

Innovation and R&D

Ever since it was founded, ENKA has succeeded in supplying the highest level of design and engineering services in the projects in which it has been involved, and attached great value to innovation and research and development (R&D) activities, with a view to developing these capacities continuously. ENKA's design and engineering expertise encompasses capacities for architectural, civil, structural, electrical, instrumentation and mechanical engineering as well as piping, process and control systems engineering.

In 2016, ENKA established the ENKA Design Centre at its Headquarters with a view to maintaining its years-old culture of design and innovation and of bringing the design and engineering activities which its experienced staff were already carrying out together in a wide-ranging organisation. As a result, it became the first Turkish construction company to have a Design Centre recognised by the Ministry of Science, Industry and Technology of the Republic of Turkey.

The ENKA Design Centre has set itself the strategic goal of developing joint projects and collaborations with institutions such as the Technology Development Foundation of Turkey (TTGV), the Scientific and Technological Research Council of Turkey (TÜBİTAK) and the Ministry of Science, Industry and Technology, which provide considerable support to the private sector for R&D and Design projects.

The ENKA Design Centre hosts groups of ENKA engineers working in three different areas:

- the Energy Engineering Design Group

- the Architectural Project Design Group
- the Civil Engineering Design Group

The Design Centre has an important place in the company, with a staff of around 150, 100 of whom are designers. It is responsible for the general design, development, innovations and engineering works of all new designs to be offered in building and industrial structure projects, for managing the process stretching from the proposal of the designs to the implementation phase, and for work to improve and increase the efficiency of production processes.

The ENKA Design Centre offers internship opportunities to students studying in relevant departments of universities and vocational and technical schools. Through these internship programmes, ENKA aims to contribute to the sector, to share with the students the internal culture of engineering and innovation which it has developed, and to train up potential future personnel.

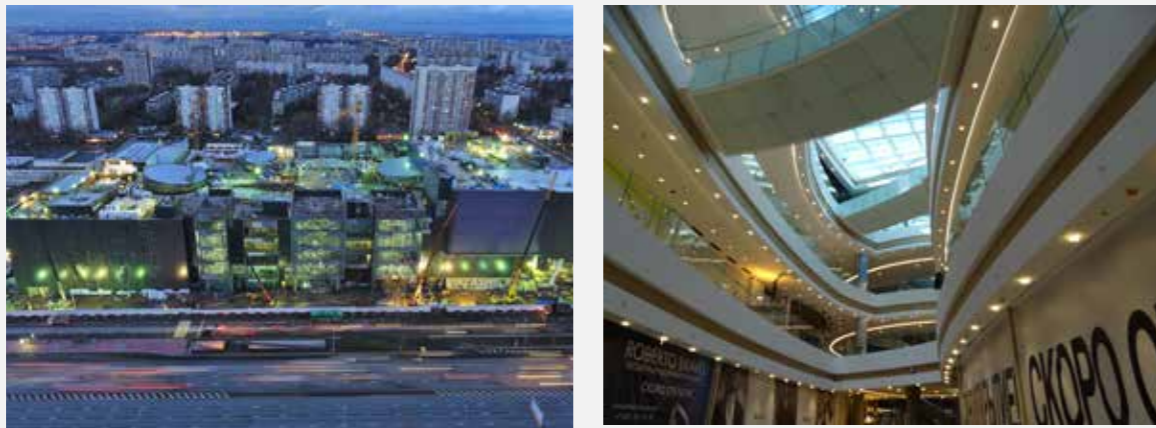
In 2017, preliminary discussions commenced with Istanbul Technical University concerning training, the development of joint projects and support for academic work on topics related to "Sustainable Buildings and Building Information Modelling (BIM)".

Under the TÜBİTAK 4005 Project, there are plans for the ENKA Design Centre to support the Science, Technology, Engineering and Mathematics (STEM) education project as well as teachers serving in the Science and Arts Education Centres (BİLSEM) throughout Turkey. This project will be carried out as a partnership between ENKA, TÜBİTAK and Marmara University in the summer of 2018.



Examples of Innovative, Environment-Friendly Practices in ENKA Projects:

Kashirskaya Multi-Functional Trade Center One aim of the project was to make the most effective possible use of natural light in the interior of the centre. Accordingly, daylight studies were carried out and use was made of Building Information Modelling (BIM) to help reach a solution whereby the interior volumes benefit most effectively from natural light.



Kashirskaya Multi-Functional Trade Center

Sadi Gülçelik Administrative Centre: This building is to be constructed at the ENKA Sadi Gülçelik Facilities in Istanbul. During its design, daylight and shadow analyses were carried out, taking the topography of the land into account, so as to make maximum use of daylight.



Sadi Gülçelik Administrative Centre

Gelendzhik Multi-Functional Medical Centre: The facade of the medical centre has been designed in an optimal manner to ensure maximum use of natural light without compromising the comfort of the patients.



Gelendzhik Multi-Functional Medical Centre

Riverside Business Centre Renovation Project: During the renovation of the frontage of this office complex in Moscow, arrangements were made to meet the needs of a modern business centre and derive maximum benefit from natural light by analysing the apertures.



Use of Natural Light for Internal Illumination (ENKA Health Centre): While renovating the health centre for the use of employees working at ENKA Headquarters, the need for natural lighting in the reception area was met with the aid of light tube lighting elements which make use of lenses to bring the sun rays into the interior volume. When there is no daylight, the sun is still used for lighting, with electricity derived from solar energy.



ENKA Health Centre



Roofing Practices: In projects designed within ENKA, every effort is made to abide by LEED green building principles. Reflective surfaces are preferred over absorptive surfaces with the aim of making savings on the cooling loads within the building.

Mechanical Heating and Cooling: In the design of mechanical heating and cooling systems in projects designed within ENKA, low energy-consumption equipment is preferred in order to save energy, provided that it is suitable for the design.

Innovation and R&D at ENKA Systems

ENKA Systems is a technology and software company which was established as an ENKA subsidiary in 2017 to develop technologies for the construction sector, turn innovative ideas into products with real-life applications, and engage in R&D activities. The basic aim of the company is to carry out technological innovations and R&D activities within the ENKA organisation.

ENKA Systems is operating in the following three main areas:

- the development of work processes providing for the emergence, management and implementation of innovative ideas in the construction sector, and particularly in large-scale projects
- the conduct of R&D activities concerning the technological solutions required to manage large-scale projects
- ensuring that the technological products generated are developed, supported and marketed

In December 2017, ENKA Systems was recognised as an R&D Centre by the Ministry of Science, Industry and Technology of the Republic of Turkey. In addition to the software programmes which it develops, its R&D projects lead both to the emergence of new products and to the addition of new features to existing software.

Innovation and R&D at Çimtaş

When Çimtaş Steel was recognised as the 274th R&D centre in 2016, following its application to the Ministry of Science, Industry and Technology, this represented a first for all of the Çimtaş companies and for the entire ENKA group. In line with its target of pioneering R&D and innovation, the centre engaged in 51 projects and three patent exercises in 2017. These projects included three TÜBİTAK projects and one “VAP” project (a state-supported efficiency-increasing project for energy management systems). Meanwhile, the work which began in 2017 on establishing an R&D centre at Çimtaş Precision Machining continues. One TÜBİTAK project was completed in 2017 and the application and approval processes for two other TÜBİTAK projects are under way.