RESEARCH ARTICLE
DOI: 10.52957/27821919_2022_1_82

Problems and features of designing social housing in Angola

N.A. Isaeva, M.Y. Pokrovskaya, F. Lumingo

Natal´ya A. Isaeva
Ivanovo State Polytechnic University, Ivanovo, Russia
nino2014nino@yandex.ru

Marina Y. Pokrovskaya
Ivanovo State Polytechnic University, Ivanovo, Russia
mapina59b@mail.ru

Florentino da Silva Lumingo
Ivanovo State Polytechnic University, Ivanovo, Russia
f.lumingo@yandex.ru

The problems and features of the design of social housing in Angola are considered, special attention is paid to the specifics of the architecture of social housing built over the past two decades. It is proposed to revise the existing residential development paradigm in the context of the active use of landscaping techniques and social comfort of urban areas in order to improve the quality of life of Angolan citizens.

Key words: social housing; environment, urbanization, design models, quality housing, comfortable housing

For citation:

Isaeva, N.A., Pokrovskaya, M.Y. & Lumingo, F. (2022) Problems and features of designing social housing in Angola*, Smart Composite in Construction,* 3(1), pp. 82-91 [online]. Available at: http://comincon.ru/index.php/tor/issue/view/V3N1_2022 (In Russian)

DOI: 10.52957/27821919_2022_1_82

НАУЧНАЯ СТАТЬЯ
УДК 728.1.01: 365.22
DOI: 10.52957/27821919_2022_1_82

Проблемы и особенности проектирования социального жилья в Анголе

Н.А. Исаева, М.Ю. Покровская, Ф. Люминго

Наталья Адольфовна Исаева
Ивановский государственный политехнический университет, Иваново, Российская Федерация
nino2014nino@yandex.ru

Марина Юрьевна Покровская
Ивановский государственный политехнический университет, Иваново, Российская Федерация
mapina59b@mail.ru

Флорентино Да Силва Луминго
Ивановский государственный политехнический университет, Иваново, Российская Федерация
f.lumingo@yandex.ru

Рассмотрены проблемы и особенности проектирования социального жилья в Анголе. Особое внимание в ходе исследования уделено специфике архитектуры социального жилья, построенного в течение двух последних десятилетий. Предлагается пересмотр существующей парадигмы жилой застройки в контексте активного использования приемов озеленения и социальной комфортности территорий городского пространства с целью улучшения качество жизни граждан Анголы.

Ключевые слова: социальное жилье; окружающая среда, урбанизация, модели проектирования, качественное жилище, комфортное жилье

Для цитирования:

Исаева Н.А., Покровская М.Ю., Ф. Луминго. Проблемы и особенности проектирования социального жилья в Анголе // *Умные композиты в строительстве*. 2022. Т. 3. № 1. С. 82-91 URL: http://comincon.ru/index.php/tor/issue/view/V3N1_2022

DOI: 10.52957/27821919_2022_1_82

INTRODUCTION

The debate on the design of social housing in a number of African countries dates back to the twentieth century. For example, some project concepts implemented in solving the global housing problem in Angola.

Population of Angola is 32.8 mn people. The country is urbanized one. Despite the advances in housing construction, affordable housing remains a problem for the majority of the Angolan population. 60 % of the country's population lives at urban areas; the remaining 40% lives in peripheral urban areas and slums. This demonstrates the existence of clusters of people who do not have acceptable comfortable housing and do not even fit into their environment. This trend can be seen, for example, in Luanda, the largest city in Angola (Figure 1).

a ***b***

Fig.1. Architectural appearance of Luanda: *a* - urban environment, *b* - peripheral environment [photo source: Google]

Slums in some Latin American countries tend to be located in urban areas, Angola is characterized by their dislocation in the suburbs, where the quality of the built housing is extremely poor.

RESULTS AND DISCUSSION

About 880 m people currently live in cities in worse conditions. An expected increase the world's population by 2030 more than 1.2 bn people, combined with the current housing deficit provide the deficit of comfortable homes for more than 2 bn people. There is a positive progress since the establishing of UN-Habitat. But the global housing deficit is still incredible one. There are 130 m more people living in urban slums today in compare with 1995. As the world continues to urbanize, countries around the world are demanding the implementation of various options for affordable, adequate and safe housing [1].

According to the INE (National Institute of Statistics of Angola), the current urbanization rate in Angola is 62.3%. Most of the urban population is concentrated in the coastal cities of Luanda, Benguela-Lobito and Cabinda, which are highly affected by climate change. Despite substantial investment by the GdA (Angola's government) in housing projects the urbanization process occured through informal settlement. Luanda has 6.8 m inhabitants (41.9% of the total urban population),

Lubango has 600.8 thousand (3.7%) and Ouambo 595.3 thousand (3.7%). (3.7%), Ouambo - 595.3 thousand inhabitants (3.7%) and Cabinda - 516.7 inhabitants (3.2%). Thus, 37.1% of the total population is concentrated in just a few cities of the country [1].

According to the results of the General Population and Housing Census of Angola in 2014, 87.2% are self-built. 57.0% of households in urban areas have access to a proper water source, 81.8% have access to proper sanitation facilities and 50.9% have access to electricity. Only 37.5% of farms have a proper solid waste management system [2].

According to the UN (UN-Habitat), social housing is the housing of proper quality and location, having the low cost, allows residents to pay basic living costs and does not threaten basic human rights.

The origin of the term 'social housing' is also linked to urbanization and the growing demand for low-cost living conditions. “Social housing' is a way of providing housing for citizens who do not have enough money to buy or rent housing by market price” (Wikipedia).

Before Angola became an independent country the social housing projects had already been implemented; a typical example is the People's Quarter and the Cazenga Quarter in Luanda (Figure 2).

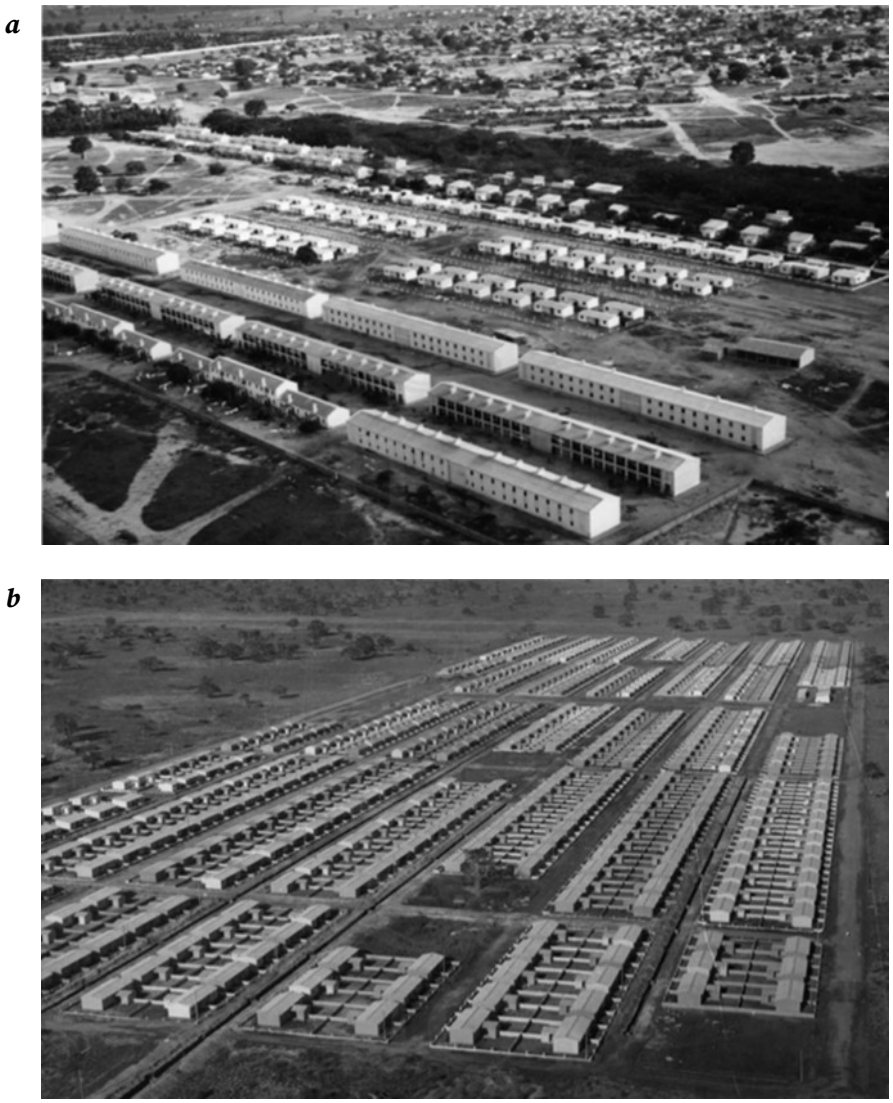
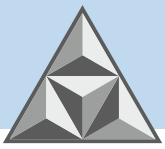


Fig. 2. Social housing in Luanda: *a* - People's Quarter; *b* - Kazenga Quarter
[Get image: https://actd.iict.pt/view/actd:AHUD21959; https://actd.iict.pt/view/actd:AHUD21958]



Social housing in Angola can be seen as the outcome of a government programme to construct buildings and facilities for middle- and low-income families displaced from areas where other types of projects and programmes will be implemented to ensure that people have the right to access decent housing.

The Government of Angola developed a National Housing Programme in 2003 and made its implementation a priority. This programme aims to address urban and housing policy challenges and involves active participation of private organizations with foreign investment.

The social housing development programme in Angola can be considered as successful one if consider only the housing construction.

However, it is important that social, communal and recreational services are not fully realized in these residential areas. It is relevant to reflect the current social housing paradigm in order to find new ways and mechanisms to improve it.

The high cost for the majority of the country's inhabitants is one of the reason of the social housing programmes slow progress. Today, rents for decent housing in Angola are comparable to the cost of real estate in major Russian cities.

The promise made by Angolan President José Eduardo dos Santos in 2008 to build one million homes in four years fulfilled by the construction of Kilamba - city. The city was built with the support of an international Chinese property investment corporation. The complex designed to accommodate more than a million people. It comprises 750 eight-storey buildings with more than 2,800 flats. There are also schools, kindergartens, shops, shopping centres and the infrastructure necessary for people in the city. However, the city is half empty. The problem is the high price for Angolans, spending on average less than $2 a day. Few citizens can afford to pay for comfortable outside the capital accommodation.

The average salary in the country in 2021-2022 is quite low. As to the relatively well-paid category of citizens - medical specialists - their average salary is about $1,000. The cost of a flat in Kilamba, however, varies between $120,000 and $200,000 [3]. The government tries to find new ways to encourage people to move to a new city, offering low mortgage rates and flats for free to those who moving out of dilapidated housing.

Increasing the number of residential flats will not solve the problem. This leads to reflection on the existing social housing system in Angola, the need to improve it and to reflect the concepts of designing a qualitatively new living environment in terms of the current paradigm.

In this case, there are several issues.

What are the architectural features of social housing design in Angola?

How ideal is the current social housing system in Angola?

To answer the first question we consider the architectural characteristics of social housing in Angola. They vary according to the social class of the residents as well as the quantity and type of building materials used.

The perspective of housing architecture projects is in its sustainability. It is important to consider the climatic characteristics, the life cycle of the building's infrastructure, its maintenance, the choice of quality materials for construction and dealing with their disposal after use. In addition, it is relevant to pay attention to the customs and lifestyles of the population in particular regions.

For example, an important feature of the Angolan way of life is the tendency to have many children. On average, every woman of reproductive age gives birth to 6 children. The annual increase in the Angolan population is 2%. The application of European methods of functional and layout organization of the dwelling flat and the architecture of the residential building is not possible in this case. Thus, recent decades' construction copied the architectural techniques of flats consisting of two or three living rooms. It prevented many families from moving into these flats. In our opinion, this

approach is wrong and required the new one.

The second problem arises when forming open areas are constructed by usual landscape design tools. The climatic characteristics of the areas suggest the use of water resources to create landscape features. There should be a comfortable microclimate using a system of fountains, pools and other water features. To maintain this infrastructure significant resources are needed. It makes social housing and their maintenance quite expensive. To solve the problem there is a need in governmental support for the development of engineering infrastructure systems.

Angola implemented two models of social housing design. The first model is characterized by single-storey social housing, usually isolated from the city; infrastructure (sewage network, water, electricity, transport), etc. is absent. Also there are no opportunities for self-development. The second model is social housing, represented by buildings of 1 to 13 storeys. It characterized by a certain distance from cities, where the most important administrative, commercial, financial, educational and other public activities are concentrated. The second model is characterized by instability in the location of social services and engineering systems.

An example of the first model is Aldea Solar, located in the municipality of Kabiri, 50 km from Luanda. The model is designed for 500 low-income families spread over an area of more than 95 hectares, ensuring relatively self-sufficient farming community (Figure 3).

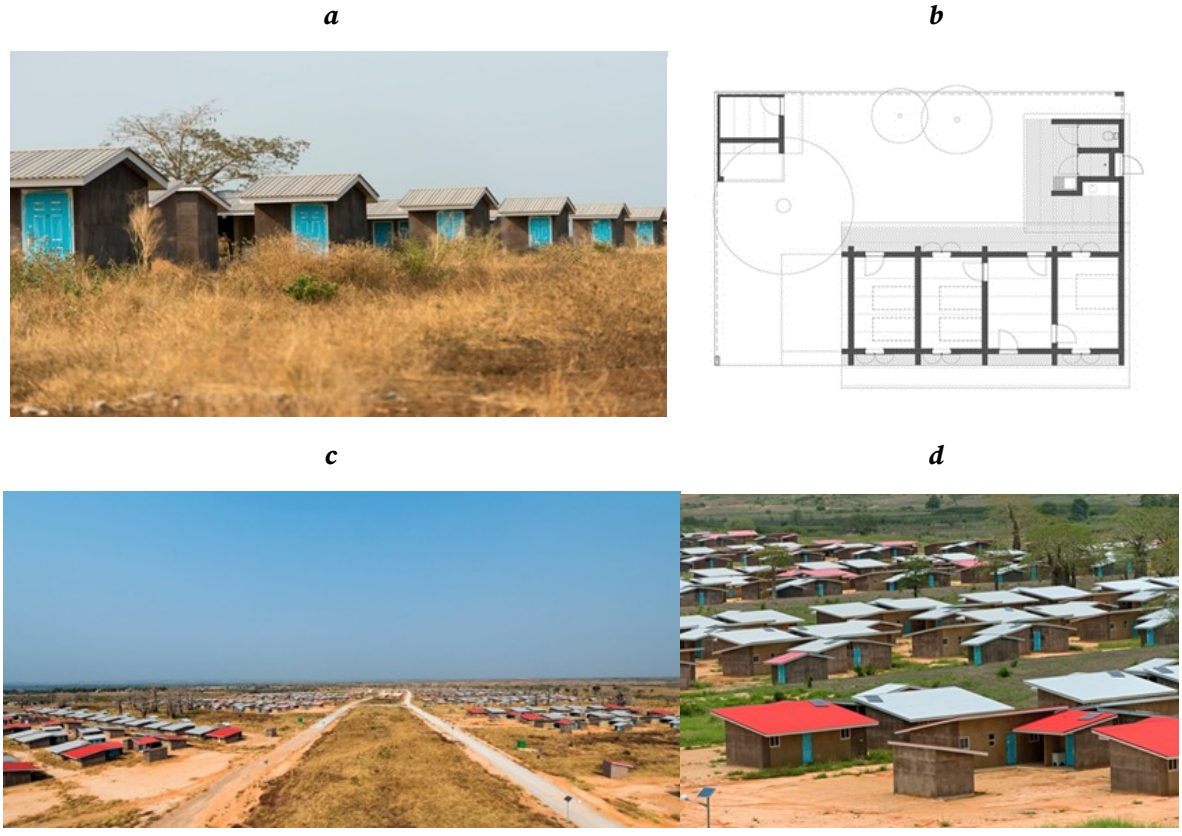


Fig. 3. View of Aldea Solar street (*a*) with a typical house plan on it (*b*); general view of the municipality (*c*) and the residential area (*d*)
[Photo source: https://www.costalopes.com/portfolio/007/]

The single-storey houses have a modern design with one or two pitched roofs made of corrugated zinc sheets. The layout is pavilion-type, with 3-5 living rooms on the plot. The kitchen and sanitary facilities are separate. All rooms are covered by individual roofs, which is not comfortable for residents during the rainy season. This layout does not allow for the economical formation of

utilities.

The second model: CL (Centralidade do Lossambo); located 10 km from the province of Ouambo (Figure 4).

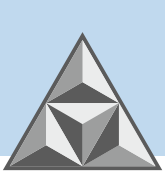
Fig. 4. Model plan of a dwelling typical of the second model (*a*); general view of the building façade (*b*), the centre of Lossambo (*c*) and the residential street (*d*)
[Photo source: https://www. jaimelerner.com/ portfolio/ comunidades-urbanas]

The so-called 'block' structure of buildings is perfectly suited to the basic functions of social housing. Typical and simple geometric residential blocks allow to assemble a complex, multi-faceted building. This kind of design becomes more and more popular in Angola.

The second model uses autoclaved aerated concrete as the basic building material for residential buildings. It was first developed in Sweden in the 1920s. The Angolan government has contracted to supply lightweight prefabricated in the form of blocks concrete to the country. It allows to reduce construction time. However, for regions where local building material is available, its use is not advisable, as it often leads to an increase of the residential architecture cost.

CL flats have a minimalist design with three bedrooms and an open kitchen joined to the living room. The façades of the houses are covered with horizontal grilles. There are a total of 527 houses and 1,482 flats in the social housing complex. There are two children's centres, two primary schools, a health centre and other infrastructural objects. There is also a drinking water distribution system, electricity supply, etc. There is a motorway between CL (Centralidade do Lossambo) and Ouambo - city, allowing residents of the complex quick access to the city, where the majority of the population works.

Nevertheless, the current and applied social housing system in Angola is hardly ideal. The parameters of a more inclusive architecture combining diverse public areas that encourage public interaction and promote social cohesion should be considered. Environmental optimization, the



introduction of modern green architecture practices creating a pleasant living environment for most Angolans, should also taking into account.

When talking about social housing, we should not forget the intrusion of large numbers of people into the environment. The implemented systems should be comprehensive, equipped with public spaces for recreation, green areas and public buildings (church or mosque, medical centers, pharmacy, regional market, fire station and police, etc.).

It is also extremely important today to provide small and medium-sized communities with more attractive and ecological solutions optimizing the environment and implement innovations improving the quality of life of these communities. It should be remembered that systems do not have to be extremely expensive and large.

People spend 90% of their time in buildings. Therefore, such buildings should be socially comfortable in order to promote the manifestation of a state of full satisfaction of the needs of the body and spirit, a sense of security, tranquility and interest in creative activity.

CONCLUSION

The paradigm for contemporary social housing in Angola must be defined in terms of social housing has moved beyond the classic notion of an inexpensive place of human dislocation. Nowadays, social apartment buildings are no longer the usual boring types of buildings. New architectural trends should provide the most of modern construction methods.

Despite Angola's high unemployment rate, poor health services, electricity supply disruptions, drought, lack of sanitation and water supply, the paradigm shift towards inclusive architecture will make it clear that residents need more than just affordable housing. It is necessary not only to design the housing object but also provide the qualitative city lifestyle.

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Received 09.03.2022
Approved after reviewing 16.03.2022
Accepted 22.03.22