| # | **Ioannis Skarparis**<br>Architect Engineer AUTH |  |
|---|---|---|
| Title: | Architect Engineer at Athos Dikaios and Associates, Nicosia, Cyprus | |
| email: | skarparch@gmail.com | • |
| Presentation title: | **Materials with High and Low CO2 Emissions.<br>Assessing their Environmental Impact in Construction.** | |

The construction industry is one of the largest energy consumers in resources. Building account over their entire life cycle for around 40% of CO2 emissions, 40% of natural resource consumption and around 40% of waste generation. Nowadays, the increased demand of building materials leads to an increased consumption in raw materials and used of energy, especially during the extraction, processing, manufacturing and transportation of materials. Worldwide constructions industry intense activity, led to the need for new artificial construction materials, which are used as first line materials in industry. The use of such materials leads in some serious environmental issues that could potentially be threatening for planet. In addition, the continued generation of waste is caused by the surplus of unused materials and demolition debris. Scientists in the construction sector in recent decades are increasingly interested in the improvement of social, economic and environmental indicators, which are also the pillars of sustainable development. Analysis and evaluation methods such as Life Cycle Analysis are essential for improving the quality of materials and environmental management in the construction industry, as well as significant investments in manufacturing processes and technologies. In addition, the construction industry has increasing responsibilities towards society and must align with sustainable development practices. Aiming at the sustainability of constructions, it is necessary to reduce the environmental impact by using materials with a low carbon footprint. To achieve this, it is important to look for new manufacturing methods and sustainable materials that will not be harmful to human health and the environment, and will also be durable, recyclable and economical. This study was conducted to answer the question, of whether sustainable materials can reduce the carbon footprint in construction. For this reason, the most basic building materials – conventional and non-conventional – are investigated based on the amount of CO2 emissions they emit into the atmosphere throughout their life cycle. Then case studies are presented and analyzed from the world literature, where a comparative analysis of construction methods, construction materials and evaluation of different types of buildings is done and alternative construction solutions are proposed that will contribute to the reduction of the carbon footprint. The work is completed by formulating overall conclusions.

| Short CV GREEK: | |
|---|---|

Είμαι απόφοιτος Αρχιτέκτων Μηχανικός από το Αριστοτέλειο Πανεπιστήμιο Θεσσαλονίκης. Τα ερευνητικά μου ενδιαφέροντα εστιάζονται στην Ενεργειακή Αναβάθμιση Κτιρίων, στα νέα υλικά και μεθόδους δόμησης, και στον σχεδιασμό τρισδιάστατων μοντέλων μέσω ειδικών προγραμμάτων.

Απώτερος σκοπός είναι η εμβάθυνση σε ερευνητικό επίπεδο πάνω στα ζητήματα αειφορίας και βιωσιμότητας στα κτίρια και τις κατασκευές.

| Short CV EN: | |
|---|---|

I am a graduate Architect Engineer from the Aristotle University of Thessaloniki. My research interests focus on Building Energy Upgrades, new construction materials and methods, and the design of 3D models using specialized software.

My ultimate goal is to deepen my research in the fields of sustainability and sustainable construction.

| CV: | |
|---|---|

Ioannis Skarparis , Architect Engineer
Nicosia, Cyprus.
Phone: +357 9971972

## Education and Certification

**October 2023 – June 2024**

Certificate - ArchViz Masterclass on Interior Architecture – CAD ACADEMY ATHENS

**October 2017 – July 2023**

School of Architecture – Faculty of Engineering, Aristotle University of Thessaloniki, Greece
Grade : 8,61/10
**Diploma research thesis:** From conventional to low carbon footprint building materials : the road to sustainable construction
**Diploma design thesis:** The rehabilitation of the Old Silk Factory in Geroskipou as a School of the Fine Arts

## Work experience

**September 2023 – Present**

Architect at Athos Dikaios + Associates Architects, Nicosia, Cyprus

**August 2021 – October 2021**

Internship at Urban Soul Project, Thessaloniki, Greece

**July 2015 – January 2017**

National Guard of Cyprus
Responsible and assistant in office matters and services
Honorary title : Sergeant first class
Rank : Sergeant

## Conferences

- Back to the Future - Building with Sustainable Local Traditional Materials. 21-22 June 2023. Aristotle University Research Dissemination Center, Thessaloniki, Greece (KEDEA)

- Urban Energy Transition, Climathon Thessaloniki 2021, 13-14 November 2021, OK!Thess, Makridi Mansion (str. Maria Callas 23), Thessaloniki, Greece

- Modern solutions and new materials, 28 September 2021, Ktirio Webinars

- Passiexpo 2019 North Edition, 6 April 2019, TEE-TKM, Thessaloniki, Greece

- CITY under CONSTRUCTION, Faculty of Engineering, 12-13 October 201 8, Aristotle University of Thessaloniki, Greece

## Conferences presentations

Skarparis, V. Kyriakou, "From conventional to low carbon footprint building materials: the road to sustainable construction". Back to the Future - Building with Sustainable Local Traditional Materials. 2 1-22 June 2023. Aristotle University Research Dissemination Center, Thessaloniki, Greece (KEDEA)

## Activities extracurricular

### March 2019

Field visit under the project : Restoration of Historical Buildings, Prespes, Greece

## Competitions

12 hour competition - DOCEXDOCEEUROPE topic : Review the role of the three chimneys as an industrial landmark with the urban landscape, the coastal context and the future environmental changes. suggestions : Vertical Funpark

## Software skills

Autocad, Rhinoceros, Vray for Rhino, Photoshop

## Languages

Greek (native language), English (B2 LEVEL)