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Analysis of the architectural forms of the colonial period, in the regional group of Saoura, in Bechar (Algeria)

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Abstract
The regional set "Saoura", immanent to the Algerian Sahara, is characterized by the dune aspect, with here and there a sporadic plant formation adapted to the harsh climate. Despite the constraints, human settlements have been established, the oasis of Bechar can be used as an example thereof. Like its peers, the oasis of Bechar reflects an ingenious architecture that accommodates the social and climatic context inherent in this regional set. Indeed, "the ksar" (Habitat), this genius of the place, responded to the socio-cultural needs as for the requirements imposed by their unforgiving context. This presentation lasted for a long time until the colonial order completely changed the logic of spatial production. Henceforth, new emblems referring to the French jurisdiction were integrated into the composition. Relatively, in a short period of time, the old city underwent series of changes from which the modern city gradually emerged. Today, this heterogeneous expression has been the subject of many criticisms of stylistic wandering in relation to the context. This article focuses on the analysis of architectural forms during the colonial period between 1900 and 1940 (considered as a transitional phase between traditional architecture and post-independence architecture), in the Saoura region, precisely in Bechar and Kenadsa. For this purpose, we will use a morphological approach inspired by the work of C. Norbert Schulz, who revealed an architecture called "neo-Moorish" or "Arabism". This research allows us to lay the groundwork for the debate on the current architectural production in the city of Bechar.

Keywords
Saoura Oasis, Bechar-Kenadsa, Neo-Moorish architecture, Architectural forms, The colonial period.

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1. Introduction

Qualified as the gateway to the Algerian South, at the top of the Saoura gutter (a valley in southwestern Algeria, formed by the wadi named Oued Saoura), Bechar located at 950Km from the capital Algiers (see Figure 1) is originally an oasis, whose ksar is inseparable from the palm grove. The colonization is at the origin of a micro-urbanization, even extensions from the traditional core by juxtaposition, inducing an urban growth of a new logic. (R.W. Biara, 2014). The new extensions realized by the colonization break with the ancestral architectural vocabulary and urban production. (Marc Côte, 1998).

Bechar thus inherits two modes of production, that of a traditional architecture and another deriving from the colonial period. The Europeanized center is structured by a grid of fairly wide roads, distributing blocks, and a regular layout alternating public and private space.

Twenty kilometers southwest of the chief town Bechar (see Figure 1), from the vast expanse of sand, emerges the city of Kenadsa (once a center of influence of knowledge and spirituality). In addition to its ksar (historical center renowned for its religious brotherhood and its Zaouïa) which stands out for its architecture and the richness of the detail of its constructions, Kenadsa is notably known for its mining center (being the first industrial city in the colonial period) following the discovery of coal during the colonial period (A. Mostadi & R.W. Biara, 2021).

Figure 1. *Map of the location of the cities of Bechar and Kenadsa (Source: Web).*

These two cities Bechar and Kenadsa are a perfect example, with their local architecture (the ksar), a colonial extension and a post-independence development described as monotonous. After its independence, the Algerian state did not have the means and tools necessary to ensure a quality architectural and urban production, which can meet the requirements of its development. (T. Guerroudj, 1993)

We will investigate the sites of Bechar and Kenadsa. The aim is to identify and understand the characteristics of this architecture through the analysis of four buildings:

- The girls' school in Kenadsa,
- The post office of: the 1st November in Bechar.
- A villa of: administrator.
- A villa of: engineers.

The choice of these buildings is motivated by the fact that the phenomenon under study is manifested primarily through the habitat (housing and buildings that accompany it, including mainly school facilities).

This work aspires to analyze the architectural production of the colonial period (covering the period between 1900 and 1940), recognized by authors as a new style adapted to a region, and said: Neo-Moorish and/or Arabism. It is a set of constructions bequeathed by colonization (Jean Jacques Delluz, 1988). The Neo-Moorish style, also called Arabism, appeared at the turn of the twentieth century, since the beginning of the French presence in North Africa: Algeria, Tunisia and Morocco. This modern architecture in the Maghreb oscillates between Western models and local languages.

2. State of the art

The architecture produced in the colonial period in the Mediterranean basin has been properly mediated only from the years 2000, through the program Euromed Heritage. This project associates several partner countries of the Mediterranean as well as collaborators of the European Union. Since indeed the legacy of the colonial period in the Mediterranean basin concerns the southern shore, as well as the geographical areas to the

east and north of the Mediterranean Sea: this includes the countries subordinate to the European Union, on the shores of the Mediterranean Sea and the countries of the Middle East (Syria, Palestine, Turkey, Jordan, and Lebanon).

Algeria, (among all the colonized countries) seems to be a relevant reference of the colonial period, as indicated by the Maghreb colleagues. This refers to the long period of occupation, which allowed the colonizers to apply during the 132 years of the French presence (between 1830 and 1962) a real policy of Westernization on all levels (particularly on the architectural and urban levels) according to Alexandre ABRY. Yet comparing the rate of works on architecture and urban planning related to the period between the nineteenth and twentieth century's in Algeria, and the amount of literature produced after its independence (between 1962 and 2000), it is almost insignificant, especially compared to the works published by researchers in the southern Mediterranean. (M.A.Moulai Khatir, R.W. Biara 2019). Indeed, many researches are developed on the architecture produced in the countries of the southern shore of the Mediterranean Sea, we cite: (M. Volait, N. Oulebsir, 2009; M. Bacha, 2011; A. Boussad, F. Cherbi, 2006; M. Volait, 2005; F. Beguin, 1983), the list is not exhaustive.

However, despite the wealth of references and scientific productions, this built heritage is still difficult to identify in the Maghreb countries. M.Gerard and C.Jelidi evoke in the case of the city of Fez: In order to deepen the knowledge of how architecture was developed during the colonial period, and then how it was adopted by heritage specialists and actors, it is necessary to widen the area to be analyzed. This means first identifying and recognizing the heritage of the colonial era, and then exploring this heritage through different museographer and aesthetic aspects. Egypt, unlike Algeria, Tunisia and Morocco, had already in 1983 initiated studies on the specificities, the aesthetic and stylistic richness of the productions of Heliopolis and Cairo during the period of British colonization (Volait, 2003).

In addition, the appearance of the new architectural production known as "Neo-Moorish" represents a referential repertoire and an opportunity to highlight the work done in many countries such as Algeria, Tunisia and Morocco, demonstrating the lack of reference or Mediterranean style.

In Algeria, neo-Moorish architecture was born after seventy years of colonialism (Oulebsir, 2004; Beguin, 1983). It is the focus of several art historians as in the countries of the southern shore of the Mediterranean Sea (M.Bacha, 2011), (D.Khiat Senhadji, 2011), (François Beguin, 1983). In a first step (in the circular of December 2, 1904), it was recommended to the mayors to pay particular attention to the schools. The architects had to be inspired by the Moorish style in order to adapt a specific architectural style to the schools in Algeria. In a second phase (in the circular of March 4, 1905), it was necessary to give an interest to the administrative buildings (the directions, the seats of the municipalities...), by calling upon the professionals for the development of these projects; it is about the architects and not the conductors of public works, bridges and roads. The architects had to adopt the style of the Moorish productions. The third phase (at the level of the circular of March 19, 1906) the professionals implemented the oriental style for the design of the public buildings. The last stage focuses on the architectural style to be granted to the communal buildings according to the circular of June 10, 1907. (M.A. Moulai Khatir and R.W. Biara, 2019)

It is also an architecture that has its origins in the logic of decentralization and autonomy and accentuates at the same time the concept of regionalism, because it is based on a local aesthetic referring to traditions and local architectural representations based on a local repertoire (N. Oulebsir, 2004).

The work of Edmond Duthoit, following his mission in 1872 in Tlemcen in Algeria, for the exploration of the historical heritage of Algeria, have highlighted the vocabulary of this architecture, called neo-Moorish (the minaret, the dome, the carved balustrade, the mocharabieh, the calligraphy, the decoration of earthenware)

and intrinsic characteristics, it is about:

- The use of the horseshoe arches, mantling or stalactite.
- The use of domes and pinnacles in public buildings.
- The use of woodwork for corbelled balconies.
- The presence of columns with cylindrical, fluted and twisted shafts.
- The use of minarets in public buildings.
- Treatment of the spandrels with polychrome tiles.
- Presence of monumental doors, wall bases in tiles of earthenware or tiles or capitals with simple baskets.

In sum, the late penetration of French colonization in southern Algeria did not allow an architectural production as important as in the north, added to the scarcity of scientific work on this remote region (southern Algeria) specifically in the field of architecture of the colonial era, justify our intervention in the theme and context, that is to say: the architecture produced in the colonial era between 1900 and 1945 in the region of Saoura (Bechar and Kenadsa specifically).

3. Presentation of the site and the corpus to be analyzed

Described as the "gateway to the Algerian Sahara," Bechar is the largest province in southwestern Algeria (the province's capital). In addition to its geostrategic location, its ancient history is characterized by the trade and caravan routes of the past, on which it constituted an important stage between the south (towards Black Africa) and the north (towards the Mediterranean). Although the city of Bechar seems a contemporary production thanks to its new buildings and its modern architecture, the history of its territory is much older. It still preserves the traces of its past. (L. Ceard, 1933).

Contrary to what was done before in all the traditional Algerian cities, the colonial penetration brought a new architectural style. A commercial village was created, on the traces of the old ways. This new core organizes until 1928 new villas in the west of the ksar of Bechar as well as in the locality of kenadsa, then, from 1935, the realization of public equipment continues.

The buildings of specific character established during the colonial era respected the rules of urbanism and architecture that were set; hence, the curiosity about the general profile and the main architectural lines of a landscape emanating from the colonial period. This leads to the examination of buildings that seem to be the perfect embodiment of the colonial period, namely a choice focused on the habitat (housing and accompanying equipment). It is precisely about:

- The girls' school in Kenadsa,
- The post office of the 1st November in Bechar.
- A villa of administrator.
- A villa for engineers.

Therefore the corpus, object of the present study is represented by specialized buildings and basic buildings:

3.1. Specialized buildings

- Project n°01: The School of girls in Kenadsa, built in 1948 by the mixed technical services under the authority of captain Villalonga of Corsican origin.
- Project n°02: The post office of the place of the 1st November in Bechar is designed by the architect George Chevaux and built in 1938.

3.2. Basic buildings

- Project n°03: Villas of administrators.
- Project n°04: Villas for engineers.

The villas of the coalfields are realized by the military engineering, from 1947, the mine started in 1942.

4. Methodology

The analysis of the selected projects was based on the morphological approach. The principle of the method consists in the decomposition of the projects, with the aim of highlighting the compositional choice of the designer. "As soon as we want to apprehend the "referential", "coexistential", or "contextual" logics, it is no longer possible to do without a fine morphological analysis. How can we be sure of a compositional or stylistic filiations' if we cannot precisely compare a work to its possible model? How to determine the particular level

of these references which cannot always be reduced to simple quotations of facade elements? How can we identify the hidden affinities in the compositional schemes that do not always appear at first reading?

Without ever being sufficient, the morphological analysis is always essential ", (A.Borie, M.Micheloni, P.Pinon, 1978-1986)

We have therefore opted for a morphological analysis according to (A.Borie, M.Micheloni, P.Pinon, 1978-1986), in which the relationships between the components of the architectural forms will be highlighted by breaking them down into constituent elements, and by comparing their proportions, rhythms, and even if they present a symmetry, or a repetition. The investment in depth of the decomposition of the buildings under study, we have also used the approach of C. Norbert Schulz.

The architectural forms of the projects under study will be broken down into their constituent elements in order to study their specific relationships according to four criteria: numerical, topological, geometric and dimensional. The preferred tools for the decomposition of an object are: the plan, the section, and the elevation, the axonometric... to which photographs are added.

4.1. The decomposition

We propose two systems of analysis: the decomposition into constituent elements and the decomposition into constituent levels.

4.1.1. 1st system: Decomposition into constituent elements

It is in accordance with a method recommended by (C. Norbert Schulz, 1998), in "Logical System of Architecture", which he calls "structural" analysis. The hypothesis is as follows: any form is decomposable into "element" - "element" on the one hand, and "link" on the other hand, the latter ensuring the coherence of the whole. The system of analysis is proposed in three stages:

- Decomposition and qualification of the formal "elements" (linear, planar, volumetric elements).
- Qualification of the nature of the relations ensuring the various types of relations between the elements (relationship).
- Qualification of the "modality" of these relations, i.e. the modification or not of the elements resulting from their confrontation (integrity, deformation, articulation).

4.1.2. 2nd system: Decomposition into "constituent levels"

The constitutive "levels" are sets of elements homogeneous between them, having their own structure. It is now necessary to adapt this second method to the formal scales that we will approach:

The two main levels are respectively the "material" level and the "spatial" level.

- At the material level (structuring of the matter). We will distinguish among others: the external envelope, the internal partition, etc.....
- At the spatial level (structuring of space). We can distinguish the "dynamic" spaces which have a role of connection between the spaces; the "static" spaces have on the contrary, morphology "without exit.

4.1.3. Decomposition criteria

Morphological analysis by decomposition into constituent elements or constituent levels requires the consideration of four aspects:

The numerical aspect: concerns the identification of the components and the numerical relationships that they conjugate to each other (rhythm, repetitions...).

The topological aspect: concerns:

- The positioning of the components, the ones in relation to the others (the distance, the coupling, the inclusion, the overlapping.)
- The types of circuits: linear, loop, tree.

The geometrical aspect: according to C.Nobert Schulz, the formal aspect is apprehended according to:

- The quality of the figures
- The geometrical lines
- The geometrical relationships
- The dimensional relationships.

The dimensional aspect: concerns:

- The dimensions and dimensional relationships between components.

- The proportions of these components.
- The scale of these components: this concerns the scale of the site of the architectural project and its details at the architectural scale.

5. Morphological analysis of the selected projects

5.1. Project n°01: Girls' school in Kenadsa

5.1.1. Composition with the site

The girls' school is located near the axis coming from the city of Bechar crossing the 1st place of May 1st where the administration H.S.O. of coal is located; the axis coming from the city of Bechar crosses a series of four (4) places (see Figure 2).

Numerical aspect

We have two full components and one empty component:

1. The school (study project).
2. A town hall.
3. The square

Geometric aspect

The components are represented by similar figures: the rectangle whose direction is justified by the parallelism (between the project and the main axis).

Topological aspect

The components of the site are positioned by:

1. Proximity between the full component (the project) and the empty component (the square).
2. Distance between the two solid components.

Dimensional aspect

Linear proportions: the plan reveals that the dimensions are proportional to the values: 5a.

Planar proportions: 2a, 5a, 3a/2, 4a.

5.1.2. Composition of the plans

Numerical aspect

We have a single component, a single volume that houses all the functions of the project; it is subdivided into two components (see Figure 3).

1. Complete component (courtyard + toilets).
2. Empty component (the courtyard).

Geometric aspect

The shapes have similar figures but oriented in 2 directions: one horizontal and the other vertical, which are assembled in perpendicularity.

The composition of the school is based on the square which, once doubled, becomes a golden rectangle materialized by the classes following the two directions.

Topological aspect

The void is very important in the girls' school, where the components are positioned in an adjoining way, which gives fluidity to the entrance. This is

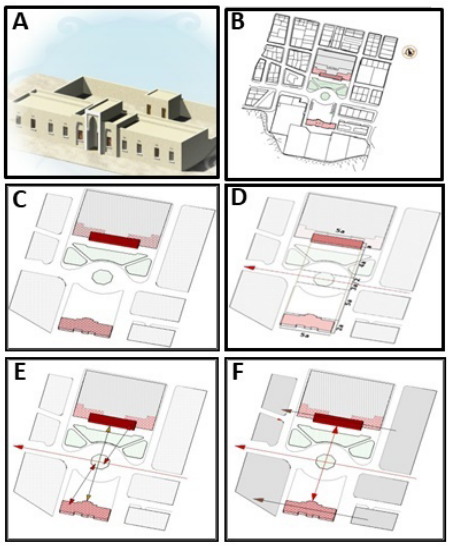

Figure 2. *Analysis of the composition of the project with the site. Project: Girls' school in Kenadsa (Source: Authors). A) Volumetric axonometry of the project. B) Site presentation. C) Numerical aspect. D) Dimensional aspect. E) Geometric aspect. F) Topological aspect.*

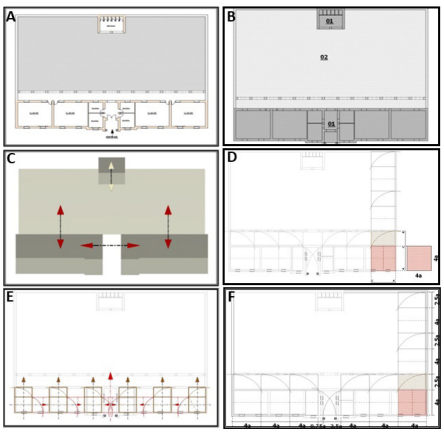

Figure 3. *Analysis of the composition of the plans. Project: Girls' school in Kenadsa (Source: Authors). A) The school map. B) Digital aspect. C) Dimensional aspect. D) & E) Geometric aspect. F) Topological aspect.*

then justified by the importance of the dynamic space materialized by the corridor, compared to the static space materialized by the classrooms and offices.

Dimensional aspect:

The linear proportions are of a ratio of: 4a - 4a - 4a - 4a - 4a - 4a - 4a - 2,5a -2,5a - 4a - 4a - 4a - 4a - 4a - 4a - 4a.

The planar proportions are of the ratio 4a - 4a: which manifests the presence of a square as a module giving the golden number of folding.

5.1.3. Façade composition

The introduction of the arcade element as a module, that sets the rhythm of the rear façade (see Figure 4).

The arcade sets the rhythm of the facade with the value of - a -, where the ordering depends on a ratio, where the usefulness of the regulating lines for the form of the arcade is readable:

The rhythm: the window represents a module that sets the rhythm of the main façade.

The rhythm is regular with a value of: 2a, a, 3a, 3a, a, a, 3a, a, a, a, a, a, a/2, a, a, a, a/2.

The symmetry: the symmetry effect which represents the entrance of the school is marked by the arch.

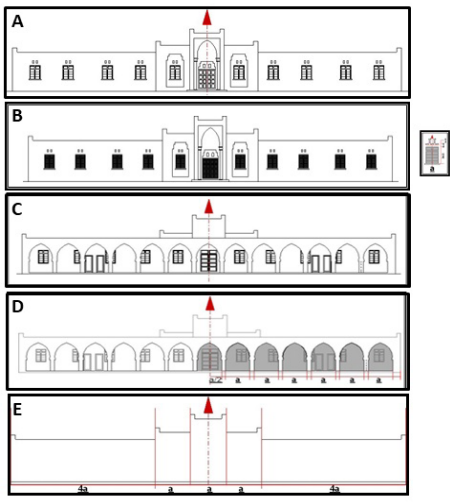

Figure 4. *Analysis of the composition of the facades. Project: Girls' school in Kenadsa (Source: Authors). A) Presentation of the main facade of the project. B) Rhythmic facade (module is the Windows) the ratio a. C) Presentation of the rear facade. D) Scheduling of the facade by the archway. E) Symmetry and geometric patterns.*

5.2. Project n°02: The post office of the 1st November square in Bechar

5.2.1. Composition with the site

The project is located in a set of administrative facilities, near the square designated by "place Tenzrouft" during colonialism, then by "place 1 November" after independence (see Figure 5).

Numerical aspect

The number of components is the addition of five (05) full components (the project is one of the full components) and one (01) empty component (place).

Geometrical aspect

The shapes have similar figures. The directions of the rectangle and the square remain in obedience to the shape of the square.

The formal components are positioned by a direct relation with the place, which gives a hierarchy of spaces: path - place - project.

Topological aspect

The components are positioned by a direct relationship with the place, which then gives a hierarchy of spaces: way - place - project.

Dimensional aspect

The dimensions reveal that the plane is proportional to the following values: 10a, 4a, 7a, 3a, 7a, 7a, 2a, 10a, 6a, 5a, 13a.

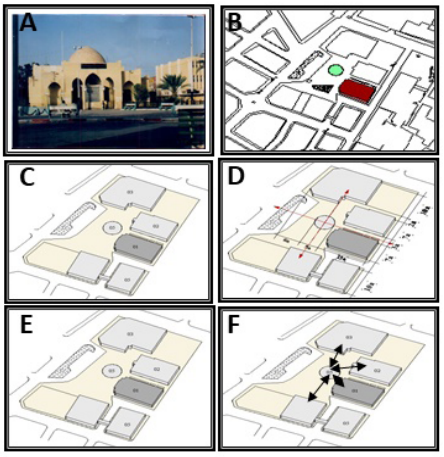

Figure 5. *Analysis of the composition of the project with the site. Project: The post office of the square of the 1st November in Bechar (Source: Authors). A) Presentation of the project 02. B) Site presentation. C) Digital aspect. D) Dimensional aspect. E) Geometric aspect. F)Topological aspect.*

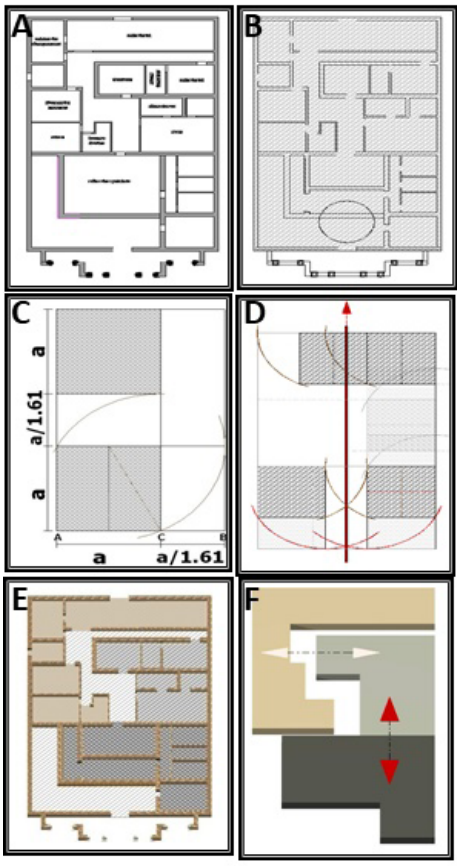

Figure 6. Analysis of the composition of the plans. Project: The post office of the square of the 1st November in Bechar (Source: Authors). A) Presentation of project plan 02. B) Digital aspect. C) Dimensional aspect D) Geometric aspect. E &F) Topological aspect.

5.2.2. Composition of the plans

Numerical aspect

We have a single volume as a component that houses all the functions of the post office (see Figure 6).

Geometric aspect

The geometric division is subject to the division of functions, where the figures correspond to the square base given by the golden rectangle. The result is the assembly of these rectangles.

Topological aspect

The solid volume corresponding to the offices (static spaces) is greater than the void represented by the circulation spaces, including the corridor and the lobby (dynamic spaces). The position of one in relation to the others is by proximity and coupling.

Dimensional aspect

Linear proposals: the postal plan reveals that the dimensions are proportional to the values: a, a/1.61.

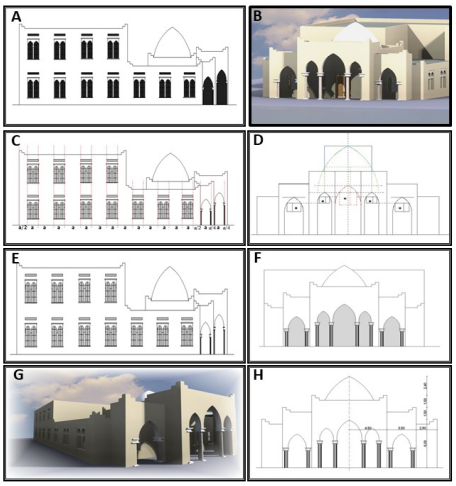

Figure 7. Analysis of the composition of the facades. Project: The post office of the square of the 1st November in Bechar (Source: Authors). A) View in perspective of the project. B) Axonometry of the project C) Presentation of the lateral facade of the project. D) Presentation of the main facade of the project. E) Decomposition. F) Study of the regulating traces of the main facade. G) Studyof the rythmof side facade. H) Study of regulatorytracées régulateurs dans la façade.

5.2.3. Composition of the facades

The facade is the result of an addition of arches, where the composition (of the facade) remains readable by a ratio of value 3 vertically and horizontally. The symmetry is readable in relation to an axis (the axis of symmetry). This gives a sense of the project's entrance and the utility of the control paths (see Figure 7).

The components of the facade are positioned in a rhythmic order of the same component as the window.

The layout of the facade is classic, the alignment is respected by using the ratios of a, a/2, where the module is the opening.

5.3. Directors' villa

5.3.1. Composition of the plans

Numerical aspect

The whole project is based on a compact form, where the full volume dominates the empty volume which is caught up by a terrace accessible by a staircase (see Figure 8).

Topological aspect

Regarding the positioning, there are two paths:

The 1st path through a dynamic space, the 2nd path is a central space,

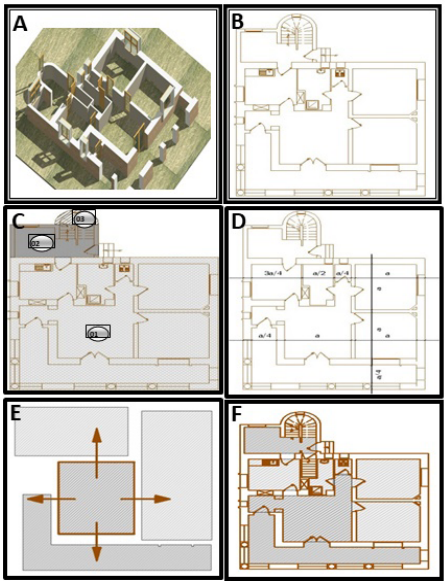

Figure 8. *Analysis of the composition of the plans. Project: Directors' Villas (Source: Authors). B) Presentation of the project plan 03. C) Numerical aspect. D) Dimensional aspect. E) Geometric aspect. F) Topological aspect.*

it is the living room that groups the other spaces (bedrooms - kitchen). So the living room represents a static and dynamic space.

Dimensional aspect

The dimensional ratios show that the planes are proportional in both directions to the values: a, a/2, a/4.

5.3.2. Composition of the facades

The elements of the facade are simple elements, but their composition is far from an idea of symmetry and rhythm, which does not prevent coherence (see Figure 9).

5.4. Project No. 04: Engineers Villa

5.4.1. Composition of the plans

Numerical aspect

We have a single volume that houses all the functions of the house, grouped around a dynamic space. This is the corridor connecting the other components (the rooms) (see Figure 10).

The full (the whole volume) is more important than the empty (outside).

Geometric aspect

The forms obey each other along parallel and perpendicular axes, we say that there is a modality of obedience of form by perpendicularity.

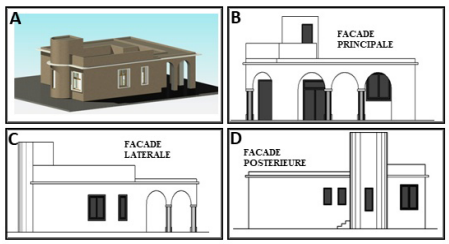

Figure 9. *Analysis of the composition of the facades. Project: Directors' Villas (Source: Authors). A) Axonometric presentation of the project 03. B) Presentation of the main facade. C) Presentation of the right-side facade. D) Presentation of the rear facade.*

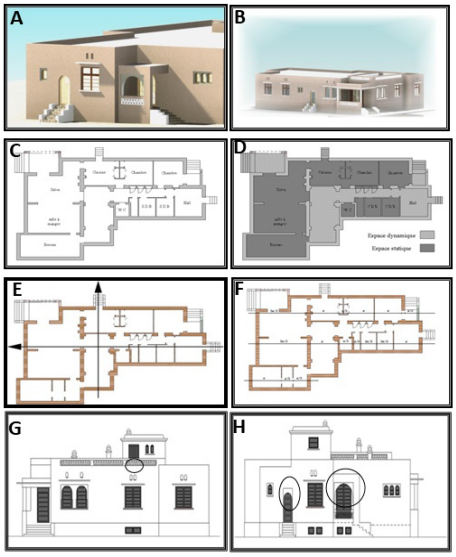

Figure 10. *Analysis of the composition of the plans. Project: Engineer's Villa (Source: Authors). A & B) Axonometric presentations of the project. C) Presentations of the project plan. D) Reading of the project spaces. E) Studies of the dimensional relationships between the space. F) Relationship and obedience modality in the project plan 04.*

Topological aspect

The outer shell is the result of the addition of a square and a parallelepiped.

As far as positioning is concerned, there is a proximity between static and dynamic spaces.

Dimensional aspect

Linear proportions: the plane is proportional to the values: a, a/2, a/3, 2a/3, 5a/3, 5a/2, which alternate between "long" and "short".

5.4.2. Composition of the facades

The facades here are the result of an overlap of architectural elements

"arcades" in the foreground and "openness" in the background.

The solid volume (offices) is more important than the empty volume because the static spaces are connected by circulation spaces (dynamic spaces), which are the corridor and the entrance hall. The position of one in relation to the other is therefore by proximity and coupling.

6. Discussion and comments

The style formerly produced and adopted by the Algerian community in the construction of its buildings, gives way to new postures during the colonial period. This article seeks to understand and interpret the architectural production of the period between 1900 and 1940 (corresponding to the colonial period) through four manifesto projects on housing (villas and buildings).

The composition of the architectural forms of the studied projects is based on a set of qualities and rules, being:

Numerical relationships: where the elements that form the spaces, are added, multiplied, or divided.

Topological relationships: where the full or empty components at the level of the architectural plan, conjugate relationships of contiguity.

Geometric relationships

The composition of the figures is geometrically based on the square, which in doubling becomes a rectangle. The composition advocates the regulating tracings, where certain dimensioning is related to the golden number.

Symmetry is adopted as a mode of composition, to ensure the balance between the parts combined to form a coherent whole.

The obedience of the figures is accomplished in directions either parallel or perpendicular, or even along the axis of symmetry.

Alignment and folding also represent modes of composition adopted by the designers.

Dimensional relationships

Basic modules are common to the composition, forming coordinating relationships between figures. The combined proportions and relationships between figures streamline the designs through a module (basic element). The planes are proportioned with the values ½, ¼, 1, 2, 3, 4, 5, 6, 7, 10, 13. These dimensional relationships are carried over in the summary table below (Table 1).

The ratios between solid and void elements are complementary, since in effect one is the negative of the other. The void (corresponding to the spaces of circulations) is however, quantitatively dominant. Generally central, it constitutes an obligatory passage (circuit in loop under the galleries or corridors).

The different elements of the composition are notably put in relation by the concretization of a rhythm. The combinations of the figures are thus ensured by a regular periodic repetition whether on the level of the plan or the façade.

The morphological analysis of the selected projects, concerning the habitat and the buildings (which are annexed to it) located in Bechar as a chief town, as well as in Kenadsa as a secondary agglomeration, has highlighted the rules of architectural composition in the colonial period, which is imperatively based on dimensional relationships putting in logical relation all the elements of the composition between them.

In sum, the projects, ineluctably composed with the site, manifest a morphology based on an orthogonal grid, whose basic geometry is a square. The composition of the whole is combined around a patio (which translates the introversion adopted in the local architecture), hemmed with circulations and arches in reference to the place.

The facades are specified by a regular and not very imposing template, an axis of symmetry, horizontally and vertically aligned openings. They are of orthogonal forms and other times arched. The golden rectangle is used as a regulating line for the facade as well as for the plan.

Particular attention is also paid to the public space (streets and squares) which are articulated to the volumes of the projects by dimensional relationships following the same logic of the solid, with the values 6a, 5a, 4a, 3a, 2a (see Table 1).

Table 1. *Summary table: of the dimensional relationships between the architectural components of the analyzed projects.*

Project	Figure	Basic Module	Analysis	Proportions
School for girls in kenadsa	Figure 2	a = width of the building	Composition with the site	3a/2= width of the track. 2a= width of the building. 4a= width of the plot. 5a= length of the building.
	Figure 3	2,5 a = width of the corridor which represents the golden number of folding.	Composition of the plans	2.5a=corridor width. 4a= width/length of the classroom.
	Figure 4	a = rhythm of the arcade façade. a = doubled size for windows in the rear façade.	Composition of the facades	1/2a=window width a= width of the arch.
The post office of the square 1st November in Bechar	Figure 5	a = major component = a square giving rise to the golden rectangle.	Composition with the site	13a, 10a, 7a = correspond to the different dimensions of the built structures. 6a, 5a, 4a, 3a, 2a = correspond to the dimensions of the different widths of public spaces (squares and lanes).
	Figure 6	a/1,61=the modulus is the opening.	Composition of the plans	a= width of the solid volume a/1,61=width of the circulation space (corridor).
	Figure 7	A value ratio of 3 vertically and horizontally Symmetry is readable with respect to an axis (the axis of symmetry), the usefulness of the regulating plots.	Composition of the facades	-
Villa of engineers	Figure 8 and 10	a= the central square a/a around which the other components are articulated.	Composition of the plans	a= width of the central square. a/2= width of a component around the central space. a/4=width of the circulation spaces.

The vocabulary common to the projects studied is based on the use of symmetry, unity and coherence, rhythm, and proportion. It is precisely the way of composing by topological, numerical, dimensional and geometrical criteria that concretizes a coherent whole. Note that the simplistic dimensions refer to ancient Egypt. "The French architects of Algeria, in search of their identity, wanting to stand out, claimed a modern language but adapted to the sun of "North Africa" (Xavier Malverti, 1992). The classical syntax of the facades refers to classical architecture. The materials and color also contribute to the composition.

Aware of the local cultural and climatic context, the architecture of the colonial period is the exergue of a mixture of cultures, seeking modernity through a new style called Neo-Moorish.

7. Conclusion

The main objective of this work was to understand the adaptation of this new face, which is expressed through a certain syntax related to the architectural composition, as one of the concepts that enters the definition of a new style: the one that evolved during the 132 years of colonization of Algeria.

This work aims to understand the architectural composition in the regional set "Saoura" during a historical period between 1900 and 1945 (during the colonial era).

To do this, we have analyzed through a morphological approach some examples of architecture built by France after its conquest of Algeria and, specifically in the cities of Bechar and Kenadsa.

On the two levels of architectural analysis, that of spatial organization and that of construction techniques, we are particularly interested in the first.

The location in the site, the spatial organization (plan composition) and the facade, was analyzed from basic buildings (housing) and specialized buildings (schools, post offices, etc..) with have highlighted rules of composition that govern this spatial organization architectural forms in this specific period. Such as, the modes of architectural composition are based on: the assembly of simple volumes, the relationships of proportions, the rhythm

and the repetition, the centrality, the symmetry, the alignment and the regulating lines. The appeal to the golden rectangle (by folding, multiplication, or addition) allowed a coherent and harmonious geometry.

The symmetry of the façade of a classical European architecture implies the symmetry axis of the accesses due to the symmetrical organization of the interior spaces. The symmetry is particularly visible in the compositional axis of the façade.

Two types of organization can be distinguished as models: this appears decisively in the specialized buildings. As for the basic buildings: the habitat with facades is sometimes symmetrical or and formerly asymmetrical, the syntax is classical but the vocabulary is picturesque.

What characterizes especially the architecture of the buildings between 1900 and 1940 (basic building and specialized building) is the respect of the arched façade.

As for the site playing an important role in the architectural expression, it favors a contextual architecture that refers to the place.

The architecture of this period uses a lexicon and syntax quite elaborate, understandable by all, known under the term "Arabism" or "Neo-Moorish" style. Far from being the fruit of chance, Arabism reveals the search for a link between two different orders, passing through stages: from the search for the relative Arab style or the Moorish style to a Neo-Moorish style.

Arabism in colonial architecture is a priori, the response of a conjunction sought between two different orders: a local Arab order and a Western order.

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