THE PROCESS OF URBAN CATALYSIS IN

AREQUIPA FROM 1868 TO 1920

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This paper aims to discuss the spatial evolution of the Main Square in Arequipa from 1868 to 1920 and its role as a catalytic element in the development of the city's urban spatial system. During that period, the square was the place where the population underwent a process of discovering of its own aesthetic and landscape values, while solving new functional needs and novel urban concepts. Subsequently, this intervention generated a chain-reaction effect, triggering the transformation of other nearby spaces and approaching the city to its riverscape.

Key Words: *Arequipa, Peru, square, plaza, urban catalysis, spatial system.*

1. INTRODUCTION

This paper aims to clarify the structure of landscape development in Arequipa **(Fig. 1)** in modernization, from the view point in relation to the affecting urban areas: urban catalysis. Arequipa experienced a particular revitalization without an extensive transformation from its historical configuration.

There are no previous studies about the evolution of the landscaped public spaces in Arequipa and very few urban researches include an urban-environmental point of view. The historian Carpio (1983)[1] compiled many events and photos from 1868 to 1911, providing important information in order to understand the era's social, economic and cultural characteristics. Also, Gutierrez's work (1992)[2] is a reference to understand the urban evolution of Arequipa from 1540 to 1990. Though they tell fine information about historical matters, their studies are not for the explanation of structural understanding of urban space as this paper aims.

Most of the studies on urbanism in this era are focused on cases in Europe and the United States, but very few take into account the processes occurred in Latin America, despite its rich urban heritage. However, the work of Kostoff (1999)[3]
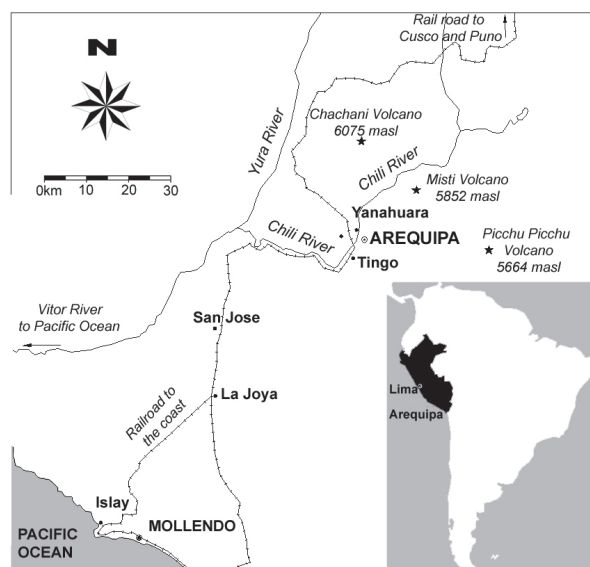

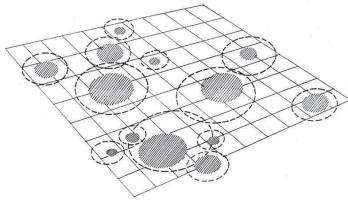**Fig. 1** Location of Arequipa in South America and Peru

Fig. 2 Catalytic model proposed by Attoe & Logan

mentions a few Latin American cases in his comparative study on the urban spaces in different cities in the world. On the other hand, in reference to the structural view, the works of Lynch (1953)[4] and Passini (1984)[5] have been important to understand the concepts of imageability and legibility in a city. Higuchi (1983, pp 190-193)[6] has stressed the importance of landscape in Japanese tradition and urban development.

Complementarily, Attoe and Logan (op cit, 1989) proposed the concept of urban catalysis as the "positive impact an individual urban building or project can have on subsequent projects and, ultimately, the form of a city" (Attoe & Logan, 1989, xi)[7] analyzing several cases in the United States, although their work does not include necessarily a landscape approach. In order to clarify the characteristics of the chain reaction process in Arequipa, we have developed a model of catalytic process, where each action in urban renovation of public spaces catalyzes other actions, which in turn lend impetus to others **(Fig. 2)**. This model is useful to explain the chain reaction effect in a city, but it does not necessarily make clear relations between spaces and their environment.

In this paper, firstly, we will analyze the factors that generated the transformation of the city, focusing on the evolution of the Main Square as a catalyzer element that triggered a chain-reaction effect in Arequipa. Subsequently, we will clarify how the catalytic process was carried out, explaining the improvement of the public spaces and the role of the river as a fundamental landscape resource in the city. Finally we will discuss the role of each one of these spaces in the development of a city's urban space system. [i]

2. PHYSICAL EVOLUTION OF THE MAIN SQUARE

(1) Antecedents to the transformation

Before the arrival of the Spaniards in 1539, the native inhabitants of Arequipa lived an intimate relationship with nature, especially with the river and the seasonal streams, which were respected and worshipped as gods. However, in 1540 Arequipa was founded by the Spaniards under an introverted model where the river was considered "the back of the city" and the riverbanks were known as "*La Barranca*" (the Cliff) (Carpio, 2005, pers. comm.; Palomino, 2004, pers. comm). The city was also centripetal (with the Main Square was the only public space in the city) and segregated (with differentiated areas for conquerors and native Indians). Eventually the churches surrendered areas for public use; nonetheless, before 1868 those spaces were basically utilized as open markets.

From this state, in which the city was detached from its riverscape and without recreational spaces, Arequipa was turned into a city with parks, promenades, treed streets and riverfront areas, without damaging its historical heritage. This upturn was carried out in only 50 years, despite the catastrophic effects of the 1868 earthquake, the Peru-Chile war (1879-83), the damage during the Chilean invasion of Arequipa (1883-84) and the economic bankruptcy during the post-war.

In the second half of the XIX century, the attitude of many prominent personalities in the political and academic circles was deeply influenced by the relationship existing between a scientific culture and a reformist trend for a modern society. That movement, known as Hygienism, aimed the creation of a new society characterized by such notions as "clean", "healthy", "virtuous" and therefore of a new moral order[8].

The influence of the Hygienism and landscape ideas brought to Arequipa by European non-Spanish merchants after the Peruvian independence (1821) triggered the desire of the local population to renovate the plaza as a space for recreation.

(2) Original layout characteristics

The Main Square, placed in the core of a grid layout, was a space for the celebration of the main religious, political, social, economic and civic activities in the city. It was also symbolically
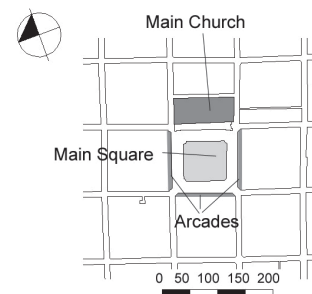

Fig. 3 Main layout characteristics of Arequipa's Main

associated to the throne of God. (Bielza de Ory, 2002)[9]. Its shape is a perfect square of 110 m per side. Its regular geometry induces centrality and equilibrium because its directionalities offset each other and are equal. (Thiis-Evensen, 1992, p.139-141)[10]. It is surrounded by the city's main church in the North and three arcades in the East, South and West. The main church or cathedral is located longitudinally, with its principal axis parallel to the square. Its long façade contributed to a better definition of the space and enhanced the monumentality of the plaza (**Fig. 3**).

(3) Functional characteristics before 1868

In Arequipa and Hispanic America in general, the square was not a void area in a town, but the heart of the city, around where the main activities were centripetally structured[ii]. The main functions that surrounded the square in Arequipa were the cathedral, the jail, the municipality and the governor's house. The plaza was the place for social exchange, where people used to congregate to get water from its fountain. It was also the location for religious ceremonies, for the administration of justice or where the army used to have formation (nowadays, the Main Square in Arequipa is still called "*Plaza de Armas*" or "Square of Weapons").

However, the most important activity in the plaza was the commerce and the square functioned as the city's open market (**Fig. 4**).

As early as 1868 the municipal authorities decided to redesign the plaza from a market to a park (La Bolsa, 1868, p2)[11]. Unfortunately the 9.0 magnitude earthquake that devastated Arequipa on August 13th of the same year postponed the project of remodelling the plaza.

The 1868 earthquake destroyed the structures around the square, but the reconstruction that followed completely changed the perception of how the city's main public space should be. The concept of modernity associated to closeness to nature transformed the Main Square to a space to "see" and to "stay", rather than to "sell and buy". In the XX century, new public needs appeared, like the use of electric street lighting, the automobile and the electric tram, while some of the functions in the square such as the jail or the governor's house were relocated to other areas in the city.

(4) Evolution of the surrounding structures

The beautification of the surrounding structures in the Main Square contributed to enhance the pride and self esteem of the population, and which was considered "one of the most beautiful plazas in the country" (Carpio, op cit, III, 143) .

a) The cathedral

Arequipa's main church or cathedral[iii] is the most important building in the plaza. It was built in neo-classical style by the Arequipan architect Lucas Poblete, occupying the whole extension of the block (107 m). In each side of the cathedral's atrium, "two magnificent arches" were located and finished in 1850 by Luis Gamo. These arches served as "support for the church and basically for decoration purposes"[12]. According to several historians like Grandidier (1861), the Arequipan cathedral was "the most remarkable monument built in Hispanic America after the independence"[13] (**Fig. 5**).

However, despite its majestic display, the intense commercial activity in the plaza did not allow a clear visual scope of the building. The atrium of the cathedral was occupied by 36 kiosks commonly known as "*cajoncitos*" (little boxes), built by the priests in order to obtain rent income, regardless of the damage to the esthetical image of the monument (Carpio, op cit, III, 20).

The 1868 earthquake destroyed the cathedral's towers and produced much damage in its vaults and arches. Lucas Poblete, in charge of the reconstruction, built the new towers taller and slenderer, enhancing the scale of the building. The height of the building reached 15.40 m and the towers measured 43.60 m[14].

The conception of a wide atrium in front of the church (designed by Lopez de Romaña) without any kiosk construction, was perceived as a spatial extension of the square and very important to get a better extended view of the cathedral from the plaza.

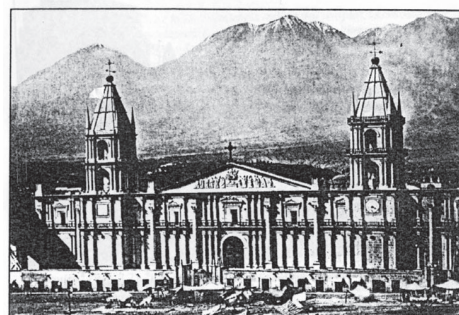**Fig. 4** Main Square as an open market. View to the SE.

Fig. 5 Arequipa's cathedral before 1868 and the "cajoncitos" or kiosks in the atrium

b) The arcades

The Main Square is surrounded by three arcades, located to the East, South and West, and their main function was to provide protection from the rain or the sun (**Fig. 6**). These arcades had received several names throughout history (Carpio, op cit, II, 34), but for practical reasons we will use their current names to refer to them: *Portal de Flores* (Flowers Arcade) to the East, *Portal de la Municipalidad* (City Hall Arcade) to the South and *Portal de San Agustín* (Saint Augustine Arcade) to the West.

The formal configuration of the arcades has evolved in three basic stages:

1) Before the 1868 earthquake

They were one-story arcades made of stone, built by private citizens (the owners of the stores in front of them), in order to use their roof tops, although their use at street level was given to the public (Gutierrez, op cit, p.94). Because of that, the arches did not follow a uniform pattern, and their shape, size and number were heterogeneous.

The *Portal de la Municipalidad* had taller arches than the other arcades, arranged in a two-story white and blue gallery, the lower story of 5.5 m high and the upper one 5 m high approx. The other two arcades, the *Portal de San Agustin* and the *Portal de Flores*, were one-story arcades, approximately 5 m high and also painted blue and white (**Fig. 7 a)**). The *Portal de San Agustin* had 39 arches and the *Portal de Flores* had 35, even if the distance that they covered was the same (Gutierrez, op cit, p.112). Therefore, the arches in the *Portal de Flores* were wider. In the upper rooms there were galleries or balconies made of iron and wood.

2) From 1869 to 1915

After the earthquake and during the next 20 years the three arcades were rebuilt, under a project by Brugada with modifications by the engineer Augusto Tamayo and the participation of Italian builders (i.e. Aquilino Cappeletti, Juan Albertozzi).

The three arcades were built in one story and their size and number was made uniform. Their design was also enriched, including neoclassical features, decorations and luminaries. The materials used were volcanic rock, which included sienita, basanita from Misti volcano, pink *sillar* and bricks from Cañahuas[15] (**Fig. 7 b)**).

3) From 1915 to 1960

In 1915 the municipal authorities decided to embellish the square by enhancing its scale and adding a second story to the arcades. They considered that otherwise, the "culture of Arequipa will be diminished" (Gutierrez, op cit, 190).

Actually, the height of the one-story arcades in comparison with the breadth of the square looked
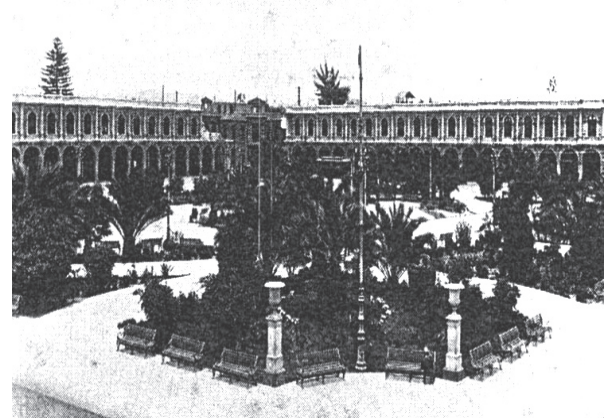
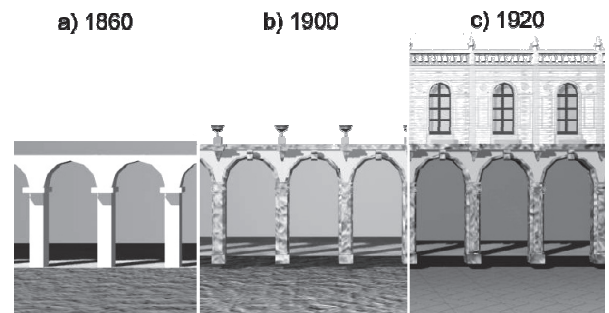**Fig. 6** SW view from the Plaza de Armas, showing the surrounding arcades

Fig. 7 Evolution of the surrounding arched arcades:
a) Two stories in the South arcade, one story in the east and west; irregular number and size.
b) One story, regular sized and shaped on all sides.
c) Two stories, the second one is enclosed with windows and crowned by a balustrade.

too wide and flat, with a ratio of just 1:20 and a visual angle of 3°. When a second story was added in 1915, the ratio was increased to $1:10^{iv.}$

The municipality encouraged the owners to build a second story, according to the official model (Romaña, 1916)[16]. The upper windowed arcades, designed by the architect Guidi, were crowned by a neo-classical balustrade. (**Fig. 7 c)**)

(5) Evolution of the landscaped areas

The Main Square in 1540 was a 13,800 m² earthen area, with some scarce trees. In 1735 a three section fountain was placed in the center of the plaza by Bishop Juan Cavero de Toledo, crowning it with a brass statue representing an angel playing a bugle, known as the "*Tuturutu*". (**Fig. 8 a)**)

The project of transformation of the plaza-market was initiated in 1875, when Francisco Pietrosanti changed it into an area with trees, designed by Lopez de Romaña (Zegarra, 1875)[17]. A road in the perimeter was defined and the square was framed by trees of various species. The star-like design included ficus trees along the diagonals joining the corners with the center. A 20m wide octagonal

central garden was placed around the fountain. Four lateral gardens were located on the Cartesian axes. All the gardens were protected by iron fences. The paving was made of pebbles and arranged in a radial way, each line starting from the central point of the octagon. The benches and street lamps were installed following the same arrangement (**Fig. 8 b)**).
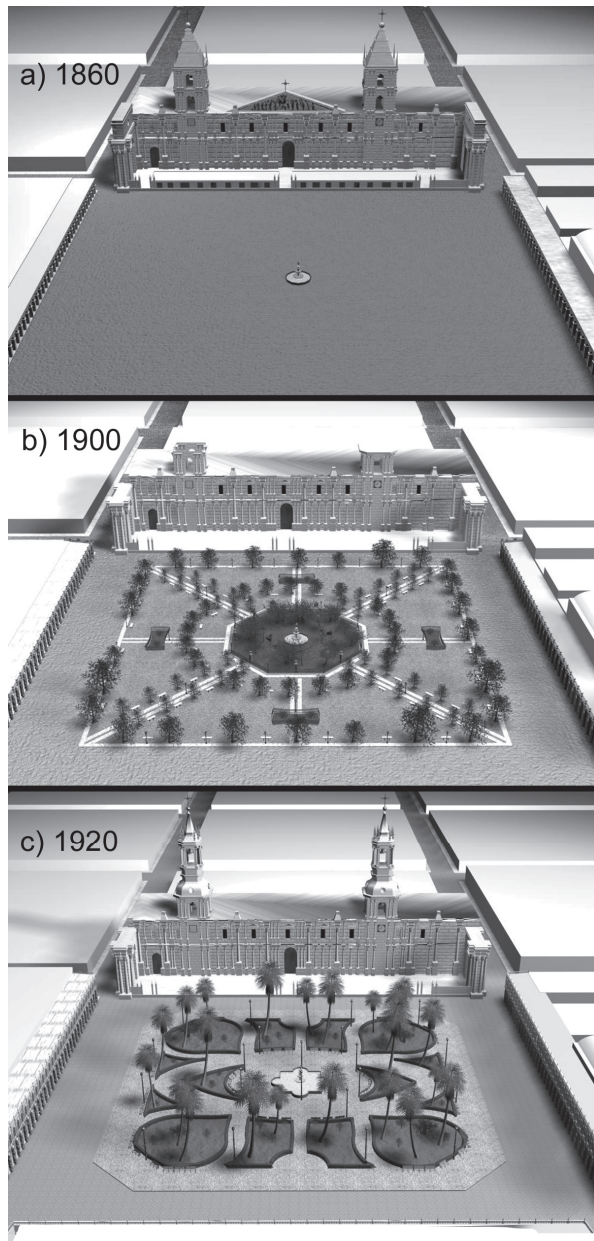

Fig. 8 3D models of the evolution of the Main square:
a) Without the landscaped areas and the kiosks in front of the cathedral. The arcades were not uniform.
b) Nuclear octagonal garden surrounding the fountain. Trees displayed in the perimeter and crossing diagonally. Cathedral's atrium spatially linked to the square. Arcades are uniform.
c) New cathedral is finished. The design of greenery is less geometric and allows casual strolls. Street lamps and vegetation are taller. Scale of the square is enhanced by adding a second floor in the arcades

In the first decade of the XX century the mayor Octavio Muñoz Nájar criticized this "basic and rigid design" because "it was not according to the world's cultural standards", complaining about the shape and size of the sidewalks, the greenery (he called it "cemetery trees"), the fountain and the materials of the base (Muñoz, 1909)[18]. In 1908 the square was completely redesigned by the mayor Eleodoro del Prado, according to a scheme based on European models which allowed a more casual stroll (**Fig. 8 c)**). The Italian gardener Leopoldo Lucioni was hired to beautify the square (Carpio, op cit, IV, 220). The redesigned paved stone was installed by Forga using multicolor tiles. The quadrangular shape of the plaza was chamfered in the corners and the big central garden with the fountain was replaced by a small grass rotunda. The colonial fountain and the *Tuturutu* were considered "unsuitable" to the new aesthetic patterns and removed from the square until 1920 when they were finally put back in its original position. Greenery was introduced in 8 parterres with English grass, in which marble flower pots laid, and the iron fences were replaced by bushes. Subsequently, trees and then palms were added to enhance the scale of the vegetation.

(6) Impact of the Main Square transformation

The transformation of the main plaza-market into a park had an important effect on the population, enhancing their pride and self-esteem, who saw their city being reborn "more beautiful" after the calamities (Carpio, op cit, III, 143). The newspapers of the era commented with enthusiasm about the evolution of the plaza to "modernity" and "a park of beautiful perspective" (La Bolsa, 1868, p.2)[19].

Considering the social scenario described by Carpio and the aforementioned historical compilation, we propose that the most important concepts used in the Main Square that triggered a chain-reaction effect in the city were the following:

a) Idea of modernity

The conception of a city in harmony with nature and the development of new aesthetics and hygiene values were utilized for the first time in the Main Square and they became fundamental concepts acquired by the population for the improvement of the city in the subsequent years.

b) Functional specialization

The plaza, which used to be a place to sell and buy, assumed a specific role as a recreational space. Some of its elements, like the fountain which used to be for water supply, became ornamental. This influence was repeated in many other public spaces which also used to be open markets and then turned into parks, until the construction of a specialized market building in 1913.

c) Landscaping of the space

The development of landscaping techniques in urban areas, particularly the use of greenery in a public space as a provider of shadow, sound, visual delight and human scale, was introduced in the Main Square and then utilized in many other public spaces. Moreover, the use of new materials and the installation of neo-classical style urban furniture, such as electric streetlamps, balustrades, flowerpots and benches, was a landscaping resource commonly applied in other areas, especially along the riverfront.

d) Pedestrian movement

The layout of the sidewalks in the plaza, particularly from 1908, favored an informal flow of the passers-by, in contrast with a more rigid previous pattern. The idea of strolling casually along a path was an important influence later utilized in the design of parks and promenades.

e) Perceptual effect

The beautification of the contiguous built areas and the enhancement of their scale was accompanied with design techniques (such as the renovation of the cathedral's atrium as a wide space without constructions) that a allowed a better perception of the monumentality of the surrounding architecture. The subsequent design of parks located next to architectural landmarks (like the churches or bell towers) took into account perceptual resources for a better observation of the nearby monuments.

3. DEVELOPMENT OF THE AREQUIPA'S LANDSCAPE FROM THE MAIN SQUARE

The transformation of the Main Square and its surrounding built areas had a tremendous impact on the population, especially in the use of new neo-classic architectural styles and landscape design techniques, which influenced the urban development of Arequipa in the XX century as a modern city close to nature.Two main stages can be identified as in the following.

(1) Evolution of the spaces in the Central Area

After the Main Square, other nearby public spaces were also transformed into parks. During the remodelling of the Main Plaza (**1** in **Fig. 9 b)**), the open market was relocated to the Alameda Promenade (**2** in **Fig. 9 b)**) and to the San Francisco Square (**3** in **Fig. 9 b)**). In 1899 the small San Francisco Square, which measured 25 by 50 m and was flanked by the massive architecture of the San Francisco Church, was also remodelled into a park. The dimensions of the square, the surrounding architecture and the characteristics of its gardens

(planted with several *jacaranda mimosifolia,* an ornamental South American tree with blue flowers and a leafy top) favoured a more intimate space, different than the monumentality of the Main Square. During the works, the market was relocated to the San Lazaro Square (**4** in **Fig. 9 b)**).

In 1904 the San Lazaro Square was also remodelled into a park along with the completion of the San Lazaro Boulevard (**5** in **Fig. 9 b)**). These two spaces had an important social role, since the neighbourhood of San Lazaro had been considered a
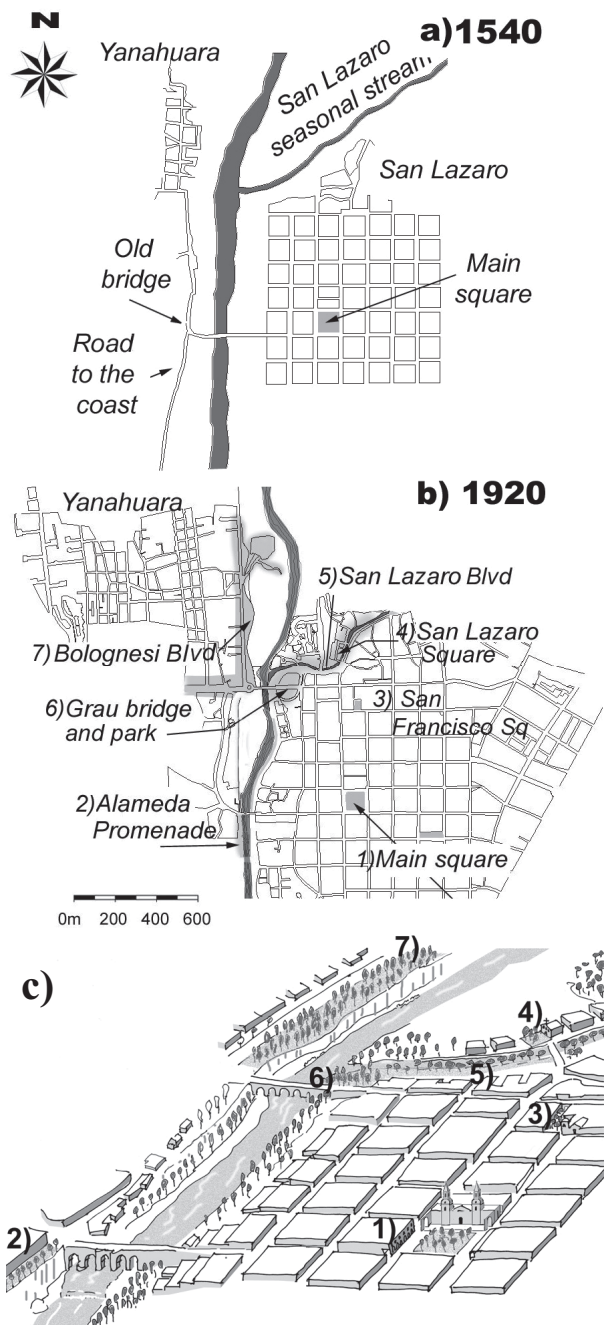

Fig. 9 Evolution of the urban spaces in Arequipa
a) From 1540 to 1800 Arequipa had no landscaped spaces
b) Catalytic process after the transformation of the Main Square. Aerial view of the urban system in 1920
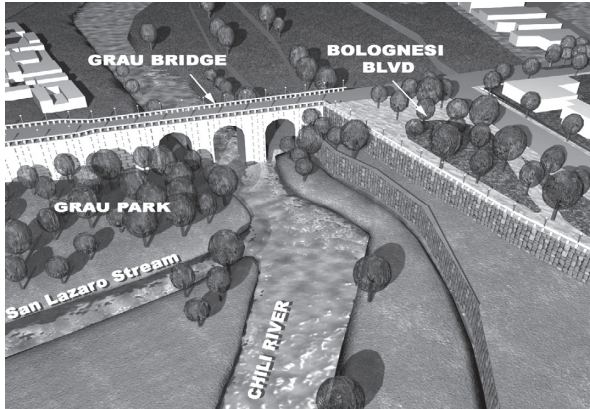**c)** The image of location from bird's-eye view

Fig. 10 View of the Grau Bridge, Grau Park, the San Lazaro stream, and the Bolognesi Blvd, a riverfront complex around the Chili River

Fig. 11 Proposed urban model.

segregated area by the conquistadores during the colony (Gutierrez, op cit, 28), because its social ethnic composition (a zone for native Indians), its organic layout and its location, partially situated beyond the seasonal stream. Therefore, the construction of a park and boulevard along the stream spatially and socially linked the neighbourhood with the rest of the city.

In 1913 the markets in the squares were definitely relocated into a new building planned for commercial purposes, the prefabricated steel market San Camilo, designed by the French Gustave Eiffel's company.

(2) The Approach to the Riverscape

The construction of the Grau Bridge (1884-98) was fundamental for the connection of the Central Area and the traditional town of Yanahuara in the West riverbank. It had also an important recreational role by linking the city to the public Zemanath Baths and by becoming an impressive viewpoint to the riverscape.

The Grau Bridge was designed by the Italian architect Juan Albertazzo and built by the architect Juan Rodríguez (Administración Local de Arequipa 1884, 33)[20], involving a huge amount of labor, due to the difference of the level between the two banks (hundreds of citizens participated voluntarily in its construction). After its completion, proposals were made to embellish the riverfront areas with "beautiful promenades" (La Bolsa, 1887, p. 1) [21].

The Grau Bridge had also a catalytic effect by stimulating the creation of other recreational spaces and approaching the city to its riverscape (**Fig. 11**): Next to the bridge, Grau Park (also known as Quinta Vargas) was built in 1905 and it was the first public space specifically designed as a children's playground. (**6**) in **Fig. 9 b**)). The San Lazaro Blvd. was connected to the Grau Bridge in 1905. In 1908
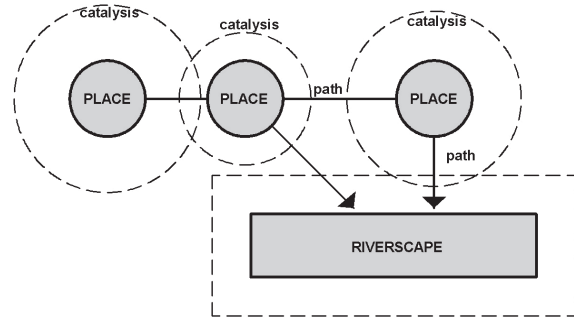
the Villalba Street linked the Grau and the Old bridges, and also the Alameda Promenade, which was reconstructed after the earthquake (Bedregal, 2001)[22]. Some of the balconies built to overlook the river from that street can still be appreciated nowadays.

In the West riverbank, the Bolognesi Blvd. was finished in 1910. (**7**) in **Fig. 9 b**), **Fig. 10**). The Bolognesi Blvd was designed as a casual treed promenade with trees overlooking the Chili River and it connected the Grau Bridge with the traditional Zemanat Baths. It was one of the first public spaces in the 20th century specifically designed for the enjoyment of the riverscape. It extends 1 km along the river and the park included areas for recreation, civic areas, monuments and kiosks. The furniture, balusters and street lamps were made in neo-classical style, such as the one used in the Grau Bridge and the park located next to it.

The spatio-temporal evolution of the catalytic process in Arequipa and the change of use in the aforementioned places is shown in the **Table 1**.

Table 1. Spatio-temporal evolution of the catalytic process.

PLACE	1868	1890	1900	1910
1.Main Square	market	park	park	park
2.Alameda Promenade	promnade	market	promenade	promenade
3.San Francis Sq.	market	market	park	park
4.San Lazaro Sq.	market	market	park	park
5.San Lazaro Bld	-	market	boulevard	boulevard
6.Grau Park	-	-	-	play ground
7.Bolognesi Blvd	-	-	-	promenade

(3) Influence of the catalytic process

Before 1868 Arequipa occupied 200 hectares and only 0.6% of them corresponded to recreational areas. In 1920 the city had expanded to 350 hectares

and 7% of them were recreational spaces. However, from 1920 to 1940 the city expanded to 560 hectares and 32% of them were parks, promenades, green areas and boulevards, most of them built next to the river basin or close to it. The details of these projects are out of the scope of this paper, however, we would like to stress the influence of the Chili River in the city planning in those years.

In 1940, the river was considered the main axis for the development of Arequipa's first Master Plan. His author, De Rivero, proposed the construction of promenades and boulevards on the banks of the river and seasonal streams, the cleaning and beautification of the polluted areas, the construction of a modern residential development surrounded by nature and facing the river, the connection of the streets to the riverfront promenades, the creation of new parks and green areas and the prolongation of the Bolognesi Blvd. about 3 km south, next to the Chili River (De Rivero, 1940)[23].

(4) The urban spatial system

In the case of Arequipa, the catalytic process not only implied the upturn of several spaces scattered throughout a network of roads. The success of the approach of the city to its riverscape lays on the development of a new "imageability" (a new way of understanding the environmental information) which incorporated the landscape in the perception of the population (Passini, op cit, 109).

The image of the city during the colony was a very segregated one. There were differentiated districts for the conquerors and the conquered, segregated not only by their spatial location but their urban layout (Gutierrez, op cit, 24). In some maps from the 18th century the districts for Indians and the river were not even depicted as a part of the city. (MPA, 2002, 10-12)[24]. The river was considered a strong edge both for its topographical configuration (it was called "*the cliff*") and the cultural detachment from the population (a popular myth tells of a nymph living under the bridge, who took the lives of the ones who approached the river at night, seduced by her voice) (Nicoli, 2006)[25]. The Main Square was the only public node and the campaniles of the churches were the most remarkable landmarks, not only because of their prominent form, but for the strong religiosity of the population (MPA, op cit, 12) (**Fig. 12 a)**).

After 1868 the perception of the city changed dramatically. According to numerous photographs, testimonies of authorities, articles on newspapers, maps and bibliography consulted from the time, it is clear that the association of modernity and approach

to nature were part of the new imageability of the population. Even poems and songs were composed to praise the landscape features and the multicolored farms.

It is also clear that despite the change of the role of the Main Square as a park, this space continued to be the most important area in the city. However, the creation of new recreational spaces was associated with a sense of whereness or "public inhabitability" (Moore & Bloomer, 1977, 84)[26] and they usually assumed a particular theme or role.

In contrast with the only node in colonial times, a multi-nodal spatial system was created, where five types of places have been identified (**Fig.12 b)**).
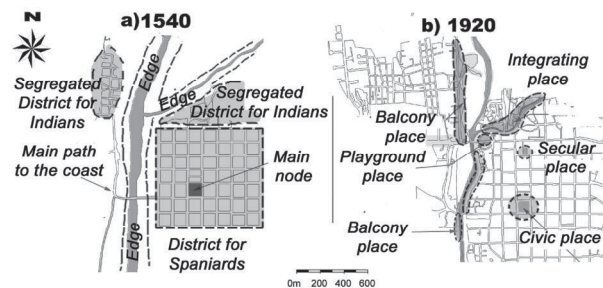

Fig. 12 Evolution of the urban perception in Arequipa
a) From 1540 to 1800 Arequipa was a very segregated city
b) Recreational places promoted a new perception of the city and a strong relation between modernity and closeness to nature

a) **Civic place**:

The Main Square (**1**) in **Fig. 9 b)**) traditionally concentrates the main public functions: social, cultural, civic, religious and political. It is centralized, hierarchical; its shape is regular and its scale is monumental. It is considered as the most important civic place in the city.
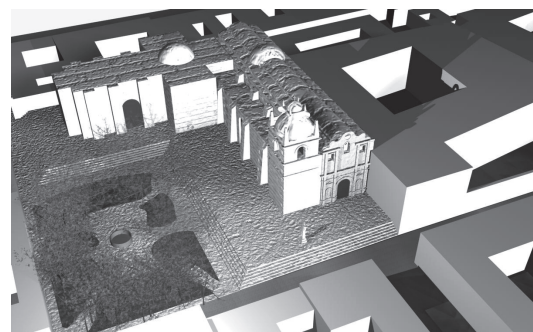

Fig. 13 San Francisco Square and Church

b) **Secular place:**

The San Francisco Square (**3**) in **Fig. 9 b)**), **Fig 13**), and the San Lazaro Square (**4**) in **Fig. 9 b)**) were originally spaces surrendered by the churches for evangelization purposes and they became later

the areas for public use. Their shape is irregular and their scale is more human and intimate, but not enclosed. These spaces were reported to be used as meeting nodes during religious festivities.

Fig. 14. View of the Chili valley from Alameda Promenade

c) **Playground place**:

The Grau Park (**6**) in **Fig. 9 b**)) is located in a lower level than the street and it is detached as much as possible from the noisy life in the city, but near to the sound of the river. Its rounded shape is embraced by the San Lazaro stream, the river and the Grau Bridge. It is an intimate space and gives warmth and protection from the outside world.

d) **Balcony place:**

The Bolognesi Boulevard (**7**) in **Fig. 9 b**)), **Fig. 10**) and the Alameda Promenade (**2**) in **Fig. 9 b**)), **Fig. 14**) are located on top of the rim (the cliff) of the river. They are basically linear but, since one of their sides is open to the landscape they are both a place to stay and move along. From there, it takes advantage of the topography to enjoy magnificent panoramas of the valley. Those places became the favorite spots for viewing, for painting or photographing the city, the green valley and the snowed mountains as a background.

e) **Integrating place:**

The San Lazaro Blvd (**5**) in **Fig.9 b**)) is located at the edge of a stream, it is used to unify two areas which were traditionally divided, the Spanish origin gridiron layout with the organic Indian neighborhood, creating a promenade along San Lazaro stream.

4. CONCLUSION

The transformation of the Main Square in Arequipa from a plaza-market to a plaza-park (1868 – 1920) is an expression of the evolution of the local population's approach to nature and landscape. The Main Square was the space for the innovation of urban landscape design ideas, the consolidation of its spatial structural coherence, the enhancement of its monumentality and scale and the inclusion of new recreational activities in addition to its previous socio-cultural-civic role.

The strategic remodeling of the Main Square led to a process of urban catalysis in the nearby public spaces, revitalizing surrounding areas without involving dramatic modifications of the urban fabric and generating an urban spatial system enhanced by visual relationships. The aim of this process was to link the city with its riverscape by means of the various typologies showed in this paper.

NOTES

i) Based on the written data and photos consulted, detailed 3D models of the evolution of the square have been made for the historical reconstruction of the square, using AutoCad Architectural Desktop 2005TM and 3Dstudio MAX 7.0TM for the construction and rendering of the 3D models.

ii) The Oxford English Dictionary defines "*square*" as an "*open area in a town, usually with four sides, surrounded by buildings*" and "*plaza*" as a "*public outdoor square especially in a town where Spanish is spoken.*" However the Royal Academy of Spanish Language's Dictionary defines "*plaza*" as a "*public, wide and spacious place in a town where the groceries are sold, where neighbors and vendors trade and where the fairs, markets and public festivities are celebrated*".

iii) A cathedral is a Christian church building, specifically of a denomination with an episcopal hierarchy, which serves as the central church of a diocese, and thus as a bishop's seat. In 1609 Arequipa became a diocese and therefore its main church became a cathedral.

iv) Leon Battista Alberti in his *Ten Books Of Architecture* (1755) writes "A proper height for the buildings about a square is one third of the breadth of the open area, or one sixth at the least" (De re aedificatoria , viii.6, mentioned by Spiro Kostoff, the city assembled, 137)

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