

## Challenge of Civil Construction: growth with environmental sustainability

Angela Borges Masuero<sup>1</sup>

<sup>1</sup>Assistant Editor

Universidade Federal do Rio Grande do Sul - UFRGS, Núcleo Orientado para Inovação da Edificação - NORIE, Av. Osvaldo Aranha, 99, 90035-190, Porto Alegre, RS, Brasil.

E-mail: [angela.masuero@ufrgs.br](mailto:angela.masuero@ufrgs.br)

The construction industry has always played a role of great social and economic importance, especially in periods of crisis such as the Covid-2019 pandemic. It drives a large production chain, leverages economic growth and job creation quickly, and is responsible for a significant portion of GDP, a large number of jobs and a considerable portion of income generation for the population. On the other hand, the construction industry has a negative environmental impact, with a high consumption of exhaustible natural inputs, high energy demand, high waste generation and CO<sub>2</sub> emission. According to the UN [1], it is estimated that by 2050, the world population living in urban areas will increase from the current 55% to approximately 70%. The big challenge will be to meet the demand for infrastructure and housing arising from this greater urban concentration with the least possible environmental impact. To date, the growth of human well-being and economic development has been associated with the rapid increase in the use of natural resources such as energy, materials and water [2]. However, given the depletion of natural resources and the increasing concentration of greenhouse gases in the atmosphere, it is essential to decouple the development from the use of new natural resources and simultaneously generate less CO<sub>2</sub> emissions.

Within this context, it is of fundamental importance to develop innovative technologies and solutions that allow for gains from the point of view of sustainability, whether by using waste for a more efficient, safe, quality construction with reduced environmental impact, or by development of new materials and processes. Scientific research, with its subsequent transfer to the market, is a path of no return.

This edition, v26, n.4, brings 51 articles with a strong focus on innovation and sustainability, addressing topics such as the development of new innovative materials or the use of waste; or even the search for higher quality, safety, durability and lower cost, through materials more suitable for use, the replacement of materials with great environmental impact by alternatives, the development of new processes, mastering the behavior of materials, equipment or methods of assessment; or even through a proposal to capture CO<sub>2</sub>.

### BIBLIOGRAPHY

[1] UN HABITAT. UN-Habitat Global Country Activities Report: 2015. Kenya: United Nations, 2015. Disponível em: <<https://unhabitat.org/books/un-habitat-global-country-activities-report-2015-increasing-synergy-for-greater-national-ownership/>>. Acesso em: 01 out. 2021.

[2] UN Environmental. Decoupling natural resource use and environmental impacts from economic growth, 2011. Disponível em: <<https://wedocs.unep.org/handle/20.500.11822/9816>>. Acesso em: 01 out. 2021.

### ORCID

Angela Borges Masuero | <https://orcid.org/0000-0001-9117-8346>