had been formed.

The Tiwanaku culture flourished between 500 B.C. to 1,000 A.D. in the

southern part of the Andes. The Huaris had a considerable shorter period of life in the Central Andes, only 500 years, from 700 A.D. The Chimu culture in the northern coast, also flourished for about 400 years, in ca. 1,000 A.D. Practically all these major cultures were conquered by the Incas, who developed in the southern part of the Sierra from ca. 1,100 A.D. until the Spaniards arrived.

These cultures built a number of settlements in what is now Peruvian territory and although most of them are in ruins, they show the creativity, skill and attitude of these people to create an environment for human habitation.

Most of the pre-Inca settlements can be generally qualified as "city-state" settlements[13], because of the lack of societal and governmental integration and existence of a system of cities. The urban remains dating from the Inca period reflect a hierarchization of functions and more advanced quality in both city building and architectural techniques. The Inca Empire had a socio-politico organization as well as a regional-spatial conformation. A system (network) of transportation was built covering most of the four regions of the Empire. Each region had definite roles within the overall context, and the center of power and administration was Cusco.[14] Prior to the arrival of Pizarro, the Inca Empire was approaching its development peak, it covered approximately half a million of square kilometers and comprised an estimated population of 6,000,000.

The main activity of the incas was agriculture, consequently the population was scattered throughout the territory, the ruling elite and noble class resided in cities primarily with people devoted to their service and artisans. Unfortunately, the Spanish conquest aimed at destroying the empire - and their cities - succeeded in this aim. Nowadays all, but two, of the Inca cities are in

ruins. The two cities that have been continuously inhabited ever since are Cusco and Ollantaytambo, north of Cusco.

SPANISH-COLONIAL PERIOD

The European discovery of America in 1492, marked the beginning of a period of heavy population and urbanization of the New World. The Spaniards began their effort to conquer these new territories and to subjugate the aboriginal Americans in the Carribbean. A substantive part of this effort was carried through the founding of cities. It should be noted that the main thrust of the conqueror was not in founding new cities and promoting urbanization per se, but in controlling and overtaking the territory as fast as feasible.

In the Fifteenth Century, Spain was in a period of war against the Moors in the Iberian Peninsula. For this reason, Spain was not in the forefront of the Renaissance in terms of cultural, artistic, architectural or urban expression as were, at the time, the French, with the Villes-neuves, England or Italy. Spain in general followed the urban trends that emanated from these countries, especially Italy. Some Spanish cities followed the urbanistic principles of Rome.

So, the thrive of creation of urban places by the Spaniards in America was not all based in an experienced attribute of town-founding. There was not a real original preoccupation as to the form, shape, internal conformation of land uses, or even to the location of the towns in America; in fact, the idea of a preconceived pattern for a human settlement was very much foreign to the conquistadores that originally arrived to America.

The Spanish foundation of cities started in the northern part of what is now Peru, San Miguel de Piura is the first settlement founded by the Spaniards

in 1532. As the conquerors went south along the coastal area, their labor of settling and subjugating the aboriginal population also continued. In this way, Cajamarca, Tumbez, Lima and Jauja were founded and populated with the increasing number of Iberians. Jauja, towards the Andes, was determined as the capital city of the newly discovered Inca Empire. Cusco was destroyed partially and founded again as a colonial city, its original name Qosqo (in Quechua) was in this way transformed. In March of 1535, Lima was founded and by 1580 had become a prominent city in South America. Earlier, it had been selected as the capital city, replacing Jauja, of the Vice-royalty of Peru.

The Spanish conquerors continued with their invasion and exploitation of the native population, to this end they used the strategy of city founding nearby the original native settlements of the Incas, or wherever mineral resources were discovered. In this way, Chincha was founded in 1537, Chachapoyas, in the selva region, in 1538, Huanuco in 1539, Huamanaga in 1540, Arequipa in 1540, and Huancavelica as a prominently mining center. Parallel to the towns of the conquistadores, the policy of the Spanish Crown was to found settlemtns for the indians. In order to subjugate them[15] the native population was forced to live in the "reducciones". The reducciones were settlements solely and exclusively for the indian population, the Spanish population was prohibited to enter the reduccion. Only priests were allowed into these settlements in order to carry on evangalization task.

The population had grown in their iberian population and reduced in the indian population, there are a variety of accounts of chroniclers refering to the population during this period. An account by Pedro de Avendano[16] states the

	Persons of all age
Lima	99,600
Cusco	267,000
Arequipa	201,830
Huamanga	112,520
Piura	16,617
Trujillo	215,000

In this way, the Sixteenth and Seventeenth Centuries witnessed the creation of most of the Peruvian cities and towns currently inhabited. The reducciones pervaded and became the indian villages still populated by the direct descedants of the aboriginal Inca race.

As colonization continued, an urban network was created and cities played different roles according to their economic importance to the Spanish Crown. Lima, due to its adjoining port El Callao, became the capital city and the place where both the administrative and economic power was located. On the other hand, Cusco, which had enjoyed enormous importance during the Inca period, lost this status essentially due to its location, that is, distant from the ocean, the only link with Europe. Huancavelica grew tremendously in population, by 1600 its population was over 20,000[17]. Apart from this city in the Andean region, most of the population growth took place in the coastal region, primarily centered in Lima which by the early Nineteenth Century had approximately 70,000 people.[18]

It is in the late Eighteenth Century that the socio-economic scheme imposed by the Spanish colonialistic forces in South America in general started to yield adverse effects on the growing American population. This facts plus the heavier

contact with European thought and revolutionary movements soon had uprising consequences in the ever expanding group of "nationalists". Argentina and Colombia were the first South American nations to be liberated from Spain in the early Nineteenth Century. Their libertators Gen. Jose de San Martin and Gen. Simon Bolivar saw a threat to the newly established nations the presence of the royalists in Peru, at that time called Upper Peru and Lower Peru, later to be called Bolivia and Peru respectively.

In this context, the independence came to Peru as a liberating force from outside. Gen. San Martin declared the Independence of Peru in 1821. The first years of independent life were extremely chaotic. The newly formed country had a number of tasks to undertake to organize itself socially, economically, politically and spatially. The country adopted the model of a Republic, therefore, a Constitution was drawn and a President elected.

However, the participation of the country in the world capitalistic system through the provision of mineral resources and "guano"[19] was primarily channelled through the commercial ties with England. England, then, suplanted Spain in its role of dominant commercial power.

From a period of mercantilistic capitalism, Peru progressed to the industrialist and financial capitalism[20]. The internal spatial organization of the country took shape. The coastal region continued to develop at a faster pace than the Sierra. Investments, mainly of foreign origin, were allocated in Lima which contributed to its growth at a faster rate than any other city. The starting process of industrialization and the emergent policies of administrative and commercial centralism reinforced the development of Lima as the primate city of Peru.

As a consequence the area of Lima and Callao emerged at the country's core. Lima in 1860 had around 89,000 inhabitants[21] and "...was still a small town of around 10 square kilometers, of which, 58% was used for housing and 38% for open spaces, parks and dumping places for the middle and higher classes. Only 127 private houses, 19 convents, 6 hospitals and a few public buildings had a service of running water."[22] At the turn of the century, Lima had nearly 150,000 inhabitants[23] while Arequipa, the second largest city had diminished its population to around 45,000.[24]

In the north, Trujillo and Piura followed a similar trend of growth than did Arequipa in the south. In the Sierra, Cusco, Ayacucho and Huancayo were considered regional centers for the centralization of the natural resources and products from their hinterlands. The Selva was literally untouched in terms of urban development because of the lack of means of transportation.

The transportation network was essentially geared to the transportation of the natural resources from the Sierra to the coastal region. Consequently the effect on the Sierra was ambivalent; in some cases certain cities decreased in population (Cusco and Puno in the southern region) while on the other hand, some prospered (Huancavelica in the northern part). Railroads were instrumental in the transportation of natural resources to the coastal region for the newly settled industries.

MODERN PERIOD

The process of urbanization and metropolitanization at the world wide level has its peak in the present century. The American Continent undertakes a process of urban expansion at a much faster rate than ever before. In North America, this is the consequence of the rapid process of industrialization, while in Central and South America, the opposite trend takes place, that is,

urbanization precedes industrialization. The expansion of mercantilism in the eastern part of South America in the late Nineteenth Century (especially in Brazil and Argentina) took place due to the closer commercial ties with Europe. This fact contributed the economic development, consequently increasing the rates of urbanization. The western part of South America, on the other hand, did not develop economically until the 1910's and, therefore, urban expansion was also delayed.

Perhaps the cornerstone of the urbanization process in Western South America is the construction of the Panama Canal in 1914. The commercial, and consequently, economic ties with Europe were strengthened in the countries of the Pacific-Colombia, Ecuador, Peru, Chile and Bolivia. The dependency on the European industrialization process in terms of the provision of manufactured goods became essential and highlighted the mercantilistic-capitalistic expansion. This trend lasted until the Second World War, when the commercial ties and interests shifted to the American Continent, and the United States became the pole with which South America would maintain commercial relationship, also as a provider of natural resources and a receptor of manufactured goods.

There is said to have always been a relationship of "dependency", be the attraction pole Spain, England or the United States[25]. Since the development of the urban pattern is directly influenced by the development of the structural social, economic and political, forces dominating a country, this depdency relationship have exerted forces that shaped the urban environments throughout South America and Central America. (A similar relationship is found between England and some African countries in the present century).

While the overall context for development of Latin America is applicable to 20th century Peru, there are some components that make it singular. The most

important of these components in social, economic and cultural terms will be analyzed.

In social terms, the country presented a somewhat similar characteristic than that of the Colonial times. Class and ethnicity distinctions have been very much prevalent in the Peruvian society of the 20th Century. A national aristocracy, composed by the people who played key roles during the later part of the Colonial periods or in the independence movements, and a "landed aristocracy"[26], primarily composed by English, German and North American immigrants, emerged in the center of power, Lima. By the attainment of wealth, the access to political power was also gained by these groups. These immigrants who arrived in the early 20th century in its majority, were primarily engaged in commercial activities in the most developed urban areas. Along the coastal region other social groups were present although without economic or political power. The migrants from the Sierra, specially starting in the 1940's, emerged as a growing sector of the population. They were called "mestizos", which indicates the combination of the native indian with the foreign "white". This mestizo group will later constitute a principal factor in the urban expansion, primarily in the coastal region. Other two socio-ethnic distinctions should be made at this point. The african slaves and the asiatic manual workers who were brought in the 19th century, emerged as two distinct and important social groups also in the coastal region.

In the Sierra, despite there was some social mixture in the few centers that had already developed by the turn of the 20th century, the majority of the population was composed by native "indians" living in scattered settlements. During the first 40 years of the present century, not very much population mobility takes place intraregionally and consequently, the prevalent social characteristics of the population were those inherited from the colonial period.

Around the turn of the century, most of the Peruvian population lived in the
Sierra.

In the Selva yet another ethnic grouping lived completely isolated from the
rest of the country. This group was composed by different tribal groups which
were not integrated to the national realm until the 50's and 60's. In this way
the Peruvian society was very much fragmented and spatially dispersed throughout
the national territory.[27]

A "dual economy" is prevalent in Peru, as in most developing countries.[28]
This model presupposes the interaction of two different sectors within the
national economy. A "modern" sector and a "traditional" sector. The modern
sector is depicted as being the economic sector which is capital intensive and
with high levels of productivity. The traditional sector is highly labor
intensive with low levels of productivity. In this way, the modern sector is
associated with the industrial and manufacture complex, usually in or nearby the
urban centers; while the traditional sector is linked to the small scale
agricultural production and indigineous manufacture.

Therefore, in a dual economy, two economies function at the same time in
the country. A highly dynamic modern economy and a backward traditional one.
The centripetal forces of the modern sector, contributed to the development,
reinforcement rather, of the primate city: Lima.[29]

Culturally, the differentiation between the modern and the traditional
sectors can be associated, although with certain exceptions, to a predominance
of the "western" cultural elements in the modern sector, while the traditional
sector has been primarily composed by the native (indian) cultural background.
In cultural terms the former sector is perceived as a very dynamic one, which

readily adopts behavioral patterns developed in foreign countries, conversely the traditional sector is regarded as a less flexible mass. The modern-traditional approach should not be equated with other groupings (such as costa-sierra or urban-rural) although there are some instances in which this correspondence appears to be so. Such is the case of some coastal areas in which the social, economic and cultural organization operates according to the traditional sector, or some Sierra or Selva areas which behave as typical modern poles. However, this did not deny the presence of Lima and its hinterland as an eminent location of the modern sector.

The conceptualization of "modern" vis-a-vis "traditional" is presented at this point merely as a way to explain the structural formation of the Peruvian society which, in turn, constitutes the framework for the spatial organization of the population. The implicit believe is that this framework directly affects the internal structure of the city by affecting the location and intensity of economic activities in space.

NOTES

[1]Max Weber,The City,(Glencoe;Ill:The Free Press,1958)

[2]Louis Wirth,"Urbanism as a way of life",American Journal of Sociology, XI,4,1938

[3]Gideon Sjoberg,The Pre-Industrial City,(Illinois:The Free Press,1960)

[4]Harland Bartholomew ,Land Uses in American Cities,(Cambridge:Harvard University Press,1955)

[5]Ralph Linton,The tree of culture,(New York:A.Knopf,1957)

[6]Le Corbusier,Urbanisme,(Paris"Editions Cres,1924)

[7]Jorge E. Hardoy,Pre-Columbian Cities,(New York:Walker and Co.,1973)

[7a]Ibid.

[8]The latest population Census was conducted in 1981m unfortunately the results have not yet been published . The information presented corresponds to the 1972 Population and Housing Census.

[9]The country is administratevely divided in Departamentos. These are divided into Provincias and finally into Distritos

[10]As reported in "La Primera aldea de America" Suplemento Dominical de El Comercio, Lima, 19 de Julio de 1981 p.8; and "Hopes for a new dawn in Paloma after 77 centuries",Week in Review, The New York Times , May 3,1981 p.6

[11]See John Rowe and Edward Lanning

[12]Edward Lanning, Peru before the Incas,(Englewood Cliffs,New Jersey: Prentice Hall,1967)

[13]Peter Lloyd,The Young Towns of Lima:Aspects of the Urbanization of Peru,(Cambridge:Cambridge University Press,1980)

[14]Ibid.

[15]Some authors deal with the issue from the perspective of the "integration" of the native to the european culture. Others talk in terms of religious "conversion". No matter what the interpretation is given, the main features of this relationship was the domination of the Spaniard over the Indian.

[16]As quoted in Ralph A. Gakenheimer,"Determinants of physical structure in the Peruvian town of the Sixteenth Century",PhD Dissertation, University of Pensylvannia,Department of City and Regional Planning, 1964

[17]Tertius Chandler and Gerald Fox, 3000 years of urban growth. (New York:Academic Press,1974)

[18]Ibid.

[19]The guano is the organic deposition of the sea gulls along the coastal areas and used primarily as fertilizer.

[20]Oscar Yujnovsky,"Notas sobre la investigacion de la configuracion espacial interna y las politicas del uso de suelo urbano en America Latina" Revista Interamericana de Planificacion 9(35) 1975

[21]Richard Boyer and Keith Davies,Urbanization in the 19th Century Latin America:Statistics and Sources. (Supplement to the Statistical Abstract of Latin America)(Los Angeles:The Latin American Center,1973)

[22]Jorge E. Hardoy,"Dos mil anos de urbanizacion en America Latina", in Jorge E. Hardoy and Enrique Tobar (Ed) La urbanizacion en America Latina. (Buenos Aires:La Editorial del Instituto,1969) p.63

[23]Boyer and Davies,op.cit.

[24]Ibid.

[24.]Celso Furtado,Economic Development of Latin America. (Cambridge: Cambridge University Press,1970)

[26]This term has been widely used in the description of the role of the foreign inmigrants in the economic development/ Class notes,Latin American Politics,Prof. Jose Encinas,Political Science Department,Spring-1982,Kansas State University

[27]For further ideas on this issue see: Fernando Fuenzalida, El Peru de las tres razas. (New York:Instituto de las Naciones Unidas para la formacion profesional e investigacion,1974)

[28]Furtado,1970

[29]Paul Doughty,"A Latin American perspective in the world context: Urban primacy and cultural colonialism in Peru",Urban Anthropolgy, 8(3/4) 1979,pp.383-397; and Harley Brownning,"Primacy variations in Latin America during the Twentieth Century" in Actas y Memorias,XXXIX,Congreso Internacional de Americanistas,Lima,Vol.2 pp.55-77 (1972)

C H A P T E R 2

PRE-COLUMBIAN SETTLEMENTS

In this chapter, the morphology of some of the urban centers of the pre-Inca and Inca period will be analyzed. The Tiwanaku, Huari and Chimu cultures developed before the emergence of the Inca Empire.

TIWANAKU

The <u>Meseta del Collao</u> (The Collao Platteau) is located between Peru and Bolivia, at an altitude of 4,000 meters (approximately 13,000 feet). The area is considered <u>puna</u>, and consequently, agricultural production is limited to a few products; there are few animals that can survive at this altitude and be of human benefit. Lake Titicaca, considered the highest navigable lake in the world, lies in this <u>meseta</u>.

The site of Tiwanaku is located in a valley at 3,800 meters above the sea level. It is enclosed by two parallel rows of hills and thus is protected from cold winds that hit the <u>Meseta</u>. The area comprises about 450,000 sq. m. Its magnitude qualifies it as the largest human settlement in the southern part of South America in the period of 0 A.D. as established by J. Hardoy. Its axis are oriented to the cardinal points and the layout presents a regularity in terms of the distribution of open spaces and the massive effect of the buildings. There are very many remains of religious and ceremonial constructions and most of them are of pyramidal form. For this reason it is believed to have been a ceremonial center.[1] Canals are found and are thought to be for drainage of rain water. Although sculptural elements are widely used in the area, not very many urban design elements are used. There are some vistas that may have been created

25
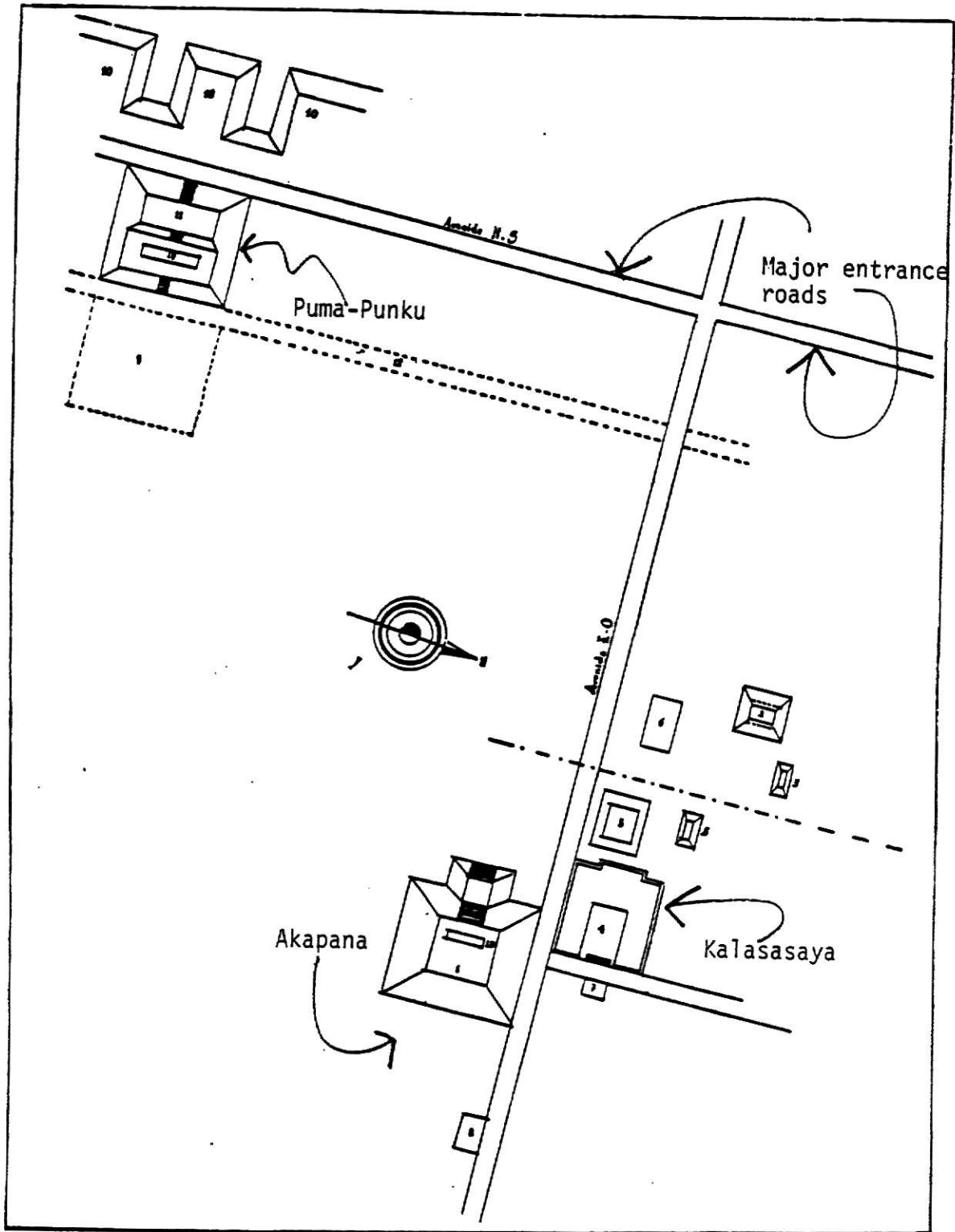
Plan 1
Tiwanaku.
Source: Hardoy, 1973
Credit: Ibarra Grasso, D.E.; Mesa, J. & Gisbert, T.:
"Resconstruccion de Taypicala (Tiahuanaco), "Cuadernos
Americanos, Vol XIV, Mexico, 1955.

purposively for the enhancement of the center. The dwellings are built of <u>adobe</u> while the ceremonial buildings, some still standing, are built in stone. The ceremonial center is located in the core of the complex in what appears to be an unplanned area. According to Hardoy[2], although it does not present the quality of the Mayan centers in Central America, it has striking similarities in terms of the allocation of land uses and urban elements. In fact, all the urban design elements that are part of a monumental center of the Mayan period are found in <u>Tiwanaku</u>, but in a less developed fashion.

Unfortunately there is not sufficient research available in order to determine the population or the types of activities of these people.[3] The map presented shows the central part of the complex which resembles a ceremonial center.

HUARI

In central Peru another culture emerged around 700 A.D. with very urban-prone attitudes. Whereas the Tiwanaku culture has only one clustered center remaining, the <u>Huari</u> has a number of scattered centers that can be associated with "cities" according to our tipology. Unfortunately at the moment no research in depth has been conducted as to the nature of the settlement of the Huari culture. However, some generalities can be asserted from the descriptions of Hardoy and Gasparini.

The characteristic of the <u>Huari</u> settlement is the regularity of its plans, the use of the right angle for the layout, the use of piled-up unforged stone forming high walls that are still standing and, regular plazas probably for community uses. Although the site of <u>Huari</u> itself does not represent the best example of the technique in settlement planning achieved by this culture, it is considered to be the "center of difussion of the principles of urban planning
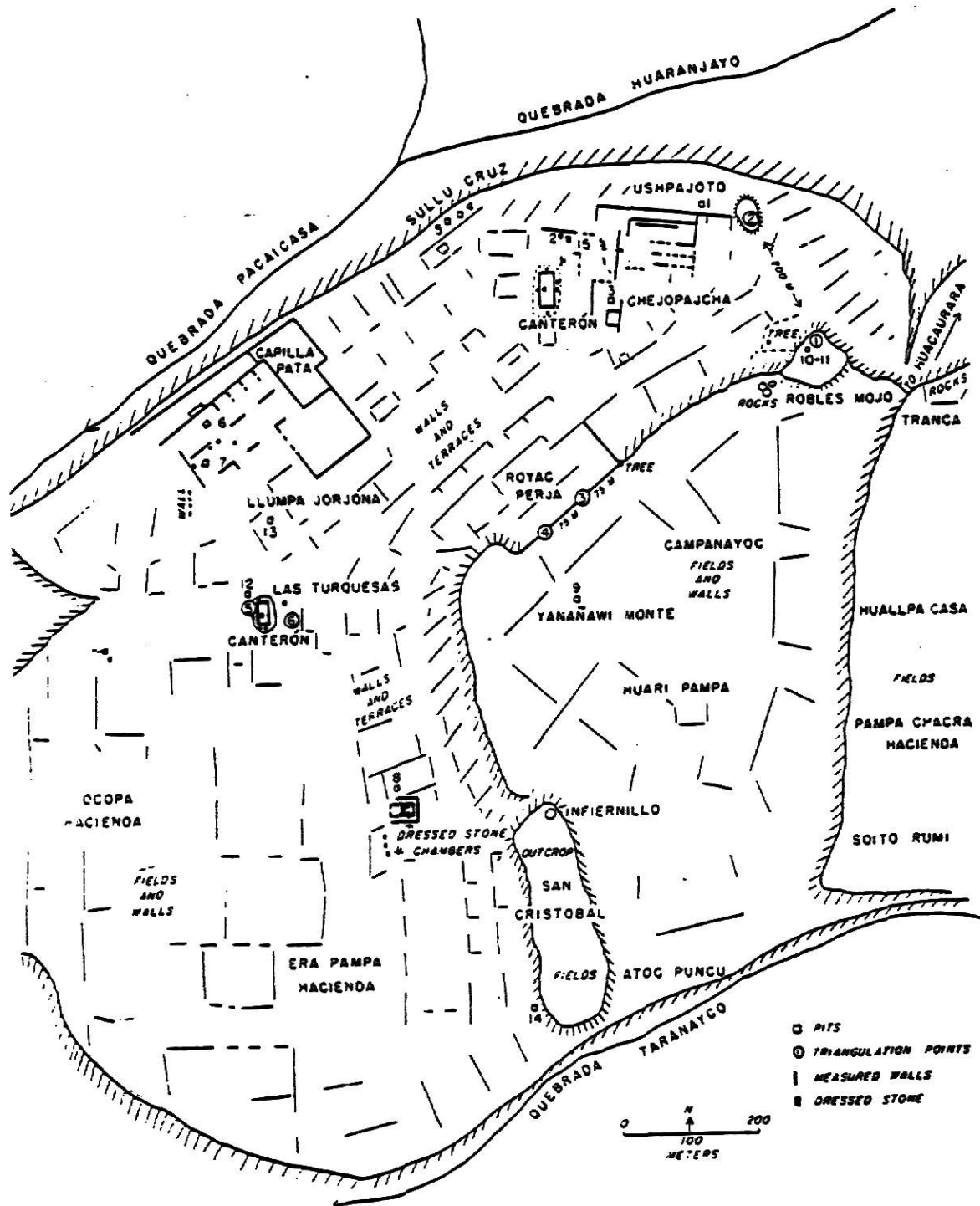
Plan 2
Huari
Source and Credit: Bennet, Wendell C. "Excavations at
Wari, Ayacucho, Peru," Publications in Anthropology,
No. 49, Yale University Press, New Haven, 1953.

and housing design which spread throughout the highlands and the coast of Peru".[4]

PIKILLAQTA

Pikillaqta is a settlement in the south eastern part of the valley of Cusco, built by the Huaris, and represents an advanced state of physical planning. It is thought to be primarily an administrative center of the Huari culture. It is located on the top of a hill overlooking the valley, which extends some 80 km. It is squared with its sides forming 45 degrees from the cardinal points. The whole settlement covers an area of approximately 50 hectares. Its layout is completely regular and districts can be easily established revealing different land uses. The streets, as characteristic of the Huari settlements, meet in a 90 degree fashion, and the walls are extremely high, with no voids, built of piled-up crude stone. It was walled and had limited access. The nature of this administrative center was to collect agricultural products from the neighboring areas and to serve as a storage place. For his reason many constructions in the fashion of "silos" are found in the northwestern part of the settlement. In the southern part a large plaza is located where the entrance roads meet.

The housing area lies to the north of the plaza, forming a very regular area of rectangular buildings, connected with extremely straight streets in different widths showing the intensity of use and probably the importance of these connectors.

No calculation exists as to the probable population of Pikilaqta, but it is understood that many people with different roles have lived within the center. The main plaza is off-centered in the settlement, and this makes the area peculiar because as opposed to the settlements in Central America and several
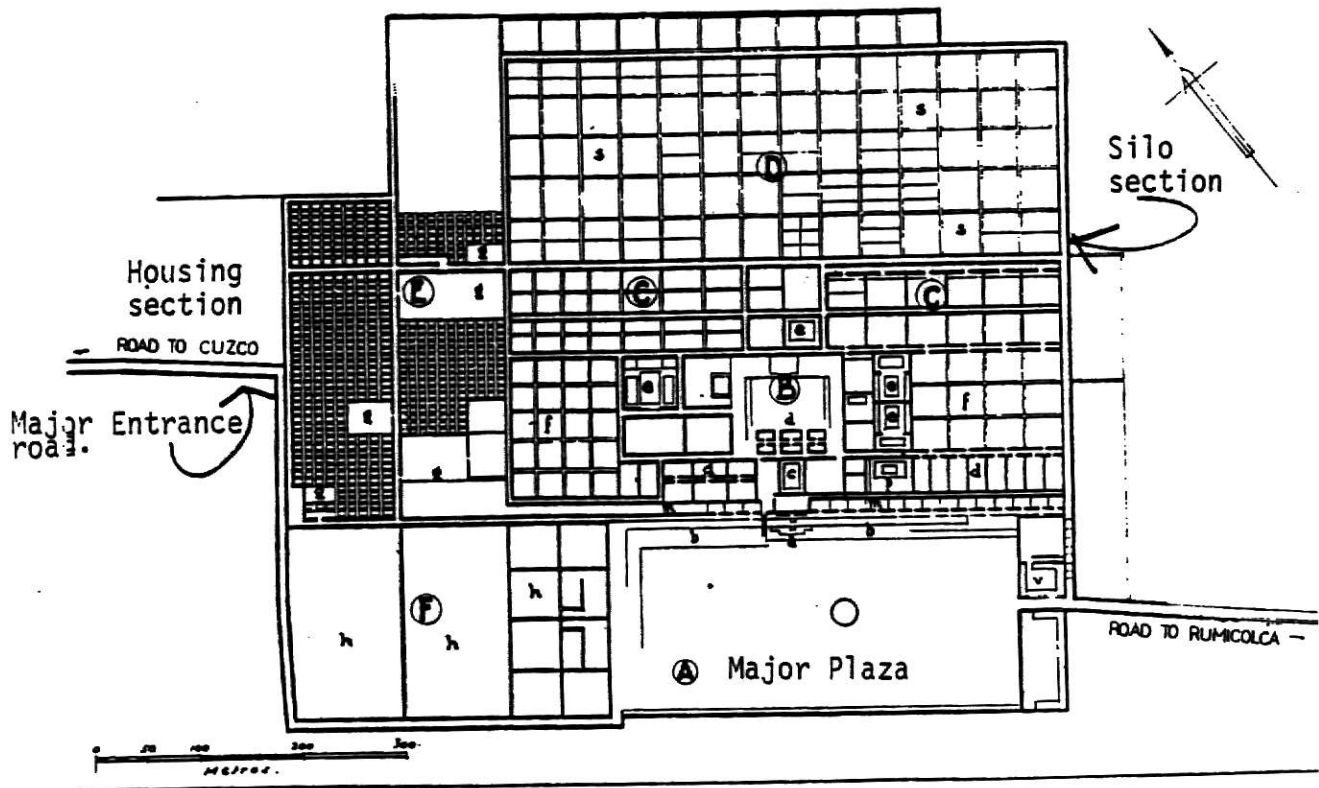
Plan 3
Pikillaqta
Source: Hardoy, 1973
Credit: Harth Terre, Emilio: "Pikillaqta, ciudad de
positos y bastimientos del imperio incaico, "Revista del Museo e
Instituto Arqueologico, Universidad del Cuzco, Cuzco, 1959.

small centers in South America; it did not highlight the quality of the plazas which for most of these other sites was for ceremonial purposes. This may have been a consequence of the regional administrative/storage character.

CHIMU

The Chimu culture developed in the coastal region of northern Peru, and had its peak of evolution after 1300 A.D. at the same time the Inca Empire was in a formative period. The Chimu managed to control the northern coastal region and tried to conquer even further north, until the Inca Empire invaded them years later.

The organization of the Chimus is more widely studied than the previous cultures and this provides some light as to the characteristics of the settlements constructed in this period. It was organized in a vertical political and social fashion, in which the ruler had absolute policy making authority, it also had a program of public works and mass production of goods.[5] Although it didn't have any other means of transportation than the llama and no form of written alphabet (as the Tiwanaku, Huari and later the Incas) it managed to arrive to an urbanistic period in which the construction of settlements was probably a planned activity, or at least followed some criteria for their establishment. The main human settlement built by this culture is Chan-Chan, along the Moche River.

CHAN-CHAN

The capital city of the Chimus, located 5 km north of Trujillo, the second city founded by Pizarro in Peru in 1535. The area of the site, as found today unhabited, is around 20 sq km. It is composed by a number of isolated sites all forming the great complex of Chan-Chan. It appears as though the city was formed of small citadels - 10 in number - that had been built along a period of

time in which the city may have gone through a period of natural growth. The use of the right angle is found prominently in the whole area as well as the overall rectangular fashion in a northeast/southwest direction with a deviation of 19 degrees, adjoining the Pacific Ocean in a 45 degree manner.

All ten citadels are rectangular in essence, presenting similar characteristics in terms of interior distribution. It appears though, as if no formal planning has been promoted for the open spaces among the citadels, because there does not appear to be a formal undertaking to this end. Because of the characteristics of the citadels they are thought to be for housing people leading researchers to believe that the density of residential use may have been very high if we compare it to the other settlements of this period.

Archeologists and ethnographers have forwarded a few hypotheses as to the existence of the citadels and although some of them coincide with the belief that they were built in accord with the expansion of the population, some other elements get into play. Some researchers state that they were centers for different social classes, others offer the explanation that they were chieftains. Ethnographers emphasize the idea of the presence of clans in the Chimu organization. Despite the hypothetical explanation as to the category and role of the citadels, our concern is centered in their physical ordering.

All the citadels were walled and the entrance to any of them appears to have been controlled not only by locating an entrance door, but by the design of the unit itself which offers a natural control by leading the incoming person through large corridors around the citadel before actually entering the core area. As for the internal streets, none of them appear to have been more important than the rest, because all of them show similar widths.
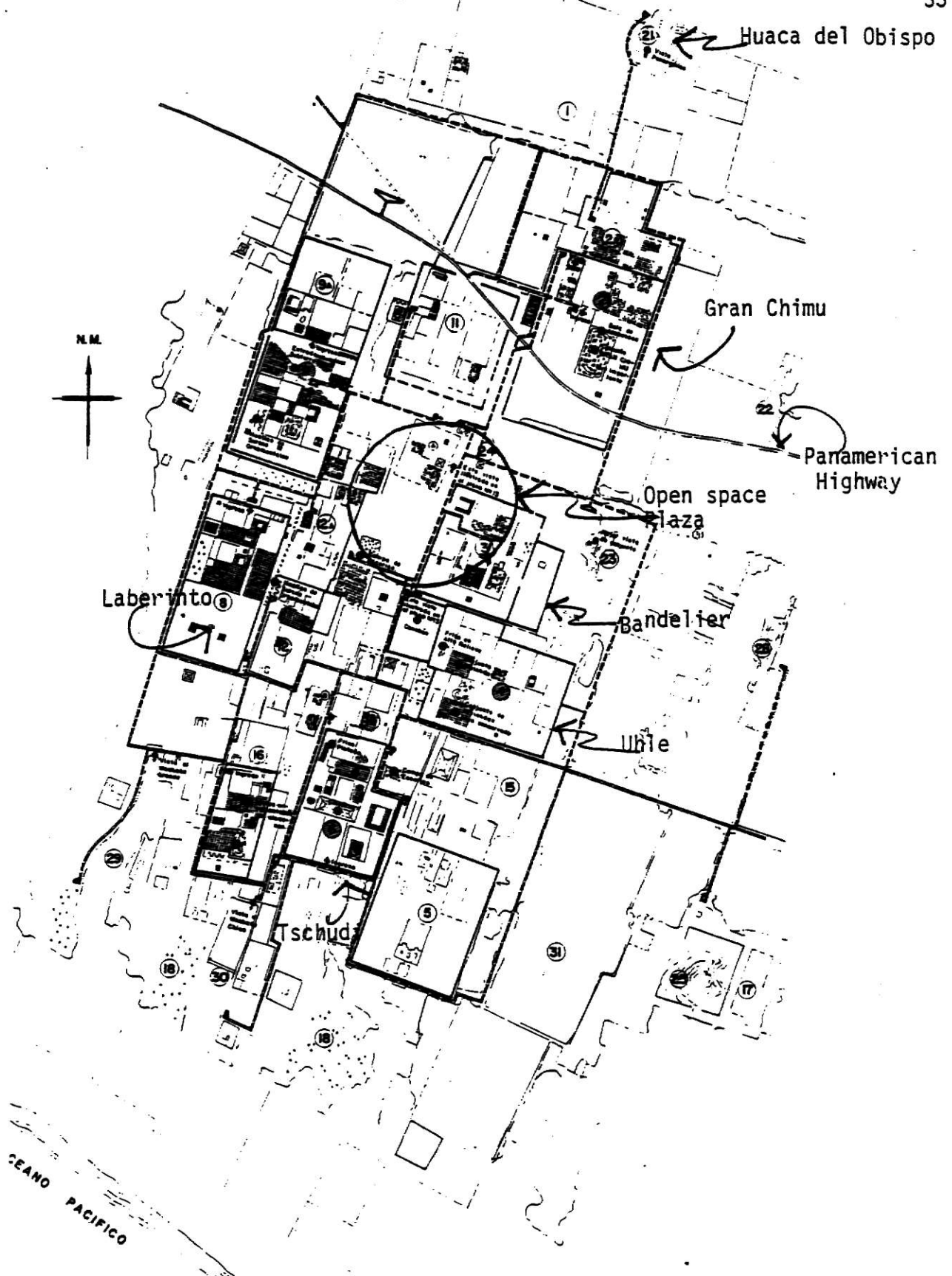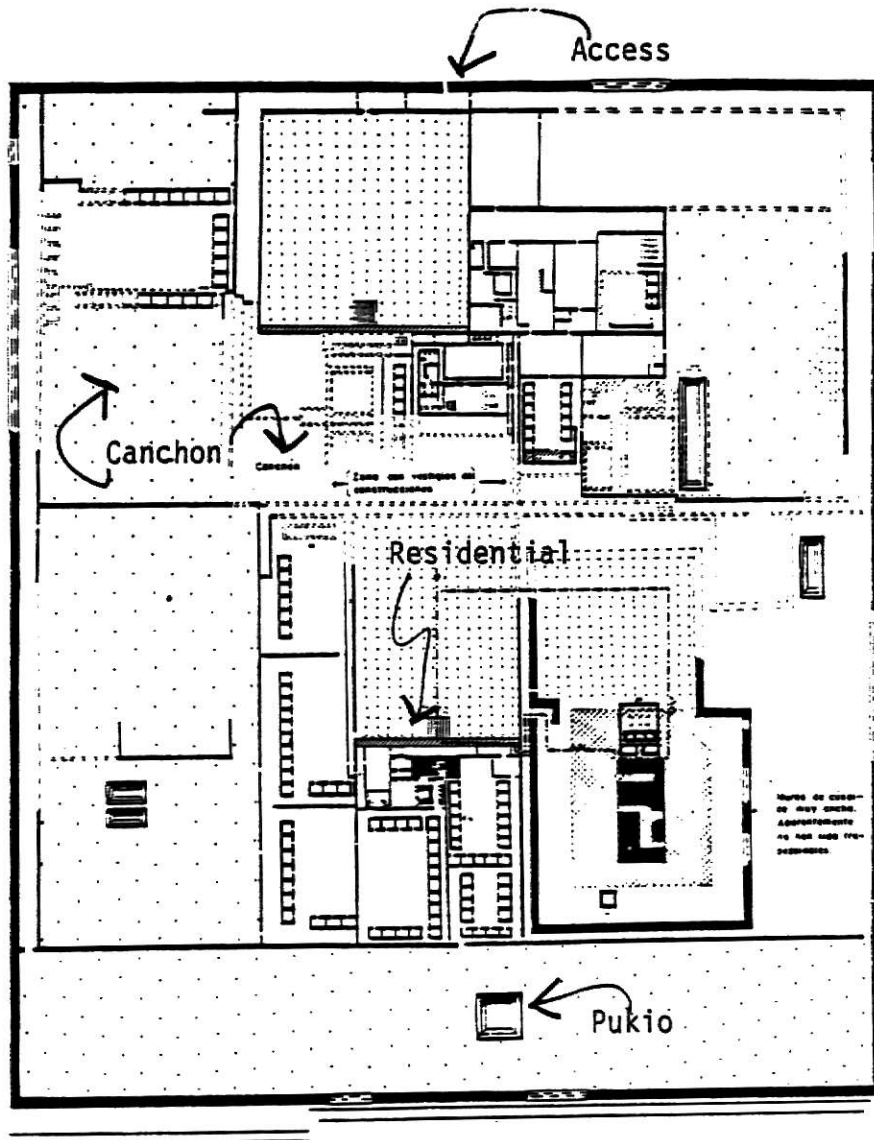
Plan 4
Chan-Chan
Source: Hardoy, 1973
Credit: Miro Quesada, Luis: "Chan-Chan, estudio de
habitacion urbanistica, "Oficina Nacional de Planeamiento y
urbanismo (ONPU), Lima, 1957.

All the buildings are made of <u>adobe</u> and no remains of stone are found. This is very interesting because of the different techniques developed by the Chimus in relation to the Tiwanaku and Huari whose buildings are mainly in stone. Even though these buildings were made of this fragile element they are still standing and preserve some of the original details.

The proportion of the sides of the citadels vary but are limited by the 2:1 to 1.25:1 ratios. Similar internal distribution is found in the citadels, therefore similar land uses may have been allocated. There are housing sectors, open communal spaces (plazas), "<u>pukios</u>", which are places where water for human consumption is collected, temples and <u>canchones,</u> which are open spaces for placing animals, and storage rooms. Hardoy conducted a detailed study about the allocation of land uses in five of the ten citadels arriving at quantitative conclusions.[6]

From an analysis of the plans of the citadels, there are some elements that are representative in most of them.[7] The periferic entry ways are common in most of the citadels.[8] The allocation of land for residential purposes varies from a low of 13.3% to as high as 28.4%[9] which shows a varying importance or need given to the housing district, and also consequently a variation of the density of population. The <u>canchones</u> also vary in terms of area. The plazas are generally in or near the housing districts, and are square or rectangular in shape and in most of the cases they are surrounded by walls and sometimes raised or lowered accesses by ramps. The <u>pukios</u> are generally located near the plazas. As far as the type of use of the plazas it could have been either civic or ceremonial.

There is reason to believe that Chan-Chan is an urban expression of a culture that achieved a fairly advanced stage of development and that the

Plan 5
Chan-Chan, Bandelier Citadel
Source: Hardoy, 1973
Credit: Miro Quesada, Luis: "Chan-Chan estudio de
habilitacion urbanistica," Oficina Nacional de Planeamiento
y Urbanismo (ONPU), Lima, 1057.

principles of distribution of land uses for human habitation and the layout characteristics are very surprising. Chan-Chan is said to have had relevance, in terms of urban practices, to the Incas who conquered them in the process of enlarging their empire around ca. 1400.

INCA

The Incas constitute the most advanced culture that inhabited South America before its discovery by the Spaniards. They managed to conquer and control the largest territory ever dominated at that time, some 1.5 million square kilometers, comprising areas of Peru, Ecuador, Bolivia, Chile and Argentina. The origins of the Inca Empire had their roots in the previous cultures that inhabited in the area prior to the thirteenth century, but the real forces that motivated and drove these people to the control of such an enormous extension is still obscure.

It is clear though, that the Inca, as a culture, originated in the city of Cusco which at that time had been a rather small and unimportant settlement in the valley of Cusco. The estimated population of the Inca empire at its peak has been calculated at six million. Theories have been developed as to the nature of their organization. One of the most widely spread is the organization of the Inca system resembles a socialist organization in which the state provided the people with food and the land was owned by the state. Since most of the Inca productive effort was given to agricultural production, most of the Incas were farmers assigned with plats of land. There is no evidence of a monetarial system used in the trading of products, foodstuffs, or otherwise. The barter system was used and apparently the value apportioned to the products was set by bi-personal relationships rather than having the rulers, or the market, determine the value of the product or good being bartered.
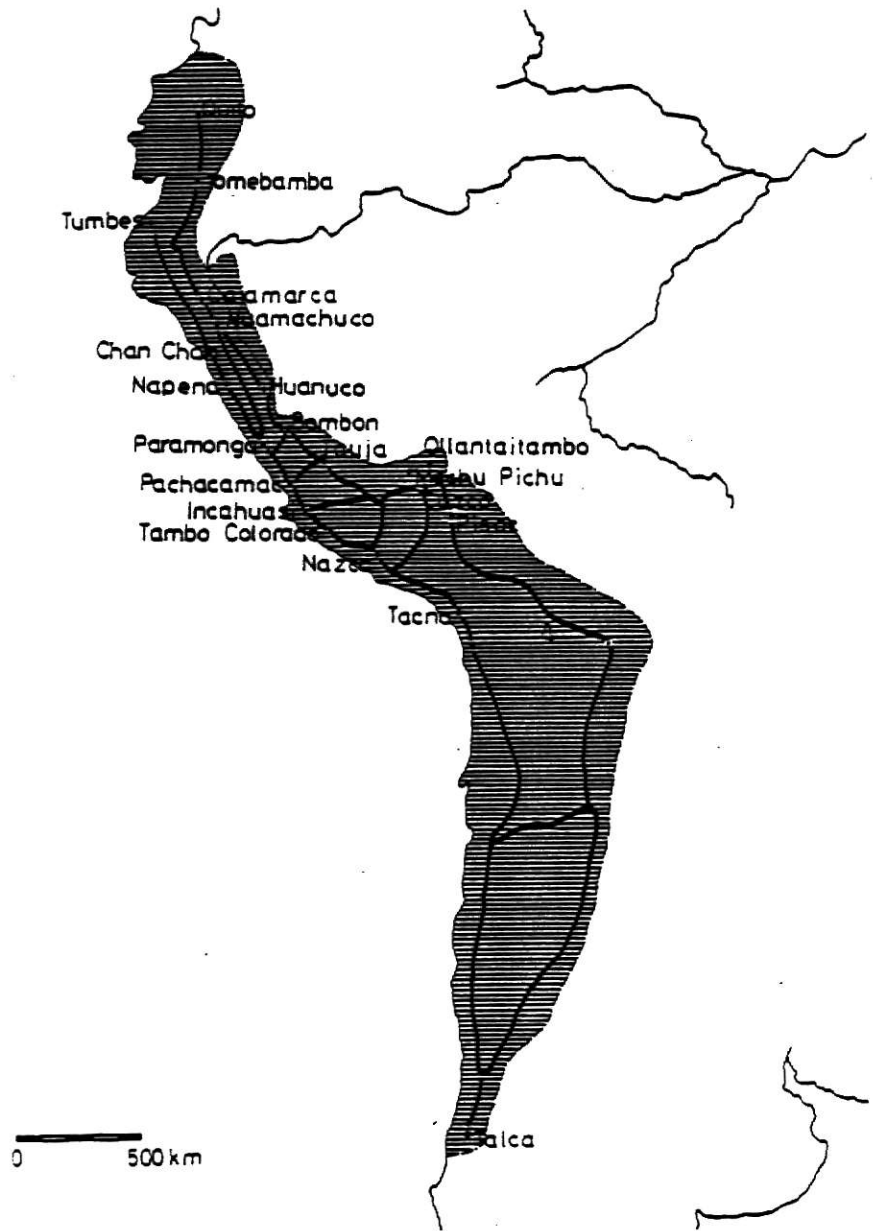
Map 3
The Inca Empire
The Inca Empire at its maximum showing the transportation
system.
Source and credit: Hardoy, Jorge, "Pre-Columbian Cities"
Walker and Company, New York, 1973.

From a certain perspective this organizational structure is interpreted as unjust[10], because there was no liberty on the part of the Incas to move freely and to produce their own products. Nevertheless, the system developed and managed to reach a well-advanced stage comparable to the level attained earlier in similar states of development in cultures of Europe and Asia.

The Inca[11] obtained his power only from succession and therefore, the powerful caste maintained control over the empire by determining which of the sons was chosen to be the Inca, that is, the ruler of the Empire.

It was not until the Inca Pachakuti that the empire began a process of expansion as never before. Pachakuti was known as the builder of the empire and the one who started using effectively the principles of social, productive and urban planning. There is no evidence that the Incas had utilized a written system of accounts, but the tasks of administration had impelled them to develop a system of keeping accounts by means of quipus, which are knotted strings of different colors and sizes used to keep the administration aware of its possesions and production. The quipus were operated by the quipucamayos, trained "statisticians" or accountants for the empire.

In order to better control and manage the empire, it was divided into regions. There were four regions corresponding to the cardinal points, the center of which was Cusco. Qosqo, in quechua, the language used by the Incas, means the "center". From Cusco four roads originated to the four regions, these roads were covered with cobblestones and are still followed by explorers in the twentieth century.

Pachakuti ordered the reconstruction of Cusco around 1440, and according to reports by Inca Garcilazo de la Vega (the most publicized writer of Inca origin

who was taken to Spain to be educated)[12] he ordered his builders, meaning architects or urban planners, to present him with a model of the city, so they could dsicuss the characteristics of the settlement to be rebuilt. According to these reports, care had been taken in the process of locating the different communal buildings as well as temples and palaces.

CUSCO

The desire of Pachakuti was to remodel the existing Cusco to resemble a powerful center. It had existed as a small unimportant settlement before this period, composed by a number of neighboring nuclei. Therefore, the builders evidently had constraints due to the many already existing structures in the site; nevertheless, the city continued to be rebuilt having its layout follow the shape of a puma, an animal that was esteemed by the Incas and that was represented in many scuptural works.[13] According to an early chronicler "Pachakuti laid the principal streets that were there when the Spaniards entered Cuzco and he set aside ground for community, public and private uses, ordering them built of highly polished masonry."[14]

At the core of the city a huge plaza was located which was divided by the Huatanay river; the lower part was called Huacaypata which was used for ceremonial purposes, and the higher part Cusipata was used for the public gatherings of the Incas and a place for conducting civic public events. Palaces were placed around Huacaypata, and space had been set aside for other palaces, since at the time of the advent of a new Inca, he was supposed to build a new palace and was not entitled to inherit one. The Temple of the Sun which, according to early reports by the Spaniards, was the finest structure in the whole city, was located to the south of the Plaza. The residence of the priests and their servants was also located in the temple. Between the Plaza and the Temple, the house of the Chosen Women was located, which was a sort of convent
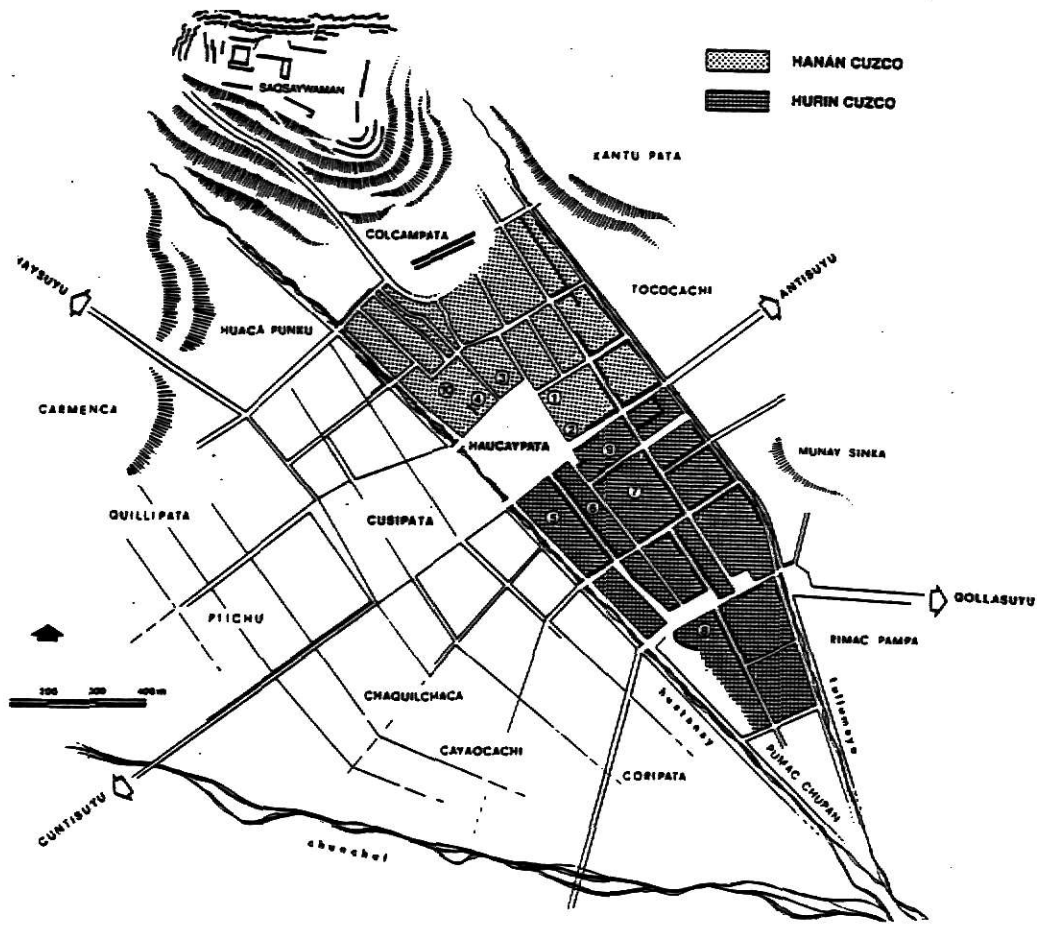
Plan 6
Inca Cusco
Source: Gasparini, Graziano and Margolies, Luise: "Inca
Architecture," Bloomington, Indiana University Press, 1980.
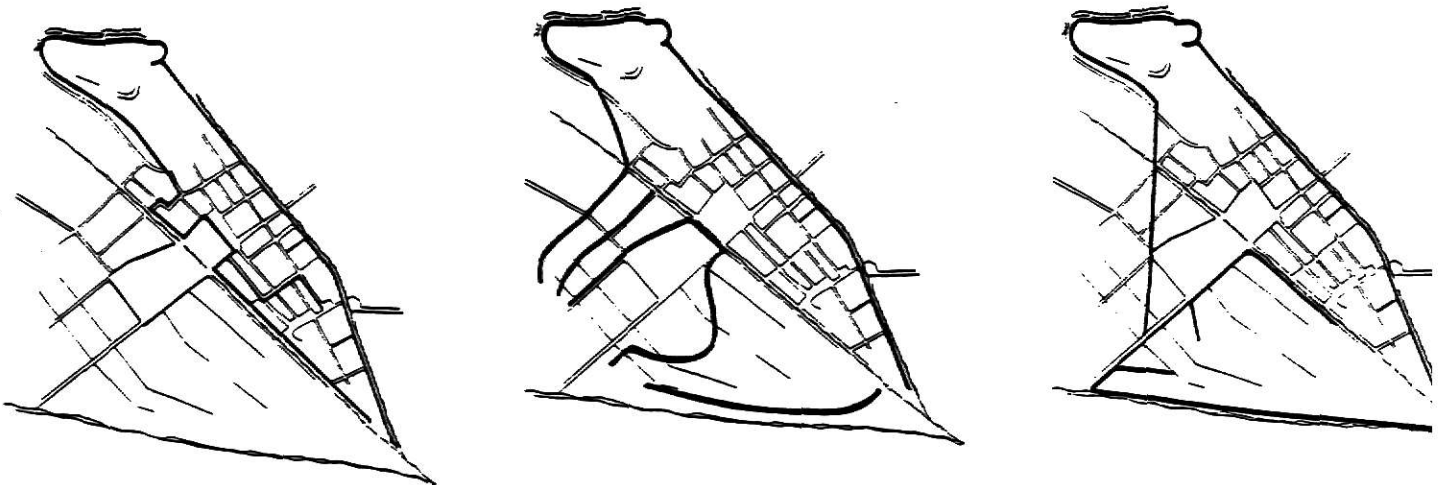
Plan 7
Possible Puma shapes of Cusco
Source: Gasparini, Graziano and Margolies, Luise: "Inca
Architecture," Bloomington, Indiana University Press, 1980.

for the women who served the Inca and the noblemen as well as the priests of the empire.

The <u>Yachayhuasi</u> was located in the northern part and was the learning center where the noblemen were educated in the history and basic principles of administration by the <u>Amautas</u> teachers.

The housing sector was located in the southeastern part, and its architectural features were not of extreme quality compared to the religious and royal buildings.

The layout is rather irregular in terms of the street pattern and sizes and shapes of the blocks. Although the streets are in general rectilinear, they are not organized in a regular grid pattern, as Ollantaytambo, a later Inca settlement, and appear to conform to the topography of the terrain. This causes the blocks to vary in size, although always within a rectilinear fashion.

The urban design of Cusco was rather simple given the constraints posed in its planning; if we compare it with Teotihuacan in Mexico, it does not feature the more advanced conception found in this center. There are other centers, though, that appear to have had a more rational process of construction and that represent a more advanced stage in terms of settlement construction during the Inca period.

Although it is generally thought that Cusco was the capital center of the Incas, there are some theories that indicate it may well had been a ceremonial center as well. Rowe bases his theory on the separation of the residential districts from the core area of the center and in chronincles that establish the access to Cusco was limited to only certain people whom the Inca and the noblemen received.

But, even though the importance of Cusco in political and administrative terms is accepted, it is not the best example of spatial ordering by the Incas. Ollantaytambo, a settlement some 80 km from Cusco, is thought to present a better example of Inca land allocation and distribution in their settlements.

OLLANTAYTAMBO

Located in the Urubamba valley, Ollantaytambo shows a more sophisticated level of planning. It has been continuously inhabited ever since its founding, like Cusco, and nowadays it presents the features of its original layout. The settlement presents two areas clearly divided, a river contributes to mark the division. To the east of the river, a gridiron fashion layout is found which housed the canchas. The canchas were the housing quarters that constitute the smallest habitational unit in the settlement. Its size and quality may be compared with the modern block. To the west of the river a plaza was laid out with constructions to three sides. These buildings may have served as ceremonial centers. To the westerly part abutting the steep mountain are a number of terraces, following the contour lines of the mountain. At the top of this mountain, stone constructions of religious character are found.

This allocation of land uses obviously follows a predetermined plan in terms of the settling of the land. The checkerboard pattern for the housing sector, resembles the Renaisance urbanism practiced in Europe at about the same time. The streets meet in 90 degree angles, and are approximately 1.5 meters wide. They are parallel to each other although there appears to be a slight deviation in the longitudinal streets towards the south. The central space of this sector as an open area, whose use may have been for community gatherings, but when the Spaniards arrived, they proceeded to build housing units in this area.
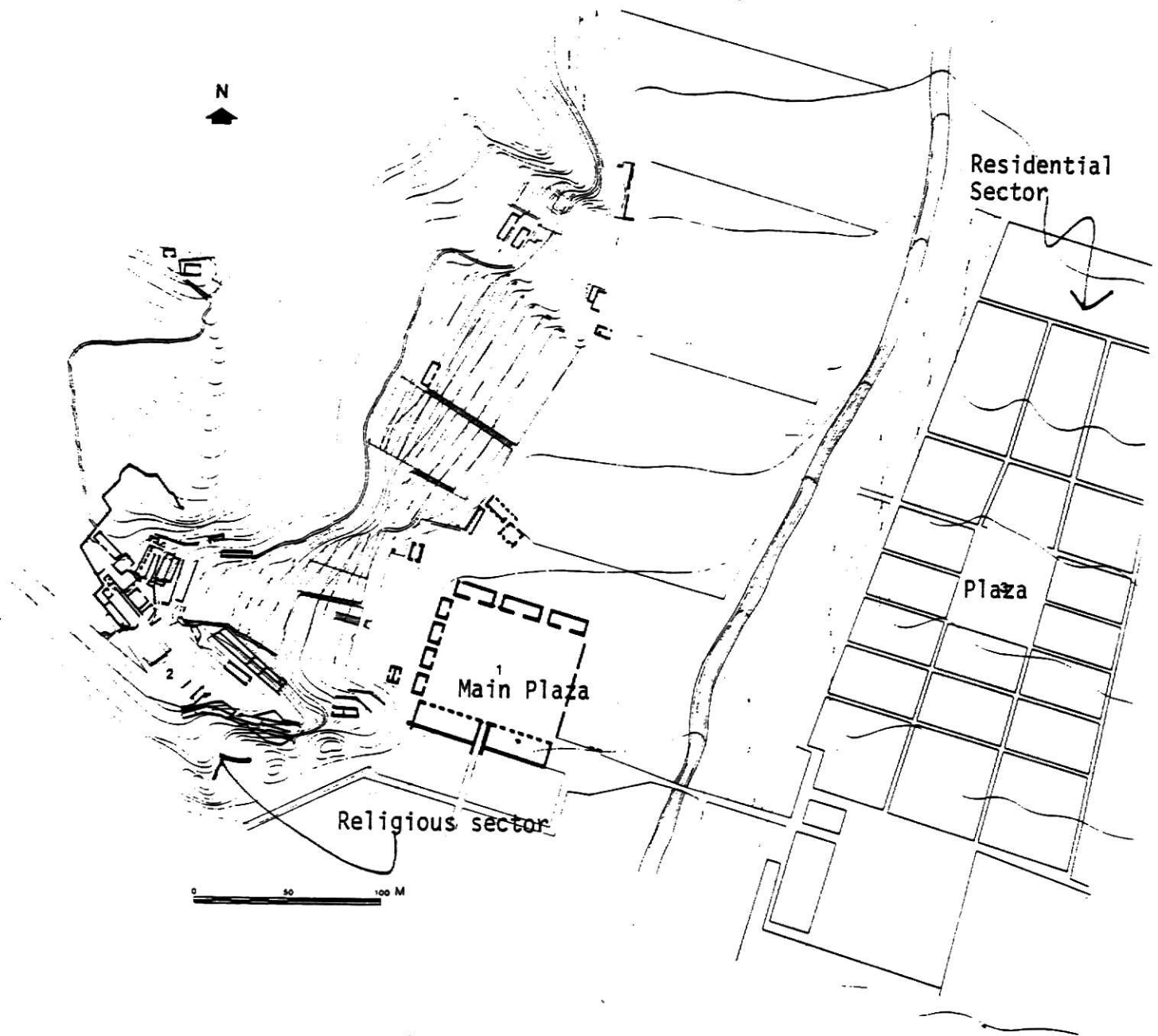
Plan 8
.Ollantaytambo
Source: Gasparini, Graziano and Margoiles, Luise: "Inca
Architecture," Bloomington, Indiana University Press, 1980.

Ollantaytambo may have been an outpost of the empire towards the Urubamba valley, which leads to the jungle. It may have also been a site for centralizing the administration of the agriculture, like Pikillaqta for the Huaris, of the Urubamba valley, which is noted for having very productive soil. It may have also been a center for royal residence.[15]

The notion that it served as a center for administration is accepted in the accounts that it could not have served to house common people (farmers) who presumably lived in the place of production this it may have served to house the administrators, who along with their families and servants may have come to the area to control the system of production of the empire. Aside from the character of the settlement, its importance lies in the fact that it is there that the Inca notion of settlement planning has been exercised at its best, and that it appears to be a center that has been planned since its beginnings, not like Cusco, which started as an incoherent site and upon acquiring importance was rebuilt.

MACHU PICCHU

In the Urubamba Valley, at the top of a mountain about 50 km from Ollantaytambo, Machu Picchu lies in evidence of the ability of the Incas to conquer altitudes and build settlements that are accomodated to the physiography of the natural elements. The only part by which access to the area is obtained is from the southern side of the mountain. The Urubamba river flows around the Machu Picchu mountain and practically encloses it, making access difficult from other flanks.

The settlement is divided into two clear-cut areas. The southern area is characterized by terraces which serve for agricultural purposes, and the northern part constitutes the settlement itself. The division is achieved by a
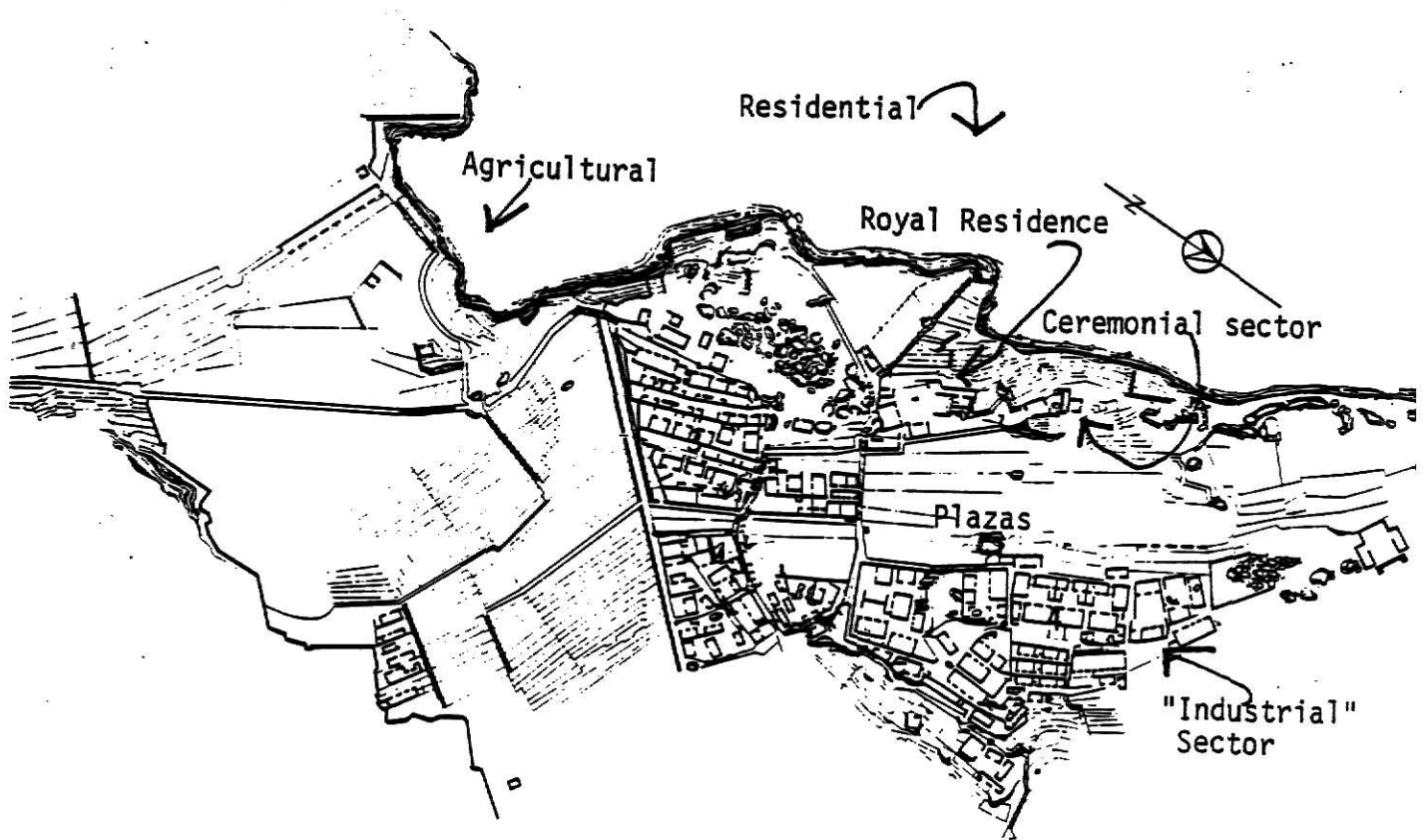
Plan 9
Machu Picchu
Source: Gasparini and Margoiles,1980
Credit: Instituto Nacional de Cultura-Lima, Peru

ditch that runs east-west. The ordering of the constructions in this area does not appear to follow a completely delineated plan. It is composed by a number of repetitive constructions that adapt to the extremely difficult variation in levels. These facts made the planning of the area a very difficult task.

Overall, the plaza is present in an irregular shape, and having different levels. The site almost appears to have, not one, but as many as five plazas in different levels. Similar land uses in the city are obviously clustered. The best location had been apportioned for religious use and also to the royal residence. There is an "industrial"[16] section which may have been the area where textile production had taken place. The housing section presents, typical of the Inca constructions, considerably lower quality in terms of the architecture.

Machu Picchu still poses many questions as to the role it has served during the Inca period. Some historians state it served as a retreat center for the noblemen and others indicate it was a training center for the future Incas.

The layout is very irregular, and streets appear not to have had much importance. Streets are formed by the open spaces between buildings, and the location of certain buildings in different levels was served by many stairs. Practically most of the streets are straight stairways. It cannot be asserted that there was a sequencing of streets, a fact that is typical of the Inca settlements.

HUANUCO PAMPA

Located in the central highlands at around 3,6000 m.a.s.l., Huanuco Pampa was an Inca administrative storage center, along the lines of Ollantaytambo. It was built as an outpost in an effort to expand to the north of Cusco. The site

may have been occupied before by other smaller cultures, but its importance lies
in the characteristics of the site in terms of the peculiarity of its design.

The element that clearly stands out is the plaza which is centered in the
settlement. Its size it about 540 by 370 meters (1,772 by 1,214 feet) and
appears to be extremely huge for the overall size of the center. It is clearly
rectangular and has a ceremonial construction exactly in the center. The larger
sides of the rectangle expand in a west-east direction. A path (Inca road)
crosses the plaza in a southeast/northwest fashion. The whole plaza is
surrounded by what appears to be housing complexes.

In the eastern side, the so called Inca Huasi (the house of the Inca) is
located showing the best architectural elements in terms of quality. The street
layout is typically irregular to the point in which streets are not clearly
defined. It is quite evident that the streets in Huanuco Pampa were not thought
of as important elements and their importance was neglected. They merely appear
as open spaces left out between buildings.

The area north of the plaza shows a quite regular design compared with that
of the west and south. This area houses a number of small "barracks" which were
probably allocated for the production of textiles and ceramics, rather than for
housing. The southern and western areas were used for housing units.

48

Royal Area

Plaza

Residential

0   100   200 M
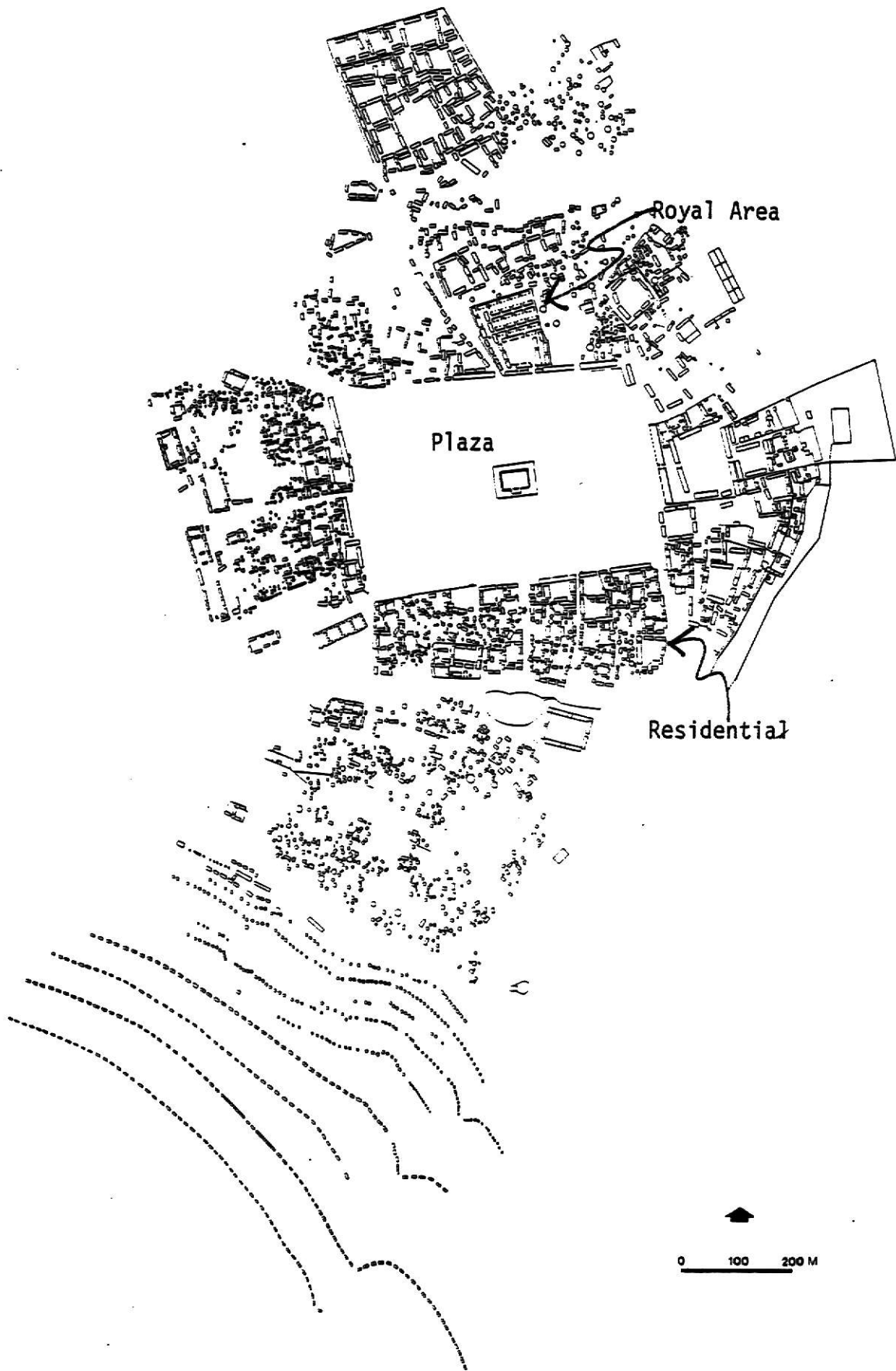
Plan 10
Huanuco Pampa
Source: Gasparini and Margoiles
Credit: Jose de Mesa and Teresa Gisbert

NOTES

[1]Edward P. Lanning,<u>Peru before the Incas</u>. (Englewood Cliffs,New Jersey: Prentice Hall,Inc. 1967)

[2]Jorge E. Hardoy,<u>Pre Columbian Cities</u>. (New York:Walker and Co,1964)

[3]Graziano Gasparini and Luise Margoiles,<u>Inca Architecture</u> (Bloomington:Indiana University Press,1980)

[4]Hardoy,1964

[5]Hardoy,1964 and John Rowe,"Urban Settlements in ancient Peru", in <u>Nawpa Pacha</u> 2(2) 1964 p.1-27

[6]Jorge E. Hardoy reports the following results for the five citadels:

	Tschudi	Labyrinth	Uhle	Rivero	Bandelier	
Reservoirs	9,580	2,030	225	785	560	sq.m.
(Pukios)	9.2	1.3	0.1	1.0	0.4	%
Canchones	30,180	73,175	74,850	7.000	49,500	sq.m.
	27.4	49.2	38.4	9.6	39.6	%
Plazas	7,040	8,477	6,000	8,500	15,100	sq.m.
	6.3	6.0	3.0	11.6	12.0	%
Perimetric	11,730	6,550	11,800	20,150	11,000	sq.m.
Corridors	10.6	4.0	5.6	27.6	8.8	%
Shrines	2,000	----	----	----	3,650	sq.m.
	1.7	----	----	----	2.8	%
Internal Corridors	17,700	21,000	77.245	20,875	22,490	sq.m.
	16.4	14.1	39.6	28.6	18.8	%
Housing	31,220	37,270	26,180	15,440	22,700	sq.m.
	28.4	25.0	13.3	21.6	18.4	%
Total Area	109,450	148,500	196,300	72,750	125,000	sq.m.
	100.0	100.0	100.0	100.0	100.0	

[7]Peabody Museum,Arch-tectural Plans of Chan-Chan,Peru (New York: Peabody Museum,1980)

[8]Moseley,Michael and Mackey,Carol,:Chan-Chan,Peru's ancient city of Kings",<u>National Geographic</u>,143(3)March1973 pp.318-344

[9]Jorge E Hardoy,<u>Urban Planning in Pre-Columbian America</u>.(New York: George Bazilier,1968)

[10]Hardoy,1964

[11]In this context the term "inca" refers to the ruler (King) and also to the subjects of the Empire.

[12]Garcilazo de la Vega (el Inca) Comentarios Reales de los Incas. (Buenos AIres:Emecee Editores,1945) 2 vols.

[13]John Rowe suggeste the shape od the puma for the layout of the city. The puma, according to his view, is lying down.

[14]Pedro de Sarmiento de Gamboa, Historia de los Incas (Buenos Aires: Emecee Editores,1947)

[15]Hardoy,1964,1968

[16]Victor Angles,Historia del Cusco (Lima:Industrial Grafica,1978) Vol.1

[17]This term is used by the Peruvian architect Emilio Harth-Terre in his article "El Pueblo de Huanuco-Viejo" El Arquitecto Peruano, 320-321 (1964)p.1-20

[18]This view is also shared by Gasparini and Margoiles.

C H A P T E R   3

SPANISH COLONIAL URBANIZATION

The first settlements that the Spaniards founded in America were in the northern part of what is now the Dominican Republic (Hispaniola Island) in the Caribbean. The fort-like settlement was founded by Christopher Columbus, but was destroyed soon after its creation. Subsequent efforts of town-building in the Caribbean took place by the early adventurers until 1504 when Santo Domingo was founded and made to have the characteristics of a real city. Santo Domingo became the first large settlement founded by the Europeans in the American Continent, and soon became the "Capital of America" in the Spaniards' eyes. It housed the first archidiocesis and the first gobernatura.[1]

Santo Domingo had a regular plan, with blocks of the same size, because it "...permitted an easy subdivision and design on the terrain."[2] It had a Plaza around which the main buildings of the town were located.[3] It served as the center for the later conquest and settling of the rest of the islands in the Caribbean and Central America.

Nicolas de Ovando replaced Columbus in the conquering task in 1501. He was given what are considered to be the first official instructions by the King Ferdinand of Spain regarding the founding of towns in America. "As it is necessary in the island of Hispaniola to make settlements anf from here it is not possible to give precise instructions, investigate the possible sites and according to the quality of the land, place the peoples; in additon to the present native settlements, you shall establish others in the number and locations that seem proper to you."[4]

51

Plan 11
Santo Domingo
Source: Chueca Goithia, Fernando y Torres Balbas, Leopoldo, "Planos de ciudades Iberoamericanas y Filipinas existentes en el Archivo de Indias," Madrid, Instituto de Administracion Local, 1951.

This ordinance does not really have any real content of an urbanistic intent and leaves the decision making as related to the location and internal structure of the city to the conqueror. However, Santo Domingo followed a pattern that was a combination of the early Spanish military camps and cities. In 1526, the city was compared to Barcelona in the following terms: "The streets are much more level and broader and incomparably more straight; for as the town was founded in our time ...it was laid out by rule and compass with the streets all of the same size, in which respect it is far ahead of all the towns I have seen."[5]

In 1514 another set or regulations were given to Pedro Arias de Davila (Pedrarias). These were somewhat more precise in posing the Spanish policy of town location vis-a-vis the internal structure of the city. To the latter respect the following quote indicates: "...let the city be regular from the start, so that once the streets are marked out the town will appear well ordered as to the place which is left for the plaza, the site for the church and the sequence of the streets; for in the newly established places proper order can be given from the start, and thus they remain ordered with no extra labor or cost; otherwise, order will never be introduced."[6]

This is the first implication of "regularity" expressed via an ordinance from the Spanish Crown which was translated into a gridiron pattern in the laying out of the new settlement. This pattern is present in the towns later found in America. Pedro de Arias used this concept in the foundation of Panama City.

Aside from these early efforts to promote the orderly creation of cities in America, the main concern of the Spanish Crown was elsewhere. The task of conquering and subjugating the natives of the Americas as well as the desire to

attain wealth rapidly drove the early colonists to seek desperately for this end. They found America comparatively less populated than Europe and the population located in relatively few settlements. No big agglomerations were found, except for Tenochtitlan in Mexico and Cusco in Peru. Therefore, the logical strategy for the Spaniards to follow was the concentration of people in controlled centers to establish a social and political authority, military dominance, and also religious indoctrination.

In this respect urbanization was a means to attain these ends, and was not an end in itself. There is no report as to the number of settlements the Spanish may have founded in their early trial-and-error and later experienced efforts in establishing cities and towns. Their labor extended from the southern part of what is now the United States to the southern part of twentieth-century Chile, covering in this way Central and the greater part of South America. This means that the system of settlements that existed prior to the arrival of the Spanish was disregarded and/or destroyed, although in some cases certain cities were continued to be in use with an overlay of Spanish urbanism on the native system. This is the case in Tenochtitlan, the Aztec capital, where Mexico was founded in 1521, and Cusco, which was refounded by the Spaniards in the same location of the Inca capital in 1534.

Regional space in pre-Columbian America was organized having centers of power and an organized knitted system of roads. In the case of Peru, Cusco was the center of power and the Inca empire was regionally organized for administrative purposes and served by a system of roads. The arrival of the Spaniards meant the destruction of this system and the creation of a new one according to new needs and requirements. Since the means of communication with Spain was the ocean, most of the early Hispanic cities were founded along the coastal regions, and these in turn were given much attention by the Crown.

Other minor centers were created inland as a means of penetration into the newly discovered territory.

REASONS FOR THE FOUNDING OF TOWNS IN AMERICA

Some of the essential reasons for the founding of towns in America can be systematized in the following way:

1. In the first place the conquerors, mainly military people, found a settlement in accordance with the will of the King of Spain. In this way they complied with a military duty in performing the role of town-founders. The Kings of Spain at this time were Ferdinand V (1452-1516); Charles V (1516-1556); Philip II (1556-1598).

2. The Spaniards who first came to populate America were essentially urban-minded They came from the main cities of Spain, and therefore naturally wanted to recreate their home urban environments. In later stages agriculturally-minded people were brough in primarily for the inland settling.

3. In order to control the new possesions the King of Spain needed cities that would serve as administration centers for some sort of administrative and political subdivision. For this reason originally, in the 1540's, America was divided in two Vice-Royalties, the Vice-Royalty of New Spain in Central America and the Vice-Royalty Peru in South America. In turn each Vice-Royalty was divided into Audiencias, that is, internal administrative sub-division. There were originally ten Audiencias in America, six of them were in the Vice-Royalty of Peru.

   - Audiencia of Panama
   - Audiencia of Santa Fe de Bogota

-Audiencia of Quito

-Audiencia of Lima

-Audiencia of Chile

-Audiencia of Charcas

The Vice-Royalty of Peru covered an immense territory. An account of the population for 1580 gives 11,661 households in 108 towns; and for 1630, 41,228 households in 170 towns.[7] Of course, the statistical meaning fo the term "household" is very vague. It meant a family of white Spanish people living in a housing quarter. This family may have been composed of as many as 10 members and as may as 15 servants, slaves and other non-white people.[8]

In this vast territory a city meant a center of power to control the hinterland. So the notion of the city for the Crown included not only the physical space covered by the settlement, but also the hinterland of the city that was supposed to be governed from the municipality.[9] It should be added that there was no form of rural administration. The city was the center for the total rural administration.

4. One of the means the Spaniards utilized to control the natives of America was through religion. The Pope had given the King of Spain powers to undertake the discovery and conquest of the new continent to spread the Catholic religion. The natives of America were considered "savages and barbarians" and had to be converted to the Catholic faith. This effort is evidenced in the Act of Foundation of San Juan de la Frontera de Chachapoyas, in the northeast of Peru. "Since there are good depositions of land and Indians in the region, a city ought to be founded for the service of God and His Majesty, and for teaching of the Catholic faith."[10]

5.   The military sense of occupation was inherent to almost all the towns founded by the Spaniards; they always feared the presence of the natives (because of their greater number) who originally tried to reconquer their property and rights.   The coastal cities in some cases were walled in case of attack from the ocean by pirates.   No inland city was walled.

6.   Some cities were founded strategically in locations adequate primarily for exploitation of mineral and agricultural resources or wherever heavy native population concentration was sighted.   Mining was an important activity for the Spaniards, and wherever they could find minerals, especially silver, they would settle a town immediately.   Potosi, in the southern part of the Titicaca basin, is a clear example of this attitude.   Potosi flourished greatly with the silver mining activity and became the largest city of America in 1600.[11]   The decline of the city came once the mineral resources were completely exploited.

Agriculture was also an important activity for the surival of the European. Although they were not directly involved in the actual agricultural process, the Spaniards were bound to own large extensions of land, and had Indians to cultivate it.   From this perspective, towns were founded for the control of agricultural production.

7.   The commercial exchange of goods, a typical European activity, was also carried out in towns.   Merchants came from Spain, and many goods were imported from Europe.   Trading began to be a profitable economic activity, and since the means of transportation were essentially by ocean, the coastal cities acquired greater and greater importance in the regional context.   Other cities in the interior were also involved in part in the commercial exchange of goods.   In this sense the cities in the interior

served as centers of trading imported goods for indigenous products. The coastal cities, especially the ones that had ports, were used as bases for receiving imports and shipping natural resources to Spain. This was highlighted by the commercial monopoly that Spain exerted over the various colonies, it did not allow any kind of trade among them until the early seventeenth century.

8. In order to exercise control over the Indians, the Spaniards concentrated them in settlements called reducciones. The reducciones were settlements located essentially in the rural areas that served to bring the scattered Indians to a controllable place. It also served as a place for indoctrination and conversion to the Catholic faith. The reducciones were parallel towns to the Spanish settlements, and were designated only for Indians, where Spaniards, other than priests, were not allowed to stay for more than two days. These settlements followed in general lines the physical pattern of Spanish cities, but with greater simplicity.[12]

SPANISH TOWN PLANNING LEGISLATION

As stated earlier, during the first years of discovery and conquest, the Spanish Crown took little interest in determining a rational process for the location and layout of the settlements founded in America. It was not until 1573 that a more comprehensive set of regulations to this regard was forwarded by the Crown. In "Ordenanzas de Su Majestad hechas para los nuevos descubrimientos, conquistas y pacificaciones' signed on July 13, King Philip II stated the official policy regarding the already developing urbanization of America. These ordinances were based on prior orders the King had given to the early conquerors; but some other principles are advanced. These ordenanzas are part of the Leyes de Indias (Laws of the Indies) which were the basis for legislation concerning America during the Spanish colonial period.

The ordinances related to town location and internal structure were not a Spanish creation. They were based on previous literature originated elsewhere in Europe. The most widely accepted sources are:

1. Tolomeo de Luca's "De Regimine Principium ad Regem Cypri" (The principle of ruling in the Kingdom of Cyprus, 1267-1684). In this publication Thomas Aquinas wrote about the location of towns. He discussed the "...need of healthy sites for the towns, water supply, agricultural hinterlands."[13] According to J.M. Houston, a copy of this work is said to have been kept in the Escorial.[14]

2. A catalan monk, Francex Euximenic (1340-1409), wrote "Regemint de Princeps." In this book he describes the ideal town with reference to a healthy site, wind directions, the form of the plan, position of the cathedral, hospital, etc.[15]

3. Marcos Vitruvius Polio, more than anyone else, has influenced Spanish town-planning legislation. Even the rethoric used in the ordinances follows the one utilized by Vitruvius. Dan Stalinawski[16] analyzed this dependence in detail, comparing paragraphs of the "Ten books on Architecture" with the Royal ordinances. In his analysis he clearly determines two levels in the town planning effort by the Spaniards the location of settlements and their internal distribution, as expressed by Vitruvius.[17]

Following are exerts of the 1573 ordinaces:[18]

110 ..."on arriving at the locality where the new settlement is to be founded (which according to our will and ordinance must be one which is vacant and can be occupied without doing harm to the Indians and natives or with their free consent) the plan of the place, with its squares, streets

and building lots is to be outlined by means of measuring by cord and ruler, beginning with the main square from which streets are to run to the gates and principal roads and leaving sufficient open space so that even as the town grows it can always spread in a symmetrical manner."

111. "The chosen site shall be on an elevation; healthful; with means of fortification; fertile and with plenty of land for farming an pasturage; fuel and timber; fresh water, a native population, commodidiousness; resoruces and convenient access and egress..."

112. "In the case of the sea-coast town the main plaza which is to be the starting point for the building of the town, is to be situated near the landing place of the port. In inland towns the main plaza should be in the centre of the town and of an oblong shape, its length being equal to at least one and a half times its width, as this proportion is the best for festivals in which horses are used and any other celebration which have to be held."

113. "The size of the plaza shall be in proportion to the number of residents, heed given to the fact that towns of Indians, being new are bound to grow and it is intended that they shall do so. Therefore the plaza is to be planned with reference to the possible growth of the town. It shall not be smaller than two hundred feet wide and three hundred feet long nor larger than eight hundred feet long and three hundred feet wide. A well proportionated medium size plaza is six hundred feet long and four hundred feet wide."

114. "From the plaza the four principal streets are to diverge, one from the middle of each of its sides and two streets are to meet at each of its corners. The four corners of the plaza re to face the four points of the compass, because thus the streets diverging from the plaza will not directly be exposed to the four principal winds, which would cause much inconvenience."

115. "The whole plaza and the four main streets diverging from it shall have arcades, for these are a great convenience for those who resort thither for trade. The eight streets which run into the plaza at its four corners are to do so freely without being obstructed by the arcades of the plaza. These arcades are to end at the corners in such a way that the sidewalks of the streets can evenly join those of the plaza."

116. "In cold climates the streets shall be wide; in hot climates narrow, however, for purposes of defense and where horses are kept the streets had better be wide."

117. "The other streets laid out consecutively around the plaza are to be so planned that even if the town should increase considerably in size it would meet with no obstruction wich might defigure what had already been built or be a detriment to the defense or convenience to the town."

118. "At certain distances in the town, smaller, well proportionated plazas are to be laid out on which the main church, the parish church or monastery shall be built..."

120. "After the plaza and streets have been laid out building lots are to be designated; in the first place, for the erection of the main church, the parish church or monastery and these are to occupy respectively an entire block so that no other structure can be built next to them excepting such as to contribute to their commodiousness or beauty."

121. "Immediately afterwards the place and site are to be assigned for the Royal and Town Council House, the Custom-House and Arsenal which is to be close to the church and port so that in case of necessity one can protect the other. The hospital for the poor and sick of noncontagious diseases shall be built next to the church forming its cloister."

122. "The lots and sites for the slaughter houses, fisheries, tanneries, and such like productive of garbage shall be situated so that the latter can be easily disposed of."

123. It would be of great advantage if inland towns, were built on the banks of a navigable river; in which case an endeavor should be made to build on the northern river bank..."

125. "In inland towns the church is not to be on the plaza but at a distance from it in a situation where it can stand by itself, separate from other buildings so that it can be seen from all sides. it would be built on high ground so that in order to reach its entrance people will have to ascend a flight of steps. Nearby, between it and the main plaza, the Royal Council and Town House and the Custom House are to be erected..."

126. "No building lots surrounding the plaza are to be given to private individuals for these are to be reserved for the church, Royal and Town House, also shops and dwellings for the merchants, which are to be first erected."   .

127. "The remaining building lots shall be distributed by lottery to those settlers who are entitled to build around the plaza...in order that the entries of these assignments be better made, a plan of the town is always to be made in advance."

128. "After the plan of the town and the distribution of the lots have been made each settler is to set up his tent on his lot if he has one, for which purpose...those who own none are to build huts of such materials as are available...all settlers, with greatest possible haste, are to erect jointly some kind of palisade or dig a ditch around the main plaza so that the indians cannot do them harm."

129. "A common should be assigned to every town, of adequate size so that even though it should grow greatly there would always be sufficient space for its inhabitants to find recreation and for cattle to pasture..."

130. "...the remainder of the land is to be sub-divided into as many plots for cultivation as there are town lots and the settlers are to draw lots for these..."

134. "Settlers are to endeavor, as far as possible, to make all structures uniform for the sake of the beauty of the town."

135. "The faithful executors, architects and persons who may be deputied by the governor for the purposes shall be most scrupulous in carrying out the above instructions and in hurrying both field labor and house building so that the town may be completed in a short time."

SPANISH TOWN FOUNDING AND PLANNING IN PERU

Francisco Pizarro was offically the conqueror and discoverer of Peru. It was under his quest that the Vice-Royalty of Peru was founded and apportioned. As stated earlier, at this time the Vice-Royalty comprised a much larger territory that what is now Peru. For this reason this study will be centralized on the Spanish town-founding activity within the boundaries of modern Peru.

Pizarro arrived in Peru in the early 1530's and started his explorations in the northern part of the country. In 1534 he arrived in Cusco, and in the same location in which the Inca city had been located, he proceeded to found the Spanish city of Cusco. From this point it was easier to continue the task of the conquest, taking for granted that once the Inca capital was controlled, the Indians would not oppose the Spaniards' expansion. But prior to his arrival in Cusco, Pizarro, who was not especially interested in founding towns as much as collecting wealth took over most of the settlements that had been in use by the Incas. Quito (Ecuador), Tumbes, Pachacamac, Chan-Chan, Vilcashuaman, Huanuco Viejo, Jauja and other were utilized by the Spaniards as centers of control and authority.

Cusco, at the time of the Spaniards' arrival (according to the priest Valverde), had some 3000 to 4000 houses in the central part and some 19,000 to 20,000 in the suburbs. According to Emilio Hart-Terre, at the outset the

conquerors planned to remove the city to a different location, but the amount of people, the quality of the constructions, and the already existing organization, were elements in the decision to maintain the city in the same place and to continue with the Spanish occupation.[19]

In January of 1535, Pizarro founded Lima in the Rimac valley. The city was created from scratch and it was here that they utilized their utmost ability and experience gained in earlier town-founding attempts. Lima was located near the natural harbor of Callao on the Pacific Ocean. The Rimac river flows westward to the Ocean, and the city was founded on banks of the river. It started with 111 vecinos, and was laid out with a preconceived plan. Jorge Basadre wrote: "Lima was a natural capital for the reasons deriving from the circumstances of the moment and later as the centuries passed, for reasons of a cultural, intellectual and historical order. But is was an artificial capital in the sense that the political structure here came before the economic structure... The main center of the population and wealth was in the mountains, and Lima lacked the contact which Cusco had had with all regions of the country."[20]

The city had a main plaza surrounded by a church, the Cabildo (Municipality) and the Gobernacion. It was laid out in a gridiron pattern, having all the blocks the same square shape and streets of the same width. According to Bernabe Cobo, a Spanish historian, "to found this city the governor first made a drawing on paper with the streets and blocks, and indicated in the plan the holdings distributed to the settlers by writing he name of each on the holding granted to him; and not paying regard to the number of vecinos with which it was founded but to the greatness which it promised to have eventually, a spacious site was laid out...for 117 blocks...each was allocated 450 feet of frontage; the settlement was planned to have thirteen blocks in length and nine in width, separated by the width of the streets; these were each measured by a cord, all the same, each one 40 feet wide."[21]

The "drawing on paper" was the traza of the city, that is, the first document of the internal configuration of the settlement. The traza was a crude plan determining the locations of the principal buildings in the area of the city and in most cases having the names of the persons to whom lots were allocated. In some situations the trazas were attached to the Acta de Fundacion (Act of Foundation), in which the founder would establish the initial characteristics of the city. determine the type of regulation it would have and the names of the people who would be in charge of the administration of the city.

Pizarro was the only person commissioned by the Spanish Crown to found cities. Among other cities he founded are: San Miguel de Piura (1532), considered the first city established by the Spanish in Peru; Cajamarca; Jauja, which temporarily served as the capital center for the Vice-Royalty of Peru; Cusco in March of 1534; Lima; Callao in 1537; Huamanga in 1540, later named Ayacucho; and Arequipa also in 1540. It should be noted that all these cities were founded before the comprehensive ordinances were forwarded in 1573. In the instances in which Pizarro himself could not reach a site and found a settlement, he had the prerogative to appoint an Adelantado, who acted as a town founder. In this way Chincha was founded by Almagro in 1537, Chachapoyas by Alonso de Alvarado in 1538 and Huanuco by Gomez Alvarado in 1539.

Once the main cities had been founded covering most of the Audiencias of the Vice-Royalty, in 1568 the Spanish Crown adopted the policy of reducciones under the rule of Viceroy Toledo. He instructed his adelantados to "reduce" the Indians to settlements as soon as possible and to "...in each area choose the most appropriate place, of good weather, with enough cultivable land, with hills, prairie, and enough water."[22] He also instructed them to "...found the reducciones in the farthest possible places form the Indian shrines, in order
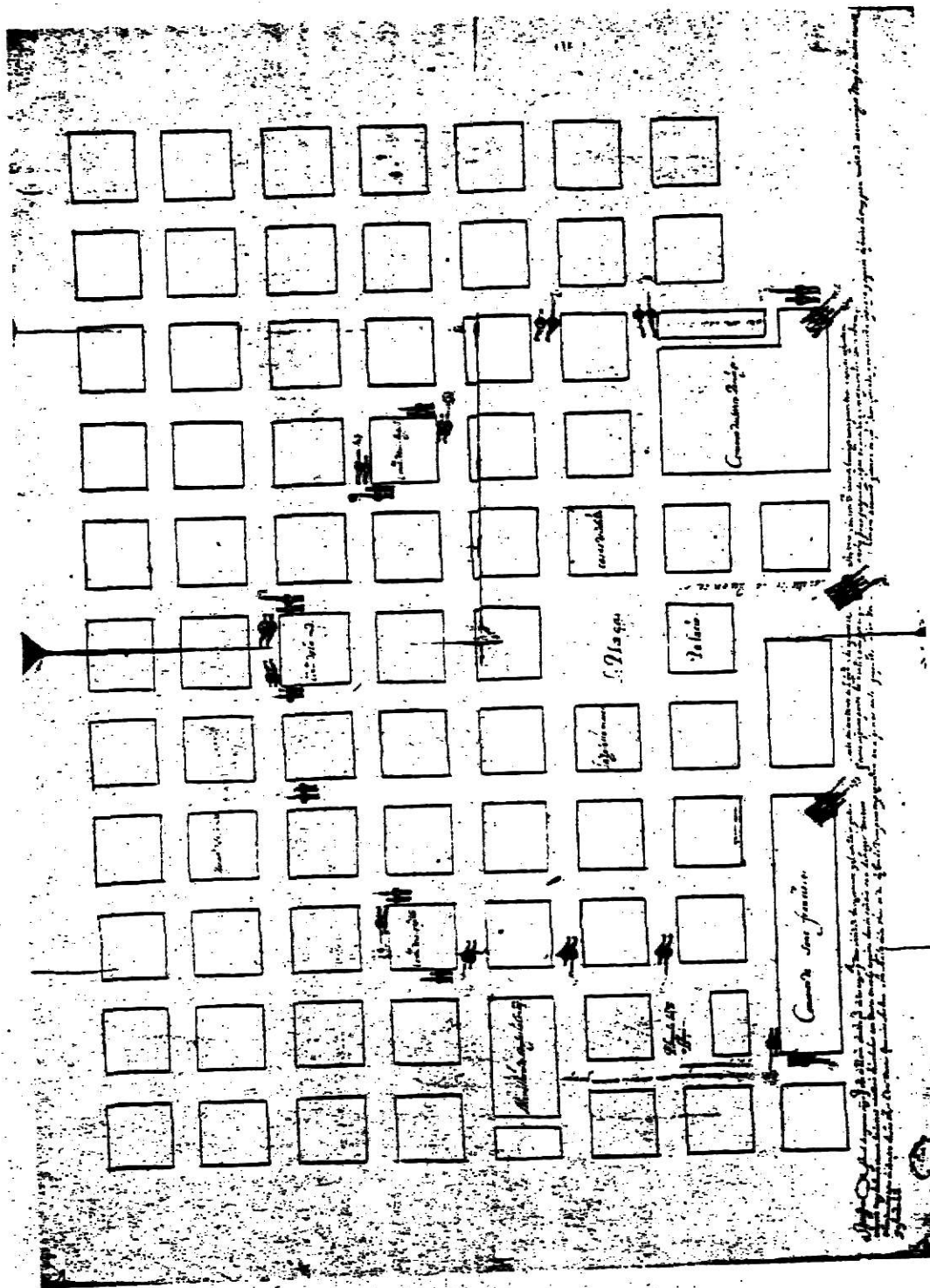
Plan 12
Lima (1626)
Source: Aguilera Rojas, Javier y Moreno Rexach, Luis,
"Urbanismo Espanol en America, "Madrid: Direccion Nacional
de Ordenacion y Turismo, Editora Nacional, 1973.
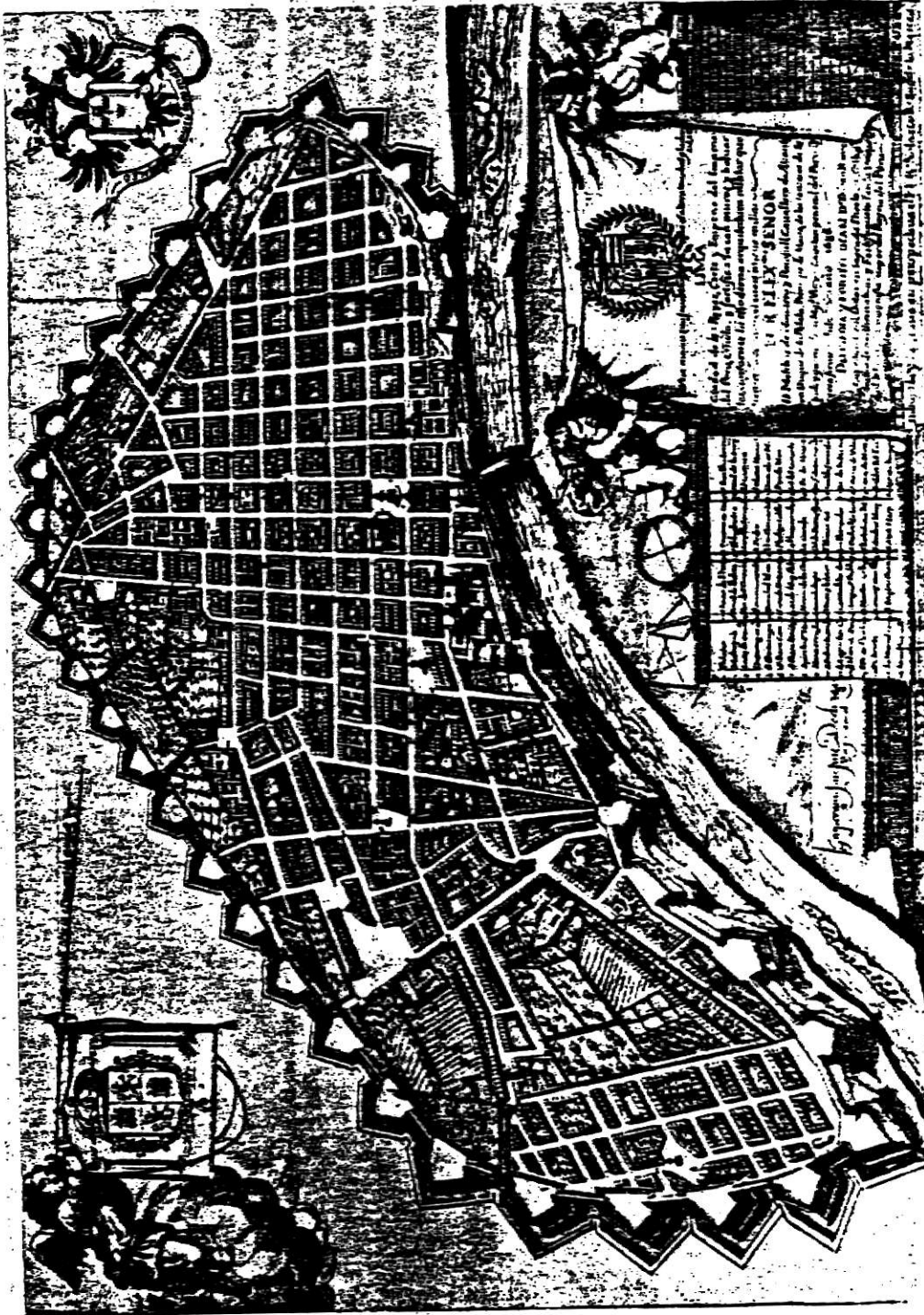
Plan 13
Lima (1685)
Source: Chueca Goitia, Fernando y Torres Balbas, Leopoldo,
"Planos de ciudades Iberoamericanas y Filipinas existentes
en el Archivo de Indias," Madrid, Instituto de Administracion Local,
1951.

that the Indians not continue with their paganish practices."[23]

The aspect of the reducciones was like a Spanish city. They had a central plaza, around which a main church was to be built. The cabildo was also located in the central part of the reduccion. Housing quarters were located in "rectangular homogeneous blocks."[24] The original Indian settlements were to be maintained for two years, after which all the Indians were to be living in a reduccion, and the original Indian town was to be destroyed.

This policy destroyed most of the network of the existing pre-Columbian settlements. It was devastating in its effects, since the native population in the interior was scattered in many small settlements devoted to agricultural activities. Hundreds of new towns were founded throughout the Inca Empire.[25] The Indians had never lived in concentrations and the effects were clear when they were exposed to health hazzards alien to them: they were decimated. On the other hand this was ideal for the purposes of the two religious orders the Franciscans and the Jesuists that came to America at this time in their effort to convert the native population to the Catholic religion. The reducciones were also considered as centers where the Spaniards could get labor for the construction of their cities. (Bellavista dn Characato were reducciones).

CHARACTERIZATION OF THE COLONIAL URBAN CENTERS IN PERU

Following the elements of analysis determined for the pre-Columbian settlements, a characterization for the Spanish urban centers will be discussed. It should be noted that this period in the urban development of Peru is quite important as to the effect that has to the present. Most of the cities nowadays were founded during the sixteenth and seventeenth centuries. There are very few cities that were created in a later time. For this reason cities in Peru now still preserve the original Spanish idea in town planning, and throughout the

Plan 14
Huamanga (1802)
Source: Aguilera Rojas, Javier y Moreno Rexach,
Luis, "Urbanismo Espanol en America, "Madrid: Direccion Nacional
de Ordenacion y Turismo, Editora Nacional, 1973.
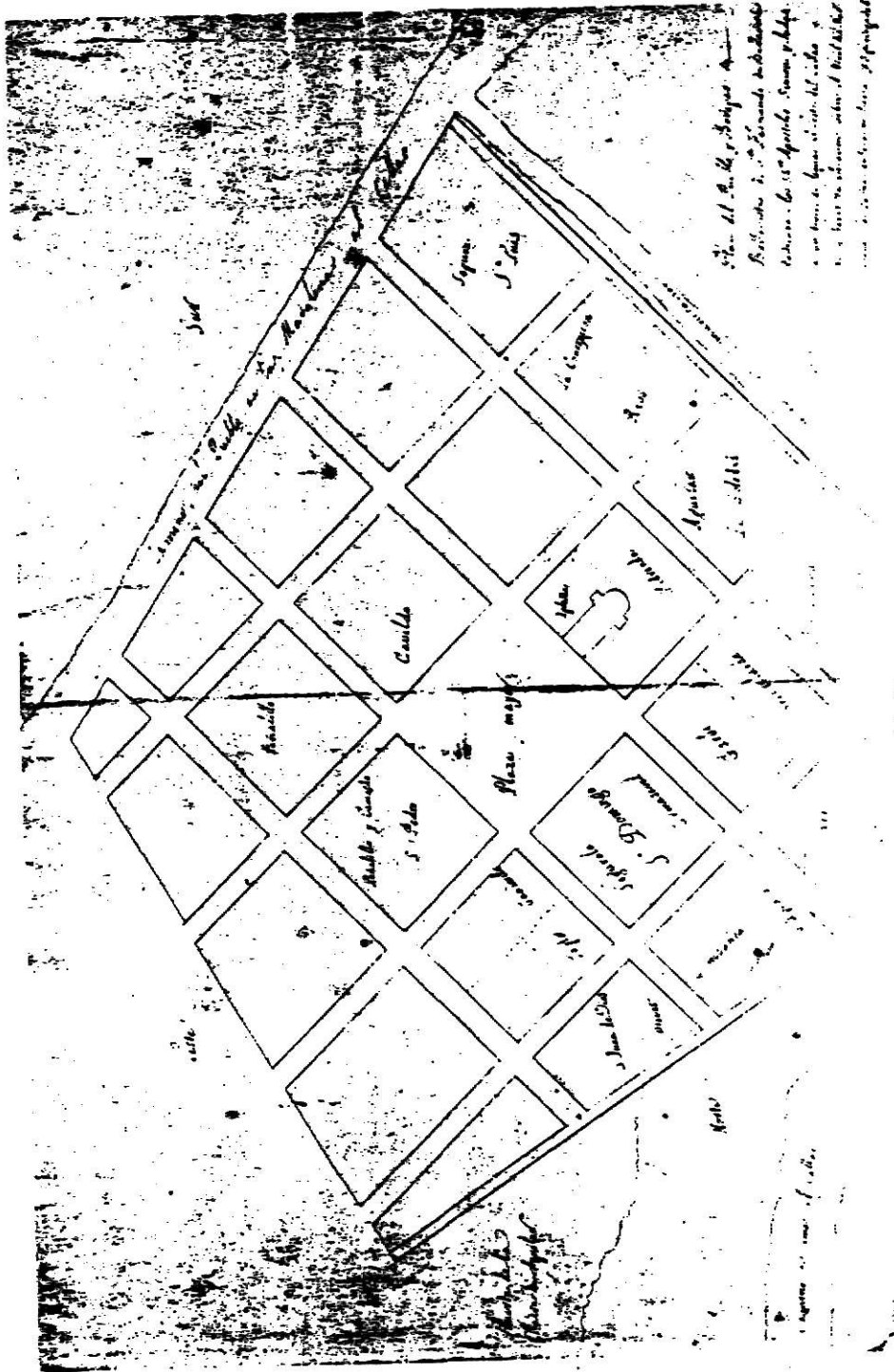
Plan 15
Bellavista (1746)
Source: Chueca Goitia, Fernando y Torres Balbas, Leopoldo,
"Planos de ciudades Iberoamericanas y Filipinas existentes en el Archivo
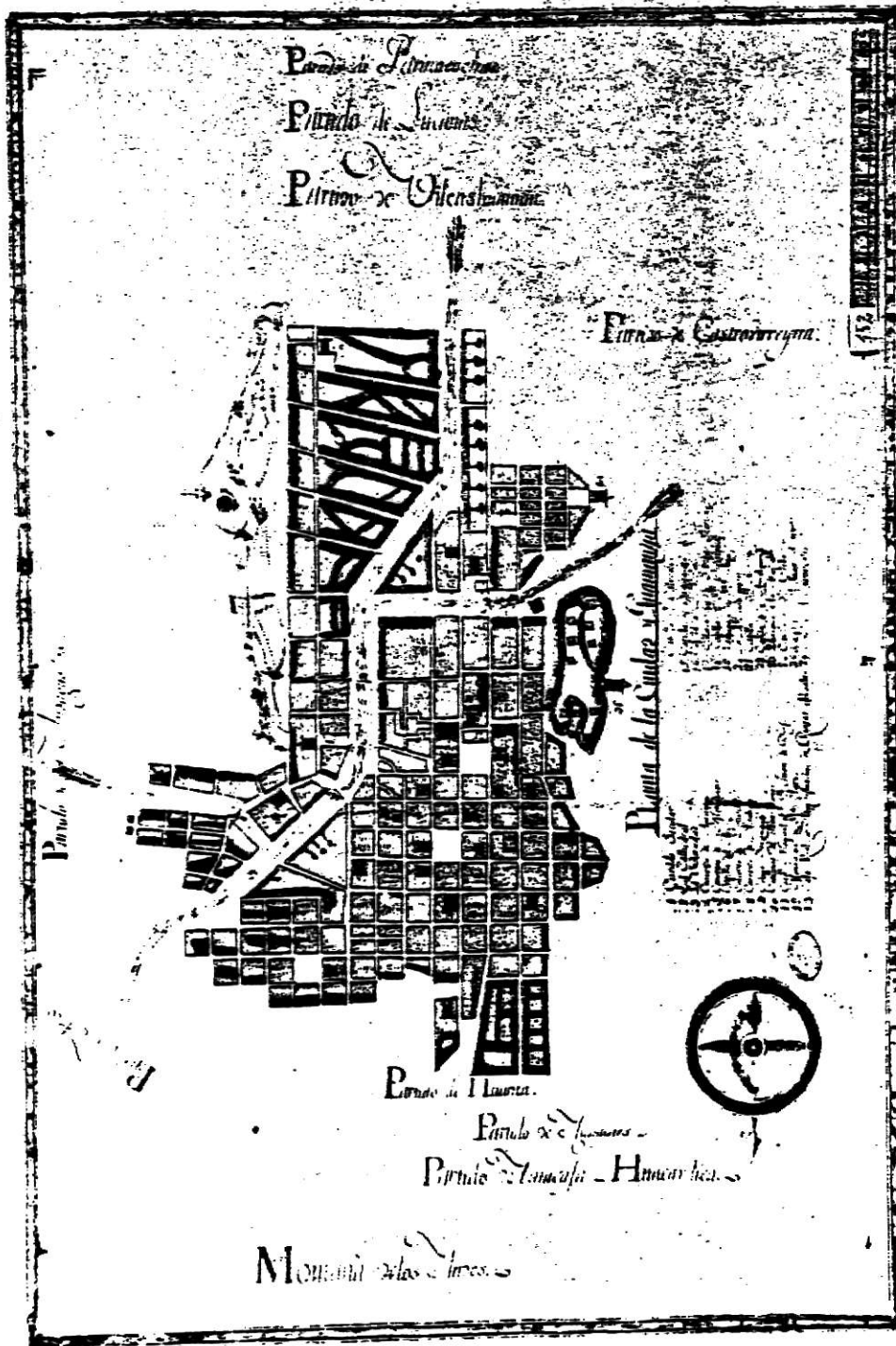de Indias, "Madrid, Instituto de Administracion Local, 1951.

years have maintained the same principle, especially in the small centers. Larger cities have tended to change in terms of the original characteristics due to enlargement.

SIZE

In general the Spanish towns are small, and were not enlarged until their roles were assumed by different urban centers vis-a-vis the development of the economic and productive structure in the area. Cusco was probably the largest in the early years of Spanish urbanization, but later Lima grew faster and became more important because of the location and the importance the Crown of Spain had assigned to Lima when declared the official capital of the Vice-Royalty of Peru. As indicated, Lima originally had 117 blocks and Callao did not have more than 50 blocks and was walled. Huamanaga had 60 blocks and Cusco around 150 blocks.

Regarding the population of each city, it is difficult to indicate precise figures because of the different qualifications the Spanish had given to the people; that is, some of the accounts of population consider only the vecinos and omit the Indian population or other non-Spanish population. In other cases they provide accounts in terms of households, which clearly limits the true appreciation of the number of people actually living in cities at this time.

For these reasons the number of people cannot be used as a valid indicator in the determination of the size of cities. The size of the city, therefore, could only be interpreted in terms of the number of blocks they had, assuming that most of the blocks were used for housing purposes and that no internal sub-division was made in each block.

LAND USE

Land use patterns were clearly a consequence of the Spanish idea of colonization. The distribution of land uses within the cities was determined according to the ideals brought from Spain. The church was allocated large amounts of land in the city. The land use pattern of the cities followed the criteria of locating the most important uses towards the plaza. The plaza was at the core of all activities and therefore the church, the Calbildo and the gobernacion were always located surrounding it. The rest of the land was mainly allocated for housing purposes in the original settlements. Later the allocation of uses was legislated through the Ley de Indias. The Custom House and the arsenal were to be located near the church. The hospital was also located adjoining the main church. The sites of the slaughter houses, fisheries, tanneries, and other garbage productive uses were to be located in areas where gargage could easily be disposed of. Once the three main institutions were allocated land surrounding the plaza, the merchants were provided with land. The rest of the land was purposevely left for housing and was assigned to the Spanish who came and joined the royal forces in conquering america. Surrounding the town a common was determined, so that there would always be enough area for recreation, pasture and possible growth of the city. Land immediately outside this common was distributed accordingly among the people of the city so that they could use it for agricultural purposes.

LAYOUT

Three clearly different types of layout patterns can be determined: the regular, the irregular and the indefinite models. No reports of circular or lineal layout are found. Following are some components and typical elements of

the three models:

1. The Regular Model

    This model was composed of the following elements:

    -A gridiron layout. The blocks were either square or rectangular in shape.
    All the blocks are identical.

    -The Plaza was one block which remained free of any constructions. Usually
    in the center of the town.

    -The sides of the plaza not devoted to the church almost always were built
    so as to have arcades surrounding it.

    -If another church was built it would almost always be located in front of
    a small plaza, in some cases the plazoleta was located beside the church.

    -Streets originated in each of the four corners of the main plaza, and in
    most cases were oriented according to the cardinal points.

    -The width of the streets varied according to the importance and location
    of the city.

    Lima and Arequipa are examples of this type.

2. The Irregular Model

    This model was utilized in the first towns built. They were probably
    spontaneous and no rational process of building the city was practiced.
    Typical examples of this type are the mining centers, that actually had
    grown due to the boom of the mines in certain areas. Huancavelica and
    Potosi are an example of this type.

    -The streets were not parallel or orthogonal to each other and usually met
    in different angles.

    -There were certain plazas that following this pattern were not rectangular
    but of irregular poligonal shape.

    -The church may still be located in the main plaza as well as the important

institutions of the city.

-The width of the streets varied tremendously, and in some cases even one street varied its width along different blocks.

3. Indefinite Model

They were completely spontaneous in their origin and growth and probably were originated inthe very first years of the arrival of the Spaniards. Due to their minimal importance they were never replatted or rebuilt. Thus no formal planning had been applied to these settlements either in the location or in their internal distribution.

URBAN FEATURES

Undoubtedly the plaza is the main element in urban design utilized by the Spaniards in America. It was the center of the city where the most important public activities took place. It had a double function for it served for civic and commercial purposes. It was the place where trading took place.

Although the Ley de Indias stated that the plaza should be "...in the shape of an oblong, its length being equal to at least one and a half times its width...,"[26] in most of the towns built before 1573, the plaza was a square. No landscaping or decorative elements were located in the plaza itself, because it was to serve as places where "...festivals in which horses are used and any other celebrations which have to be held..."[27] In some of the cities fountain-like elements were located in the center of the plaza as a decoration. The plaza served as the frame for the church which was undoubtedly the most important architectural element in the city. The arcade around the plaza also served to enhance the characteristics of the plaza as an open urban space. Generally the buildings around the plaza were of the same height and similar architectural characteristics; that is, adobe buildings with Spanish tile

roofing. The plaza was, in conclusion, the place where the greatest effort of creating an open urban space was made by the Spanish town founder.

In some cases, as was mentioned, alternative plazas were located in the city. They were the plazoletas which resemble the basic characteristics of the plaza in proportion but at a lower level of quality and importance. Plazoletas did not feature the same commercial activity as the main plaza, and were regarded as centers for recreation and leisure. In some cases these plazoletas may have had some landscaping as decoration.

The streets, as a consequence of the gridiron, were straight and narrow. They were practically enclosed by the buildings on both sides and since no open space was left out between the property line and the construction line, the streets served as paths with no elements of attraction other than the architectural quality of the buildings. The use of the streets in terms of an urban design element was not managed by the Spaniards. No vistas were attempted nor was there any indication of a purposive differentiation as to the importance of the streets. Streets were simply used as pathways between blocks.[28]

NOTES

[1]A gobernador was the representative of the King of Spain in America. He was in charge of the implementation of the Royal Policies.

[2]Jorge E.Hardoy,"La forme de las ciudades coloniales en America Espanola" in Francisco de Solano,ed. Estudios sobre la ciudad iberoamericana, (Madrid: INstituto Gonzalo Fernades de Oviedo,1975) p.315 ff.

[3]Ralph A.Gakenheimer,"Determinants of physical structure in the Peruvian town of the sixteenth century" (PhD Dissertation, University of Pennsylvanis,1964)

[4]"Coleccion de documentos ineditos relativos al descubrimiento,conquista y organizacion de las antiguas posesiones espanolas en America i Oceania"Madrid,XXXI 17-18 as quoted in R.P.Beckinsale and J.M. Houston, Urbanization and its problems,(Oxford:Basil Blackwell,1968)p.359

[5]Gonzalo Fernadez de Oviedo,Sumario de la natural historia de las Indias,Mexico D.F.,1950 as quoted in Richard Morse,"Some characteristics of the Latin American urban history",Latin American Historical Review,LXVIII:2 (Jan,1962)p.369

[6]"Ynstruccion para el Gobernador de la Tierra firme,la qual se le entrego el 4 de Agosto DXIII,"in Origenes de la dominacion Espanola en America Manuel Serrano Sanz,ed.(Madrid:n.p.,1918)I cclxxi, as quoted in Richard Morse, Ibid.

[7]J.M.Houston,"Foundation of Colonial towns in Hispanic America" in R.P.Beckinsale and J.M.Houston,ed.Urbanization and its problems,(Oxford: Basil Blackwell,1968) p.376

[8]Ibid

[9]Gakenheimer,1964

[10]"Libro Primero de Cabildos de la Ciudad de San Juan de la Frontera de Chachapoyas",Raul Rivero Serna,ed. in Fenix,XI,pp.295-6,Sept.5,1538, as quoted in R.A.Gakenheimer

[11]L.Hanke,The Imperial city of Potosi,(The Hague:n.p.,1947)

[12]Alejanfro Malaga Medine,"Aspecto urbano de las reduccione toledanas" in Revista de Historia de America,88,Jul-Dic,1979

[13]J.M.Houston, in R.P.Beckinsale and J.M.Houston,1968 p.386

[14]Also according to J.M.Houston,Diego de Rosales described the Chilean towns in the following terms:

"...with the knowledge of all these things it is possible to select sites for cities...which always should be located near rivers with good water supply in lands of good pasture and abundant woods...which is what Saint Thomas Aquinas advised in the foundation of a city, which he urged should be located from the beginning where there are fertile and healthy atmosphere,fresh water and abundant woods."

Quoted from Diego de Rosales,Historia General del Reyno de Chile,Flandes Indiano,(Valparaiso:n.p.,1877)I,278 and II,439.

[15]Torres Balbas reports the following:

"..on flat land,to have a city enlargeable without trouble, its plan is to be square,100 paces on a side with the principal gate openning form the center of each side, flanked by two smaller ones...and fortified...from gate to gate two wide streets divide the city into four quarters,each to have beautiful large plazas. The palaces of the prince should be strong and high,built on a hill, with direct exit from the city. At the point of crossing of the two streets the Cathedral shall be put and a large plaza with winding stairways shall be located nearby and the palace of the Bishop...instalation of the gallows in the plaza of the market shall not be permitted. Each borough will have convents for monks and...various streets. The hospitals, gambling houses, houses of prostitution and sewer drains should be put in the leeward side of the city. People of the same occupation should live in the same borough, that is the maritime population,market people,bankers,etc. The homes of the field laborers should be close to the gate which opens to the fields. Commercial facilities necessary on daily life should be spread throughout the city."

In Leopoldo Torres Balbas,et al,"Resumen Historico del Urbanismo en Espana" (Madrid:Instituto De Estudios de Administracion Local,1954)p.89

[16]Dan Stalinavsky,"Early spanish town planning legislation in the New World",Geographical Review,37,1947.

[17]Marco Vitruvius,The Ten Books on Architecture,(Cambridge:Harvard University Press,1914)Translation by Morris Hicky.

[18]Zelia Nuttal,"Royal Ordinances concerning the laying out of towns" The Hispanic Historical Review,5 (1922) p.249ff.

[19]Emilio Harth-Terre,"Fundacion de la Ciudad Indiana"Revista Historica de Lima,XVI (1945) pp.1-28

[20]Jorge Basadre,La Multitud,la ciudad y el campo en la historia del Peru (lima:n.p.,1929)

[21] Lee Bertran,ed.<u>Libros de Cabildos de Lima</u>,(Lima:n.p.1935)III as quoted in R.P.Beckinsale and J.M.Houston,1968 p.389.

[22] Alejandro Malaga Medina, op.cit.

[23] ibid.

[24] ibid.

[25] Jorge E. Hardoy States:

> "...their number and names have never been determined but presumably were in the thousands..."

(Author's tranlation) Jorge E. Hardoy, op.cit. p.315.

[26] Nutal, op.cit.

[27] ibid.

[28] Hispanic towns could also be classified according to their role in the regional context in:

1. Administrative Centers and Commercial Centers.
   Lima and Cusco(until the 17th Century)
2. Ports
   Callao,Pisco
3. Mining Centers
   Huancavelica
4. Agricultural Centers
   Cajamarca,Cusco(from the 17th Century),Arequipa, Trujillo and Huamanga.
5. Military posts
6. Religious Centers.

There are also other approaches to the classification of towns, as detailed by Aguilera and Moreno,(1973)

C H A P T E R 4

TWENTIETH CENTURY URBAN EXPANSION

REINFORCEMENT OF THE PREVALENT URBAN SYSTEM

The development of urban areas in the present century merely continued the trend which had been initiated in the Colonial Period. The reinforcement of Lima as the primate city was a consequence of the continued centralization of administrative, economic and political power. The rest of the cities continued a process of growth but at a slower rate. By the turn of the century, Lima had about 150,000 inhabitants, including the population of El Callao, in 1930 this population had practically doubled; it was 500,000 by 1940 and a million and a half by 1961. In 1972 it had reached 3.5 million. The estimate for 1982 is around 6 million people.[1]
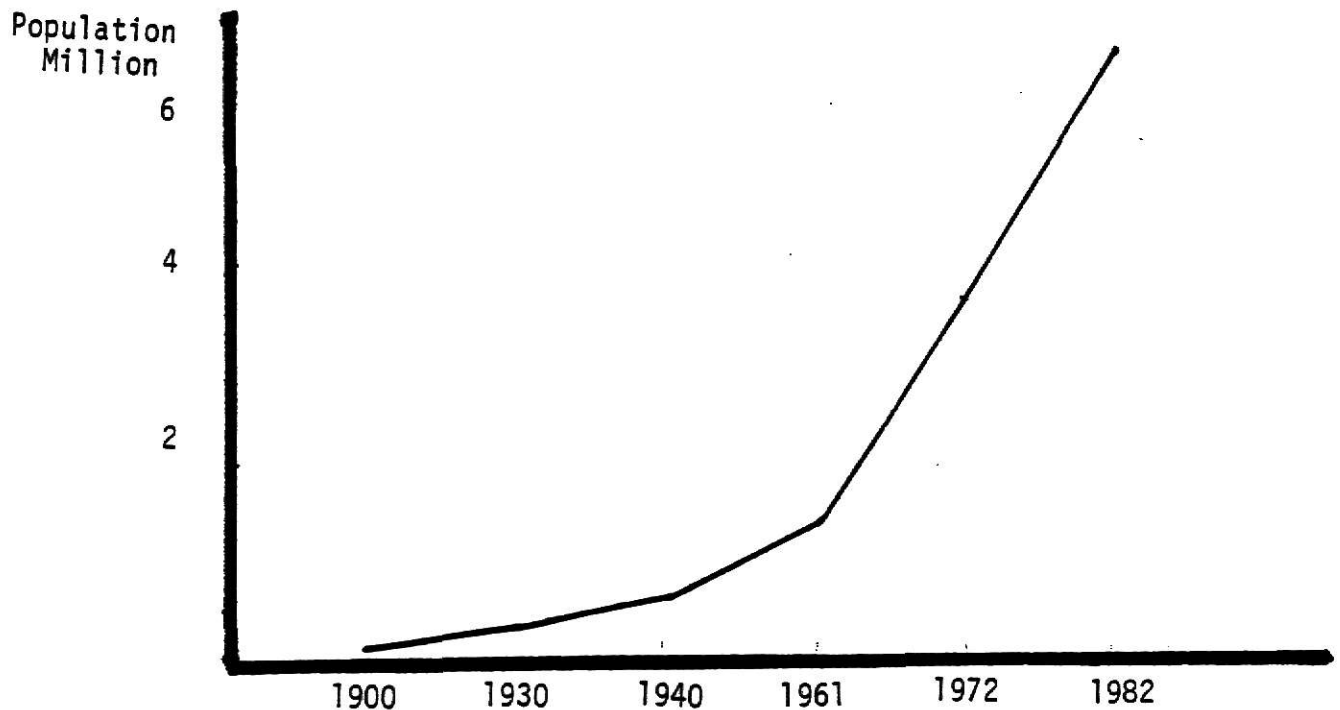
Graph 4
Population growth of Lima

In 1900, Arequipa (the second largest city) had less than one half the population of Lima. Today, its population is roughly one-sixth that of Lima[2], showing the tremendous disparity in growth between the primate city and the other urban areas of the country.[3]

Reinforcement also came because of the geographical location of urban centers. The coastal region witnessed the emergence of larger urban centers than any other region of the country. Along the costa, to the north of Lima, Trujillo, Chiclayo, and Chimbote emerged with populations approaching 200,000. In the south, Arequipa continued to be an important regional center. In all these cases, the prevalence of the urban pattern was affected by the financial resources (foreign capital) allocated to develop the production structure. The construction the Panamerican Highway contributed to the development of these centers as part of an interrelated economic network.

In the case of the Sierra and the Selva, the development of urban systems occurred later. The construction of roads in the Sierra contributed to the development of a system of cities and, therefore, to their growth by mobilizing the population. However, the growth of the Sierra cities occurred at a slower rate than that of the coastal region. This can be explained by comparing the level of industrial investments in both regions. In the Selva, development and integration into the rest of the country has not yet been achieved. The "penetration" roads into the Selva were not begun until the 1960's. This was after the main poles of economic attraction were reached, and only then did the urban population grow and the interconnection with the rest of the country take place. Pucallpa developed in the central Selva region in this way once a penetration road was built linking it directly with Lima. Iquitos, another major city in the northeast Selva, developed a little earlier, due to its location on the Amazon River. The Amazon serves as means of communication with

the other smaller settlements along the river and its tributaries.

Other than these two major urban cetners, the rest of the _Selvà_ 63% of the national territory) is populated by small settlements which are not considered to be completely developed urban places.

In addition, the introduction of the airplane, contributed to the formation of the urban network in the _Selva_ region and preceded the road in the penetration effort.   (See map)
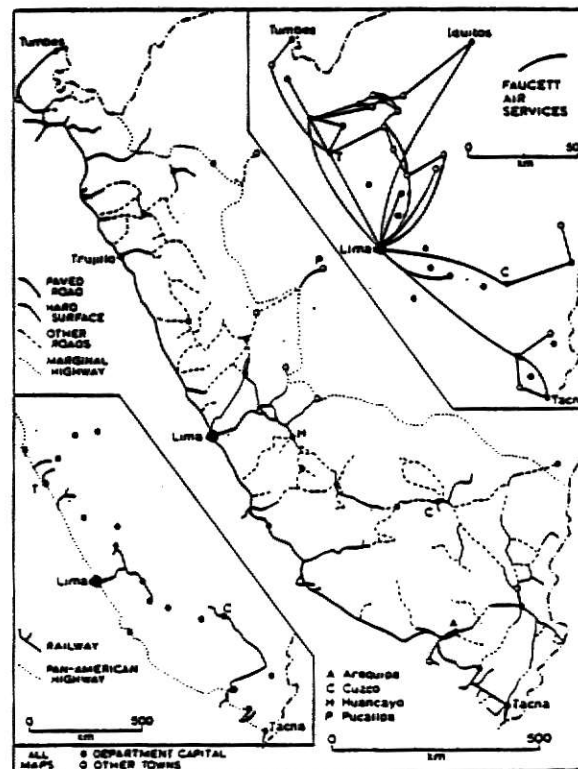
Map 4
Transportation Network
Source: Cole, J.P. "Latin America, An Economic and Social Geography,"
New Jersey: Rowman and Littlefield, 1975.

THE GROWTH OF URBAN AREAS

Given the framework of the process of urbanization, some of the components of physical expansion and the way in which it took place in this century will be analyzed. The absolute growth of population and its location will also be further analyzed in order to eventually understand the physical form adopted by the city in housing this population growth.

There are certainly other components that affect the growth of the city i.e. economic location, allocation of resources, provision of services and so forth, but since this paper deals with morphology of the city, it will focus on the sections in which this growth has been more extensive. Then, certain definite undertakings will be elucidated which constitute the representative patterns which were generally adopted by the cities in their expansion process.

POPULATION GROWTH

Population growth can be divided into two major components, the <u>natural population growth</u> and the <u>induced population growth</u>. Natural population growth is the rate of population expansion within a geographical area with minimal or no external influence. The national population growth could be considered in this typology and will serve also as a quantifier of the growth of the urban population. The natural population growth represented by the classical equation:

Total Population = Existing population + births - deaths

The rate of growth of the national population for the period 1960 to 1970 was 2.8% per annum and for the period 1970 to 1980 was 2.7 per annum.[4]

The induced population growth is a combination of the natural population growth with the effect of the population mobility to and from the geographic area under study. That is, the natural population plus the population that move to and from an area in a given period of time.

Induced population = total population + immigrants - emigrants

Taking into consideration the migration effect the rate of growth of the

population in urban areas increases to a rate of 5.5% per annum,[5] while rural population remains constant.

	COSTA	SIERRA	SELVA

Graph 5
Trends and volume of internal migration
Source: ILPES-ILDIS, "Planificacion regional y urbana en America Latina"
Credit: Instituto Nacional de Planificacion y Oficina Nacional de Evaluacion de Recursos Naturales, Lima Octubre de 1970. Documento no oficial.
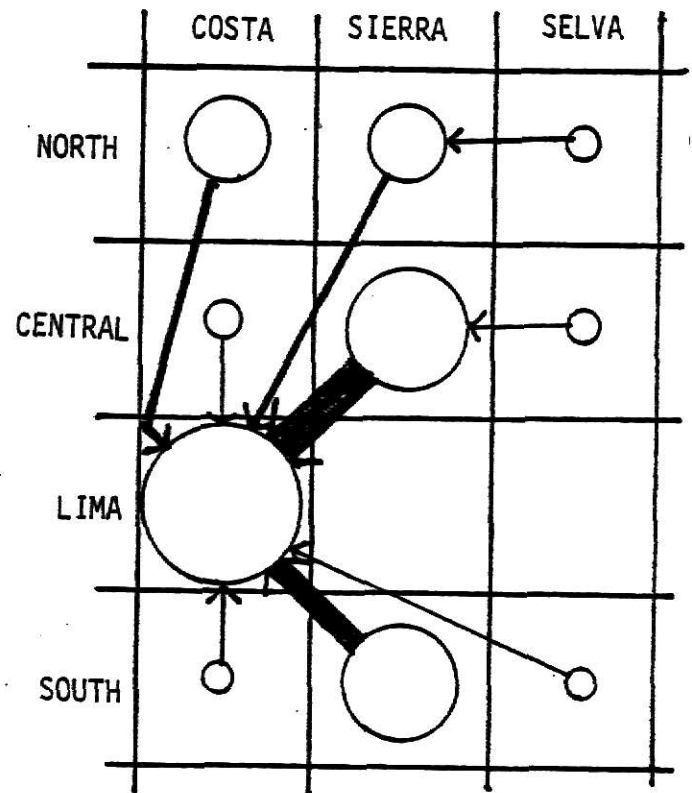
INTERNAL MIGRATION

Traditionally migration is considered to take place from rural to urban areas in developing countries[6] but this ascertion has been widely debated and analyzed. After a very rich period of empirical study, primarily between the early 60's and the late 70's, a pattern of migration determined for most of the Latin American countries. Here, migration takes place within an urban hierarchy in an ascending manner. That is, people who arrive in large metropolitan areas are not the active peasants who were directly engaged in agricultural activities at the time of the migration, but rather, people who had experienced some degree of urban adaptation in smaller urban centers.[7]

In Peru the organization of the urban system and transportation system help determine the pattern of internal migration. The hierarchy of urban centers is organized with Lima located at the top, where the bulk of the migrant population will eventually move.

ARRIVAL
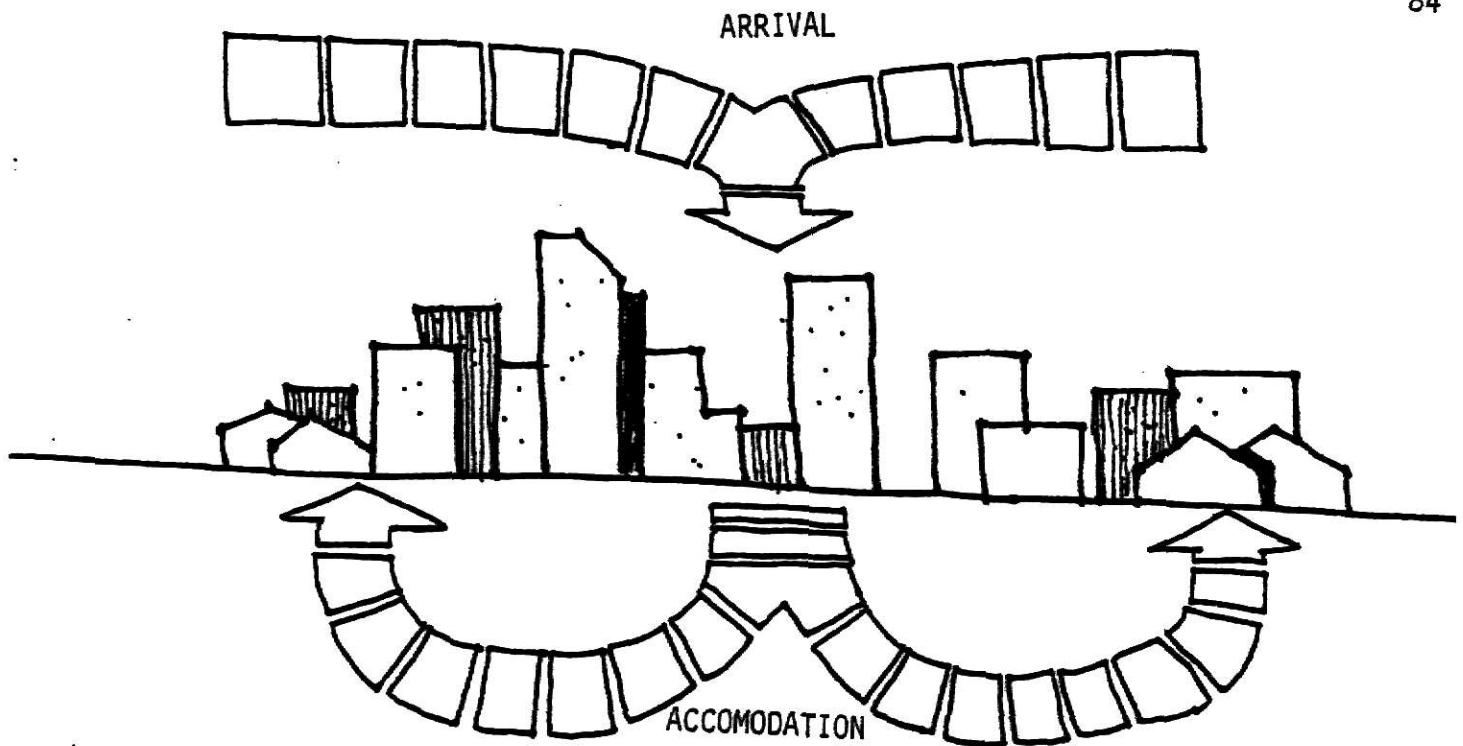
Graph 6
The intra-urban spatial movement according to the Turner Model.

A pattern of spatial adaptation takes place for the migrant once in the city. John Turner[8] has explored this facet of the migration process in Lima and has developed a model which portrays the movement of the migrant within the city.

The "Turner Model" establishes the following two states:

1. Upon arrival in the city, the migrant is generally directed to the central part. This "port of entry" offers the convenience of access to sources of labor and city services. Rent values are usually the lowest in central areas, as are the living conditions. The structure which houses the migrant at this level is called TUGURIO. The tugurio is an old building originally designed as a housing unit for one family, which has been subdivided to accomodate migrants. Practically entire families dwell in a room of the house, sharing the services. Commonly these structures are

owned by speculators who benefit by the location of these structures. At this point, according to the model, the migrant undergoes a process of social adaptation; he/she is actually benefited by this location which permits him/her to develop social relations with other migrants and find a job.

2. Once the migrant has become familiar with the city, attained a stable job, and met other migrants in similar situations, the need to move arises. This is due to the "pull" to achieve a better standard of living (social mobility). At this point, since the migrant is unable to rent or buy a better housing unit in another advantageous location, there is a desire to "take over" unused land in the fringe areas of the city. This "taking over" in a de-facto fashion of private or governmental land in the suburbs gives rise to the BARRIADA. The barriada is the second spatial location the migrant takes within the city to accomodate his needs and expectations, producing in this way the process of urban expansion.

THE "BARRIADA"

A barriada, a housing sector on the fringe of the urban area where migrant populations are usually located, is in the process of entering into the city structure with the provision of city services.[9] In this perspective, the barriada could be considered bedroom community, a tragical manifestation of the government's, local or central, inability to provide adequate housing for the increasing population of the city. The formation of the barriada has been vividly protrayed by Mangin and Turner.[10]

The "land overtaking" mode usually begins with the formation of groups of migrants living in tugurios. These groups, related by some sort of social, familiar or origin ties, organize to provide themselves with a housing unit. A plot of land is usually found by the leaders of the movement whose legal status

may even be researched. The group is then organized and the families counted A rough "site plan" of the barriada is sketched by the leaders and a date is set. The date is usually strategically selected in order to attract media attention and minimal police interference. On the date, the migrants "move" to the unoccupied land and take position of "their" land. The land allocation process is done on the basis of the adapted sketch and streets are immediately laid out by the settlers. In this fashion the city has, literally, expanded overnight.

In the beginning, the barriada has no services whatsoever, and the settlers suffer from lack of any facility. A year or so later, the barriada usually is provided with electricity, water and even sewer and some other urban services.[11] A great percentage of the physical expansion of Lima, starting in the late 40's, has taken place in this fashion. In the rest of the urban areas of the country, a similar pattern of growth was experienced, especially in the 60's.

The physical organization of the barriada is quite simple and follows traditional patterns. It is generally based in the gridiron pattern which is adapted to the topographic conditions of the terrain. However, in the cases of steep slopes, the grid is completely disrupted and a haphazard pattern is presented. The development of barriada "Cuevas" is a typical example of a regular layout model. It is located between two hills in a small valley in the northern section of metropolitan Lima. It was settled in 1961, and its growth until 1965 is shown in the sketch. All the blocks are rectangular and the longitudinal streets are located in the downhill axis. There are three plazas laid out by governmental authorties to provide water tanks to service the community of approximately 15,000 people.

The diagonal street follows the path of an electricity line feeding the city of Lima. The lots on the slope of the hills follow the contour lines.
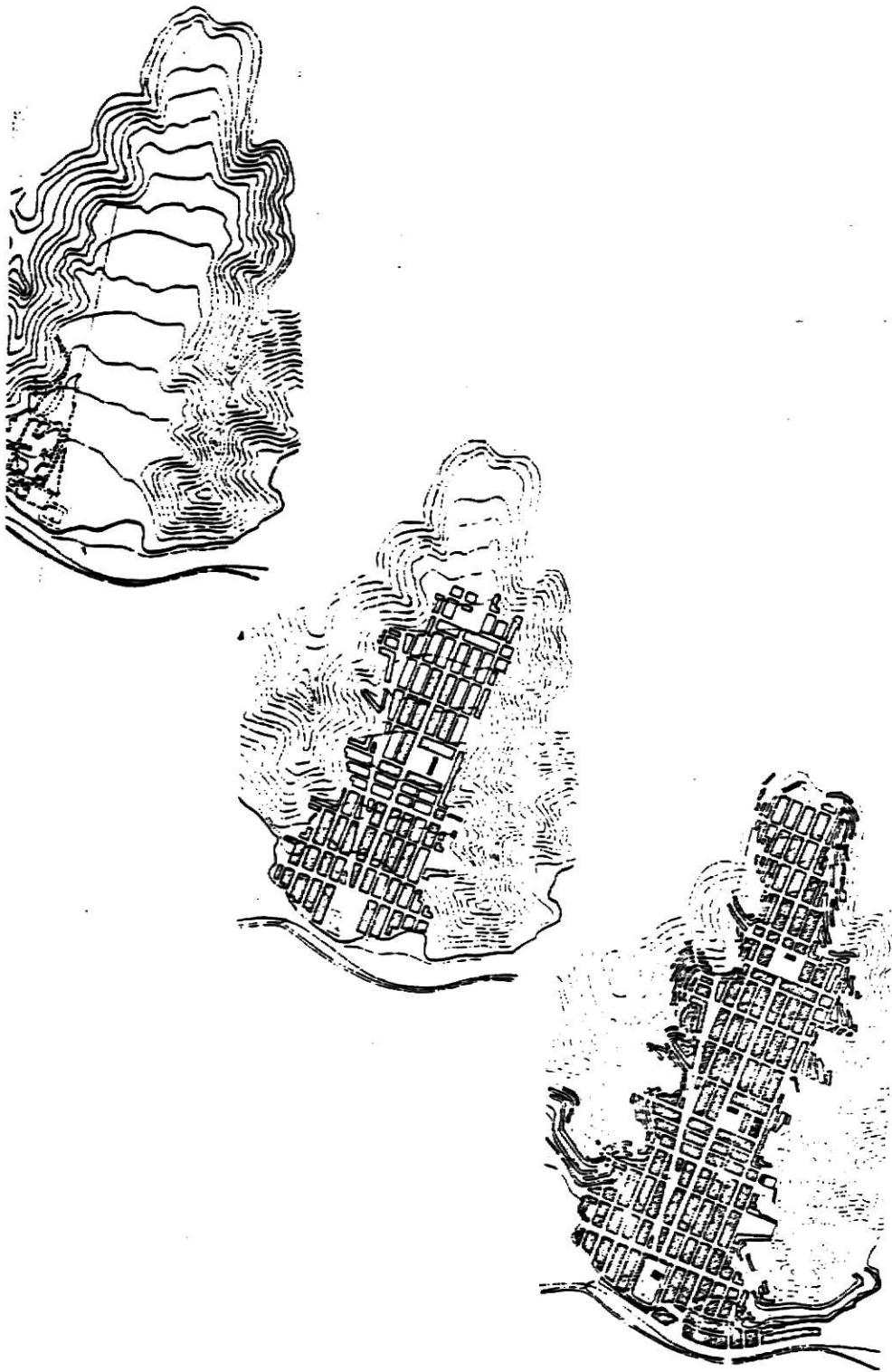
Plan 16
Development of Barriada Cuevas from 1961 to 1966
Source & Credit: Turner, John, "Barriers and Channels for housing
development in modernizing countries: Journal of the American
Institute of Planners, 33, 1967.

There is one primary school which was provided by the government inthe core area of the barriada, but few other services are found in the settlement itself. The streets are usually not paved or sealed the definition of the street pattern is done by constructing the housing units, rather by the providing sidewalks or other elements of street furniture. In the case of the coastal cities, where the temperature never goes below 10 degrees celsius (50 Farenheit) and the rainfall is negligible, the early housing units in the settlement process are usually made of very light construction material such as cardboard, plywood and the like. In the case of the Sierra cities piled up adobe or sod are used depending on the seasons.

As the economic capacity of the settler advances, improvements in the housing unit are usually made and "regular" brick with concrete structure or adobe are built. The provision of the services to the barriada is usually done by "communal action". It is the participatory approach to construction, in which all the settlers devote part of their time and resources to provide ditches for water pipes or holes for electricity poles. In this sense the barriada could be understood as an enormous example of self-help building of both the environment and the housing unit.

The appearance of the barriadas evidently had posed a political problem to the government. There had been continuous efforts on the part of the central government to upgrade the condition of the barriadas. A cornerstone in the development of the barriada movement could be found during the administration of the Military Government. In 1973 guided by the principles of the social revolution and confronted by a movement of the Catholic church to better the barriadas, the government adopted a new policy concerning these settlements. The new approach was aimed at providing governmental aid to the settlers and

the land owners, providing urban services to the forming areas and promoting community development programs. The revolutionary rethoric renamed the barriadas calling them "Pueblos Jovenes" (Young Settlements) instead. A national organization which embodied all pueblos jovenes was created.

Under any name, the cities in Peru have been growing due to these unplanned settlements. Their physical structure has been determined by the settlers themselves. Ironically, they have been the most dynamic parts of the city terms of rapid growth achievement.[12]

CONTROLLED URBAN GROWTH

Efforts to control urban growth have also taken place, although not to the same degree as the uncontrolled expansion. The central government has been the entity in charge of Urban Planning ("urbanism" as is officially called) through the Ministerio of Vivienda y Construccion (Ministry of Housing and Construction). The Ministerio has offices in every major urban center of the country, and in the 1960's an effort was made to provide urban centers of over 100,000 inhabitants with Master Plans to guide their growth. The process of implementation has also been the task of the government. The current administration of President Belaunde, passes a "Ley de Municipalidades" (Law of Municipalities) in 1981 which called for the decentralization of urban planning activities. Under this law, the urban planning and implementation tasks are passed on to the local governments.

Two examples of governmental intervention in the urban planning process will be presented as examples of the model of spatial organization sought by the urban planners of the central government.

As an alternative to the barriada formation a whole new settlment was

relocated in the southern was relocated in the southern area of metropolitan Lima. This effort of physical and social planning was aimed at building a self-help community that would eventually house 100,000 people. Residential, recreational, commercial, and small scale industrial areas were provided in an effort to make the settlement self-contained. The social organization was translated into a specific physical distribution. The basic community cell was the "Grupo Residencial" (Residential Group) which was composed by 16 blocks arranged around a central, common, open space. Three and half grupos residentciales in turn, constitute a "Barrio" (Neighborhood) and twenty residential groups constitute a "Sector".

The thrust of the government was "the collective appropriation of housing", with this ideal "Villa El Salvador" was built by a huge process of self help.[13]
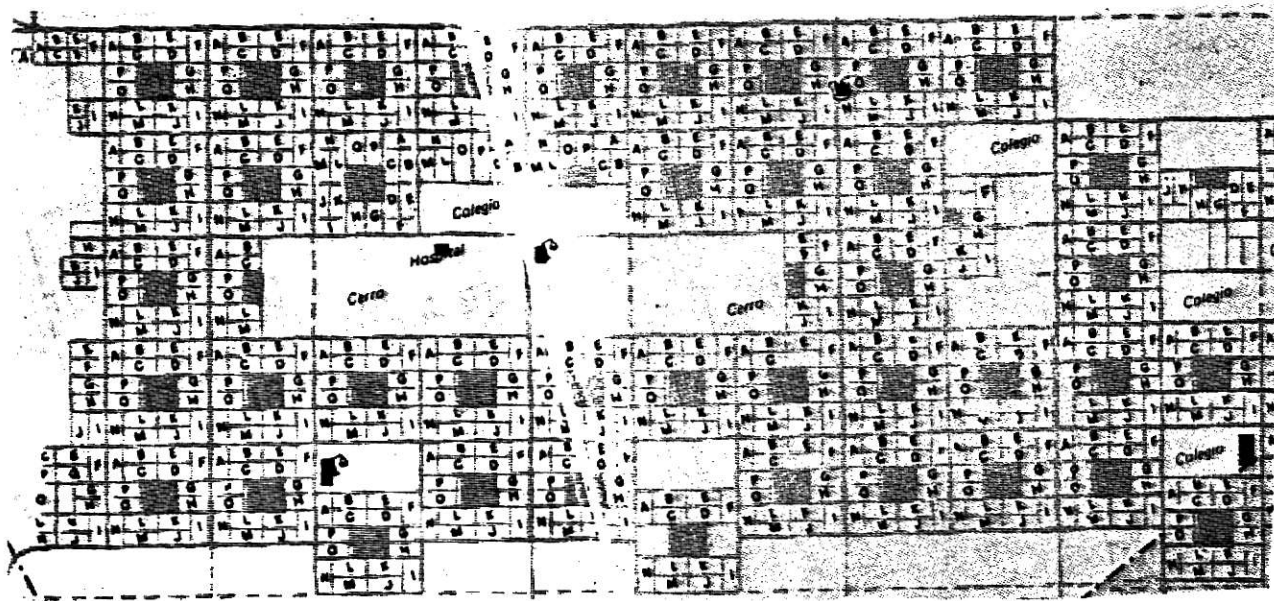
Plan 17
Barriada Villa El Salvador

Another official alternative undertaken to provide housing to the middle class in Lima, was conducted in the late 1960's. Based on a policy set in 1966, the government chose an area of 40 has. in the northern part of Lima, and announced an international design competition. The task was to design a new community for 1500 families with precise indications as to the layout, the size of the units and the overall spatial organization. There were 13 foreign entries (Atelier 5, H. Ohl, Charles Correa, Christopher Alexander, Van Eyck among others) and a similar number of entries from Peruvian architects. The final decision of the government was to build a number of units (approximately 20) from each winning scheme. The result of this decision is the intermingling of all sorts of architectural styles in the same area built according to an adapted layout.

Following are the two winning entries, first an entry by Christopher Alexander showing a peculiar pattern of spatial organization.[14]

THE SITE
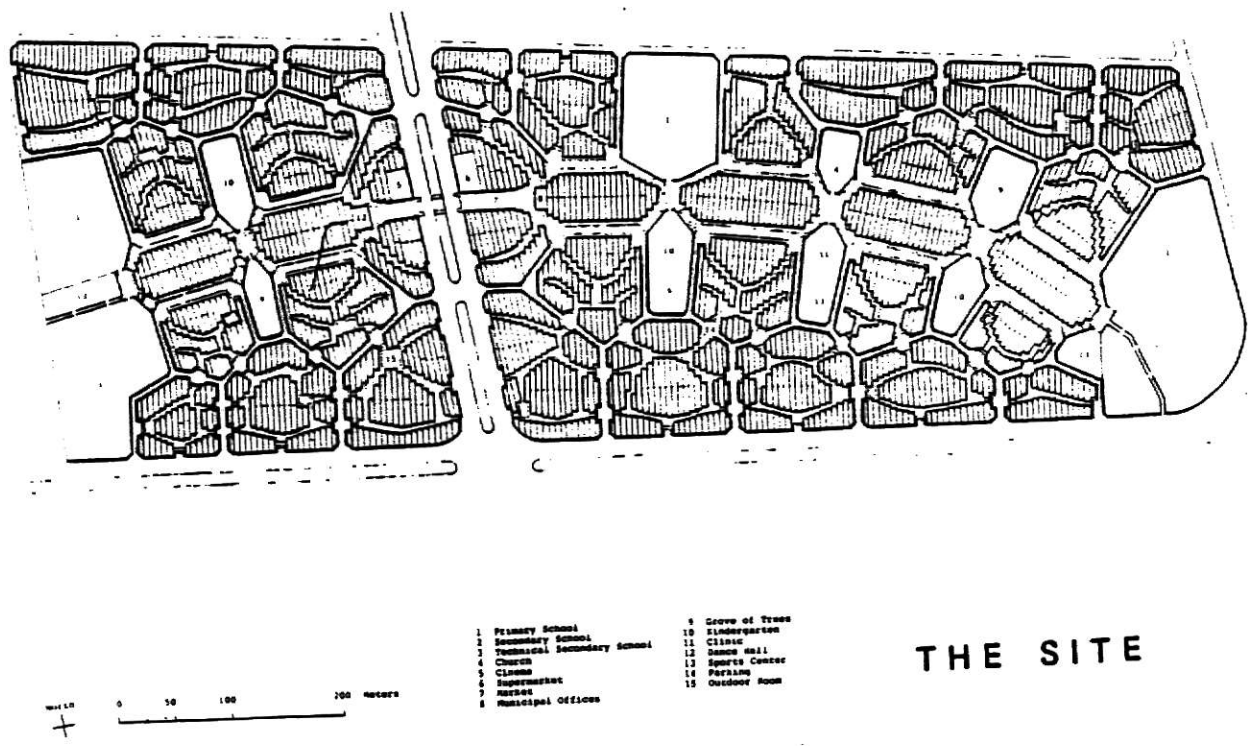
Plan 18
Proyecto Experimental de Vivienda, Christopher Alexander's entry.
Source: Alexander, Christopher et al, "Houses generated by Patterns", Berkeley: Center for Environmental structure, 1969.

The second entry, corresponds to Aldo Van Eyck, a rather traditional organization of the space clustering the housing units as in Alexander's.
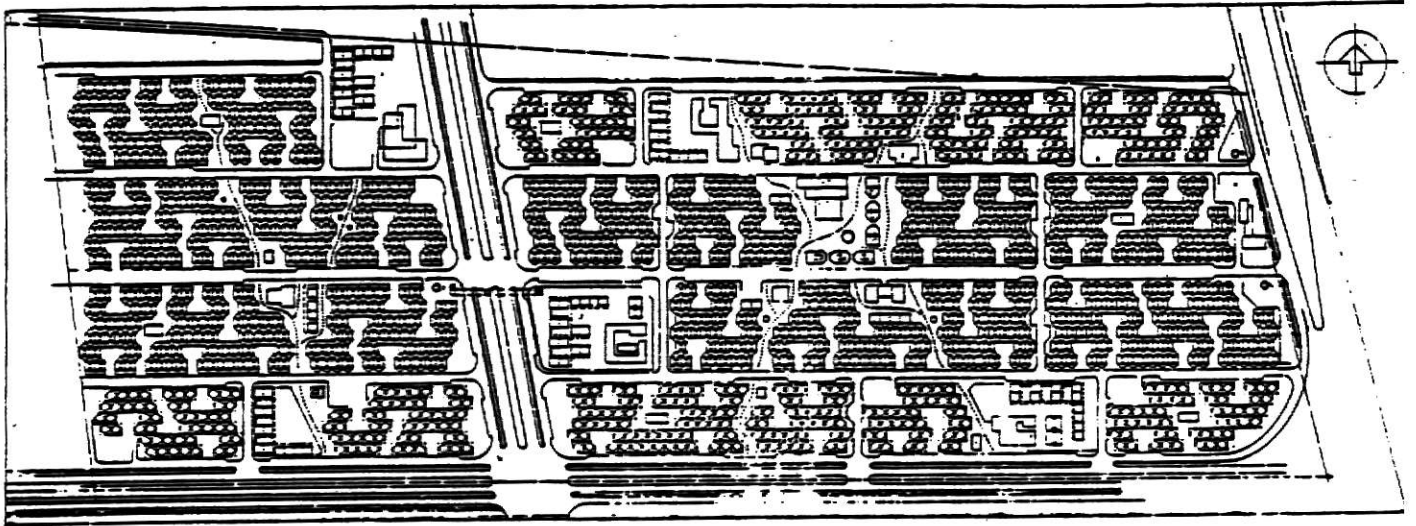
Plan 19
Proyecto Experimental de Vivienda, Aldo Van Euck's entry.

Beyond these official efforts to establish control in the urban expansion and its morphology, cities have experienced limited growth due to private initiative. In this case the higher strata of the society in every city obtained housing with the provision of the required city services. The provision of housing at this level could be compared to the idea of the "Subdivision" in the United States, in which a private developer buys land, provides the urban services, builds the housing units and sells the units in the open market. In this regard, this model organization is clustered in certain areas of the city, enjoying comparatively better facilities and services with respect to the rest of the population.[15]

The organizational model of the "urbanizaciones", such the equivalent of the subdivision, is very loose with provision of very ample open spaces. The gridiron pattern is not typically used in this type of development, instead, the use of the curvilinear irregular street design is adopted. The streets are
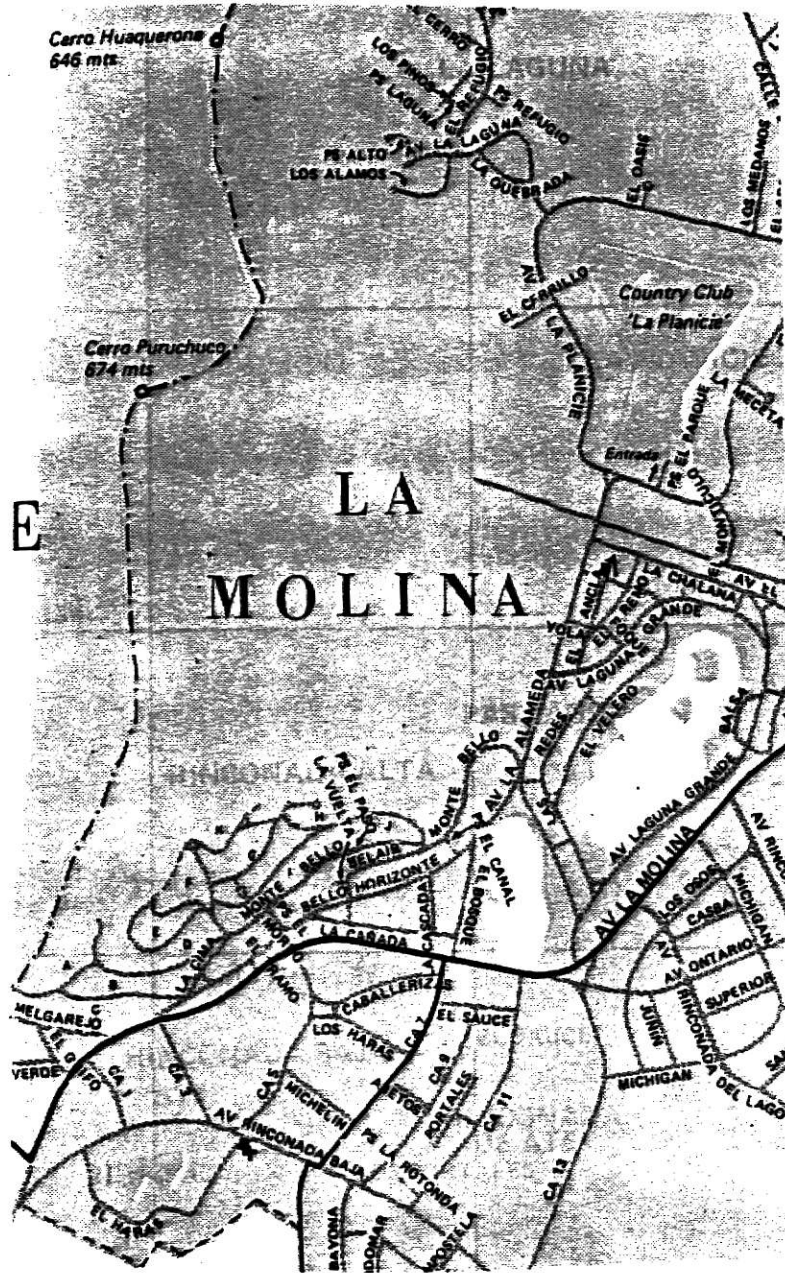
Plan 20
La Molina. Typical urbanizacion model in modern Lima.
Source: "Lima, Guia De Calles"; Lima: ed. Lima and 2000,1981.

paved with street furniture and landscaping provided. The housing units are usually built in fashionable "modern" architectural styles. Open areas (parks) are commonly found throughout the urbanizacion.

BEYOND THE URBAN EXPANSION MODELS

A clear effort by the Peruvian government to create an attraction pole outside Lima is Chimbote, located in the northern costa. Chimbote was planned in the late 1950's and implemented in the 1960's and 1970's. Impressed by the increasing quantity of anchovy (Peru and Japan occupy the first place of anchovy production in the world), and with the potential capability to locate heavy industry in the area (steel mills), it was decided to create a new industrial city. "...the master plan is to serve the basis of the creation of atruly modern industrial city... (the plan) was taken with the intent of eliminating the chaotic growth and of guiding the achievement in function of the coefficient of expansion of industry and population..."[16] Based on this governmental encouragement and its effect as a economic policy, a model of comprehensive urban planning was used, zoning ordinances were drafted and orderly · implementation was designed. Paul Lester Weiner and Jose Luis Sert were given the task of designing the new city on this promising economic base. Unfortunately, Chimbote grew faster than expected. Nowadays it is the third largest city in the country.

In 1972, an ecologic imbalance almost resulted in the extinction of the anchovy of the Peruvian coast, and a great portion of the economic base succumbed. After this, the migration flow which had been established continued by a process of inertia.

SMALL TOWNS

Although this report has dealt thoughout with prevalent forms of large urban centers, the small town is also a main component of the Peruvian urban

Plan 21
Chimbote. Project developed by Weiner and Sert.
Source: Wiener, Paul Lester and Sert, Jose Luis,
"Urbanisme en Amerique du Sud," Paris: L'Architecture
D'Aujourd'hui, 1951.

structure. Moreover, it serves as the basis of support in the hinterland of the larger cities. Two examples are presented:

Andahuasi, a small community in the coastal region to the north of Lima, is located in an area of sugar cane production. The layout of the town is somewhat irregular, the gridiron is used. The sizes of the blocks vary and no central plaza is found. It is a typical production center. The southern section of the twon, residential areas, have a regular grid and smaller blocks. A project had been undertaken by the "cooperativa" (Cooperative) the production unit promoted by the military government, in order to change the tradition of the production system on the agricultural level to provide housing units for its members.

· The project presents a very innovative structure of spatial arrangement, and creates a central open space from which different paths depart to the sections of the residential area. The housing units are clustered in blocks and a block of communal services is provided in the core of the residential area. Note also that the vehicular access is limited to certain areas. In this way the traditional gridiron is undergoing a process of slow change by the introduction of new forms of spatial arrangement.
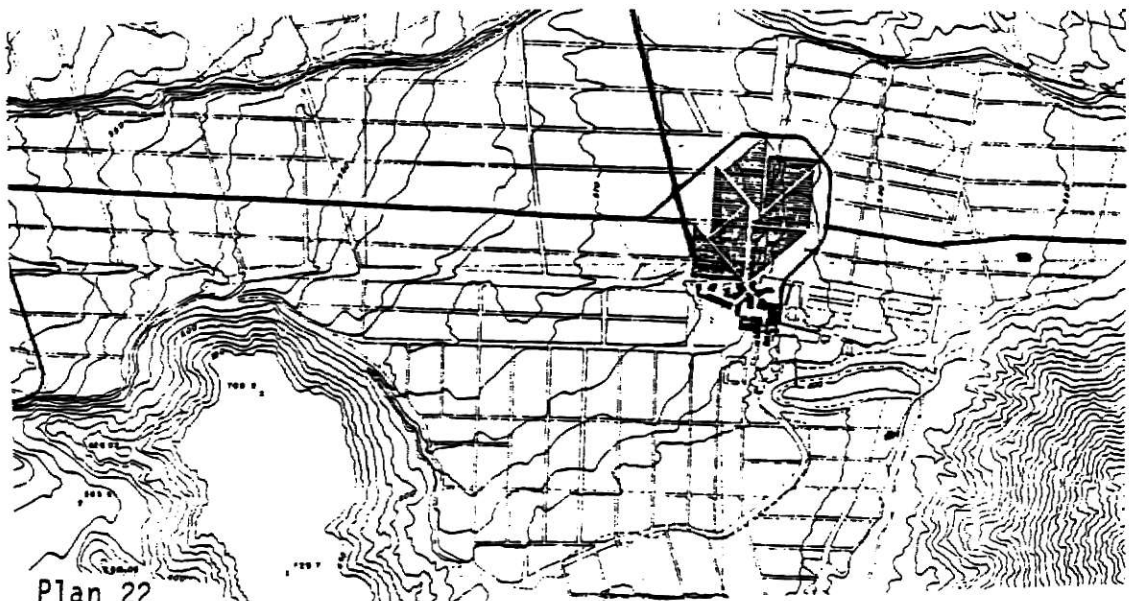
Plan 22
Andahuasi.

In the _Sierra_ two examples are provided, Cerro de Pasco and Colca. Cerro de Pasco is a mining center in the central Andes and, has experienced a very spontaneous growth. The street layout is completely irregular. Consequentely the blocks vary in size and shape. A plaza is present in the central part of the town and the streets do not appear to follow any organized pattern. Another plaza is located a few blocks from the main plaza. Other than these, there are no other spaces in the town. Cerro de Pasco seems to fade into the hinterland and mix with the agricultural uses of the land. The mining center is located a few kilometers from the town.

A different example of spatial organization is found in Colca, in the _de - partamento_ de Arequipa. Located in the slopes of the Andes, Colca sollows a traditional Spanish model of regular gridiron layout. In the center of the settlement, a plaza is located in what appears to be four regular blocks. The church is located on one side of the plaza and the totality of the town follows the regular model. The urban elements discussed in the third chapter of this Report, appear in this settlement in a purity of expression,[18] which preserves the heritage of the colonial times.

NOTES

[1]Robert C. Fox, <u>Urban population trends in Latin America</u>,(Washington: Interamerican Development Bank,1975)pp.90-96

[2]Richard E. Boyer and Keith A.Davies,<u>Urbanization in 19th Century Latin America:Statistics and sources</u>,(Los Angeles:Latin American Center, 1973)

[3]Harley Brownning,"Primacy variations in Latin America during the Twentieth Century" in Actas y Memorias , XXXIX Congreso Internacional de Americanistas, Lima, Vol.2, pp.55-77, 1972

[4]The World Bank,<u>World development Report-1980.</u>(Washington:The World Bank,1980)

[5]Ibid.

[6]For example: Jacqueline Weisslitz,"Migracion rural y urbana en el Peru" in Manuel Castells (Ed) <u>Imperialismo y urbanizacion en America Latina</u>,(Barcelona:Gustavo Gili,1973)

[7]See for example: William Mangin,<u>Peasants in the cities,readings in the anthropology of urbanization.</u>(New York:Houghton Mifflin Company,1970,; Brian Roberts,<u>Cities of peasants,The political economy of urbanization in the Third World</u>,(London:Edward Arnold,1978)'Ronald Skeldon,"The evolution of migration patterns during urbanization in Peru",Geographical Review,67 4 (Oct.1977) pp.394-411. For a rebuttal to Mangin's approach see: T.G.Mc Gee,"Peasants in the cities:A paradox, a paradox a most ingenious paradox" Human Organization,32,2 (Summer,1973)pp.135-142. For a study on the adaptation of the migrants to the cities see: Paul L.Doughty,"Peruvian migrant identity in the urban milieu" in <u>Anthropology of the urban environments,</u> Thomas Weaver and Douglas White (Eds) (Boulder:The Society of applied Anthropology,1972) and Susan Bloom Lobo,"Urban adapation among Peruvian migrants" ms.; for a study of urban-rural (return) migration see: David Guillet,"Migration,Agrarian Reform and Structural change in rural Peru", Human Organization,35,3 (Fall1976) pp.295-302

[8]John C. Turner,"Housing priorities,settlements patterns and urban development in modernising countries",Journal of The American Institute of Planners 34(November,1968) pp.354-363

[9]<u>Barriada</u> is the term used to refer to the shanty town, squatter settlement although there would be a different implied interpretation if the term is to be used in english. These settlements adopt different names in different countries:

Chile	Callampas
Argentina	Villas Miseria
Brazil	Favelas

```
Colombia          Barrios
Mexico            Colonias Proletarias
Venezuela         Ranchos
Turkey            Gecekondu
```

[10]William Mangin and John Turner,"The Barriada Movement", Progressive Architecture, May 1968; and John Turner,"Barriers and Channels for housing development in modernizing countries",Journal of the American Institute of Planners, 33,May 1967

[11]For further details on the process of invasion see: Henry A.Dietz, "Land invasion and consolidation: A study of working poor/governmental re-lations in Lima,Peru" Urban Anthropology 6,4 1977 pp.371-385; also Frank M. Andrews and George W. Phillips,"The squatters of Lima: Who they are and what they want", The Journal of the Developing Areas, 4(Jan.1970) pp.211-224, and Andrew ,askrey,"In lieu of Planning",Town and Country Planning, OCtober 1980,pp.298-300

[12]Percentage of the city residing in a Pueblo Joven in 1972:

```
Tumbes            76.0
Ilo               73.4
Trujillo          63.8
Huacho            60.3
Sullana           51.2
Tacna             49.7
Piura             49.6
Nazca             45.2
Moquegua          41.5
Paita             39.2
Ayacucho          38.3
Arequipa          37.5
Chiclayo          34.8
Ica               28.1
Lima              25.6
Pacasmayo         22.5
Iquitos           21.7
Talara            21.5
Cusco             21.3
Huanuco           17.4
Huancayo          16.0
Pucallpa          15.9
```
From: Emilio Romero,Peru:Una nueva geografia.Vol 2,(Lima:libreria Studiem,n.d.)

[13]L'architecture d'Aujourd'hui,No.173,Mai/Juin,1974

[14]Christopher Alexander,Houses generated by patterns,(Berkeley:Center for Environmental Structure,1969)

[15]For a deeper analysis of this type of settlement see: Peter W.Amato "Elitism and Settlment patterns in the Latin American City",Journal of the American Institute of Planners,36(March,1970)pp.96-105

[16]Paul Lester Weiner and Jose Luis Sert,"Urbanisme en Amerique du Sud" (Paris:L'Architecture d'Aujourd'hui,1951)

[17]Cesar Cavieses,"Chimbote:El caso de la ciudad boom"Instituto Paname - mericano de Geografia-Organismo de los Estados Americanos, Revista Geografia, Dic.1975,pp.51-65

[18]George R.Johnson,Peru from the air,(New York:American Geographical Society,1930)

C O N C L U S I O N

Throughout this report, the physical dimension of the urbanization pattern of Peru has been analyzed and documented. Emphasis has been placed on the internal morphology of Peruvian settlements as it relates to the overall social, economic and political organization of the country in its different historical stages. The focus of the study is the internal allocation of land uses, transportation patterns and the location of activities. The urbanization process is understood as a global procedure in which the physical organization of space is the result of the interplay of other dimensions acting upon the development process.

Historically, Peruvian urban development can be classified into three main periods:

1. The Pre-Columbian Period

    The pattern of spatial organization varied in this period according to the level of social organization and geographical location. Most of the settlements dating from this period are in ruins with the exception of Cusco and Ollantaytambo, which have been continuously inhabited.

2. The Spanish Colonial Period

    With the arrival of the Spanish in America, a new pattern of spatial organization was adopted. The gridiron model was brought by the conquering forces as an expression of their urban pattern, which in turn, stemmed from the Roman and Greek models. In this way, the ridgid orthogonal model was introduced in Peru. It can be fairly asserted that most of the existing cities and towns in twentieth-century Peru, date from this colonial period, with varying degrees of refinement.

3. The Modern Period

Within the turn to the present century and the introduction of the auto-
mobile, the urban fabric experienced a radical departure from the Spanish
gridiron pattern. As cities grew, new physical organization patterns
developed according to needs and intraurban forces. Cities underwent a
gradual process of "modernization", which proceeded in direct proportion
to a given city's role within the national context, Lima being in the
forefront.

Of particular importance is the increased rate of urbanization achieved
after the 1950's, and the metropolitanization of Lima, the capital city.
As of 1980, 67% of the total population is considered urban, of which 39%
lived in Lima. The average annual growth rate of the urban population
for the 1970-1980 period is 4.4% which places the country in the cate-
gory of countries undergoing a rapid urbanization process.

This compilation and systematization of the historical urban physical elements
of Peruvian cities is expected to complement the numerous studies of Peruvian
urbanization that deal with economic, social and political factors. However
some policy recommendations are suggested aimed at guiding the spatial develop-
ment in Peru:

-Decision making with respect to urban planning should attain a gradual
level of decentralization, that is, local governments should exercise
their right of planning their growth according to their needs and possi-
bilities.

-Along with administrative decentralization; economic and financial
decentralization should be adopted in favor of the local governments.

-In order to implement this decentralization process, care should be
taken in providing qualified technical personnel. In order to meet
this need, programs or urban and regional planning as well as public

administration should be offered at the university level, reinforcing the current planning program at the National Engineering University in Lima and creating two more, one in the north (Chiclayo) and the other in the south (Arequipa or Cusco).

-Once and if, local governments (municipalities) exercise their power of determining their growth, then the power of implementation and enforcement of policies and programs should also liew in the local level. In this way it is expected to achieve a more coordinated process of policy making and implementation within the same adminstrative unit.

BIBLIOGRAPHY

Aguilera Rojas, Javier; Moreno Rexach, Luis J. <u>Urbanisomo Espanol en America.</u>
 <u>Seleccion de planos y textos</u>. Madrid: Editora Nacional, 1973

Angles, Victor. <u>Historia del Cusco</u>, Cusco: Industrial Grafica, 1978 Vol 1.

Amatom Peter. "Elitism and settlement patterns in the Latin American City."
 <u>Journal of the American Institute of Planners</u> 36 (March 1970) pp. 96-105

Andrews, Frank M. And Phillips, George W. "The Squatters of Lima: Who They
 are and What They Want," <u>The Journal of Developing Areas</u>, 4 (Jan 1970)
 pp. 211-224

Alexander, Christopher. <u>Houses Generated by Patterns</u>. Berkeley: Center for
 Environmental Structure, University of California, 1969

L'Architecture D'aujourdhui, 173 (Mai/Juin 1974) Issue on Latin America

Bartholomew , Harland. <u>Land Uses in American Cities</u>. Cambridge: Harvard
 University Press, 1955

Basadre, Jorge. <u>La Multitud, la Ciudad y el Campo en la Historia del Peru.</u>
 Lima, n.p. 1929

Beckinsale, R.P.; Houston, J.M. <u>Urbanization and its problems</u>. Oxford: Basil
 Blackwell, 1968

Bell, W.S. "Los Desgraciados: Aspects of poverty in Peru." <u>Journal of Lation
 American Studies</u> II, 1, 1979

Bonilla, Heraclio. "The new profile of Peruvian history." <u>Latin American
 Research Review</u> XVI (3) 1981, pp. 217-224

Boyer, Richard; Davies, Keith. <u>Urbanization in 19th Century Latin America:
 Statistics and sources</u> Los Angeles: Latin American Center, University of
 California, 1973

Browning, Harley. "Primacy variations in Latin America during the
 Twentieth Century." <u>Actas y Memorias, XXXIX Congreso Internacional de
 Americanistas</u> Lima 1972, Vol 2 pp. 55-77

Brunner, Karl. <u>Manual de Urbanismo</u> Bogota: Concejo Municipal de Bogota,
 Columbia, 1938 2 vols.

Bulrich, Francisco. <u>New directions in Lation American Architecture</u>. New
 York: George Bazilier 1969

Butterworth,; D. Chance, J. <u>Latin American Urbanization</u>. Cambridge:
 Cambridge University Press, 1981

Casis, Ana; Davis, Kingsley. "Urbanization In Latin America" <u>The Milbank
 Memorial Quarterly</u> XXIV (3) 1946, pp. 292-314

Castells, Manuel. <u>Imperialismo y Urbanizacion en America Latina</u>. Barcelona: Gus tavo Gili, 1973

Caviedes, Cesar. "Chimbote: El caso de la ciudad boom." <u>Revista de Geografia</u>. Instituto Panamericano de Geografia. Organismo de la O.E.A. Dic. 1975, pp. 51-65

Chandler, Tertius; Fox, Gerald. <u>3000 years of urban growth</u>, New York: Academic Press, 1974

Childe, Gordon. <u>The Urban Revolution</u>, <u>Town Planning Review</u> 21, 1950, pp. 3-17

Chueca Goitia, Fernando; Torres Balbas, Leopoldo. <u>Planos de las ciudades Iberoamericanas y Filipinas existentes en el Archivo de Indias</u>. Madrid: Instituto de Estudios de Administracion Local 1951 2 vols.

Cole, J.P. "Some Town Planning probles of Greater Lima." <u>Town Planning Review</u> 27 (January 1956), pp. 243-251

Consiglieri Cevasco, Luis. "Rol del Estado Peruano en el control del funcionamiento del mercado de tierras. Estudio del caso: Lima Metropolitana, 1968-1972." <u>Revista de la Sociedad Interamericana de Planificacion</u> 9 (34) 1975, pp. 63-73

Conway, Dennis; Brown, Juanita. "Intraurban relocation and structure: Low income migrants in Latin America and the Caribbean." <u>Latin American Research Review</u>. XI (3) 1980, pp. 95-125

Davis, Kingsley. "Colonial expansion and urban diffusion in the Americas." <u>International Journal of Comparative Sociology</u> I (1) 1960, pp. 43-55

De Solano, Francisco. <u>Estudios sobre la ciudad Ibero-Americana</u>. Madrid: Instituto Fernando Gonzales de Oviedo, 1975

Delgado, Carlos. "Three proposals regarding the accelerated urbanization problems in metropolitan areas: The case of Lima." <u>The American Behavioral Scientist</u>. May-June 1969, pp. 34-45

Department of Housing and Urban Development. <u>Strengthening urban administration in developing countries with emphasis on Latin America</u>. Ideas and Methods Exchange No. 67. Washington: HUD, n.d.

-----<u>Urban planning in developing countries</u>. Ideas and Methods Echange No. 61, 301 Urban and Regional Plannning. Prepared for the Agency of International Development. Washington: n.d.; n.p.

Dietz, Henry A. "Land invasion and consolidation: A study of working poor/Governmental relations in Lima-Peru" <u>Urban Anthropology</u> Vol 6 (4), 1977, pp. 371-385

Dominguez, Francisco. "Contenido urbanistico de las actas de fundacion (1520-1573)" <u>Revista de Historia de America</u>. No. 91, Mexico, 1981, pp. 9-27

Doughty, Paul L. "Peruvian migrant identity in the urban milieu" in Thomas Weaver and Douglas White (Eds) The Anthropology of the urban environments. Boulder, Colorado: The Society of Applied Anthropology, 1972, pp. 39-49

----"A Latin American speciality in the world context: Urban primacy and cultural colonalism in Peru" Urban Anthropology. Vol 8 (3/4) 1979, pp. 383-397

Dwyer, D.J. The City in the Third World. New York: Barnes and Noble, 1974

Ford Foundation, Urbanization in Peru. n.p.; n.p.; n.d.

Fox, Robert C. Urban population trends in Latin America. Washington: Interamerican Development Bank, 1975

Friedman, John. "Urban poverty in Latin America, Some theorical considerations" Journal of Development Dialogue 79-1 Upasalla, Sweden. pp. 99-114

Fuenzalida, Fernando, El Peru de las tres razas. New York: Instituto de las Naciones Unidas para formacion profesional e investigacion, 1974

Furtado, Celso. Economic Development of Latin America. Cambridge: Cambridge University Press, 1970

Gade, Daniel, "The Latin American Central Plaza as a functional space", in Robert Tata Latin American Search for Geographical Explanations, procedings of the conference of Latin American geography, Coca Raton, 1974

Gakenheimer, Ralph "Determinants of physical structure in the Peruvian town of the sixteenth century" PhD. Disseration. Department of City Planning, University of Pennsylvania, 1964

Garcilazo de la Vega, El Inca. Comentarios Reales de los Incas. Buenos Aires: Emecee Editoresm 1945 2 Vols.

Gasparini, Graziano; Margolies, Luise. Inca Architecture Bloomington: Indiana University Press, 1980

Griffin, Ernst and Ford, Larry, "A model of Latin American city structure" The Geographical Review, 70 (4) Oct. 1980

Guillet, David. "Migration, Agrarian Reform, and structural change in rural Peru." Journal of the Society for Applied Anthropology. Vol. 35 (3) Fall 1976, pp. 295-302

Hanke, L., The Imperial City of Potosi The Hague: n.p., 1947

Harth-Terre, Emilio, "Fundacion de la ciudad Indiana", Revista Historica de Lima. XVI, (1945)

----"El Pueblo de Huanuco Viejo", El Arquitecto Peruano 320, 1964

Hardoy, Jorge E. Las Ciudades en Latino America: Seis ensayos sobrela urbanizacion contemporranea. Buenos Aires: Editorial Paidos, n.d.

----Pre-Columbian Cities, New York: Walker and Company, 1964

----Urban Planning in Pre-Columbian America. New York; George Bazillier, 1968

----"La forma de la ciudades coloniales en America Espanola" in Francisco de Solano (Eds) Estudios sobre las Ciudad Iberoamericana Madrid: Instituto Gonzalo Fernandez de Oviedo, 1975, pp 315-344

----and Aranovich, Carmen, "Escalas y Funciones urbanas en la America Espanola hacia 1600: un ensayo metodologico: in Francisco de Solano (Ed) Estudios usobre las Ciudad Iberoamericana. Madrid: Instituto Gonzalo Fernandez de Oviedo, 1975, pp. 345-381

----, Basaldua, Raul and Moreno, Oscar. "Urban Land policies and controls in Latin America" Ekistics 244, May, 1976, pp. 160-167

----and Tobar, Carlos (Ed) La Urbanizacion en America Latina. Buenos Aires: Editorial del Instituto, 1969

Hauser, Phillip, Urbanization in Latin America. New York: Colubmia University Press, 1961

Herbold, Carl F. (Jr), "Peru" in Richard Morse, Urban development of Latin America, 1750-1920. Stanford: Center for Latin American Studies, Stanford University, 1971. pp. 104-109

"Hope for a new dawn in La Paloma after 77 centuries: New York Times, 3 May 1981, p. 6

Houston, J.M. "The foundation of Colonial Town in Hispanic America" in R.P. Beckinsale and J.M. Houston, Urbanization and its problems. Oxford: Basil Blackwell, 1968, pp. 352-390

Ingram, Gregory K. and Carroll, Alan, "The spatial structure of Latin American cities," Journal of Urban Economics, 9 (1981) 257-273

Jimenez de la Espada, Marcos. Relaciones geograficas de Indias - Peru II Biblioteca de Autores Espanoles, Madrid: Editorial Atlas, 1965 Tomo 194

Johnson, George, Peru from the air. New York: American Geographical Society, 1930

Katz, Frederich, "A comparison of some aspects of the evolution of Cuzco and Tenochtitlan," in Richard Schadelm, Jorge Hardoy and Nora Scott Kinzer (Eds) Urbanization in the Americas from its beginnings to the present. The Hague: Mouton Pubs., 1978, pp. 203-214

Kubler, George, "Cities and culture in the colonial period in Latin America", Diogenes No. 47, 1964, pp. 53-62

----"The unity of cities in the Americas", Journal of World History. Vol. IX (14) 1966, pp. 884-889

Kurian,G.,Encyclopedia of the Third World., New York:Facts on File Inc. 1978

"La primera aldea en America",El Comercio, Suplemento Dominical, Lima, 19 de Julio de 1981

Lanning, Edward P. Peru before the Incas, New York:Prentive Hall,1967

Le Corbusier, Urbanisme Paris:Editions Creś,1924

Linton,Ralph, The tree of culture,New York:A.Knopf,1957

Lloyd,P. The Young Settlements of Lima:Aspects of Urbanization in Peru. Cambridge:Cambridge University Press, 1980

Malaga Medina,Alejandro,"Aspecto urbano de las reducciones toledanas" in Revista de Historia de America. 88, Jul-Dec. 1979, pp.167-183

Mangin, William."Squater Settlements" Scientific American, 217:4

----- Peasants in the cities:Readings in the Anthropology of urbanization, New York:Houghton Mifflin Co.,1970

----- "Urbanization case study in Peru", Architectural Design , VIII (Aug. 1963)

----- and Turner, John.,"The Barriada movement",Progressive Architecture, 49(1968) pp.154-162

Maskrey, Andrew. "In lieu of planning", Town and Country Planning October, 1980, pp.298-300

McGee,T.G. "peasants in the cities: A paradox,a paradox a most ingenious paradox",Human Organization 32(2) Summer,1973, pp.135-142

Morris, Craig. "State settlements in Tawantinsuyu: A strategy of compulsory urbanism in Mark P. Leone, Contemporary Archaeology. Carbondale: Southern Illinois University Press, 1972. pp.393-401

Morse, Richard, "Latin American cities: Aspects of functions and structure". Comparative studies in society and history.IV (4) 1962,pp.473-493

----- "Some characteristics of Latin American urban history:, The American Historical Review, LXVII (2) 1962,pp.317-338

----- The urban development of Latin America 1750-1920. Stanford: Center for Latin American Studies, Stanford University, 1971

----- "A prolegomenon to Latin American urban history", The Hispanic American Historical Review, 52(3) 1972. pp.359-394

----- "Trends and patterns of Latin American urbanization 1750-1920" Comparative Studies in Society and History, 16(4)1974. pp.416-447

----- "The development of urban systems in the Americas in the nineteenth Century",Journal of the Interamerican Studies and World Affairs. 17(1) 1975. pp.4-26

Moseley, Michael and Mackey, Carol. "Chan-Chan:Peru's ancient city of Kings" National Geographic, 143(3) March, 1973. pp.318-344

Nutall, Zelia. "Royal irdinances concerning the laying out of towns" The Hispanic American Historical Review 5, 1922. pp.249-255

Odell,P.R. and Preston, D.A.Economies and societies in Latin America, Bath: John Wiley and Sons, 1978

Peabody Museum, Architectural plans of Chan-Chan-Peru. New York: The Peabody Musuem, 1980

Reissman,Leonard. The urban process. New York:The Free Press, 1964

Roberts,Brian. Cities of Peasants: The political Economy of urbanization in the Third World. London:Edward Arnold,1978.

Romero, Emilio. Peru:Una nueva Geografia. Lima:Libreria Studium, n.d. 2 vols.

Rowe, John. "What kind of settlement was Inca Cusco?" Nawpa Pacha 1(1), 1963 pp.59-75

----- "Urban settlements in ancient Peru" Nawpa Pacha 2(2), 1964 pp.1-27

Sarmiento de Gamboa, Pedro. Historia de los Incas. Buenos Aires: Emecee Editores, 1947.

Scargill, D.I.,The Form of Cities. London:Bell and Heyman Limited, 1979.

Schaedel, Richard P."From homogeneization to heterogenization in Lima-Peru" Urban Anthropolgy. 8(3/4) 1979. pp.399-419

Schteingart, Marthe and Torres, Horacio. "Estructura interna y centralidad en las metropolis latinoamericanas:Estudio de casos: in Manuel Castells (Comp) Imperialismo y urbanizacionen America Latina. Barcelona" Gustavo Gili, 1973. pp.253-285

Segre,Roberto. America Latina en su Arquitectura. Mexico:Siglo Ventiuno Eds. 1975.

Sjoberg, Gideon. The Pre-Industrial City. Illinois:The Free Press,1960.

Skeldon, Ronald."The evolution of the migration patterns during urbanization in Peru", Geographical Review 67(4) 1977. pp.394-411.

Skidmore,Sasser, Elizabeth. Architecture of ancient Peru. Texas:Texas Technological Collefe, 1969.

Stalinavsky, Dan,"Early spanish town planning in the world" Geographical Review 37, 1947. pp.94-105.

Thomas, Vignod. Spatial differences of poverty: The case of Peru. World Bank Reprint Series, Number 153. Washington: The World Bank,1975.

Torres Balbas, Leopoldo, et al. Resumen historico del urbanismo en Espana. Madrid:Insitutto de Estudios de Administracion Local, 1954.

Tulchin, J.(Ed.) Latin America in the year 2000, Massachusetts:Adison Wesley Publishing Co. 1975.

Turner,John C."Dwelling resources in South America", Architectural Design, XXXIII, 1963. pp.360-393.

----- "Barriers and channels for housing development in modernizing countries" Journal of the American Institute of Planners. 33(May)1967 pp.167-181

----- "Housing priorities, settlement patterns, and urban development in modernizing countries" Journal of the American Institute of Planners. 34(November) 1968. pp.354-363.

Union Panamerican. La vivienda en el Peru, Washington: Organismo de Estados Americanos, 1963.

Violich, Francis. Cities in Latin America, New York:Reinhold Publishing Co., 1944 .

----- :Evolution of the Spanish city" Journal of the American Institute of Planners, 28(3) 1962. pp.170-179.

----- ans Astica, Juan B. Community development and the urban planning process in Latin America, Los Angeles:Latin American Center, 1967.

Vitruvius, Marco. The Ten books on Architecture. Cambridge:Harvard University Press, 1914.

Weber, Max. The City, Glencoe,Illinois: The Free Press, 1958.

Weisslitz, Jacqueline."Migracion rural e integracion urbana en el Peru" en Manuel Castells (Comp) Imperialismo y Urbanizacion en America Latina. Barcelona:Gustavo Gili,1973. pp.111-137.

Weiner, Paul L. and Sert, Jose,L. Urbanisme en Amerique du Sud Paris: L'Architecture D'Aujourd'Hui, 1951.

Wirth, Lois."Urbanism as a way of life" American Journal of Sociology 44(July) 1938. pp.1-24.

The World Bank. World Development Report,1980 Washington:The World Bank, 1980.

Yujnovsky, Oscar."Notas sobre la investigacion de la configuracion espacial interna y las politicas del uso del suelo urbano en America Latina" Revista de la Sociedad Interamericana de Planificacion 9(35) 1975. pp. 5-22.

Zendegui de, Guillermo. City Planning in the Spanish Colonies. Organization of the American States;Feb. 1977.

APPENDIX

Acta de Fundacion: (Act of Foundation) Document that was drawn upon foundation of a new town in Spanish Colonial America. It was a legal document usually including the name of the settlers and the land allocation. The "traza" was part of the Act of Foundation.

Adelantado: The person sent by the conqueror to explore and settle new land in Hispanic America.

Adobe: A sun-dried brick of clay and thatch used vastly in spanish architecture and brought to America during the conquest.

Amauta: Quechua word. Teacher.

Audiencias: The newly discovered territories in America were administratevely divided in Vice-Royalties, Each vice-royalty was in turn divided into Audiencias. An audiencia was an institution with regional administrative capabilities.

Barriada: Squatter Settlement. (See "pueblo joven")

Barrio:Neighborhood.

Cabildo: Local governmental body, municipality.

Canchas: Quechua word. Housing quarters that constituted the smallest habitational unit in an Inca or/and pre-Inca settlement.

Canchones: Open spaces within an habitational unit used for small scale farming and also to keep animals.

Conquistadores: Spanish conquerors.

Cooperative: A productive unit in which the workers participate in the property and control of the production.

Cordillera: Mountain chain.

Costa: Coast.

Departamento: Administrative and political unit in modern Peru.

Diputados: Representatives elected to the Lower Chamber in Constitutional Governments in Peru.

Escorial: A historic monastery and major architectural complex in central Spain.

Gobernatura,Gober.nacion: Local government during the spanish colonial period, primarily in charge o f political representation of the King of Spain.

Grupo Residencial: Residential unit housing a number of families. Multi-familiar housing unit.

Guano: Organiza element deposited by birds along the coastal areas. It has

widely been used as a fertilizer in agriculture.

Ley de Municipalidades: Law of Municipalities, refered to the Law approved by the Constitutional Government in 1981.

Leyes de Indias: Laws of the Indies. A legal set of ordinances provided by Spain to be enforced in its colonien in the sixteenth century.

Meseta: Platteau.

Mestizos: Ethnic group resulting from the mixture of Indians with Spaniards.

M.V.C."Ministerio de Vivienda y Construccion": Ministery of Housing and Construction. Governmental branch in charge of all issues relation with housing and urban development.

Ordenanzas: Specific regulations emanating from the Laws of the Indies.

Plazoleta: Small plaza.

Pueblo Joven: Current name given to the Squatter settlements (formerly called "barriadas")

Pukios: Quechua word. Spring of water.

Puna: The highest altitude in the Sierra, usually quite inhospitable. Above 12,500 feet above sea level.

Quechua: Language spoken by hte Incas, currently used by the native population.

Quipu:A device used by the Incas to keep records. It was composed of tied pieces of a type of thread of different colors and knots.

Quipucamayu: Quechua word. A person in charge of keeping the accounts on a quipu.

Reducciones: Settlements where the indians used to be kept and indoctrinated by the spaniards.

Selva: Jungle; the easterly part of the country.

Sierra: The highlands, region along the Andes Mountains.

Traza: A drawing of the lay-out of a town usually acconpannying the "Acta de Fundacion"

Tugurio: Slum tenement.

Urbanizacion: It has two different aceptions: 1. The process of urbanization.; 2.A housing section of a city, cimilar to the "subdivision" in the United States.

Vecinos: In the colonial period, the citizens, that is the white population.

Yachayhuasi: The center for learning during the Inca period. The school.

THE URBAN GROWTH PROCESS IN PERU

by

RONALD OSWALDO VILLASANTE

B.Arch. Universidad Nacional San Antonio Abad,Cusco. 1978
Dipl.Arch. Universidad Nacional San Antonio Abad,Cusco. 1980

AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF REGIONAL AND COMMUNITY PLANNING

Department of Regional and Community Planning

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1982

ABSTRACT

This report investigates the development and spatial organization of settlements in Peru throughout its historical development. Of specific concern is the way this pattern has been affected by the social, economic and political dimensions of the urbanization process.

In this regard, emphasis is given to the internal allocation of land uses, transportation patterns, the spatial location of activities and the degree to which exterior communal spaces are manipulated to create a pleasant environment. The organization process is understood as a global procedure in which the physical organization of space is the result of the interplay of other dimensions acting upon the development process.

The study begins with a definition of terms and the presentation of the variables considered in the analysis of the urban fabric. Following this, a brief description of Peru in terms of its population, geography, economy and political organization is presented.

The settlements of the many cultures that inhabited Peru before the arrival of the Spaniards are first analyzed. Within this period, two categorizations are made: Pre-Inca and Inca. Since there are many of these settlements dating from the Pre-Inca period, only the most representative are presented and documented. Tiwanaku and Pikillaqta (in the southern part of the country), Huanuco Viejo (in the central section) and Chan-Chan (in the northern coastal section) are analyzed in detail. From the Inca period, Cusco, Machu Picchu and Ollantaytambo are the three settlements which exemplify the features utilized by the natives in their spatial organization of settlements. Analysis is made of the use of open spaces and their relationship to contextual circulation patterns

as well as the location of public land uses vis-a-vis the location of housing quarters.

The influence of the Spanish urban tradition and its juxtaposition with the Pre-Columbian urban pattern is then discussed. The introduction of the rigid, European gridiron pattern is detailed, along with a presentation of classical examples of the effect of Spanish tradition on urban settlements. Most of the cities and towns existing in twentieth century Peru date from this period. The plaza and the location of the church and institutions representing the King of Spain are studied in relation to the distribution of solares in the Spanish town. In certain instances, the adaptation of the Pre-Hispanic model is analyzed as a unique case of urban metamorphosis.

A third major period in the pattern of Peruvian urban development is presented as characteristic of the present century. The initiation of industrialization, characterized by the introduction of the automobile and increased population growth exerted forces on the urban structure that changed the morphology of the Peruvian city. The urban areas in which these processes have been accelerated demonstrate a departure from the orthogonal grid to the use of the radial, the curvilinear and the irregular models of land allocation and street pattern. These new models spread to the rest of the country as the process elucidated earlier advances. However, due to the imbalance among economic and social structures in the country, these three models--the typical Pre-Columbian, the Spanish Colonial and the modern--coexist at present.