

CHAPTER 16

CHANGING WORKING PRACTICES

The responses in this chapter may be considered to be more 'subjective' than 'objective'. The questions themselves reflect queries or areas of concern expressed by members over the period in which the questionnaire was being developed.

The answers that members have given reflect their perception of such issues and are not, on the whole, based on statistical or official information, unless clearly stated within the text.

Question 16.1: What is your opinion of Eurocodes and how do you believe they will affect the construction sector in your country? In particular, what do accession states feel about harmonisation of codes?

Question 16.2: How are Environmental Impact Assessments handled in your country?

Question 16.3: Do you believe that enough is being done to implement Information and Communications Technology (ICT) in your country? Is the use of ICT increasing?

COUNTRY	
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<p>Croatia</p>	<p>Eurocodes: It is expected that the system of Eurocodes will be introduced officially in design practice by the end of the year 2004 in its ENV version. Eurocodes will replace old national regulations relating to structural design. National Application Documents have been prepared and Croatian translations are completed for ENV 1991, ENV 1992 and ENV 1998. Eurocodes (ENV version) have been taught at all four universities over the last ten years so that many generations of young engineers have become familiar with Eurocodes, and are using these methods in their design work. Introduction of Eurocodes will enhance understanding among designers from all European countries. The acceptance of Eurocodes is considered a big step forward since Croatian design regulations are currently quite obsolete.</p> <p><u>The Construction Product Directive</u> (Directive 89/106/EEC) is currently being implemented. It is expected that construction product industry will be obliged to change dramatically its approach to the process of checking conformity of construction products.</p> <p>Environmental Impact Assessments: This field is regulated by a series of laws and regulations on the protection of air, water and soil. In its "Strategy for the 21st Century" Croatian government specifies extensive measures aimed at improving present situation in the field of waste management, water management, air quality, noise protection, etc. Feasibility studies covering environmental protection must be produced prior to realization of every large industrial and infrastructure project.</p> <p>Use of Information Technology: The ICT implementation is gaining momentum in Croatia. The PC technology is dominant in the design process. Computer software programs accepted on an international scale are widely used in Croatia. On construction sites, information technology is not used to its full capacity. Often it is used only to perform tasks of minor significance (worker registration, calculation of salaries, warehouse item listing, book-keeping, etc.). No information is available that would point to extensive use of ICT in the construction process.</p> <p>The computer technology is used for traffic control on new highways and tunnels. Croatian Railways are developing their own ICT software for passenger services, traffic control and maintenance activities.</p> <p>In addition, personal computers are used in every engineering office, and Internet is recognized as a common source of information.</p>
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<p>Cyprus</p>	<p>Eurocodes are well prepared and will bring the European engineers to work on the “same platform”. We believe the effect on the construction sector in Cyprus will eventually be positive, since, until recently design work was carried out using different codes and standards, generally according to the education background of the design engineer.</p> <p>There is a Joint Committee that assesses each Environmental Impact Assessment Study and makes recommendations to the Government Environmental Services of how to handle each case. Several government departments and non – government organizations are members of this Joint Committee.</p> <p>A lot is being done to promote Information and Communication Technology (ICT) in Cyprus and the use of ICT is increasing. ICT is widely used in civil engineering design and construction in Cyprus. Computer software programs are used in structural analysis, soil mechanics, hydraulics and hydrology, highway engineering, topography, preparation of drawings (CAD) etc. Software programmes are also used in construction for programming and follow the progress of the works, preparation of payment certificates and measurement of the works. Specially tailored software using the SCADA system is used to remotely operate and supervise waterworks and water supply systems and collect and store useful data.</p>
<p>Czech Rep</p>	<p>Eurocodes: We hold a positive opinion of Eurocodes</p> <p>Environmental Impact Assessments: This is dealt with by the Czech Environment Protection law and by EU Directives as well</p> <p>Use of Information Technology in the sector: There is an effort being made to increase use of ICT, but this is not enough to catch the older generations. Generally, use of IT is increasing.</p>
<p>Estonia</p>	<p>Eurocodes: The Estonian Standardisation Centre is the main body for implementation of Eurocodes and EN. Members of EEL participate in this work as members of technical committees.</p> <p>Environmental Impact Assessments: The implementation of legislative documents and environmental policy of the EU is under the responsibility of the Ministry of Economy and Communication and the Ministry of the Environment.</p> <p>Use of Information Technology in the sector The use of ICT is increasing very significantly.</p>
<p>Finland</p>	<p>Eurocodes:</p>

	<p>Environmental Impact Assessments: The authorities have taken the environmental aspect of civil and building engineering very seriously. Laws, regulations and technology to minimise the environmental burden are developing and in use, which covers a wide scale of environmental issues (energy and material usage, effective lifetime and ecological quality of buildings and constructions, soil usage, recycling and waste minimising, etc.). The methods and technology for environmental effectiveness in civil engineering are in principal already widely available, but as a whole the implementation is still at an early stage.</p> <p>Use of Information Technology in the sector: Use of ICT is increasing. A construction ICT-professorship is under way in Tampere University of Technology at the Department of Civil Engineering. This Faculty will start producing M.Sc. level engineers specialised in ICT in the construction sector.</p> <p>Large research programmes have been conducted especially focused on ICT in construction. ICT is an integral part of all new R&D programmes and the Union of Construction Industry has started a very big “Pro-IT” development scheme within the industry.</p>
<p>France</p>	<p>Introduction of Eurocodes in Civil Engineering: The Eurocodes System is known to be implemented in a near future (End of “EN” state in 2005). It is considered that Eurocodes is a complex matter which needs a strong professional Involvement in short term. As examples, Continuous Education Sessions on this topic are already carried out, and teaching of Eurocodes is already introduced in some Establishments (ENPC and Ecole Centrale de Nantes for example), or ready to be introduced very soon (ESTP for example). Standards for Construction Products, in relation with the related European Directive, are more popular, because of the strong involvement of professionals in preparation of such Standards.</p> <p>Handling of Environmental Impact Assessments Impact assessment Studies are of current practice because now mandatory under law. Some practical documents must be mentioned:</p> <ul style="list-style-type: none"> • Decree on Involvement of Environment and Landscape in Roads Projects (Ministry of Equipment, Land Management, March 1996) • Guide of good environmental Practice (FNTP, Ministry of Land Planning and Environment, Association of French City Mayors). • 21 Commitments for Sustainable Development in the Highways Sector (Association of French Motorways Companies- AFSA) <p>The HQE (High Quality Environment) Commitments for Buildings.</p> <p>Use of Information and Communications Technologies (ICT) Out of standard office Software and electronic transfer of messages and files, ICT is developing continuously. Surveyors are currently using sophisticated GPS reference systems, Robotics, Localisation Systems, and Informatics treatment of Data are now working on Road Jobsite Equipments. More sophisticated system are only at the step of research in terms of numerical Modelling of buildings and numerical management of road jobsites.</p>

<p>Germany</p>	<p>Eurocodes are normal working tools of a civil engineer, but they do not replace the German standards DIN. Eurocodes are taught in all civil engineering classes at the institutions of higher education.</p> <p>Even if the Eurocodes are treated to be rather “difficult” to understand and applied, also the normal civil engineer has to undergo special professional development courses.</p> <p>Concerning the accession states there is no difficulty of application because the education is very scientifically based and the duration normally is not less than 5 years.</p> <p>Environmental Impact Assessments: The regulations to implement environmental requirements are very strictly. Even for private dwellings there are regulations for minimizing the heat consumption, for using natural or at least ecological building materials. The installation of renewable energy producing systems (water, electricity) is highly supported.</p> <p>Bigger private and public buildings have to be planned and built using methods and technology for environmental effectiveness in civil engineering. Laws, regulations and technology to minimise the environmental burden are developed and - in most cases - in use, which covers nearly the whole scale of environmental issues (energy and material usage, effective lifetime and ecological quality of buildings and constructions, soil usage, recycling and waste minimising, etc.).</p> <p>Implementation of Information and Communications Technology (ICT): The use of ICT is an integral part of both educating civil engineers and using it in the building industry. But as there are different ways of understanding of ICT the variety of using it is quite big.</p> <p>At universities ICT is normally understood and taught in this way as a construction tool (CAD, Statics Software, Finite Elements Software). But more and more complex software tools are taught concerning the planning, supervision, financial development, development in time etc.</p> <p>All these tools are frequently used in companies. But the use of ICT for general and detailed information exchange is still “a little behind” the possibilities. Each company has its own self-produced tool.</p> <p>Electronic tendering is more and more used, data banks are offered. It is especially necessary for so called ARGEs (a group of cooperating companies on a temporary basis and on a special project). In some Bundesländer a special software is used which has to be used too by the tendering companies. Electronic tendering is not obligatory.</p>
<p>Hungary</p>	<p>Eurocodes have been taught in the University and by the Chamber for several years now. The accession of elder engineers is very slow.</p> <p>Environmental Impact Assessments are present in Hungary and are handled in the thinking and practice of engineers.</p> <p>There is a Ministry for Environmental Matters in Hungary. Regulations are on EU level. Measures are restricted by financial possibilities.</p> <p>Use of information and communications technologies (ICT) – (no response)</p>

<p>Ireland</p>	<p>Eurocodes: Harmonisation is a good idea for European Competitiveness but too vague and poorly administered. Not enough Government direction is being given to them.</p> <p>Environmental Impact Assessments: These are treated very seriously. They are essential for major developments.</p> <p>Use of information and communications technologies (ICT): We do not believe that enough is being done to implement Information and Communications Technology in Ireland, the government is not totally behind it with resources. The Institution of Engineers of Ireland has set up an ICT division due to demand from members.</p>
<p>Italy</p>	<p>Eurocodes: The Eurocodes implementing the Directive 89/106/EEC on the construction materials are more and more in use coupled with the national technical provisions relevant to concrete and prestressed concrete in the building and in infrastructures sectors.</p> <p>The Ministerial Decree 9.1.1996 refers to the Eurocode ENV1992/1/1.</p> <p>As concerns the seismic effects, beyond Law 64/1974, a new technical updating is being elaborated and refers to the seismic Eurocode 8.</p> <p>Environmental Impact Assessment: Any important work, in particular relevant to infrastructures, shall be accompanied by analyses of its relevant environmental impact assessment.</p> <p>Use of information and communications technologies (ICT): The use of ICT is significantly increasing in the professional studios both for mail and for designs.</p>
<p>Lithuania</p>	<p>Eurocodes: Lithuanian Standards Board in the main body for implementation of Eurocodes and EN. Lithuania is following preparation of EN and transforming them into Lithuanian Standards (LST). Implementation of harmonized standards is the main priority.</p> <p>Environmental Impact Assessments: Implementation of legislation documents and environmental policy of EU is under the responsibility of Environment Strategy and Environment Quality Departments of Ministry of Environment of Lithuania.</p> <p>Use of information and communications technologies (ICT): The use of ICT is increasing very significantly.</p>
<p>Poland</p>	<p>Eurocodes: Our opinion of Eurocodes and how they will affect the construction sector in your country is generally positive.</p> <p>Harmonisation of codes gives opportunity to unification of the law in the range of civil engineering</p> <p>Environmental Impact Assessment: These are dealt with rationally, according to Polish Environment Protection Law</p> <p>Use of information and communications technologies (ICT): We believe that enough is being done to implement ICT in our country, but that very much must be done. The use of ICT is increasing.</p>

<p>Portugal</p>	<p>Eurocodes are technical texts of the highest quality and are already taught in university courses. National codes are planned to be substituted by eurocodes, but today in important projects both are used. The main problem is they are too complex and till now they are more considered as a reference technical text.</p> <p>Environmental Impact Assessment: These are dealt with according to the relative EC directives.</p> <p>Use of information and communications technologies (ICT): At design level this is well developed. All design offices currently use ICT. E-procurement and e-business is beginning its implementation in construction.</p>
<p>Romania</p>	<p>Eurocodes: The activity for drawing up the Eurocodes aims at accomplishing a number of objectives that may be grouped in three groups:</p> <ul style="list-style-type: none"> • Legal – to support the Community directives and to lead to getting an open market as far as services and products/materials are concerned • Professional – to supply general rules for an economic designing, the definition of reliability included • Industrial – to increase the efficiency of the European building industry and its competitiveness worldwide <p>The transformation period of ENV into EN will take another 2-3 years, the coexistence of the national designing codes and of the Eurocodes may take another 5 years to which may be added a period of time when the national design codes are maintained as valid.</p> <p>The following are some of the factors that may influence this latter (i.e. maintaining of the national codes) period:</p> <ol style="list-style-type: none"> a) the need to support the existing regulations and their associated documents b) the specialists' need to use the current information referring to designing c) the extension to which the new standards of products adapt the existing products d) further use of the products in accordance with the national standards to which reference is made in the national designing codes e) impossibility of drawing up the EN standards for products in a relatively short period of time f) the capacity of each state to use its equipment and manpower to use the new products <p>The future European norms are expected to no longer present incompatibilities with the national norms. Under these conditions, each of the national institutes of the member states, as part of the action of taking over of these norms, will determine which of the levels of performance specified in the EN will be applied nationally and alternative performance criteria will be defined, if required.</p> <p>The action of drawing up the Romanian codes CR in agreement with the structural Eurocodes is of a great importance that should be supplemented by a wide spreading action so that they are known by the engineers that are to apply them or that will be in contact with these norms.</p> <p>This paper may be used in the program for drawing up the Romanian designing codes and the other associated technical regulations on materials, products, tests, execution, use, interventions etc.</p>

	<p>Environmental Impact Assessment: Currently, all construction projects must have an environmental impact assessment, which is provided by the National Environmental Agency, through its branches in the territory. For important projects, studies of environmental impact are elaborated by specialized institutes with accreditation in the field.</p> <p>Use of information and communications technologies (ICT): ICT role increases, even it was not used enough.</p>
Russia	<i>No information has been provided for this topic.</i>
Slovak Rep.	<p>Eurocodes: The European harmonization in the construction sector is certainly a big step forward. Eurocodes can ensure the safety and stability of construction works and will make the free movement of building products within EU much easier.</p> <p>Euro-codes are considered to be a complex issue which needs a strong involvement in a relatively short time. They are already incorporated in the subjects taught at various educational organizations, mainly the civil engineering faculties in Slovakia.</p> <p>Environmental Impact Assessment: Environmental Impact Assessment procedure in Slovak legislation is adjusted by the Act No. 127/1994 of the National Council of the Slovak Republic on the Environmental Impact Assessment, and Act No. 391/2000 Coll., which changes and complements the previously stated act. By approval of this act, legal regulations in the field of Environmental Impact Assessment in Slovakia has been harmonised with the legal regulations of EU. The whole assessment process in the Slovak Republic is managed and regulated by the Ministry of the Environment of the Slovak Republic, the Environmental Impact Assessment Section.</p> <p>Use of information and communications technologies (ICT): The use of ICT in the civil engineering sector is currently increasing in Slovakia.</p>
Turkey	<p>Eurocodes: Turkish Standards Institution (TSI) governs the standardization of all disciplinary issues and principles. Eurocodes are being observed by Turkish civil engineering sector recently, and the general intend is through usage of Eurocodes in Turkey. The preparation studies for Eurocode implementations for the standardization sector of Turkey are being realized at the present.</p> <p>TCCE is solely supporting Eurocode usage in Turkey, referring to the advantages and benefits of global standard applications. The common goal of international sectors and chambers will be achieved by providing the same or similar constraints in the civil engineering implementations.</p> <p>The accession states are focused on legislations and regulations about general contract issues, qualified engineering problems and professional recognition concept. As these seem to be the fundamental changes to be made in Turkey, it is a seldom case of states to be focused on codes and standards presently.</p> <p>Recently, there have been new implementations to the standardisation system. Accreditation Association is realizing the determination and control of standards gradually. In addition, CE marking criteria will be applied to all implementations, within the following year, which provides another standardisation in global point of view. These recent developments are included in European Union adaptation process.</p>

	<p>Environmental Impact Assessment: There are regulations on environmental impact issues and applied properly for both public and private sectors. The Environmental Impact Assessment Regulation covers up the essential features to be responsible from and related obligations for all civil engineering applications.</p> <p>Use of information and communications technologies (ICT): ICT has been commonly being used in all areas of civil engineering. The implementation of ICT to the sectors started with private sector applications, and developed rapidly. Public sector followed these developments rather deliberately, but caught up and settled ICT involvement in every area within a remarkable time. As the human involvement is ICT usage is essential, most of the problems or difficulties in implementations are resulted from employers getting used to ICT.</p>
<p>United Kingdom</p>	<p>Eurocodes: ICE had decided to take an active approach towards the introduction of Eurocodes, and has launched a website (http://www.eurocodes.co.uk/) to assist members and the construction industry in understanding and dealing with Eurocodes. Thomas Telford, the commercial arm of the Institution, is organising training courses in the different Eurocodes.</p> <p>Environmental Impact Assessment: Environmental impact assessments are carried out in the UK in accordance with the Council Directive on Environmental Impact Assessment (EIA Directive) of the effects of projects on the environment, as introduced in 1985 and amended in 1997.</p> <p>The process involves an analysis of the likely effects on the environment, recording those effects in a report, undertaking a public consultation exercise on the report, taking into account the comments and the report when making the final decision and informing the public about that decision afterwards. Environmental assessment is undertaken for individual projects such as dams, motorways, airports or factories.</p> <p>Use of information and communications technologies (ICT): ICT is increasingly used in UK construction business, and has become a standard subject in civil engineering courses at universities.</p> <p>ICE has an ICT panel which considers questions relating to the use of ICT in civil engineering and promotes best practice in IT management systems.</p>