



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 04.11.1997  
COM(97) 539 final

COMMUNICATION FROM THE COMMISSION

TO THE COUNCIL, THE EUROPEAN PARLIAMENT,  
THE ECONOMIC AND SOCIAL COMMITTEE  
AND THE COMMITTEE OF THE REGIONS

**“THE COMPETITIVENESS OF THE CONSTRUCTION INDUSTRY”**

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# "THE COMPETITIVENESS OF THE CONSTRUCTION INDUSTRY"

## 1. INTRODUCTION

The construction industry<sup>1</sup> is a major constituent of the European Union's economy. It is a firmly established sector which has attained a level of competitiveness<sup>2</sup> on a par with that of its main competitors and it is well geared to local conditions. However, given the dynamic approach necessary in a world of accelerated change, the Commission considers that the construction industry faces a wide range of challenges which must be addressed if it is to maintain, and if possible, improve its competitiveness. Increased competitiveness in construction will also have a positive influence on other industrial sectors, as well as on employment and growth.

To achieve this goal, a series of strategic objectives and recommendations for Industry, the Commission and Member States are presented and analysed in this Communication. The Commission will, in co-operation with industry representatives and relevant authorities, establish a programme to follow-up these recommendations.

As a firm basis for the proposed recommendations, the Communication analyses the principal factors which influence the competitiveness of the sector; in particular, aspects of quality in construction, the regulatory environment, education and training provision, and the reorientation of research and development effort.

## 2. THE CONSTRUCTION SECTOR IN EUROPE

The gross output of the construction sector in the fifteen member states amounted to 750 billion ECU in 1996, which represents approximately 11% of Community GDP and 5.6% of the value added. This makes it the largest industrial sector, ahead of the foodstuffs and chemical industries, although in the period from 1970 to 1985 productivity in the construction sector only increased at an average annual rate of 0.9%, compared to 2.3% for all other industries. The sector is also crucial in producing investment goods, generating 58% of gross fixed capital formation<sup>3</sup>. Further, the output of the construction sector in the European Union outstrips that of Japan by 10% and that of the USA by 30%, and the EU is the principal world exporter of construction services - 52% of international markets are captured by European companies. Construction is also one of the most important supply sectors to public purchasers in Europe - in 1996, works contracts represented almost 30% of advertised opportunities across the EU<sup>4</sup>. The value of cross-border trade is still relatively low compared to the total value of the

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<sup>1</sup> In this Communication, the construction industry is considered in the broad sense of the word, and includes housing, non-residential buildings, civil engineering and industrial construction. In addition, the whole supply chain needs to be taken into account - from primary raw materials to complex products and systems. Similarly, the construction process includes all phases - from initial conception, through feasibility studies, design, execution of the works, and maintenance, to demolition (including recovery and recycling of materials, and waste disposal and incineration).

<sup>2</sup> The concept of competitiveness used is that defined in the Communication entitled "An industrial competitiveness policy for the European Union" - COM (94) 319 final of 14 September 1994.

<sup>3</sup> Source: FIEC

<sup>4</sup> Source: Tenders Electronic Daily (TED) database

construction market in Europe. Estimates of public sector import penetration suggest that direct imports from within the EU are approximately 3%, while direct import from outside the EU are insignificant. Taking into account indirect imports (i.e. purchases from non-domestic origin through a local subsidiary), overall EU public sector import penetration is between 7% and 10%.

Construction is the largest sector in terms of employment, providing jobs for 8.8 million people<sup>5</sup>, or some 7% of the working population. And it is a key sector for job creation. According to the so-called SECTEUR study, every job created in the construction sector generates two further jobs in related sectors. This gives rise to the commonly held view that the 8.8 million jobs in construction, plus the 0.8 million jobs in design, give rise directly to 2.5 million jobs related to construction products, and indirectly to 14.3 million jobs in other service sectors. More than 26 million workers in the EU can thus be said to depend, directly or indirectly, on the construction sector:

				<u>Million employees 1990</u>
Direct employment:				8.8
Consultants (architects, engineers, surveyors):				0.8
Construction products:				
<i>Activity</i>	<i>Employment</i>	<i>% of Output to Construction</i>		
Iron & Steel	0.32	40	0.13	
Quarrying	0.16	100	0.16	
Clay products	0.12	100	0.12	
Cement	0.11	100	0.11	
Concrete products	0.32	100	0.32	
Glass	0.32	50	0.16	
Ceramics	0.33	50	0.17	
Paints & Dyes	0.52	30	0.26	
Metal Structures	0.41	50	0.21	
Wood products	0.09	70	0.07	
Carpentry	0.22	50	0.11	
Other metals & tubes			0.20	
Other plastics & chemicals			0.20	
Electr. & mech. eqpmt			0.30	
				2.5
Total construction:				12.1
Secondary indirect effect of purchase from all other sectors				
Total civilian employment :		131.6 million		
Construction:		-12.1 million		
Total employment of other sectors		119.5 million		
Construction impact: 12% x 119.5				14.3
Total direct & indirect:				26.4

<sup>5</sup> Source : "Strategies for the European Construction sector" - the SECTEUR study.

Small and medium-sized enterprises (SME) play a major role in the construction sector. Indeed, 97% of some 2 million companies have less than 20 employees, and 93% have less than 10.

The economic weight of the sector gives a particular poignancy to the recent slump in construction activity. Since 1991, after several years of growth, output in building and civil engineering has been stagnant. Paradoxically, the social needs that the sector should be satisfying are a long way from being met. Such needs form the basis of a potential demand that, given healthy financial conditions, could be transformed into affordable demand, which will be fundamentally important in providing the engine for future growth in construction. In addition, it is well known that the more developed a society, the more its construction needs increase, a consequence, no doubt, of qualitative shifts in demand. In this respect, it is worth mentioning the opportunities for the sector that will arise from an enlargement of the European Union.

Finally, the global competitive position of European industry and services are heavily influenced by the quality of the buildings in which they operate. The quality of transport-infrastructure is also essential for all industries. In other words, the construction sector represents an important overhead-cost within the overall production costs of other industrial sectors.

### 3. SPECIFIC ASPECTS OF THE SECTOR

The construction sector is one which is highly regulated, with specific characteristics which differentiate it from other industrial sectors :

- it is a heterogeneous and fragmented sector, which depends on a large number of very different professions;
- logistical and transport aspects are very important. Construction is one of the most geographically dispersed sectors with marked regional differences;
- the final product is one of the few non-transportable industrial products, adaptable to a variety of uses and representing one of the most durable of human artefacts. It forms the physical infrastructure for living and working, for production and transportation and for essential services. Half of construction projects relate to renovation;
- most construction projects are prototypes;
- investments in machinery, tools and other elements have to be depreciated over a shorter period than is usual for other industrial sectors;
- the entry-level for new contractors is relatively low because the need for operational capital is small;
- it is closely linked to the economic cycle, and, being generally conducted outside, is affected by seasonal climatic variations;

- the sector is very labour intensive, with high mobility of the workforce and growing skills needs as construction technology becomes more sophisticated. The duration of contracts is often linked to the length of the site construction phase. Accident rates tend to be high;
- finally, the sector generates an enormous quantity of construction waste and demolition material (more than 270 million tonnes per annum). Buildings are further responsible for 42% of energy consumption within the EU, with a expected growth rate of 1.5% per annum over the next decade. The sector represents the second largest contributor to CO<sub>2</sub> emissions. Moreover, in some Member States the shortage of natural construction materials is a problem.

#### 4. THE KEY INTERRELATED ELEMENTS OF COMPETITIVENESS

The factors which determine the competitiveness of the sector are closely linked and ought really to be presented in matrix form. They are presented here in linear form only to facilitate understanding.

##### 4.1 Quality

There are well known definitions of quality. Most of them consider it to be subjective, and related to client and societal satisfaction. However, quality has become a way to look at competitiveness. This competitiveness requires investment in quality as a means to permit enterprises to remain in the market. The cost of non-quality, estimated as 5-10 % of the total output of the construction sector, also justifies the pursuit of quality.

An overall understanding of quality requires that the administrations responsible for enforcing compliance with the basic needs of the final users also set up additional conditions to those initially fixed by the client (health, safety, energy economy, environment, ...).

The evolution of systems for achieving quality indicates that there is not only a concern for demonstrating compliance with quality standards, but also that the system implemented provides guarantees for customers. The construction industry must find its own instrument for achieving and demonstrating quality.

Two main routes have been identified to achieve quality - quality assurance, or production process quality, and total quality management, or integrated management quality. The former implies product oriented quality, with objectives focused on intervention in the production process, and the latter implies interfacing with financial management, marketing management, production management, personnel and training management and the processes within them. Nevertheless, it is important that systems are adapted to make them workable, that is, economically accessible to enterprises. Quality assurance assumes planned and systematic actions to provide the necessary confidence that the product will satisfy given requirements for quality, and is based on company qualification. Total quality management assumes a management philosophy and company practices that aim to harness the human and material resources of an organisation in the most effective way to achieve the objectives of the organisation, including customer satisfaction and continuous improvement. Whatever system is chosen, it has to take into account the size of the enterprise (with appropriate systems for SMEs), the level of interrelation with other activities and its intended field of action.

Education and training are major elements in achieving quality, particularly that related to management skills. The entire system must have the confidence of the customer. For these reasons, the process has to rely on specialised professionals with updated skills to meet the new requirements.

A good quality policy also implies adequate quality systems for all the agents involved in the activity of an enterprise. Everyone, from architects, engineers, or designers to the contractor, and including those involved in the purchasing and supply of products, are all important agents to be embraced by the quality scheme.

The role of the customer in a quality policy is vital in the above scenario. The process of creating quality begins when the needs of the customer are set down in the brief for the call for tender. The role of public authorities as customers in public procurement is also crucial in this respect. The needs of the authorities must be clearly expressed, both in technical and economic terms. The price/quality ratio is a key factor for the authorities responsible for awarding public procurement contracts. Contracting entities can make full use, where necessary, of the possibility offered by EU procurement legislation to award contracts to the most economically advantageous tender.

Standardised procedures, transparency in terms and objectives, as well as in criteria for evaluating tenders, accessibility to all interested parties and agents, and performance based technical terms of reference are all requirements which lead in the direction of quality.

A final point, related to a fair approach to competitiveness and quality, is the need for codes of good practice for all industry participants, including employers, construction professionals and others, in order to provide the best possible service to the industry's clients.

## 4.2 Markets

For a sector heavily dependent on public investment, the existence of long-term infrastructure plans, social housing and non-residential public buildings (schools, hospitals, offices, ...) have a positive effect, as does any investment policy with a level of temporal stability. These plans must, however, be respected. Equally, public authorities can favour sustained growth with well planned initiatives, particularly in the housing sector. Fiscal measures, interest rates, indirect costs, particularly those related to workers, and the elimination of regulatory barriers are amongst the most effective. Public authorities can also effectively promote the use of environment-friendly construction products by establishing appropriate procurement policies.

Construction is closely linked to variations in the economy. In this respect, it responds in a direct and immediate way to changes in the economic cycle. At the same time, given its multiplier effect, it can be used as an instrument to bring about changes in the cycle. However, these artificial stimuli to demand and "stop-go" policies have negative repercussions in the medium-term, as they do not correspond to natural increases in demand.

Low growth rates and the climate of budgetary restraint in European economies effectively constrain the opportunities for public investment in infrastructure. This has led to a growing interest in private financing, a direction adopted by the majority of member states, who are considering the best means of achieving the participation of private initiatives in the design, construction and use of infrastructure.

The same is true at a Community level. Within the framework of setting-up 14 priority projects for the Trans European Network (TEN)<sup>6</sup>, it was decided<sup>7</sup> to adopt the conclusions of the so-called "Christophersen Group", which argued for development of the objective to favour public-private partnership (PPP) schemes in financing these infrastructures. A High-Level Group on Public-Private Partnerships Financing of Trans-European Network Transport Projects, the so-called "Kinnock Group", was convened in this context. The Group finalised its report in May, following which the Commission adopted, on 10 September 1997, a Communication which explains how it intends to follow the HLG recommendations. Commissioner Kinnock presented the Communication to the Transport Council on 9 October. The Council, on 9 October, adopted conclusions welcoming the Commission's Communication and endorsing the use of PPP.

In line with the conclusions of the "Kinnock Group", the construction industry considers that three conditions are particularly important to facilitate the participation of the private sector in infrastructure financing :

- if the rate of return available from exploitation of the infrastructure project is lower than that offered by alternative long-term investments, then the difference should be compensated for by the public sector, through measures such as : a reduction in the financial risks of the project, a guarantee of a minimum level of use, public sector contributions to construct a part of the infrastructure, etc, without prejudice to the normal implementation of Articles 92 and 93 of the EU Treaty.
- given the long-term nature of this type of investment (25, 30, or even 50 years), the private partner must be guaranteed compensation if the legal, regulatory or normative framework affecting the investment is changed;
- a flexible interpretation of the procedures for the award of public contracts for concessions where overall aspects need to be considered (conception and development of systems, detailed design, execution of the project, use and maintenance). In any case, intellectual property rights must be respected in situations where the execution of the project is carried out by a different entity from that which developed the idea. In this respect, the final report of the so-called "Kinnock Group" proposes the elaboration of "guidelines" to clarify the application of public procurement Directives in the case of concessions, and the Commission intends to present such guidelines.

Internationally, the European construction sector is highly competitive in the fields of design, technology, management, equipment and manpower; whence its position in the export market for construction services. These exports involve the movement of assets and highly skilled personnel. In parallel, the activities of large European companies in the movement of capital via direct investments are increasing, particularly in other parts of the EU, the United States, Latin America and South-east Asia. These direct investments take

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<sup>6</sup> Adopted by the European Council of Essen in December 1994.

<sup>7</sup> European Council of Madrid in December 1995.



different forms, including the take-over of or merger with local companies, involve the transfer of technology, investment and know-how, and can provide the means for privileged access to important markets.

Financial aspects are becoming more and more important in awarding public contracts internationally. Indeed, the financing of works has become an important factor in competitiveness, and can prevail on the final offer price, the technical competence of the enterprise, the timetable, or the various technical solutions proposed. In this regard, the position of the Community's businesses appears to be weak with respect to their principal competitors. A Directive is being prepared to harmonise the fundamental principles of the diverse public systems of export credit insurance for transactions in the medium and long-term<sup>8</sup>. This Directive will promote a better co-ordination of national agencies, which could improve the competitiveness of Community exports.

At an international level, a number of export opportunities exist. For example, the WTO Agreement on Government Procurement (GPA) allows Community industry to access a number of public contracts awarded by those third countries which are Parties to the Agreement. Work is ongoing in the WTO to try to expand the coverage of the GPA, both in terms of membership and of the number of contracts covered, which should increase the export opportunities available. Similarly, opportunities will develop as the associated countries of Central and Eastern Europe harmonise their economic regulatory base with that of the Community as part of the Enlargement process.

Finally, mention also should be made of the existence of diverse and very different market access barriers in certain countries and regions of the world, where export opportunities for construction services should, a priori, exist. One important condition for the internationalisation of the European construction industry is the provision of increased market access opportunities in third countries and access to relevant and easily available information on the possibilities for operating and trading abroad. A significant step has been the adoption of the Market Access Strategy and the establishment of the interactive Market Access Database<sup>9</sup>. This makes it possible for the industry, including SMEs, to inform the Commission of barriers they encounter whilst operating abroad, thus enabling the Commission to act on its behalf, making full use of the WTO Dispute Settlement Mechanism. A further step which is gradually being developed consists of the provision of information about conditions and requirements for access to third countries.

### 4.3 Equitable market conditions

Competition for contracts in the construction sector is considered by industry to be excessive and sometimes subject to dumping. Overcapacity, stimulated by the ease of entry into the sector, frequently encourages abnormally low offers, below the level required to cover costs.

The consequences of this situation, taken to the extreme, have been described in a study on the future of European industry, carried out under the FAST programme<sup>10</sup>. With regard to construction, the study said : "*[...] bankruptcies leaving debtors unpaid and customers with building works half finished; bankrupt firms would [...] enter the market again under a new name, thus maintaining overcapacity at a high level; contractors [...] would not*

<sup>8</sup> O.J. No. C213 (15.7.97)

<sup>9</sup> Available on internet at <<http://mkaccdb.eu.int/>>

<sup>10</sup> "The future of industry in Europe" Volume 16. Fast programme (FOP 372)

*earn enough to finance investments and research and development activities; the high degree of uncertainty would also frustrate long-term investment planning and make businessmen even more short-term profit oriented; [...] pressure to work fast would solicit carelessness and increase the already high rate of accidents in the workplace; [...]*

On the other hand, any measures to restrict excessive competition could lead, according to the study, to : *"[...] undeserved monopoly profits, externalisation of costs and exploitation of consumers, lethargy, lack of incentive to improve productivity by investment [...]"*.

On the demand side, oligopolistic situations must also be taken into account. Large customers often benefit from an effective quasi-monopoly position in several construction markets and can force contractors to lower their bids to below cost price. "Bid-peddling", which mainly affects sub-contractors, is another practice that ought to be eliminated. Here, contracts are awarded in several rounds, placing those bidders that passed the previous round into direct competition.

The use of in-house engineering for the design of public sector buildings and other works represents 40% of the total market for designers in Europe. A greater opening of these captive markets would have a beneficial effect on costs and competitiveness.

Internationally, given the strong position of EU companies in the global market and the size of the contracts at stake, the EU has a proactive interest in ensuring that markets are open on equal terms. EU industry should be free to invest in third countries, create joint ventures and consortia as necessary and to bid for contracts regardless of nationality. These goals should be pursued through all suitable international fora, particularly through the WTO Agreement on Government Procurement (GPA) and in the framework of the General Agreement on Trade in Services (GATS). The GATS, which entered into force on 1 January 1995, aims at the largest possible degree of liberalisation and market access. Further progressive liberalisation will restart with a new round of multilateral negotiations beginning by the year 2000 at the latest.

Of all the considerations mentioned, it is clear that public authorities must strive to equilibrate market conditions to enable an appropriate balancing of public interests in setting rules. The specific problem of abnormally low offers warrants particularly detailed investigation. Mechanisms to detect them, effective prequalification systems or other means need to be developed.

#### **4.4 Construction process**

At a global sector level, the construction process is changing, driven by the need to adapt to developments in technology and practice. Key aspects in improving the overall efficiency and competitiveness of the sector are the development of new relationships between actors, enhancements in communication and decision making, and the improved organisation and management of the whole process, particularly on site.

Firstly, there is a need to explore and encourage new approaches to collaboration between all parties in the construction process, to improve buildability, cost-effectiveness, life cycle costs and quality, and feedback from construction experience to design. In general terms, the requirement is for greater flexibility in all phases of the construction process. For example, the development of best practice procurement procedures and cost models will enable well-informed clients to select whatever procurement system is most convenient for

a given project, within the limits of procurement legislation, taking into account quality, innovation, health and safety, ethics, life cycle costs and environmental concerns, as well as initial cost. In particular, the adoption of appropriate procurement policies could help promote the use of environment friendly construction products. Increased team working and co-operation between all actors will lead to greater efficiencies, the availability of the right specialist at the right time, and an enhanced capability to develop new products and site processes in a climate of shared risk and reward. Here, the construction industry might benefit from adopting the approaches of other sectors, where it is more common for designers, constructors, component manufacturers, and sometimes customers, to develop new technologies and new models in collaboration.

A further prerequisite for optimising the benefits available from changes in the construction process is the development of more effective communication mechanisms between organisations. Better communication, for example through the increased use of IT, would allow more detailed designs with more frequent updates, a better integration of design inputs from specialist consultants and suppliers, leading to more efficient specifications and a significant reduction in costly variations, claims and other problems on site, due to inefficiencies in the earlier phases of the project or changes in specification demanded by the client. Electronic procurement could greatly facilitate the supplier-client relationship, especially where the transmission of huge volumes of tender materials is involved. The Commission is developing the SIMAP (Système d'Information Marchés Publics) initiative in this area, although the scope for full electronic procurement might be limited by the complexity of the procurement of construction services. Equally important is the need to enhance the decision making capabilities of all actors in the process, including the client. Significant improvements in competitiveness can be achieved by improving the process by which new knowledge about "best practice" is translated into use by construction firms and their clients.

Finally, better management of the construction process and the related supply chain holds out the prospect of significant gains in productivity and competitiveness. "Best practice" management techniques, including formalised risk appraisal, can be used throughout the construction process to achieve gains in cost and time performance and reduce uncertainty factors, but it is the organisation and management of site activity that has the greatest potential rewards. The harnessing of well developed time reduction techniques from manufacturing sectors, such as "just in time" delivery, could help in this respect, as could the development of coherent, integrated supply chains. More widespread use of benchmarking could also be envisaged to help identify, quantify and demonstrate the benefits achievable through process changes.

#### **4.5 Environment**

A proactive attitude both from the actors in the construction sector and from public authorities appears necessary to ensure the achievement of environmental objectives such as reducing the use of resources and energy, increasing re-use and recycling and achieving a proper final disposal of waste. Such an attitude would enable the sector to improve its environmental record while materialising potential cost savings, stemming from early integration of environmental concerns in the construction production cycle. At the same time, this would enhance the competitiveness of the construction industry, along with its job creation potential.

The attainment of this dual objective would be greatly facilitated by an increase in the level of awareness of the environmental impact of construction activities within the sector, on the one hand through better education and training and on the other hand through an increased use of quality management and audit schemes that incorporate environmental considerations.

Systematic integration of environmental concerns in technical specifications and norms, as well as in purchasing procedures, can contribute to this process. The Commission, in its proposed Decision on the review on the 5th Action Programme for the Environment, has already indicated that further action could be needed to take better account of environmental considerations in the application of Community public procurement rules, while safeguarding fair competition. One of the ways to incorporate these environmental concerns into selection criteria would be the use of the Community Eco-labelling scheme for identifying environmentally friendly products. The public sector can play a pioneering role in this respect and use its leverage to stimulate demand.

The impact of increased environmental awareness on construction enterprises is two-fold. Firstly, they will need to adapt to the additional constraints imposed on their activities. The better adapted a company, the more likely it is to gain competitive advantage, using environment-friendly construction as a marketing tool. Secondly, the climate of environmental awareness and sustainable development will create new markets and new opportunities for those companies able to respond to the changing demands of clients. The European construction industry must grasp the new opportunities presented, even without waiting for regulators to act.

#### **4.6 Regulatory framework**

The debate on possible deregulation in the construction industry, as an element of greater competitiveness in the sector, cannot take place only at the European level, if only because the regulations applicable to the sector are largely national. Indeed, although progress has been achieved with the implementation of Directives on public procurement and construction products, the harmonisation process has been developing at a very slow pace and national legal systems continue to place a significant number of obstacles in the path of the creation of an internal market.

At Community level, the legal framework surrounding construction remains incomplete since the rules governing works, design, the use of products and liability remain under the responsibility of national authorities. Thus, the debate on the impact of regulations on the competitiveness of the sector must also take place at this level.

The Construction Products Directive is the instrument for the internal market for these products. The White Paper in 1985 laid out the impact on potential earnings - and hence on competitiveness - of this harmonisation. However, even if the framework for harmonisation has existed since 1988, the effectiveness of the internal market remains illusory, due to the fact that its implementation depends on the adoption of harmonised European standards and other detailed technical specifications for all products.

Two recent Commission communications (the "Report on the construction products Directive" in 1995, and within the SLIM - Simplification of Legislation on the Internal Market - report in 1996) succeeded in stimulating debate on the means of achieving greater efficiency in the implementation of the internal market for construction products. This debate continues within the framework of the Action Plan for Completion of the Single Market.

There is general agreement that work is progressing towards implementation of the Construction Products Directive. The drafting of the interpretative documents, the preparation of mandates and Commission Decisions for the most important families of construction products and advances on horizontal issues such as reaction and resistance to fire have laid the foundations for the internal market in this sector. However, there is also a growing awareness that the absence of technical specifications, and of harmonised standards in particular, is impeding the functioning of the internal market and preventing the effective use of much of the work already achieved.

Building upon the analysis of the SLIM report, the Commission is of the opinion that the elements of harmonisation already in place must be used to their best advantage, and without further delay. This suggests the possibility of allowing manufacturers to demonstrate conformity with the Directive, and hence apply the CE marking, in the absence of technical specifications. These rules are those implemented in all other New Approach Directives, enabling the free movement of goods such as machines or electrical products. Achieving this aim would only require an amendment to the Directive, revising the article which fixes the conditions for CE marking in the case of an absence of harmonised standards (art. 4). This change would permit CE marking on the basis of conformity with existing elements which have until now been considered as stepping stones to standardisation, such as interpretative documents, product mandates, decisions on the attestation of conformity, supporting standards on test methods.

Such an amendment would be in the interests of all parties involved in the implementation of the internal market in construction products. Industry would benefit more quickly from the application of the CE marking regime, and components already agreed by regulators in Member States and by standardisation bodies would be brought into use immediately, without waiting for the last element to be put into place or changed on the basis of technical progress.

As regards public procurement, the Commission's Green Paper has opened a wide ranging debate. In the application of the Directives, and by recourse to harmonisation, the Commission has mandated work aimed at a greater transparency and equivalence between qualification procedures and the registration of contracting companies selected to participate in public contracts regulated by Directive.

Finally, an important hindrance to the workings of the internal market lies in the absence of a Community approach to the question of guaranties and liabilities in construction.

## 4.7 Human resources

Construction is a labour intensive industry, particularly in its final assembly stage on site. Traditionally, the industry has absorbed large numbers of poorly qualified labour from the lowest strata of educational achievement, along with unskilled immigrant workers willing to work below industry agreed rates. This profile is in stark contrast to the future needs of a modernised sector, which is to develop a stable, well-qualified workforce capable of delivering improved quality, increased productivity and better value for money. To bring about the latter scenario, the strategic objectives of the construction industry should be to improve employment conditions and job satisfaction, and improve education and training at all levels to raise the level of skills and competence, adapt to changing technology which will reduce the hard and unpleasant tasks in construction, and promote employment, recruitment and job security.

A current, and growing, problem for the construction industry is its inability to recruit and retain people of sufficient calibre and competence, particularly for site operations. Construction work has a poor image and is often perceived to be dirty, dangerous, exposed to bad weather, unhealthy, insecure, underpaid, of low social status and with poor career prospects for educated people, especially school leavers who see better opportunities in occupations in manufacturing and services.

The construction industry as a whole must work to enhance its image, by taking every opportunity, for example through the media, schools and professional associations, to raise awareness and project a positive image for the industry, stressing construction's central role in shaping the environment to the potential benefit of all. Above all, however, the industry must create the working conditions that provide prestigious, rewarding, creative and secure careers for its members.

The construction industry should take an active role in promoting health and safety measures and training. In a very competitive environment, health and safety is often a target for cost-cutting, and hence rigorous control is necessary. The Temporary or Mobile Construction Sites Directive should help, by requesting the appointment of named individuals or entities as coordinators with clear duties and the establishment of safety and health plans which can be checked. Analysis of practical examples of application of these rules clearly shows that in addition to higher safety levels, large cost reductions and shorter construction durations are achieved. A generalisation of sound safety and health practices with ensuing measurable competitiveness gains can therefore be seen as an important productive factor in the construction sector.

In comparison with other sectors, levels of self-employment, temporary or part-time work, and casual work, are high and have been increasing. To counter this trend, the sector should aim to raise the levels of pay and conditions, particularly in the low-wage countries, by raising the levels of skills and training and improving productivity. However, a balance needs to be maintained between high employment benefits and protection and the need for flexibility and mobility in the labour force. Non-wage labour costs should be kept low, especially at the lower end of the wage scale, to help promote permanent employment.

As a prerequisite for improving employment conditions and competitiveness, it is universally agreed that education and training in the construction industry needs to be improved at all levels, as a priority. As this is self-evidently beneficial to the sector at all levels, the reasons for the current failures in this respect need to be addressed. Explanations include the structure of the industry, with mainly small firms and mobile workers, and the characteristics of the markets, which have volatile demand and aggressive competition, both militating against training investment by individual firms. Also, firms that provide good training consider themselves to be penalised on two fronts, the loss of productive time of valuable employees and the risk of "poaching" of their staff by firms who spend less on training.

Whatever the concerns, policy makers in the construction industry, national governments, social partners and European institutions have to be made aware that expenditure on education and training is an investment in the future. An increase in education and training expenditure is therefore a priority for all, and a means of achieving this increase and reducing the volatility of expenditure must be found. Whether backed by a training levy or other means, such as the mutualisation of funds from various sources or training incentives, a supportive public policy is essential, strongly backed by the trade associations and professional institutions.

As regards the structure of education and training provision, the creation of networks of local training centres, nationally co-ordinated by construction industry training bodies appears to be an effective solution. Such a structure would particularly benefit SMEs and the self employed and could be directed towards developing and updating people's skills in their current work. The role of professional associations is also fundamental to the education and training process. Institutional mechanisms for education and training need to be strengthened, both to increase the level of provision and to keep it continuously adapted to the needs of the industry. In particular, the growing need for multi-skilled workers, who can adapt with ease to the changing construction process, will require a co-ordination of effort between the various associations and a move away from insularity. Better management training throughout the industry should also be regarded as a priority.

Professions must also adapt both to new technology and to changes in the construction process. Professionals will need to be capable of operating in a wider range of different roles, work in closer-knit multi-disciplinary teams and make effective use of the rapidly expanding capabilities of information technologies. Formalised systems of continuing professional development are essential in this respect, with training plans agreed by the industry as a whole and specific programmes offered by the professional institutions and colleges.

Current projects under the Leonardo da Vinci programme, which seeks to be a "laboratory of innovation", have helped raise the profile of the transnational dimension of training requirements. In the European context much progress could be made by advancing the cause of mutually recognisable training, particularly its accreditation and transparency, taking into account the 1985 Council Decision on the comparability of vocational training qualifications(85/368/EEC). Furthermore, the emphasis on the dissemination of best practice in this programme should be extended by Member States, as should the surveys and analyses of improvements in best practice, where these can be transferred to the benefit of European industry as a whole.

A further boost to the demand for education and training can be achieved through progress in the fields of registration systems for both craftsmen and professionals, and in the mutual recognition of qualifications. Voluntary registration schemes run by industry would confer a recognised status on individuals, and mutual recognition would help improve the mobility of the work force. Greater transparency of the worth of qualifications would also serve to enhance the status of construction industry workers in general.

#### 4.8 Technology

Innovation is one of the key factors in industrial competitiveness. To enable European research to achieve its full impact, mechanisms need to be set up to foster innovation, encourage the widespread take-up of research findings and stimulate the emergence of innovative companies. Furthermore, innovation in construction should be stimulated through modifications in the construction process leading to more competition on the basis of quality instead of competition based upon price.

The financing of research in the construction sector represents one of the major problems. Indeed, R&D expenditure in the sector does not reflect its economic importance - investment is limited to 0.3% of the sector's turnover which makes a poor comparison with say the Japanese construction sector which devotes between 2 and 3%. A particular challenge for the sector is to translate R&D into innovation, not just the low level of R&D.

The co-ordination of interested parties should be one of the most important tasks for governments and public bodies, through the adoption of common objectives and approaches. The authorities responsible for public procurement could also better exploit their privileged position in awarding contracts, for example by using contracting practices providing incentives to include technical innovation for the works in question.

Most of the research establishments in Europe are still government-run. Consequently, the dissemination of results is not always optimal, as their main customer, the government, tends not to have the same objectives as industry, at least not the same extent. There is a need to develop a more integrated approach where all partners in the construction process are involved. To ameliorate this situation, ECCREDI (European Council for Construction, Research, Development and Innovation) was created towards the end of 1995, with the participation of the main European federations interested in research.

The poor dissemination of information and knowledge represents one of the major barriers to innovation in the construction sector. Indeed, a great many innovative practices are not taken-up within the industry, primarily due to poor access to relevant advice and information.

Several approaches can be envisaged to improve this state of affairs, such as :

- in the absence of industry-run research, stimulate collaboration between research institutes and professional organisations as regards the collection, processing and dissemination of information;
- the implementation of education and training programmes, particularly targeted at small enterprises and site workers;
- the creation of "construction parks" to act as a focus for information;



- making use of the new possibilities offered by Information Technology for the dissemination of knowledge and research results.

R&D should be oriented towards competitiveness and environmental friendliness at the same time. From this point of view, the Community's framework programme for research, in which several projects are related to the construction industry, notably the seismic risk projects funded under the Environment and Climate Programme and a cluster of projects in the Non Nuclear Energy Programme (Joule-Thermie) addressing the development of efficient heating and cooling systems without CFCs, could provide both a pilot-model and a template for stimulating the development and co-ordination of international quality research at a European level.

In particular, under the 4th EU RDT Framework Programme, cooperative research projects have been designed specifically for SMEs with no, or inadequate, RTD means of their own. They enable groups of SMEs with similar technical problems but insufficient research means to engage third parties to carry out research on their behalf. The Commission will share the cost of the research with the SMEs, funding up to 500,000 ECU or 50% of total costs. The results of the research will be owned by the SMEs. To date, some 200 SMEs from the construction industry are actively involved in 30 Brite-EuRam CRAFT projects.

Finally, it is worth looking at how the "Information Society" can contribute in promoting increased competitiveness in the construction industry. Whilst the use of information technology is already a reality in the design phase of projects and, increasingly, in the manufacture of construction products, there remain widespread opportunities to broaden its use to all levels and all phases of the construction process. These opportunities are hindered by the lack of data exchange standards between the project owner, designers, supervisors, tenderers, and contractors and all their subcontractors.

Information highways are very topical at the moment. The Internet is no longer one choice amongst others, it is the incontrovertible international standard for electronic communications. Beyond the Internet, increasing use is being made of "Intranets", particularly amongst professionals, and here the construction sector is no exception.

Similarly, electronic commerce is rapidly making its presence felt, not only in the trade of material goods, but also for services and intellectual benefits. Here too, the construction industry should endeavour to play a role commensurate with its economic importance. The fifth R&D Framework Programme (1998-2002) proposal<sup>11</sup> has taken into account such socio-economic needs and proposed a key action "City of tomorrow" in which research on sustainable construction should be supported.

#### 4.9 Structure of the sector - Internationalisation of business strategy

As described in chapter 3, the construction industry is fragmented and differentiated from other sectors, and is one in which SMEs and craftsmen play a key role. Even if large companies control a significant slice of the market, construction is, in comparison with other industrial sectors, far from being prone to oligopolistic or dominant tendencies. Indeed, in 1990, the turnover of the ten largest European construction companies only accounted for 5.75% of the total European market<sup>12</sup>.

<sup>11</sup> COM(97)142

<sup>12</sup> Source : BIPE Conseil

Small businesses are no less important in the generation of employment; they require an adaptation of legislation, regulations, procedures and systems to their level of capacity and potential. At present, it appears that this is rarely the case.

Specific Community programmes have highlighted the fact that measures need to be undertaken to help small businesses overcome their size disadvantages. A deepening of training and apprenticeship initiatives, improvements in the dissemination of information and the implementation of registration and qualification schemes are all initiatives that should be pursued.

Nevertheless, a key factor in increasing the competitiveness of small businesses lies in the development of closer co-operation and the creation of associations between themselves, incorporating such ideas as "networking" and the establishment of "quasi-businesses". In this way, SMEs could, amongst other things, share ideas, information and common services, such as administration, purchasing and information technology, or become integrated into the networks of larger companies. There is a need to facilitate the efforts of SMEs to find business partners in other Member States or even in third countries. The first and foremost necessity for SMEs is to have an eased access to appropriate information on other markets. Then, for the subsequent phase of entry to another market, SMEs require a well organised support system for the establishment of business partnerships. The development of closer co-operation and partnerships on a reciprocal basis are essential ingredients for SMEs in the ongoing process of internationalisation. The European Economic Interest Grouping (EEIG)<sup>13</sup> can be mentioned as a specific instrument, particularly for SMEs, to favour European co-operation among enterprises and to remove some of the remaining transnational obstacles.

Sub-contracting relationships cannot be neglected in a sector such as construction, where they play a fundamental role. However, sub-contractors must not be confused with SMEs - all companies, even the largest, may be sub-contractors on some projects. The prevailing feeling in the industry is that of an imbalance in the contractual conditions imposed on sub-contractors. The position of sub-contractors is considered to be vulnerable in the procurement and construction phases. All too often, the sub-contractor is only paid after the general contractor has received his money. A solution to this problem is considered to be necessary, based around the possibility for the sub-contractor to be paid directly by the client in the event of unjustified non-payment. In this context, it is worth mentioning the publication by UNICE and Directorate General XXIII of "Guidelines for Partnership in Industrial Subcontracting" in which recommendations are given on terms of payment.

With regard to contractual relationships, the legislation which governs public procurement does not force the general contractor to follow the same rules it had to adhere to in contracting out parts of the work to sub-contractors. Moreover, there is a problem in apportioning liability in cases of faulty work. Appropriate solutions to these problems will need to be found.

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<sup>13</sup> Council Regulation (EEC) No 2137/85 (OJ L 199, 31.7.1985) and Communication from the Commission (OJ C285, 20.09.1997)

#### 4.10 Illegal practices

It has to be recognised that construction is one of the sectors worst hit by the so-called "parallel economy". There are many reasons for this : non-wage labour costs, which can amount to more than 30% of the wage cost; the high mobility of the workforce; the short duration of contracts; the strong cyclical and seasonal variation in the industry; illegal immigration which can easily find work in the sector requiring little or no experience, ...

Any remedies must directly address the causes of the problem. For example, registration and qualification systems for professionals, measures to reduce non-wage labour costs, especially at the lower end of the wage scale, and the level and structure of taxes, within the overall economic policy, and the better policing of illegal workers could all significantly reduce the level of this parallel economy. Any such registration and qualification procedures should, however, be handled in a proportionate way. In particular, duplication of administrative systems should be avoided within the framework of the cross-border provision of services.

A very delicate subject, which also affects the sector, is corruption. Construction as a source of illegitimate financing of persons or the political or social groups who have a role in the decision making process for procurement, is a plague which society must fight against. Measures that could be developed include :

- the improvement of controls by public authorities;
- full implementation of fair, open and non-discriminatory procurement procedures;
- codes of good practice for participants in the construction process;
- conventions between countries regarding international contracts;
- a general improvement in design and project specifications, to leave less margin for arbitrary changes during construction.

In this context, reference should be made to the Communication on a Union Policy Against Corruption<sup>14</sup> and to ongoing work in the OECD to combat it.

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<sup>14</sup> COM (97)192 adopted on 21.05.97

## 5. ACTIONS TO ACHIEVE A EUROPEAN STRATEGY FOR THE COMPETITIVITY OF THE CONSTRUCTION SECTOR

The Commission considers that the construction industry of the European Union, despite its strong position in certain markets, faces a wide range of challenges which must be addressed if it is to maintain, and if possible, improve its competitiveness.

To achieve this, a series of actions for Industry, the Commission and Member States have been identified, within the framework of the four priority objectives of the Commission's policy for industrial competitiveness : to promote intangible investment, to develop industrial co-operation, to ensure fair competition and to modernise the role of the public authorities. Some of these measures, detailed in the annex, are already in progress and need to be reinforced, whilst others will involve setting up entirely new initiatives.

The Commission will, in co-operation with European industry representatives and Member States, progressively put into place a structured action plan, and actively follow the evolution of the competitiveness of the European construction sector and the adoption of the various measures proposed in this Communication.

**The recommendations proposed to enhance the competitiveness of the construction sector comprise four key objectives: to develop a coherent quality policy for the sector, to improve the regulatory environment and the overall market framework, to foster a substantial and sustained growth in both the level and quality of education and training provision right across the sector, and to reorient and reinforce research and development in the face of changing needs. The specifications proposed or recommended in each of these domains are summarised in the Annex.**

◦ **FIRST OBJECTIVE : TO IMPROVE QUALITY IN CONSTRUCTION**

Quality in construction, or rather the lack of it, remains one of the basic problems for the sector. Low levels of specification and design, largely driven by price considerations, and too many defects and poor durability, exacerbated by cost-cutting to offset underbidding, contribute to a lack of quality that is estimated to cost between 5 and 10% of the investment. All actors must play their part in achieving quality in construction, the lack of which not only has serious consequences for the sector, but also for society in general. Quality will be a key element of sustainability, and in the long-term the economic benefits will substantially outweigh the costs.

The route to quality starts with the client, in the design and specification of the project and the criteria adopted to evaluate competing tenders. The most economically advantageous offer is not always the lowest. Better quality generally proves to be cheaper in the long run, through lower maintenance costs, higher rental income and so on. Quality continues through technical control of compliance with standards and regulations, the registration and qualification of enterprises, craftsmen and professionals based on their capabilities, and the quality assurance and quality management systems of the enterprises themselves. All such avenues should be pursued to increase competitiveness through improved quality.

**The Commission will propose measures to develop and sustain a policy of improved quality throughout the construction sector. The widespread adoption of quality schemes, adapted to the size of business, and life cycle cost criteria will be particularly encouraged.**

• **SECOND OBJECTIVE : TO IMPROVE THE REGULATORY ENVIRONMENT**

Much of the activity of the construction sector has an impact on public health and safety and the environment, and as such is highly regulated both at the level of individual products and construction works. Regulation inevitably has cost implications for business, and it is important that the legal framework be as stable and as foreseeable as possible.

**The Commission will act to consolidate and strengthen the legal aspects of the Single European Market applicable to construction products, markets and professions, in order to remove those problems, such as barriers to trade, caused by the different types of national legislation.**

As regards markets, the sector is heavily dependent on public financing, giving national authorities a crucial role in creating the conditions for market stability and sustainable growth. Budgetary constraints are however leading most Member States to incorporate private initiatives in the design, construction and use of infrastructure. In this climate it is essential that the regulatory environment be continually adapted to the changing needs of the sector. This includes the selection and operation of procurement systems which also have a direct influence both on the market and on competitiveness.

**The Commission will seek to improve the framework of public procurement, particularly in respect of the needs of public-private financing, and to promote the implementation of best practice procurement procedures in both public and private sectors.**

The existing legal framework also has a profound influence on the implementation of the Single European Market in construction products. The achievement of a successful and efficient implementation will necessitate an adaptation of the legal framework, creating a market in which the role of the national authorities is limited to the surveillance of operations carried out by manufacturers themselves.

**The Commission will act to improve the functioning of the internal market for construction products through adaptations of the legal framework, particularly the Construction Products Directive.**

• **THIRD OBJECTIVE : TO IMPROVE EDUCATION AND TRAINING PROVISION**

The workforce, from university educated professionals to poorly qualified site labourers, lies at the heart of the construction industry, and must play a fundamental role in bringing about improved competitiveness. And yet, there is a chronic lack of investment in education and training right across the sector, stifling progress and creating a shortage of skilled workers in times of expansion. As a matter of some urgency, both the quantity of education and training and the quality of provision must be improved at all levels in the sector. The different needs of SMEs in particular should be addressed and increasing use made of existing networks and professional associations.

**The Commission will take account of the key role of education and training in the construction sector, and help create the conditions to bring about a substantial and sustained growth in its provision at all levels.**

Employment conditions form the other axis in the consideration of ways to maximise the efficiency of the workforce. The ability of the construction industry to recruit and retain the right calibre of person to meet the challenge presented by changing technology is crucial to future competitiveness. Improved productivity is often the direct result of enhanced employment conditions, whether in terms of job security, career structure or levels of pay. Reducing the unacceptable level of accidents in the sector through rigorous implementation of health and safety measures will also serve to enhance the attractiveness of the sector.

**The Commission will propose measures to foster an improvement in employment conditions across the construction sector and improve the image of the sector generally.**

◦ **FOURTH OBJECTIVE : TO REORIENT AND REINFORCE RESEARCH AND DEVELOPMENT**

The competitiveness of the construction sector depends more and more on its capacity to innovate, at the process level, in product development, in the organisation of the workforce and in the rapid diffusion of new technologies. Increased investment aimed at research and development (RDT) is essential in this respect, especially when one takes into account its role in accelerating the penetration of new technologies into SMEs in particular, its contribution to the development of new markets and to the improvement of standards and regulations. There is also a need to more effectively co-ordinate the intervention of the public sector with the efforts of the private sector.

Constant adaptation to changing needs is the key goal for research and development in construction. In particular, improvements in the overall construction process, from initial conception to execution and beyond will enhance the competitiveness of individual enterprises and the sector as a whole. Considerable benefits can be achieved by, for example, shortening project lead times, lowering construction costs, reducing building defects and improving management structures. A progressive reorientation towards the goals of sustainable construction and renovation, and towards the satisfaction of basic and social needs will also contribute to increased competitiveness, while at the same time benefiting society as a whole.

**The Commission will continue to support research and development in the European Union, and will propose measures to reorient resources towards the real, and continually changing, needs of the sector. Actions to increase private investment in RDT, improve collaboration between key actors and achieve better dissemination of research findings will also be proposed.**

## ANNEX



## SPECIFIC ACTIONS TO IMPROVE COMPETITIVENESS

### 1. For promoting intangible investment

To promote industrial investment in the construction sector, the Commission recommends :

Actions	Commission	Member States	Industry
<b>Education and training</b>			
<ul style="list-style-type: none"> <li>• to foster a substantial and sustained growth in both the level and the quality of education and training provision at all levels in the sector:</li> </ul>			
⇒ increase education and training investment generally by industry, government, local authorities, social partners and the EU	X	X	X
⇒ investigate the best means to achieve this increase, e.g. training levy, mutual funds, training incentives , etc.	X	X	X
⇒ establish "best practice" education and training arrangements by means of a comparative study of current national practices, building upon work already carried out, notably by CEDEFOP	X		
⇒ target SMEs in particular, e.g. through a deepening of training and apprenticeship measures and the dissemination of information, and through the establishment of a network of local education and training centres	X	X	X
⇒ ensure the effective implantation and maintenance of the most advanced forms of initial and apprenticeship training with a view to sustaining the soundest base possible for skills provision and for competitive entry into the industry	X	X	X
⇒ promote European networking of construction training and educational organisations	X	X	X
⇒ promote the integration of environmental concerns in the structure and content of education and training courses, including, specifically, aspects of waste generation and its reuse/recyclability/disposal, as well as energy consumption	X	X	X
• to encourage the development of skill and competence definitions which remove barriers to the mutual acceptance of workers across Member States and facilitate mobility, adaptability and employability	X		
• to promote the roles of the social partners as agents for enhancing competitiveness and as facilitators for optimising the match between supply and demand for skills	X	X	X

Actions	Commission	Member States	Industry
<b>Quality</b>			
• to encourage the use of quality procedures and standards for Quality Assessment (QA), Total Quality Management (TQM), taking into account environmental and training considerations, and appropriate systems for SMEs	X	X	X
• to implement life cycle cost criteria, developing standards for durability and its assessment and permitting the accurate planning of maintenance and evaluation of its cost. This will also be useful in procurement procedures	X	X	X
• to carry out continuous assessment of quality criteria in all stages of the building and civil engineering process to achieve client and societal satisfaction		X	X
• to improve the quality and the detail of technical specifications and projects, which will lead to a reduction in changes during construction			X
• to implement an information network to achieve quality through easy access to problem solving, quality management, certification issues, bidding conditions and procedures		X	X
• to ensure that quality and quality performance in standards of qualifications, training and competence raising plays a central role in European level activities and initiatives which focus on skills generation and their accreditation	X		

<b>Technology</b>			
• to investigate alternative means to secure an increase in R&D investment	X	X	X
• to orientate R&D in the sector, at all levels, towards the construction process, management aspects, construction methods and environmental sustainability (both in terms of materials and finished works)	X	X	X
• to develop a strategy for the use and promotion of environment-friendly construction materials, energy-efficient technologies and better noise insulation, in order to contribute to sustainable housing	X	X	X
• to achieve better dissemination of research findings, it is necessary to:			
⇒ bring industry and research centres closer together	X	X	X
⇒ ensure better co-ordination of nationally funded research activities		X	
⇒ make better use of professional associations as centres for the dissemination of information on innovation in the sector			X
⇒ set up training programmes for the diffusion of new technologies, targeting SMEs and site workers in particular	X	X	X
⇒ create "construction parks" to act as a focus for information relating to construction research		X	X
• to encourage a better integration of design inputs and more efficient specifications, for example by the use of IT throughout the construction process			X
• to develop strategies to identify and overcome the organisational, institutional, legal and behavioural barriers to innovation, particularly in construction process matters	X	X	X

Actions	Commission	Member States	Industry
<b>Management</b>			
• to promote better management in the construction sector:			
⇒ study the potential for use in construction of time reduction techniques developed in other manufacturing sectors, especially regarding the development of coherent, integrated supply chains			X
⇒ foster the widespread use of best practice management and risk appraisal techniques throughout the whole the process, to reduce uncertainty factors and create the conditions for increased productivity		X	X
⇒ develop and encourage the use of appropriate tools to enhance the decision making capabilities of all actors in the construction process			X

<b>Employment conditions</b>			
• to foster an improvement in employment conditions across the construction sector and improve the image of the sector generally :			
⇒ encourage stable employment patterns for construction workers, and provide job security whilst maintaining flexibility and mobility, e.g. aim to raise level of pay and conditions in parallel with improved education and training and increased productivity		X	X
⇒ improve the industry image to be able to attract the right calibre of person to meet the challenge presented by technology change, e.g. use of the media, schools and professional associations, stress construction's central role in shaping the environment, create identifiable career paths, etc.	X	X	X
⇒ promote best practice and better training on health, safety and the environment throughout the sector	X	X	X

<b>Other</b>			
• to identify the key areas of competitiveness to which benchmarking could be applied to measure the performance of sub-sectors and companies. This would assist in quantifying the benefits achievable from improvements in the construction process	X	X	X
• to encourage the efficient use of energy in the production process of the construction material industry, as this can lead to substantial energy saving per unit of product and thus to an increase in competitiveness	X	X	X
• to support the continued development of codes of ethics and good practice for employers, construction professionals and others, in order to provide the best possible service to the industry's clients		X	X

## 2. For developing industrial co-operation

To develop better industrial co-operation in the construction sector, the Commission recommends :

Actions	Commission	Member States	Industry
• to encourage increased team working and co-operation between all parties in the construction process		X	X
• to encourage "networking" and the creation of "quasi-enterprises" (long term networks of firms) amongst small businesses, which will enable them, amongst other things, to share ideas, information and common services, such as administration, commercial and information technology, or become integrated into networks of larger companies		X	X
• to develop and improve the dialogue between management and labour in the construction industry	X	X	X
• to consult the sector regularly and liaise with the authorities of third countries about the problems encountered by European industry in becoming established in their markets	X	X	
• to encourage the use of Long Term Agreements (LTA's) between industry and public authorities as an important instrument for increasing co-operation, in orienting R&D, taking into account of environmental considerations and to promote energy efficiency		X	X

## 3. For ensuring fair competition

To ensure fair competition in the construction sector, the Commission proposes :

Actions	Commission	Member States	Industry
• to permit fair competition by making use of suitable mechanisms to avoid, detect, and rule out abnormally low offers		X	X
• to open up to competition the closed markets of in-house engineering and architectural design in the public and para-public sectors		X	
• to facilitate international expansion of exports of EU construction industry, in particular by:			
⇒ identifying and seeking the removal of trade barriers in third countries	X		
⇒ making full use of information on third country markets received from the EU Industry and available in the Market Access Database	X	X	X
⇒ seeking solutions to market access problems either bilaterally or through multilateral fora, in particular in the WTO and, whenever necessary, making use of its Dispute Settlement Mechanism	X		
• to encourage public authorities to set up long-term investment plans for infrastructure, social housing and non-residential public buildings, and to ensure their execution	X	X	
• to encourage a reduction in non-wage labour costs, especially at the lower end of the wage scale, which play, inter alia, a role in sustaining the black market		X	

#### 4. For modernising the role of the public authorities

To modernise the role of public authorities vis-à-vis the construction sector, the Commission recommends :

Actions	Commission	Member States	Industry
<ul style="list-style-type: none"> <li>to continue with the examination of Community and national legislation concerning products, markets and professions. This examination should be aimed at providing greater efficiency in Community mechanisms. It should be undertaken along the lines foreseen by the Action Plan for Completion of the Single Market.</li> </ul>	X	X	
<ul style="list-style-type: none"> <li>to improve the functioning of the internal market, and enable the effective use of work already undertaken, the Commission will, in the near future, propose an amendment to Article 4 of the Construction Products Directive permitting CE marking on the basis of conformity with essential requirements, as laid down in the interpretative documents, products mandates and supporting standards on test methods</li> </ul>	X	X	
<ul style="list-style-type: none"> <li>to carry out an evaluation of the impact on costs and construction industry competitiveness of all regulatory proposals, particularly those relating to technical harmonisation for products.</li> </ul>	X	X	
<ul style="list-style-type: none"> <li>to foster the implementation of best practice procurement procedures</li> </ul>	X	X	
<ul style="list-style-type: none"> <li>to encourage the use of selection criteria which consider quality, innovation, health and safety, ethics, life cycle costs and environmental concerns and requirements, and which seek to stimulate the creation of jobs and to reduce the negative effects of the adversarial relationships between parties</li> </ul>		X	
<ul style="list-style-type: none"> <li>to ensure that public authorities are disciplined in the matter of payment<sup>1</sup>, establishing precise administrative procedures to ensure that public payments are made as rapidly as possible, providing the payment of interest on the invoices not paid by the contractual date and making provision for sub-contractors to be paid within reasonable time limits under public procurement contracts</li> </ul>		X	
<ul style="list-style-type: none"> <li>clients should be able to express their requirements in performance terms, using "the best available and most appropriate technology". European and national regulations, as well as standards, should favour the use of performance criteria so as to encourage the diffusion of innovatory practices</li> </ul>	X	X	X
<ul style="list-style-type: none"> <li>to promote innovation by the implementation of contracts dealing with sub-contractors in a satisfactory manner</li> </ul>		X	
<ul style="list-style-type: none"> <li>to develop systems of registration and qualification of enterprises, craftsmen and professionals, giving transparency to the worth of qualifications</li> </ul>		X	X
<ul style="list-style-type: none"> <li>to establish mutual recognition of such systems</li> </ul>	X		
<ul style="list-style-type: none"> <li>to facilitate the participation of SMEs in the process leading to the preparation of European standards</li> </ul>	X	X	X

<sup>1</sup> Commission Recommendation of 12 May 1985 (O.J. No. L127 of 10.06.1995)

Actions	Commission	Member States	Industry
<ul style="list-style-type: none"> <li>to examine whether to allow sub-contractors the same rules in public procurement works as those imposed on the principal contractor</li> </ul>	X	X	
<ul style="list-style-type: none"> <li>to permit sub-contractors to apply directly to the client in cases of unjustified non-payment by the principal contractor</li> </ul>		X	
<ul style="list-style-type: none"> <li>to set set-up suitable systems of insurance, guarantees and liabilities aimed at protecting participants in construction from failure related to advanced technologies</li> </ul>	X	X	X
<ul style="list-style-type: none"> <li>to encourage and facilitate systems for infrastructure financing based on public-private partnerships. One such measure should be the publication of guidelines to clarify the application of the public procurement Directives to infrastructure contracts such as TEN's public-private partnerships</li> </ul>	X	X	
<ul style="list-style-type: none"> <li>to undertake measures which take account of the constraints suffered by concessions within the framework of public procurement contracts, for example by ensuring intellectual property rights in cases where the execution of the project is awarded to an entity different from that which designed it</li> </ul>		X	
<ul style="list-style-type: none"> <li>to create an information point within the Commission, which could service any external contact relating to the construction sector</li> </ul>	X		
<ul style="list-style-type: none"> <li>to set-up electronic systems for the dissemination of information from the Community relating to the construction sector</li> </ul>	X	X	X
<ul style="list-style-type: none"> <li>to develop a solid and reliable set of construction output statistics on an identical basis for each Member State</li> </ul>	X	X	

ISSN 0254-1475

COM(97) 539 final

# DOCUMENTS

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10 08 06

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Catalogue number : CB-CO-97-561-EN-C

ISBN 92-78-26187-4

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Office for Official Publications of the European Communities

L-2985 Luxembourg