

FACULTAD DE INGENIERÍA

Escuela Académico Profesional de Arquitectura

Tesis

**La tipología constructiva y su relación en la imagen
arquitectónica de los edificios de la ciudad de Oxapampa,
colonia austro alemana , ubicada dentro de la selva alta
del departamento de Pasco en el centro del Perú**

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Tesis



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The Construction Typology and Its Relationship in the Architectural Image of the Buildings in the City of Oxapampa, a South German Colony Located within the High Forest of the Department of Pasco in Central Peru

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Abstract. Our investigation had as objective, the study of the constructive typology that was developed in Oxapampa, this given that people from Germany and Austria arrived in Peru, who upon arriving in Oxapampa began with the development of an architecture which has both Austrian and German architecture that differs from the entire jungle region and even from the entire country, the architecture that the settlers impose is very well suited to the area due to the configuration of its climate, and they begin to exploit natural resources such as wood, for this reason it was possible to identify the constructive typology and the relationship it has with the architectural image. A data collection was carried out through observation sheets of the typological characteristics of the buildings located within the "Monumental Urban Environment", this to analyze to what extent the constructive typology influences the architectural image of the buildings of the city. With the use of the descriptive statistical system, we obtained results that define the architectural typology, the predominant materiality based on wood and how it relates to the architectural image. It was determined that the construction style contributes to safeguard the cultural heritage of Oxapampa; whose architectural use can be seen in the frontal elevation of each building within the zoning called "Monumental Urban Environment", as well as the state of conservation influences the cultural valuation of the buildings under study, which represent a vernacular manifestation.

Keywords: Constructive Typology, Architectural Image, Monumental Urban Environment, Cultural Heritage, wooden construction, Austro-German architecture.

1 Introduction

In the present investigation, the constructive typology of the city of Oxapampa was analyzed, in which we found very marked design criteria different from the criteria of other regions of Peru, this is due to the history of Oxapampa, in the year 1853 a group of German and Austrian immigrants arrived in Peru due to the German revolution, this group went through various journeys upon arrival in Peru, since at that time it was not known where they were going to settle, for which they had to travel through several provinces of our country after passing through many regions of Peru, for this reason it is not until 1859 that they manage to reach Pozuzo. Upon reaching this part of the Peruvian jungle, they are amazed by the beauty of its landscapes, where they settle and begin to develop a colony, they begin to replicate their houses with German and Austrian characteristics, thus introducing the Austro-German typology, in 1891 a group of settlers decided to extend their colony and thus arrived in Oxapampa, the year in which the city was founded on August 30, 1891 [1], they also began to share their culture with the inhabitants of the area, from this they began to build houses with Austro-German characteristics with materials from the area such as wood, which was abundant in the valley at that time, these replicas of Austrian and German buildings adapted to the area due to the configuration of its climate, its location.

Over the years, houses and buildings continued to be built as the first settlers did, until 1957 when new construction technology (reinforced concrete) was brought in and the famous Cine Lido [2] was built, which broke with the immediate environment in those years, because of its shape that was not related to the urban parameters of that time and because of its materiality that no wood was used in the structure and façade. Since then, construction began in a mixed way, integrating new construction technologies over the years, for this reason, in 2003, after a council session, municipal ordinance No. 007-2003-MPO [3] was created, which regulates the shape of the facades, and which preserves the continuity of the roof of the buildings in the Austro-German style.

The study problem in this research was chosen to be able to establish the necessary guidelines for future urban interventions, which safeguard the existing cultural heritage, and it does not happen as in 1957 when, as a result of a lack of correct guidelines, a building was built that was not consistent with all the urban parameters, after this event the urban landscape of Oxapampa was transformed. [2]

The method used in the development of the investigation is the scientific method at a descriptive level, this as a consequence that it was sought to define what is the architectural typology that predominates in the facades of the buildings within the zoning called "Monumental Urban Environment", this at a rate that the method makes it possible to describe each of the existing typological characteristics. Observation sheets were used to characterize the buildings within the "Monumental Urban Environment", questionnaires were also addressed to the inhabitants of Oxapampa, who know the Oxapampa culture and are the most interested in preserving the essence of the buildings with their characteristics marked as is the material, a high-sloped, gabled roof, preserving the patterns of vernacular architecture. [4]

2 Background

2.1 In the Thesis "Architectural Patterns of the traditional architecture of the Historic Center of Concepción - JUNIN 2017" [5]

The author begins by referring to the traditional buildings found in Concepción and poses the following problem: "What are the Architectural Patterns of the Traditional Architecture of the Historic Center of Concepción in Junín?" [5] Due to a previous study of the city and its current urban landscape, and to the fact that architecture changed over time, traditional buildings were gradually replaced by buildings with a modern or period typology, which was not the case in Concepción since the buildings still maintain the architecture typical of the area, therefore its general objective is to Identify and Characterize said Architectural Patterns [6], for which they delimited the study area, which is the Historic Center of Concepción, for their investigation, because in this area, the architectural typology of the place was easily recognized, during the study time I identified the traditional architecture that was developed in Concepción, highlighting the cultural heritage of great historical value that was found, it details the materials of these such as stone, adobe, wood among others, and the way in which the houses evolved over the years, also in the investigation Referring to architectural patterns, the methodology was descriptive and sought to recognize the patterns of existing architecture, for this the author collected data through a control sheet that was applied to 108 traditional buildings randomly chosen from the historic center of Concepción, After a long observation and filling in the sheets with data that refer to the main façade, the use of the building, the type of coverage, construction systems, among other characteristics, at the end the data was processed, obtaining as results the dominant patterns found in the study buildings and it was concluded that because the study buildings have the architecture of the colonial era: "The Traditional Architecture of the Historic Center of Concepción, presents a series of architectural patterns of functional and formal order." [5]

3 Results and Discussions

In the present investigation, in the first instance, do not use quantitative or qualitative instruments, which contribute to the investigation, for this reason we had to design an instrument that helps us to demonstrate the results, which we can see in Figure 1, this instrument is based on references of the theoretical bases, in order to appreciate the current characteristics of the architectural typology of the city of Oxapampa, given that "Oxapampa is located within the so-called Central Jungle stands out as a protected natural area" [7], then it will be presented a data record sheet of a total of 92 of which are attached in their entirety in the annexes chapter.


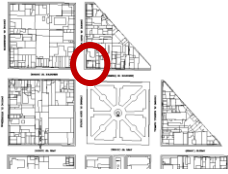
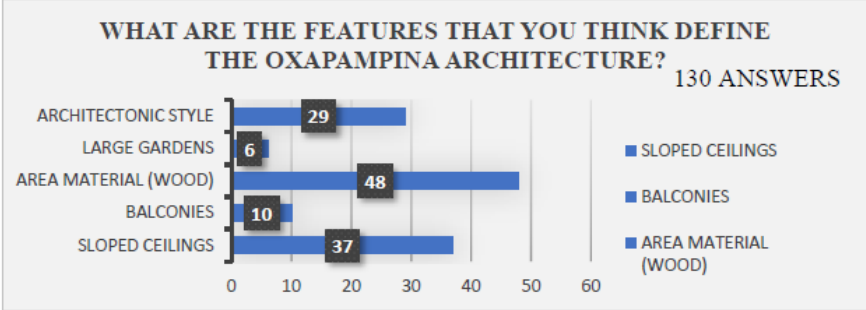
LOT TYPE		CODE: 015-MZ-B		
MEDIATOR				
CORNERBACK				
DOUBLE FRONT				
				
DATA ABOUT MATERIALITY				
STRUCTURAL SYSTEM	ENVELOPE (WALLS)	FACADE	COVERAGE	
SUPPORTED	CONFINED MASONRY	CONFINED MASONRY	METALLIC	
WOOD		WOOD	CALAMINE	
BEARING WALL	WOOD	GLASS	ROOF TILE	
MIXED	DRYWALL	MIXED	LIGHTENED SLAB	
FACTS ABOUT ZONING				
APPLICATIONS	BUILDING HEIGHT	STATE OF CONSERVATION	YEAR OF BUILDING	
COMMERCIAL	15 m	VERY GOOD	FROM 0 TO 5 YEARS	
		GOOD	FROM 5 TO 10 YEARS	
FINANCIAL	NUMBER OF FLOORS	REGULAR	FROM 10 TO 20 YEARS	
HOUSING		BAD	FROM 20 TO 50 YEARS	
INSTITUTIONAL	4	UNINHABITABLE	MORE THAN 50 YEARS	
SUPPLEMENTARY DATA				
FACADE ELEMENTS				
NUMBER OF BALCONIES	BALUSTER MATERIAL	NUMBER OF WINDOWS		NUMBER OF INCOME
5	WOOD	1ST FLOOR	7	6
	METAL	2nd FLOOR	7	
NUMBER OF PILASTS	ALUMINUM	3rd FLOOR	7	
14	GLASS	4th FLOOR	6	
	DOESN'T COUNT	ROOF	2	
ROOFING ELEMENTS				
PERCENTAGE OF SLOPE	TYPE OF SLOPE	BLESSED WINDOW	COVER TYPE	GABLE IN FACADE
0% to 10%	PRONOUNCED	0	ROOF TO A WATER	YES
10% to 15%	MODERATE		GABLE ROOF	NOT
20% to 30%	SHORT	ATTIC WINDOW	ROOF WITH THREE WATERS	STEPPED ROOFING
30% to 40%	DOESN'T COUNT	2	FOUR WATER ROOF	YES
MORE THAN 40%				NOT

Fig. 1. Registration form model. Source: self-made

3.1 Analysis of the Typology of Dwellings in the Monumental Urban Environment through the Use of the Opinion Survey

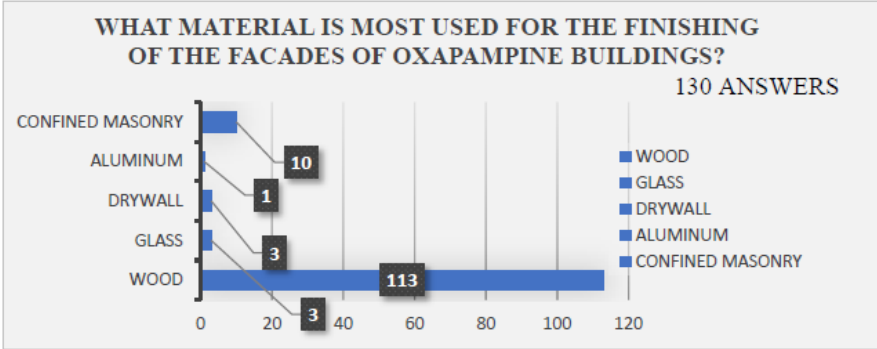
After having carried out a survey on the constructive typology in the buildings of Oxapampa, we were able to capture different appreciations about what exists.



Graph 1. Features that define the Oxapampina Architecture. Source: self made

As we can see in Graph N° 1, According to 37% of the population that carried out the survey, the feature that defines Oxapampina architecture is the use of local material (wood), 28% consider that the feature that defines the oxapampina architecture are the sloping roofs, 22% consider that the feature that defines the oxapampina architecture is the architectural style.

This data was important for the investigation since it shows that 37% of the population is wrong, given that currently wood is only being used for the details of the façade, and not for its volumetry, and only 22% is in the correct thing, because it is the architectural style that defines the architecture of the Oxapampa.



Graph 2. Most used material for finishing the facades of Oxapampa buildings. Source: self made



As we can see in Graph No. 2, 87% of the population that carried out the survey identifies wood as the most used material for finishing facades, 8% determines that it is confined masonry.

This data is very important since it shows that the population that carried out the survey was able to identify that the details of the finishes of the facades of the buildings in Oxapampa are mostly made of wood.

3.2 Comparative Chart between Austro-German Architecture in the City of Oxapampa - Peru, in Germany and in Austria.

A comparison was made of the architectural typology of 3 different countries that have the same architectural concept which we can see in Table 1, this comparison was made with the sole purpose of finding the similarities and differences between the architecture of their homes, given that it was the native settlers of Germany and Austria who brought the architectural trend to the Oxapampa Biosphere Reserve in Peru [8].

Table 1. Summary table of characteristics of Austro-German architecture in Oxapampa-Peru, Germany and Austria. Source: self-made

CRITERIA	OXAPAMPINA HOUSING AUSTRO GERMAN STYLE IN PERU	GERMAN HOUSING (GERMANY)	AUSTRIAN HOUSING (AUSTRIA)
FACADE	Illustration 1: Oxapampina House Museum 	Illustration 2: German House 	Illustration 3: Typical house in the Alps 
MATERIALS	In most of the buildings, wood predominates as a construction material, it is also used	Most of the houses have a basement, so the material to be used in this space is concrete, in the same way the upper floors are made of concrete with wood applications.	Concrete for the first levels and wood for upper levels
CONSTRUCTION SYSTEM	Structural System provided	Structural System provided	Structural System provided
COVERAGE	Calamine, Tile, Metallic Structure	Roof tiles, light bituminous roof tiles	Tile imitation bituminous plates

ROOF SLOPE	In most buildings the slope is steep	In most buildings the slope is steep	In most buildings the slope is steep
BALCONIES	Many of the buildings have balconies on their upper levels	Most buildings do not have balconies, since they have larger windows	Many buildings have balconies on the top floors, they are small balconies.
VENTANA EN TECHUMBRE	In most of the buildings we find pious windows and dormer windows, the latter being the most used.	Devout style windows could be seen on the roofs of the buildings.	Gabled attic-style windows could be seen on the roofs of the buildings.
COVERAGE TYPE	In most of the buildings we find that the coverage is gabled	In most of the buildings we find that the coverage is gabled	Many of the buildings have four water coverage, finding buildings that also have two or three water coverage, but it is a minority.
GABLE ON FACADE	There are few buildings that have a gable, but most do not.	No buildings were found that present this architectural element.	Some buildings were found that present this architectural element.
STEPPED ROOF	The minority of buildings have this type of roof, since they use it because the terrain is not symmetrical and in order to have a coverage	No buildings were found that present this architectural element.	No buildings were found that present this architectural element.

Illustration 4: Virtual Idealization Austro-German Style Housing. Source: self-made



Illustration 5: Virtual Idealization of the Museum, Austro-German style. Source: self made



4 Discussion of Results

In our investigation, the background of our theoretical framework was taken into account as references to be able to carry out the discussion of the following conclusions.

The discussion is carried out with the following criterion "In the geometric aspect of the building, it is mostly represented by an irregular parallelepiped, the color that tints these buildings corresponds to a pure white, the character corresponds to residential dwellings where they show representative elements such as balconies, gates and double pane windows. For the roofs, they are covered with 2 waters" [5] (Arnesquito and Pio 2019), on the other hand, in my research a high level of affinity was found with the buildings analyzed since the owners mostly have the facades of monochromatic colors that make contrast with the color of the wood that in most are white and green, additionally another similar characteristic with the background is the use of balconies for their facades, being in our buildings in study wooden balconies with finishes typical of the area such as rustic balusters or in some cases carved wooden balusters and finally gabled roofs are also used on roofs with the difference that in our buildings the slope is steep due to the Austro-German architectural style that these and that adapt very well to the climate due to the constant rainfall, all these characteristics found in the houses of the Monumental Urban Environment of Oxapampa are defined in the Urban Development Plan of the year 2016 for Oxapampa [9].

5 Conclusions

After having carried out the analysis of the city of Oxapampa, we realize something very important in the process of architectural mixing, which leads us to reflect on mixing, connecting the dualisms that constitute it with the socio-cultural context [10]. This is thanks to the fact that in Oxapampa there was a miscegenation not only of an architectural nature, but also of a social nature, since OXAPAMPA comes from the Quechua "OCSHA", which means "straw", and "PAMPA", which means plain (pampa de straw), the native Yánesha (Amueshas), for their part, call it Mon Konma. In these two meanings it also means plain of reeds or pajonal [11], after carrying out the analysis of the city of Oxapampa we also analyze the buildings within the Monumental Urban Environment from which we can conclude with the following:

It was determined that there is a high and significant level of influence between the constructive typology and the architectural image of the buildings in the city of Oxapampa, this is because in the field work we were able to identify the current constructive typology of each building within the environment. monumental urban area in which it focuses largely on the finish of its facades, thus giving a pleasant image that is related to the immediate environment. This is supported by the results of the façade analysis indicator in which 42, 39% are related to each other by having a confined masonry façade.

After having analyzed the buildings within the Monumental Urban Environment, it was possible to determine that there is a great influence between the construction style and the cultural heritage, because in the field work we were able to identify very marked characteristics in different buildings currently considered part of the heritage. such as the main church, the representative house of Oxapampa, the house of Alpentel, among others, with few buildings having a very marked architectural pattern that is the gable on the façade, a feature that is still preserved in Austrian architecture. German brought by the first settlers, this is supported by the results of the Hastial analysis indicator in which 19.57% have the presence of the architectural element in their buildings.

It was determined that the Architectural Use has contributed to a great extent in the frontal elevation of the buildings of the Monumental Urban Environment, this is because in the field work we were able to identify that the buildings with commercial use mostly have a different frontal elevation than buildings for institutional use or residential use, mostly having confined masonry envelopes, which is clearly supported by the results of the analysis indicator of the Envelope (walls) of buildings in which 67.39% are related to each other for having a confined masonry envelope.

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