founded 1984

Confederation of European Environmental Engineering Societies

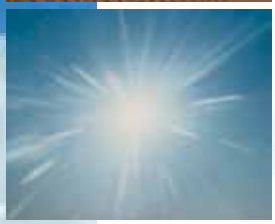
Environmental Engineering

Technical products are, during their entire life-cycle, subject to many varying influences from their environment. These affect their functional ability, durability, quality and reliability.

It is, therefore, technically and economically critical that the design and manufacture of the product should meet both the operational and functional requirements.

The various disciplines within environmental engineering examine the interactions between an object and its environment.

Environmental engineering deals in principle with questions relating to
- functional ability
- durability
- reliability
- sustainability



Environmental simulation helps to reveal ageing and weathering processes. In this connection questions of accelerated ageing and time compression play an important part. Commercial test facilities and applied research centres work in close co-operation with each other.

Environmental engineering is concerned both with the impact of the product on the environment and with its protection from environmental influences, as well as the quality of the product and economical considerations. A longer product life-span is of benefit to the consumer and assists in the conservation of resources. It results in a reduction of waste and a more economical approach to energy conservation and impact on the environment.

Environmental simulation methods are, to an increasing extent, also used in other areas of activity. For example, the investigation of damage to forests, the degradation of ancient monuments and the effects of emissions into the atmosphere.

Procedure

Environmental engineering is an interdisciplinary technical and scientific area of activity. Its disciplines include:
- The determination of environmental factors and parameters
- The simulation of environmental effects under controllable conditions
- The assessment of the effects on systems, products, components and materials

Environmental tests are tailored to guarantee that a product is sufficiently, but not over-tested. Thus with a life-cycle evaluation the environmental loads are established and the test programmes are developed. Economical considerations play a large part in this process. The expense of achieving the environmental qualification of a product is offset mostly by improved quality and reliability.

Interested Parties

Technicians, engineers and scientists in the field of environmental engineering are most likely involved in:

- Aviation and space technology
- Electrical and electronic technology
- Automotive engineering
- Construction and building industry
- Defence technology
- Transportation and packaging technology
- Environmental research

Environmental Factors

Environmental factors are all forms of physical, chemical or other influences on the item under examination. These mainly stem from the effects of the ambient conditions, e. g. during production, shipping and operation.

With any object under investigation it is irrelevant whether these influences are natural, e. g. climatic or man-induced, e. g. vibration, shock, etc.

Environmental Laboratories

Environmental engineering requires test equipment and facilities such as climatic chambers, shaker systems, shock tables, EMC facilities, etc. as well as a wide range of data acquisition equipment. Additional equipment including IR spectroscopy, scanning electron microscopy and similar systems are also necessary. Test laboratories with this type of equipment exist in most countries and their services are generally available to all.

Important environmental influences and examples of their origins

Natural Origin	Environmental Influences and Parameters	Anthropogenic Origin
Outdoor atmosphere	**Climatic influences** Moisture Temperature Rain Wind Solar radiation	Indoor atmosphere
Earthquake	**Mechanical influences** Vibrations Shock Impacts	Transportation stress Machinery operation
Salt mist	**Chemical influences** Airborne traces Liquids	Industrial atmosphere
Microbes Rodents	**Biological influences** Organisms	Pesticides
Lightning	**Electromagnetic influences** Field strength	Radar Mobil communications
Cosmic radiation	**Radioactive influences** Quantum energy	Nuclear power plants

Tool to Enhance Product Performance

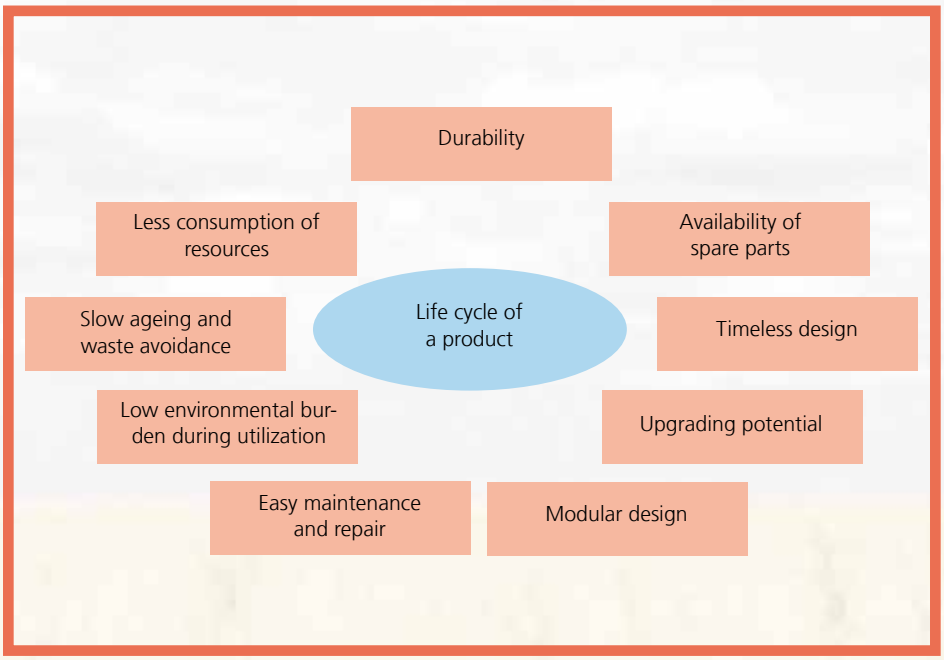
Environmental engineering is a powerful tool to enhance product performance especially by

- Analysis of the life cycle profile
- Investigation of environmental effects
- Developing environmental design criteria
- Applying environmental testing
- Providing qualification and evaluation
- Challenging virtual simulation

Sustainability during the Life Cycle

Environmental engineering contributes to the principles of sustainability in product development, design and usage by increasing service life, quality and reliability. It helps to avoid unnecessary waste generation and improves the efficient use of ressources.

Key issues of a sustainable product

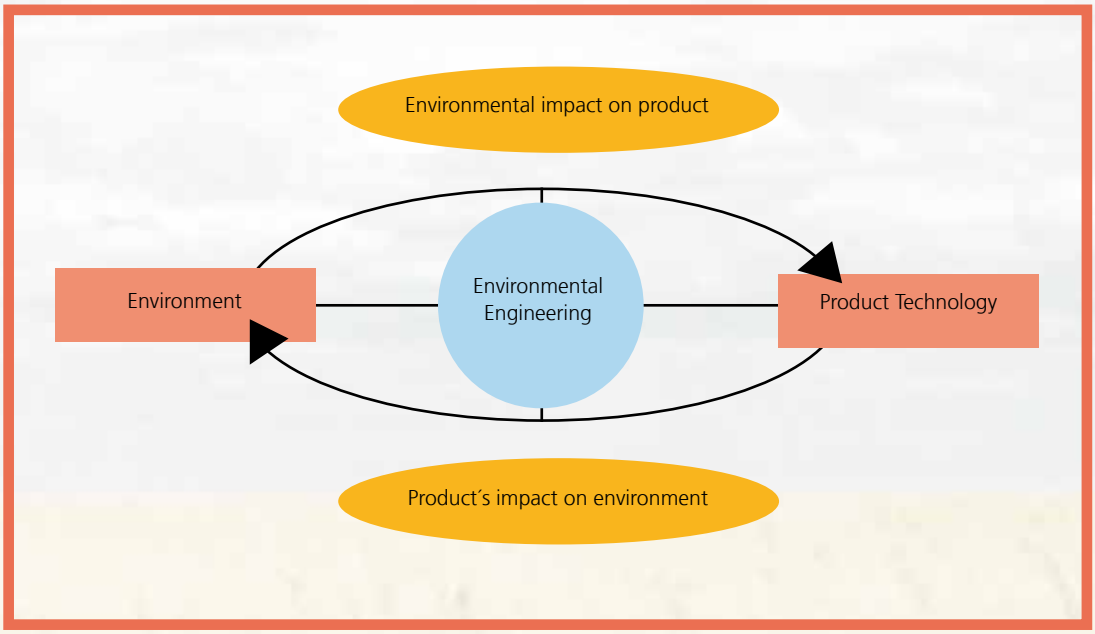


Sustainability in Product Development

- Durable and reliable products
- Weathering resistance
- Adjusted packaging
- Decrease of wear-out
- Decrease of defects
- Avoidance of waste
- Careful treatment of resources
- Service life extension
- Environmental benefit
- Customer benefit
- Market advantages

Guidelines for sustainable product design

- Modular design: Grouping of devices with similar service life
- Identification and definition of interfaces
- Standardization
- Discrete functional units
  (e.g. energy converter, control unit, mechanical parts, housing)
- Fast and easy dismantling potential
- Easy software up-grading
- Self-diagnostic capability
- Easy maintenance and repair



Environmental engineering focusses on the interaction between a product and its environment

CEEES

The Confederation of European Environmental Engineering Societies is an independent non-profit organisation. The CEEES promotes the advancement of science and technology in the field of environmental engineering by organizing and supporting the exchange of infomation and experience in all the related fields. It participates in national symposia and arranges international conferences on environmental techniques and their application.

Its stake holders are also active in the establishment of national and international standards and codes of practice. It encourages the member societies to support each other's activities. CEEES technical advisory boards cover transportation stresses, stress screening, reliability and the effects of climate and pollution on equipment and structures.

Aims and Objectives

- Advancement of science and technology in the field of environmental engineering and related branches
- Exchange of information and experience
- Arranging international symposia and workshops
- Participation in standardization and best practices elaboration
- Encouraging members to support each other
- Achieving recognition as an expert pool

Organisation

The CEEES organisation includes a general assembly, president and vice-president, treasurer, secretariat and technical advisory boards.

Each member society successively holds the presidency and secretariat for a period of two years:

1984–1986	SEE	United Kingdom	Bill Roberts
1886–1988	ASTE	France	Pierre Lémann
1988–1990	GUS	Germany	Hiltmar Schubert
1990–1992	SEES	Sweden	Hakan Torstensson
1992–1994	SSEE	Switzerland	Marcus Dumelin
1994–1996	SEE	United Kingdom	Graham Hooper
1996–1998	AITPA	Italy	Gianluigi Angelantoni
1998–2000	ASTE	France	Henri Grzeskowiak
2000–2002	GUS	Germany	Karl-Friedrich Ziegahn
2002–2004	BSTEE	Belgium	Francois Crepain
2004–2006	SEES	Sweden	Peter Eriksson
2006–2008	SEE	United Kingdom	David Richards
2008–2010	KOTEL	Finland	Markku Juntunnen
2010–2012	SSEE	Switzerland	Werner Wittberger
2012–2014	PLOT	The Netherlands	Harry Roossien

Education and Training

The CEEES supports education and training by

- Producing a calendar of events
- Workshops and discussion forums
- Conferences and symposia
- Training courses
- Round robin exercices
- Joint events with other technical organisations

Membership

The CEEES is the leading organisation among European environmental engineering societies. Only an established society can become a full member of the CEEES. Membership of individuals is not foreseen. Associated and corresponding members may be accepted by the General Assembly.

As of January 1st, 2013 the following societies are members of the CEEES:

- AITPA – Associazione Italiana Tecnici Prove Ambientali, Italy
- ASTE – Association pour le Developpement des Sciences et Techniques de l'Environnement, France
- BSTEE/BEST – Belgian Society of Mechanical and Environmental Engineering, Belgium
- GUS – Gesellschaft für Umweltsimulation, Germany
- KOTEL – Finnish Society of Environmental Engineering, Finland
- NACEI – National Association of Czech Environmental Engineers, Czech Republic
- ÖGUS Österreichische Gesellschaft für Umweltsimulation, Austria
- PLOT – Platform voor Omgevingstechnologie, The Netherlands
- SEE – Society of Environmental Engineers, United Kingdom
- SEES – Swedish Environmental Engineering Society, Sweden
- SOPSAR – Portuguese Society of Environmental Simulation and Risk Assessment, Portugal
- SSEE – Swiss Society of Environmental Engineering, Switzerland

National member society	Address		Point of contact
AITPA Associazione Italiana Tecnici Prove Ambientali	11, Via V Emanuele I-06056 Massa Martana Perugia Italy		Secretariat: Roberta Molho Phone: +39-075-8955-207 Fax: +39-075-889770 roberta.molho@angelantoni.it www.aitpa.org
ASTE Association pour le Developpement des Sciences et Techniques de l'Environnement	1 Place Charles De Gaulle F-78180 Montigny Le Bretonneux France		Secretariat: Phone: +33 1 61 38 96 32 Fax: +33 9 71 70 10 38 info@aste.asso.fr www.aste.asso.fr
BSTEE/BEST Belgian Society of Mechanical and Environmental Engineering/ Belgian Environmental Sciences and Technologies	Royal Military Academyay Dept of Mechanics Renaisancelaan 30 B-1000 Bruxelles Belgium		Secretariat: Kristof Harri Phone: +32-2-742-6640 Fax: +32-2-742-6547 kristof.harri@rma.ac.be www.bsmee.be
GUS Gesellschaft für Umweltsimulation e.V.	c/o Fraunhofer ICT Joseph-von-Fraunhofer-Str. 7 D-76327 Pfinztal Germany		Secretariat: Sabine Aref Phone: +49-721-4640-391 Fax: +49-721-4640-345 secretariat@gus-ev.de www.gus-ev.de
KOTEL Association for Cooperation, Research and Development of Electronics	P.O. Box 1001 FIN-02044 VTT Finland		Secretariat: Antti Turtola Phone: +358-20-722-5639 Fax: +358-20-722-7042 antti.turtola@vtt.fi www.kotel.fi
NACEI National Association of Czech Environmental Engineers	a. mestanskeho pivovarrn 934 CZ-17000 Prague 6 Czech Republic		Secretariat: Dr. Ivan Kudlacek Phone: +420-2-2435-2212 Fax: +420-2-2435-3949 kudlacek@fel.cvut.cz
ÖGUS Österreichische Gesellschaft für Umweltsimulation	OFI – Betriebsstandort TFZ Wiener Neustadt Viktor Kaplan Str. 2, A-2700 Wiener Neustadt Austria		Secretariat: Gertraud Lechner Phone: +43-1-798 1601-220 Fax: +43-1-798 1601-700 gertraud.lechner@ofi.at www.oegus.at
PLOT Platform Omgevings-technologie	c/o Bureau FHI P.O. Box 366 NL-3830 AK Leusden The Nederlands		Secretariat: Harm Wijsman, Harry Roossien Phone: +31-33-4657507 Fax: +31-33-4616638 harm.wijsman@fhi.nl www.plot.nl
SEE Society of Environmental Engineers	The Manor House High Street Buntingford, Herts SG9 9AB United Kingdom		Secretariat: Jill Waite Phone: +44-1763-271209 Fax: +44-1763-273255 office@environmentqalorg.uk www.environmental.org.uk
SEES Swedish Environmental Engineering Society	Storgatan 5 P.O. Box 5510 S-11485 Stockholm Sweden		Secretariat: Marten Sohlman, Göran Jansson Phone: +46-8-7820807 Fax: +46-8-6603378 marten.sohlman@teknikforetagen.se goran.jansson@testcenter.se www.sees.se
SOPSAR Sociedade Portuguesa de Simulacao Ambiental e Avaliacao de Riscos	c/o University of Minho DEB Campus de Gualtar P-4710-057 Braga Portugal		Secretariat: Claudia Sil Phone: +351-253-603-232 Fax: +351-253-603-233 info@sopsar.pt www.sopsar.pt
SSEE – SVU Swiss Society of Environmental Engineering	Schweizerischer Verein für für Umweltsimulation P.O. Box 119 CH-2540 Grenchen 2 Switzerland		Secretariat: Phone +41-32-653 18 95 Fax +41-32-653 18 43 sekretariat@svu.ch www.svu.ch