Proceedings IRF2018: 6th International Conference Integrity-Reliability-Failure Lisbon/Portugal 22-26 July 2018. Editors J.F. Silva Gomes and S.A. Meguid Publ. INEGI/FEUP (2018); ISBN: 978-989-20-8313-1

PAPER REF: 7250

USE OF STRUCTURAL MASONRY OF CONCRETE BLOCKS AND PROTECTED LABS WITH FENCED CORDOBA IN RESIDENTIAL BUILDINGS

Harlen Nunes(*), Roberto Chust Carvalho

Federal University of São Carlos, PPGECiv / UFSCar Post-Graduation Program in Structures and Civil Construction - São Carlos, Brazil

(*) *Email:* harlennunes@yahoo.com.br

ABSTRACT

This is work aims to demonstrate that some technologies already used in developed countries have great potential to leverage the economy in developing countries such as Brazil and to promote an improvement in the housing situation for thousands of people who often live in conditions of ecological vulnerability and social, through a property that brings quality of life and social dignity, as well as generating jobs and developing the economy of these countries. Civil construction comparisons are used among the various construction methods, showing better quality and economy in order to make this social, technical and economic development feasible.

Keywords: reinforced concrete, prestressed concrete, human and economic development.

INTRODUCTION

There are constructive processes widely used in developed countries, which are methodologies that present technical and economically viable qualities that would be extremely important to leverage the economy of developing countries like Brazil, mainly developing technological and social development. These technologies, demonstrated and studied here, are tools that can help these countries afford economically real estate for the population with few financial conditions, which now constitute a population of about 50% of the total population in Brazil, which today is 190,755,799 inhabitants, a total of 95,377,899.50.

The use of the above technology could contribute to the housing deficit in Brazil that revolves around 6 million housing, according to the Brazilian Institute of Geography and Statistics. These types of technologies can reduce construction costs by around 25%, as shown in various academic papers in Brazil and in many other countries with USA and France. According to these studies, the country is able to increase considerably the number of dwellings.

In a country like Brazil, a high-quality, affordable technology that has already been tested and widely used by countries such as the USA, with an economy of about 25% compared to reinforced concrete, structural masonry, is certainly a great tool for beginning a great economic and social development for countries in crisis like Brazil, as shown in Figure 1.

RESULTS

The results of the studies carried out in academic analyzes show that the economy made with the use of a structural masonry system and slabs in greenhouses using protension proved to be feasible in order to meet the technological and technological needs of a large country and economic growth and significant improvement for the large low-income population, as shown in Figure 1. And in Figure 2 we can observe the housing deficit in the main metropolitan areas of Brazil.

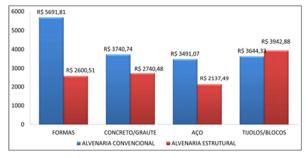


Fig 1 - Comparison in R \$, of the cost of the Conventional Masonry System x Structural Masonry

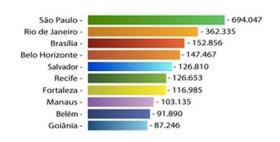


Fig. 2 - Housing deficits in the main metropolitan areas of Brazil

CONCLUSION

This study shows how simple technologies can leverage the economy of a country with technical development for the construction industry and benefit thousands of people with dignified housing and with high quality technology and compatible with the needs of the country.

ACKNOWLEDGMENTS

The authors thank the Federal University of São Carlos (UFSCAR), Brazil, through the Civil Engineering Postgraduate Program (PPGECIV), the possibility of researching these technologies that can simultaneously lead to major technical, economic and social developments for Brazil.

REFERENCES

- [1] Figueiredo Filho, J. R.; Chust, R. C. The use of the grid analogy for the analysis of pavements of buildings in reinforced concrete. São Carlos: UFSCar / Department of Civil Engineering Postgraduate Program, 2004. Class notes.
- [2] Rodrigues, A. S. Comparative cost analysis of structural systems for reinforced concrete floors. Belo Horizonte, 2002.
- [3] Spohr, R. H. Comparative analysis: conventional structural systems and structures of ribbed slabs. Santa Maria, 2008.
- [4] Kimura, Alio. Applied computing in reinforced concrete structures: calculation of buildings using computer systems. São Paulo, Editora Pini Ltda, 2017.