



# 2<sup>ND</sup> International Conference on **GREEN CONSTRUCTION** 2023

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Córdoba (Spain)



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ICGC 2023 is an international forum for the exchange of ideas and information on green construction. This conference offers an important opportunity for researchers, students and professional workers to discuss a wide variety of topics related to the use of environmentally friendly technology in the field of building and construction, what leaves a lighter footprint on the environment through a good management, a rational utilization and conservation of energy and material resources.

Construction sector is responsible for a significant share of global consumption of energy, electricity, water and materials. According to Intergovernmental Panel on Climate Change (IPCC) of the United Nations, the CO<sub>2</sub> production of this industry is almost 20% of global emissions. Development of new more efficient construction methods and technologies with a reduced level of environmental impact is necessary. ICGC 2023 pretends to be a forum to study possibilities of these new technologies and the state of research about this field.

## Conference Topics

The International Scientific Committee (ISC) and the Organizing Committee (OC) of ICGC 2023 would like to invite you to participate and submit contributions relevant to the followings topics; however issues are not limited to them:

- Advanced Building Materials
- Carbon Capture and Utilization
- Circular Economy and Sustainability
- Energy Efficient Buildings and Smart Technologies
- New construction methods

### Advanced Building Materials

Today, the new construction materials are addressing aspects such as ultra-high strength and durability properties, alkaline activation, photo-

catalysis, self-cleaning, self-healing concrete, 3D printed graphene, translucent wood, liquid granite and others.

This topic includes:

- Alkali-activated materials
- Innovative and functional building materials
- New building materials to change the construction sector.
- Photocatalysis and self-cleaning materials
- Ultra-efficient insulation materials
- Ultra-High-performance concrete

### Carbon Capture and Utilization

CO<sub>2</sub> is the main responsible for the greenhouse effect and therefore for global warming. Climate change mitigation is a priority for the Environment. The development of new CO<sub>2</sub> adsorbing materials and new building materials with a low or zero carbon footprint will be an opportunity in the next years.

This topic includes:

- New CO<sub>2</sub> adsorbing materials.
- Uses of CO<sub>2</sub> in the building sector.
- Strategies to reduce the carbon footprint of building materials.
- Accelerated carbonation.
- Economic effects

### Circular Economy and Sustainability

One of the actions proposed by the European Union for implantation of Circular Economy and Sustainability underlines the use of waste as secondary raw materials (SRM). This initiative will give a second life to waste that is initially destined for landfills. Likewise, this will reduce the consumption of natural resources, save energy, reduce materials costs and waste dumping.

This topic includes:

- Construction and demolition waste
- Industrial waste as secondary raw materials and environmental risks

- Life Cycle Assessment
- Recycled aggregates (coarse, fine and filler) and uses.
- Recycling and resources recovery
- Sustainable building materials for combating climate change

### Energy Efficient Buildings and Smart Technologies

One of the most important engineering problems at present is the growing consumption of energy in the world and its influence on the environment and climate change. Use of Renewable Energy and more efficient systems in construction will allow to reduce this impact.

This Topic includes:

- Renewable energy: wind power, solar energy, hydroelectricity, biomass, geothermal...
- Energy saving and storage.
- Sustainable and efficient energy systems
- Energy conversion systems
- Smart and efficient buildings and cities.
- Energy valorization of waste

### New construction methods

The transformation of the construction sector involves the incorporation of new construction methods that include aspects such as industrialized construction, robotization, 3D printing and the use of artificial intelligence, among others.

This topic includes:

- 3D printing in the construction industry
- Construction 5.0 (BIM, drones, robots, digitalization, artificial intelligence and sustainability)
- Eco-efficient solutions
- Modern methods and equipment
- Modular construction and advanced prefabrication
- Supply chain management

## Contributions

The program will consist of invited general lectures, selected topical lectures (15 min) and poster presentations (90 x 120 cm).

The International Scientific Committee (ISC) will select speakers to give topical lectures and for poster presentations. To allow the selection, one short communication (2 pages) is required.

The Conference proceedings with short communications will be refereed and published as a e-book. The Organizing Committee (OC) will send the proceedings to all registered participants. For publishing paper in the proceedings it is necessary that at least one of the authors is registered and participates.

## Application

All attendants are requested to register before October 31th, 2023. Registration can be made by filling in the registration form. The completed registration form must be sent by e-mail to: infoicgc@uco.es, together the document accrediting the payment of registration fee.

## Registration Fee

The registration fee includes participation in Conference, one copy of proceedings book, conference banquet, three coffee breaks, documentation and a touristic visit for no inhabitants of Cordoba with previous confirmation in registration form.

**Regular fee: 60 euros**

