

**Great International Distinction
for the Schools
of Mechanical Engineers and Architectural Engineers NTUA
September 2021**

Second prize for the NTUA Mechanical & Architectural Engineering team in the annual ASHRAE International Student Design Competition (2021 ASHRAE Student Design Competition)

The Mechanical & Architectural Engineering team of the ASHRAE Student Branch at NTUA won the second prize for its participation in the Integrated Sustainable Building Design category of the annual international student design competition organized by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (2021 ASHRAE Student Design Competition). As part of the competition, relevant designs from hundreds of academic institutions around the world were submitted and evaluated and the announcement of the winning teams was made in early August 2021.

<https://www.ashrae.org/communities/student-zone/competitions/design-competition-winners>

It is worth noting that this is only the second participation of a NTUA student team in this competition, which comes in the second year of operation of the ASHRAE's Student Branch at NTUA and highlights in the best way the potential and the capabilities of the students of the faculties of our institution.

The team that prepared the award-winning study consists of the students at the School of Mechanical Engineering of NTUA George Orfanos, Andreas Antzoulatos, Dimitris Dimitropoulos and George Papachristos and the students at the School of Architecture of NTUA Panagiotis Karapiperis, Metaxia Pilioura, Athanasios Petsinis and Spyridon Tsamatias. The academic supervision of the team was provided by Associate Professor Irini Koronaki of the School of Mechanical Engineering and Associate Professor Miltiadis Katsaros of the Faculty of Architectural Engineering. The team's technical advisors Peter Dalavouras, PhD Candidate of the School of Mechanical Engineering and Ioannis Timagenis, external collaborator of the Sound Engineering Laboratory of the School of Architectural Engineering, made an essential contribution.

The scope of the competition was the integrated sustainable design of a new 4645 m² two-story building on a higher education campus in Prince George, British Columbia, Canada. The building consists of a dining area that can accommodate 720 people simultaneously, office space and industrial refrigeration facilities. The team had to approach the concept of sustainability throughout the life of the building, following ASHRAE and LEED standards and regulations, as well as consider alternative design scenarios tailored to the characteristics of the building and the surrounding area. Heat recovery from kitchens, reconfiguration of spaces, maximizing natural lighting are some of the elements through which low energy consumption and competitive investment costs were achieved over the 50 years life cycle. Finally, Industry 4.0 elements were incorporated into the building to enhance its sustainability with the help of new technological applications, such as the automatic food waste recording and management system.

The award ceremony will take place at the ASHRAE 2022 Winter Conference (29/1-2/2/2022, Las Vegas/Nevada USA), which will be attended by a representative of the NTUA student team to receive the award.

