

INNOVATION AND R&D

ENKA acts with the mission of designing and constructing construction projects that are safe, in line with standards, high quality and at suitable cost and the vision of being one of the best and most innovative engineering and construction companies providing services globally. ENKA carries out research and development works to raise productivity to the highest level and to design projects in the most efficient way possible. This process involves providing solutions to the most complex construction design needs at its Design Centre; undertaking cooperation with universities, following the design of new manufacturing technologies and utilising the most advanced and up-to-date technology that allows different disciplines from around the world to work in cooperation on virtual platforms.

ENKA has succeeded in providing design and technology services at the highest level and quality in all projects it was a part of, and has always valued innovation work to continually improve its capabilities in this field.

In order to maintain its culture of design and innovation and to bring together the design and engineering activities it runs with its experienced team under an umbrella department, ENKA established the Design Centre at İstanbul Headquarters in 2016 and became the first Turkish construction company to be awarded the title 'Design Centre' by the Ministry of Science, Industry and Technology of Turkey.



The following three ENKA Design Groups that act in three different areas operate under the ENKA Design Centre:

- Energy Engineering Design Group
- Civil Engineering Design Group
- Architectural Project Design Group

The Design Centre holds an important position within ENKA, with 147 personnel, of which 101 are designers. The Design Centre manages the entire process from bidding to implementation for new design projects in infrastructure, building and industrial construction, including general design, development, innovation and engineering, and works to improve and increase efficiency in manufacturing processes.

ENKA follows developments around the world closely in order to ensure the sustainability of its internal innovation and R&D activities and makes considerable efforts towards the development of corporate management systems. To this end, it has carried out the following systems development activities in 2018 in order to ensure a more suitable environment for innovation and R&D work:

1- ASME R-Stamp Certification

ENKA successfully completed international certification works to show that its design, manufacturing and installation activities for boilers and pressure vessels complied with the ASME Boiler and Pressure Vessel Code in 2013. To carry its expertise a step further, ENKA decided to undertake works on the repair of boilers and pressure vessels. In order to increase the compatibility of the existing system with current design and field implementation and to form grounds suitable for the development of innovative methods, ENKA has begun the works of ASME R-Stamp certification. ENKA has revised its design, fabrication and fabrication control processes in keeping with the updated standards published by ASME in 2017. The ASME R-Stamp Certification process will be completed with the third-party certification audit to be carried out in the first quarter of 2019.

2- Personnel Incentive and Rewards System

ENKA is aware that supporting scientific research is a necessary condition for successfully running R&D work and has developed the Personnel Incentive and Rewards System to support the postgraduate studies and academic publishing works of its employees. Under this system, ENKA employees can pursue postgraduate studies with no loss of employment rights and will be supported by various means of incentives and rewards to pursue their innovation and R&D work, ideas and proposed inventions in light of current scientific developments. The incentive and rewards system will become active in the first quarter of 2019 and will start receiving applications from employees.

3- LEED Green Associate Certification

It is a fact that environment-friendly buildings consume less energy and water, cause lower greenhouse gas emissions, offer users a more comfortable and enjoyable environment and provide economic savings through lower operating costs. Of ENKA's projects until now, almost twenty have been awarded various green building certifications. In order to maintain international standards in projects in this field and to increase the number of innovative design work that meet green building standards, ENKA supports the professional development of Design Centre employees on environment-friendly buildings. In 2018, seven employees of the Design Centre were awarded the LEED GA (Green Associate) certificate of the US Green Building Council and five employees were awarded the second stage LEED AP (Accredited Professional) certificate.

4- ISO 27001 Information Security Certification

ENKA believes that the quality of innovation and R&D work undertaken at an organisation is closely related to the institutional memory of the organisation and has started works on transitioning to the ISO 27001 Information Security Management System in order to ensure the confidentiality, integrity and accessibility of information produced in-house to furnish strong foundations for innovative ideas. A majority of the physical and software-based improvement works planned under this activity was completed in 2018, policies and procedures were formed and investment in infrastructure took place. With the completion of the improvement works underway and the third-party certification audit, transition to the Information Security Management System will be completed at the end of 2019.

INNOVATION AND R&D AT ÇİMTAŞ

Çimtaş Steel has completed its second year as an R&D centre, and with its aim of leading R&D and innovation activities, has undertaken a total of 22 projects, of which two were supported by Scientific and Technological Research Council of Turkey (TUBITAK) and three patenting activities in 2018. Çimtaş Steel completed its first year as an R&D centre in 2018, successfully completed 24 R&D projects and began work on PIANİSM⁷ the first EU-supported (ITEA3) project of Çimtaş. In 2018 Çimtaş Precision Machining developed four projects, one of which was supported by the Ministry of Development and three by TUBITAK.

⁷ <https://www.enka.com/cimtas-pipe-is-one-of-the-partners-in-the-pianism-project/>



Izmit Bay Crossing Suspension Bridge

INNOVATION AND R&D AT ENKA SYSTEMS

ENKA SYSTEMS IS A TECHNOLOGY AND SOFTWARE COMPANY THAT DEVELOPS TECHNOLOGIES FOR THE CONSTRUCTION SECTOR, TRANSFORMS INNOVATIVE IDEAS INTO PRODUCTS WITH REAL-LIFE APPLICATIONS AND RUNS R&D ACTIVITIES. ENKA SYSTEMS HAS CONTINUED TO DEVELOP NEW PRODUCTS AND ADD NEW FEATURES TO ITS EXISTING SOFTWARE WITH R&D ACTIVITIES IN 2018.

The software developed by ENKA Systems are:

- Document Management System (EDMS)
- Global Procurement System (EGPS)
- Global Equipment Management (EGEM)
- Occupational Health, Safety and Environment Management System (EHSE)
- Human Resources Management System (EGHR)
- Global Vendor Network (EGVN)

Employees at the R&D/Design Centre of ENKA Systems who are pursuing postgraduate studies are given paid leave during course hours, considering the compatibility of their studies with the activities of the R&D/Design Centre. Employees who successfully complete post-graduate or doctoral studies are rewarded.

The participation of employees at conferences and symposia to follow new technologies and trends, especially in subjects that match main areas of activity and projects, is supported at ENKA Systems, making keeping up with technological developments a part of the organizational culture. Employees are encouraged to come up with project ideas that may be realised in the next project assessment period. Employees who propose ideas that are then realised using company capital, public funds (TUBITAK etc.) and EU funds are rewarded at different rates by type of funding.

In addition, should the project be completed successfully, the project team is rewarded and rewards at different rates are offered for national, international and triadic patent applications and approvals with the intent of encouraging patenting, an auxiliary output of R&D and Design projects.



2027 SUSTAINABILITY GOALS

RESPONSIBLE COMPANY	TARGET	2018 PERFORMANCE
ENKA GROUP	We will conduct Environment, Ethics, Human Rights, Social and Occupational Health & Safety audits on 10% of supplier companies that provide project materials, and are audited by independent third party companies which ENKA also works with, by 2027.	In 2018, ENKA evaluated 9.82% of the suppliers it works with in terms of ethics, human rights, combating bribery and corruption, OHS, environmental and social issues. Sustainability audits took place at 1% of suppliers.
	We aim to provide Ethics and Human Rights training to 100% of our white collar and 90% of our blue collar employees by 2027.	The Code of Business Conduct and the Supplier Code Of Conduct which are based on international ethical rules and human rights are published in four languages for the use of all of our employees and suppliers. In addition, in 2018, special training sessions were provided on Ethics and Human Rights for 7% of our employees. 7.14% of white-collar employees (332/4648) have received training on ethics and human rights in working life.
	We aim to increase our customer satisfaction rate for all group companies to 95% by 2027.	The average customer satisfaction for all group companies increased from 81.3% in 2017 to 91.91% in 2018.
	We aim to carry out at least one audit every year at every subsidiary and project to prevent corruption and bribery.	One audit took place at each project. 7.1% of subsidiaries were audited.
ENKA SCHOOLS	We aim for all students at ENKA Schools to participate in at least one social responsibility project every year.	100%
	We aim to continue organizing "ENKA Schools Sustainability Meetings" annually while also broadening its scope.	Target met.
	We will continue undertaking joint works with teachers at ENKA Schools to increase sustainability awareness.	Target met.
ENKA FOUNDATION	We aim to win awards at national and international competitions in sports and arts with ENKA Schools.	Target met.