



Betongvaruindustrin

A competitive analysis of the timber and steel frame building industry in Europe

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Executive summary

Timber/wood and steel belongs, as well as concrete, to the most common materials for construction. These building materials offer different possibilities in the construction due to its characteristics. The wood/timber and steel frame industries as well as the concrete industry play a major role in the building and construction industry of today. For the concrete industry, the competitive situation related to the steel- and wood/timber industry, differ throughout Europe mainly due to restrained regulations in a numerous of country during the last years to allow multi-storey wood/timber frame construction. This has resulted in that the competitive situation in the market place has strengthened. This paper contains a competitive analysis of the wood/timber and steel frame building industry in Europe. The information presented in this paper, concerning wood/timber and steel industry, are based on reports and competitive analysis from eight Bibm countries out of 15. The countries are Austria, Belgium, Finland, Ireland, Italy, The Netherland, Sweden and United Kingdom.

Information obtained from the wood/timber industry shows a lack of trade organisations. This is particularly obvious for the wood/timber frame industry. On the other hand, according to the majority of the country reports, the wood/timber industry has been very successful in terms of marketing the concept of wood/timber frames in building constructions. One reason for that is the strong governmental support the industry receives in some of the countries. Another reason is that several of the industries have created specific organisations mainly focusing only on marketing activities as well as developing strong collaboration partners. Examples of activities, made by the marketing organisations, are trade fairs, seminars, and different kind of prizes with focus on architects, designers, and students in order to encourage the use of wood/timber in construction works. The listed advantages for timber/wood frames are that timber/wood is perceived as a natural material and therefore environmentally correct and ecological. The weaknesses, pointed out in most of the reports, are the damp and mould issues as well as the risks of fire linked to timber/wood frames. The threats or challenges facing the timber/wood industry are raising prices of energy and raw materials but also the effects of the current economic situation which makes the growth slow down.

Promotion carried out by the steel industry is manifested through different kind of awards and prizes to encourage the use of steel in construction projects and to give rise to new ideas and inspirational designs. But the aim is also to bring attention to architects, engineers and companies that choose to utilise the properties of steel in a clear, well executed manner. An advantage listed by the use of steel in construction is its sustainability. Steel is said to be the world's most recycled construction material by far. The main opportunity available to the industry is increasing export possibilities. The biggest threat towards the steel industry is the increasing cost of raw material and energy.

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1. Introduction

The timber/wood and steel frame industries, as well as, the concrete industry play the major roles in the building and construction industry today. The competition the concrete industry is facing from wood and steel looks differently throughout Europe due to that building regulation were relaxed in a numerous of country during the last years to allow multi-storey timber frame construction the competition has strengthen.

This paper contains a competitive analysis of the timber and steel frame building industry in Europe. The information about wood/timber and steel industry presented in the paper was received in from of reports and competitive analysis from eight Bibm countries out of 15, namely Austria, Belgium, Finland, Ireland, Italy, The Netherland, Sweden and United Kingdom. Information was also retrieved from different websites of timber and steel trade associations.

The paper is divided in two parts, wood/timber and steel. Each section contains branch information for each country regarding trade organisations and their objectives, followed by marketing strategies and selection of arguments used by each industry in promoting their products. The country specific features ends with a SWOT where strengths, weaknesses, opportunities and threats within the industry is pointed out. Each section ends with analysis and conclusion of the present competitive situation.

Appendices are presented at the end of the paper. The figures represent only some of the industries included in the paper.

2. Section 1: Wood/timber

2.1 Austria

Number of people employed in timber-frame construction branch in Austria is approx. 33 000 people, of which 10 000 are employed in the sawmills.

Trade organisations and objectives

There exist several trade organisations in Austria. A selection of them is presented below.

proHolz Austria is a marketing organisation. The organisation's objective is to market the Austrian forestry industry efficiently, nationally and internationally. The organization is also supposed to give qualitative and economic benefit for its customers. Strengths like availability and sustainability of wood are advertised as well as the creation of platforms and networks. The international aim is to increase the export of wood. Website: www.proholz.at

Fachverband der Holzindustrie Österreichs [Industrial union of the forestry industry in Austria] is an interest organisation within the wood industry. The organisation has around 30 000 members (2007). Its objective is to promote cooperation for the people involved in the value-added chain, also on an international level. It also aims to increase the market share in the core sections before 2010. Website: www.holzindustrie.at

Forst Holz Papier [Forestry Wood Paper] is a co-operation of the forestry, wood, paper and pulp industry. One of their main topics is to concentrate on national cooperation. They also put emphasis on the importance of all members in the value-added chain "Forestry-Wood-Paper". Further, it is a competence center for all questions concerning the value-chain. Website: www.forstholzpapier.at

Diverse wood clusters with around 18 000 members. The aim is to increase the range of small and medium sized wood companies in the competition through a bundling of all strengths. Websites: www.holzcluster.at, www.holzcluster-steiermark.at, www.holz-cluster.at

Marketing strategies

Big yearly campaign "Holz ist genial" (Wood is ingenious), website: www.holzistgenial.at and "Stolz auf Holz" (Proud of wood). Other marketing activities are press releases, international seminars and meetings, commercial activities etcetera.

Below is a presentation of a selection of the arguments used by the Austrian timber industry in its marketing.

- Wood does not produce any waste and it is totally recyclable.
- Wood has just one tenth of the weight of steel.
- Extraordinary structural-physical characteristics.
- Wood is CO₂-neutral.
- Wood is light.
- Wood is the material with the best rate of insulation and heat storage and saves heating costs for every housing space.

- Wood burns, but the breakdown of wood in case of a fire is exactly accountable – an advantage that not all materials have.
- The insulation effect of an (a) 10 cm thin massive wood wall complies with a 160 cm thick concrete wall.
- Austrian companies and institutions are worldwide leaders in the development of wood composites as well as in modern wood manufacturing and processing technology.
- Surfaces of wood strongly contribute to a comfortable room climate, since wood regulates air humidity efficiently.
- Building with wood is simple but demanding at the same time – architects, designer and construction workers feel gratification, because they can treat a renewable, philanthropic resource.
- Living with wood – ageless beauty.

SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> - Positive public image - Excellent marketing results - Closeness to the customer - Environmental friendliness - Strong networking between smaller sized companies - Fast construction periods (because of prefabrication and immediate stability/resistance of wood) - Plenty of wood in Austria 	<ul style="list-style-type: none"> - Flammability - Rotting - Bad image among non-wooden experts - Fluctuating quality (raw materials)
Opportunities	Threats
<ul style="list-style-type: none"> - Increasing public interest in the topic of sustainability (nature, raw materials) - Increasing export rates - Wood is underestimated among non-wooden experts - Better knowledge and calculability of construction due to improved research - Fast (5 years) growing wood species for increasing the cutting down rates of wood - Customer identification with wooden products due to brand 	<ul style="list-style-type: none"> - Decreasing possibilities of import, contingently simultaneous increase of demand - Increasing prices due to application of wood as an energy generator

2.2. Belgium

(The) Number of people employed in the Belgium timber industry is approx. 24 700 people in 1660 companies (2007). Total turnover: 6,3 billion Euros (2007).

Construction elements:

- Amo(u)nt of companies : 270 (2006)
- Number|s| of employees: 3973 (2006)

- Turnover : 1081 million Euros (17,1% du total)
- Change in turnover during 2007 : +6,6 %¹

Trade organisations and objectives

Fédération Belge de l'industrie textile, du bois et de l'ameublement (Fedustria a.s.b.l.) is an organisation for textile, wood and furniture companies. The main goal of the organisation is to reinforce the competitive position for its member companies. Website: www.fedustria.be

Fédération Nationale des Négociants en Bois (FNN). The FNN group contains consist of more than 200 wholesales suppliers in Belgium. The operations of the organisation focus on education, protection and development for its members. Each member of the FNN is also indirectly affiliated to the *Fédération Européenne du Négoce de Bois* (FEBO). Website: www.fnn.be

The area of wood/timber industry in Belgium is presently confronted with changeable circumstances in connection with its general environment - legislations, image of industry - as well as with the competition from low paid countries and distribution issues. The challenge facing the Belgian wood industry can be summarized as staying competitive at an international level on the local and international market. Focus on innovation and talent development is also needed in order to be capable to compete in regards to quality.

In 2006 the *Fedustria a.s.b.l.* developed a new program focusing on the development of the wood and furniture industry in Belgium. A selection of some of the goals of the program are:

- insist to political powers in order to increase the chances for development of firms within the Belgian wood and furniture industry
- introduce the environmental advantages of wood
- follow and reinforce their efforts at the education level
- lead the campaign to improve the general perception of the sector
- support efforts relating to research and to development
- support the actions of protection against the unfair competition

Marketing strategies

The Belgium wood sector makes use of a various selection of marketing channels and *Belgium Woodforum* is the organisation that is principally responsible for the marketing. The forum undertaking to promote, in the broad sense of term, wood and wooden based products to the general public. The objective of the forum is to implement the usage of wood in the mentalities and behaviour(s) of the consumers. Their aim is also to emphasize the reasons which justify the choice of wood and spread information and necessary knowledge about the use of wood available for everyone. In order to do that Belgian Woodforum has several tools:

- Their website: www.woodforum.be, is the main sector of information and promotion of the branch of Belgian wood.
- Their quarterly journal "Le Courrier du Bois" which is a reference of the branch.
- Their hotline (no. +32 2 219 28 32) where immediate information can be obtained.
- A range of technical publications, written in collaboration with scientific researchers.
- Supplementary training/education and conferences on demand.
- European wood promotion programs, with whom the Belgium Woodforum is participating, such as European Wood Magazine, Archiwood.net etcetera.
- Promotion campaigns which deals with wood in general or more targeting, specific applications.

Belgian Woodforum has a building of 1700 m² in the heart of Brussels (L'Arsenal 2, Avenue des Volontaires, 1040 Bruxelles) named « The Home of Wood ». The building is the rallying point for the whole Belgium wood sector and its economic partners. The building is also used for exhibitions, seminars, study-rooms, lectures, conferences and to introduce new products. The building also includes a library. In 2006 a campaign took off to promote the timber industry and to inform the advantages of using timber frames. A selection of arguments used in promoting timber frames were:

- It economises energy
- It does not damage your health
- It is fire resistant
- It is an eco-friendly alternative, emitting less carbon dioxide
- It is resistant
- It offers a wide selection of choices
- It is renewable
- It produces oxygen

SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> - Natural material - Ecological - Multiple marketing channels - Numerous initiatives of product promotions - High production - Good level of education 	<ul style="list-style-type: none"> - No trade organisation focusing on construction - Improve the wood image to the general public
Opportunities	Threats
<ul style="list-style-type: none"> - Natural material and environmentally correct 	<ul style="list-style-type: none"> - Competition from countries with lower wages - Recession

2.3 Finland

Trade organisations and objectives

Suomen metsäteollisuuden keskusliitto [The Finnish Forest Industries Federation] works for trade, technical affairs, labour affairs etcetera. The federation's main focus is chemical wood industry affairs and (its secondary focus is) mechanical wood industry affairs. They also work to improve the competitiveness and profitability of the forest-based sector by strengthening its operating conditions and building its positive image in Finland and abroad. Further, they strive to influence decision-making in Finland and the European Union in matters that affect the forest branch. They also promote entrepreneurship and healthy forms of business as well as negotiate collective agreements in the branch. The membership covers the entire pulp, paper and paperboard industry and about 80% of the sawmilling, plywood and wood products industry in Finland. Webside: www.forestindustries.fi/esittely/Pages/default.aspx

Marketing of wood construction is taken care of by a separate organization, *Puuinfo Oy*. *Puuinfo Oy* consists of a cluster of contractors for large scale wooden structures which develops new guidance. Webside: www.puuinfo.fi/en/in_english.

Pientaloteollisuus PTT ry, (a family house industry association) is also working for the market of wooden houses; it takes care of statistics etcetera.

Approx. 50 people are working within the trade organisation, from which about ten in wood material leverage, about ten in information and economy, about ten in labour affairs, five for lobbying, five for standardisation, five for technical development and projects.

Marketing strategies

Influence upon authorities and politicians, massive advertising (now less than some years ago, R&D, projects for wooden houses, lobbying public opinion via press. The arguments used in promoting the products is that wood is natural, Finnish, sustainable, environment-friendly (CO2) and traditional.

SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> - Ecology - Environmental friendliness (CO2) 	<ul style="list-style-type: none"> - Timber products industry is very heterogenic, only one big operator-Finnforest Oyj - Most of the companies are too small for independent strategies - World market price of wood varies too much and weakens local businesses
Opportunities	Threats
<ul style="list-style-type: none"> - New consortiums, co-operation with towns for new small house areas 	<ul style="list-style-type: none"> - Supply of raw wood for industry from Russia is threatened because of new Russian customs fees - some 20 % of wood needed has come from Russia - Shrinking market of one family houses - Low profits of wood industry - Family stone houses have got more market share, due to thermal mass, moisture resistance, more marketing etc

2.4 Ireland

Market share: In 2007 the market share for timber frames reached an all time high of 25% to 30%. With the recent sharp decline in the market, timber frame market share may be as low as 10%. Timber frame market share grew from 5% to 30% market share in Ireland over a period of 15 years.

Volumes: In 2004 (based on 77,000 house completions & 20% market share) softwood consumption in the Irish timber frame sector was 160,000 m³ with an additional estimated 15,000 m³ used for truss rafters. In 2007 (based on 95,000 house completions & 25% market share) softwood consumption in Irish Timber Frame sector is estimated at 200,000 m³ with an additional estimated 19,000 m³ used for trussed rafters.

Trade Organisation and its objectives

Irish Timber Frame Manufacturers Association (IFTMA). One full time representative (Peter De Lacey Staunton) in Marketing and Technical Capacity and one part time representative in similar capacity. Runs national advertising campaigns and based on level of activity would appear to have an advertising budget in the range of €1 million. IFTMA has 24 members/manufacturers representing 80% of production of timber frame homes. The IFTMA works to promote timber frame in general and it is a theoretically independent organisation. However, until recently the organisation was controlled by Kingspan Century to the extent that the Kingspan Century spokesperson is often perceived to be the national representative of timber frames. This person was a high profile media specialist with contacts at the highest level – but has since sold the company. The IFTMA represents the industry at trade shows and runs national advertising campaigns.

Kingspan Century is the largest company within the branch. In 2005 and 2006 it enjoyed record turnover and profits. At its peak in 2006 annual turnover was €100 million, with profits of almost €10 million. In 2007 its profit levels fell sharply to just over €1.5 million. In 2008 the company will make a loss. Given the current housing market situation in Ireland, it is highly likely that all timber frame manufacturers will make a loss and that many will close.

Marketing Strategies

The main strategy has been to use a ‘media guru’ (former owner of Century Homes now owned by Kingspan) who is well connected to leading television chat show hosts etcetera as the mouthpiece for the industry. This character promoted himself as the ‘timber frame knight in shining armour’ out to slay the concrete industry ‘dragon’ who supposedly was being unfairly protected by government and government legislation. He received much media coverage over a number of years but has now left Ireland.

The most important strategy was to sponsor an architect with his own television production company (Duncan Stewart) who produced a television series called ‘About the House’ – which was one of the most popular programmes on Irish television. The programme has been running for about 5 years. This show was sponsored by the state owned ‘Coillte’ (the Irish forestry industry representative body) and by Century Homes and others. The programme was very successful and was relentless in its promotion of timber frame homes.

Irish Timber Frame manufacturers are frequent exhibitors at trade shows and exhibitions. They also advertise a lot in trade magazines and on occasion on radio and television. The IFTMA use ‘radio’ as the main method of advertising timber frames.

Arguments used by IFTMA in promoting timber frames:

- Timber is environmentally friendly and will help Ireland to fulfil its Kyoto commitments.
- Timber frame is warmer than masonry and delivers ‘huge’ financial savings on energy.
- Timber frames are faster to construct and saves money for the builder (Masonry is a ‘dinosaur’ technology etcetera).
- Technically – they say that both timber frame and masonry comply with the building regulations and therefore that timber frame is ‘equivalent’ to masonry.

SWOT

Strength	Weaknesses
<ul style="list-style-type: none"> - Excellent use of advertising media - They have been very strong in getting their ‘environmental’ and ‘thermal insulation’ messages across - A substantial budget was set aside for advertising and promotion – possibly 10 times bigger (per annum) than the masonry industry when the housing market was at its peak (very little advertising is now carried out due to the downturn in the market) 	<ul style="list-style-type: none"> - Not soundproof - Negative media coverage on radio chat - There is over supply in the market – margins are low or non existent
Opportunities	Threats
<ul style="list-style-type: none"> - Very few opportunities at the present time 	<ul style="list-style-type: none"> - Many indicators suggest that the industry is facing long term decline - The ‘speed of construction’ argument is wearing thin with builders and the cost of timber frame is now ‘more expensive’ than masonry - One of the biggest house builders in the U.K., Barratt Homes, has recently reverted from timber frame to masonry and claims that it will create a saving of 15% in the cost of building a house - The timber frame industry is seriously threatened by a series of ongoing high profile fires on multi-storey buildings in particular

2.5 Italy

The Italian precasters have historically never faced a serious problem in terms of competition from the wood industry since it is a very small competitor and have therefore never carried out any studies analysing the competition.

2.6 The Netherlands

Trade organisations and objectives

Nederlandse Bond van Timmerfabrikanten [timber structure producers] or NBvT has 11 employees. The membership of the NBvT gives the timber structure producers a lot of benefits and conveniences. The NBvT let the members know what the new developments are and stimulates and coordinates innovation activities and the research that is needed. The NBvT helps the members organisationally with staff, CAO, contracts, etcetera. They also help on the technical level with the latest development in production, after-care and innovations. NBvT takes care of the collective and individual interests of 250 timber structure producers. They also provide an essential input to the development of building with timber by stimulating innovations, cooperate to improve regulations and progressing the quality for the members of the NBvT. Provision of services to the members in the fields of: delivery and acquisition of selling, employment, technical business, product innovation, standards and

quality, working conditions and environment, education, information, promotion and publicity, representation in umbrella organisations, juridical and economics.

Centrum Hout [wood promotion] aims to advance the functional use of timber. Centrum Hout organises congresses, Symposia and publishes brochures, book and technical documentation. They also participate in trade fairs. Further, they work with publicity and promotion, advice and research. Competence and objectivity are very important. The Centre progresses the responsible use of timber in technical, economical, social and aesthetic relation.

Vereniging van houtskelet bouwers [timber frame builders]

Marketing Strategies

NBVT:

Trade fair for timber, brochures.

Centrum Hout:

Brochures, books, and (technical) timber documentation, het Houtblad (timbermagazine) workshops, training and educational activities including support for university chairs, guest lectures and the WoodChallenge student prize, project seminars and trade fairs.

SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> - Low-energy/durable - Affordable - Low weight - Esthetical - Sustainable 	<ul style="list-style-type: none"> - Wood rot - Material scarcity - Keeps the heat inside for a very long time
Opportunities	Threats
<ul style="list-style-type: none"> - Sustainable - Light weight - Modern methods to treat coniferous to make it as durable as tropical hardwood 	<ul style="list-style-type: none"> - Wood rot (Dutch climate) - Deforestation

2.7 Sweden

Number of people directly employed in the forestry and timber industries is approx 100,000, of which approx 39,000 in the sawmill and timber products industries, and approx 4,300 in the timber homes industry.

Trade organisations and their objectives

Trä- och Möbelindustriförbundet [Sweden's Employers' Association for the Wood Products Industry] (TMF) works with the timber processing industry in Sweden and has around 800 member companies. The TMF includes the following sections: Svensk Möbelindustri [furniture], Svensk Snickeriindustri [cabinetmaking], Svensk Trähusindustri [timber homes], Svenska Träkomponenter [timber components] and Arbetsgivarfrågor [employer issues]. TMF operations are organised within three business areas: Employer Issues, Housing and Building. The secretariat is located in Stockholm and the association also has representation nationwide in various regional offices. Two people are employed at the secretariat in the timber homes section. Website: www.tmf.se

Skogsindustrierna [the Swedish Forest Industries Federation] is the trade and employers' organisation of the pulp, paper and wood mechanical industries. The activities of *Skogsindustrierna* are structured within an employer section, which has three committees, an economic policy section (six committees) and a section for timber promotions. The purpose of the *Skogsindustrierna* trade organisation is to strengthen the companies' competitiveness and promote the increased use of forestry products. Website: www.skogsindustrin.se

Sveriges Träbyggnadskansli [Sweden's secretariat for timber construction] acts to promote the wider use of modern timber buildings on the Swedish construction market. The secretariat also functions in a supportive capacity for all timber construction initiatives taken nationwide in Sweden. Finally, the Secretariat also directs communications work concerning the development of timber construction by means of information, training and project support.

The goal of the International Strategy for Building in Wood is to ensure that timber becomes an obvious alternative in all construction projects, and that 30 % of all new buildings have a timber frame in 10 to 15 years' time. In May 2008, a three-year campaign starts to promote timber. The purpose is to provide information about the importance to the climate of the forest and forest products.

Marketing strategies

The products offered by the industry are bearing-structures in timber in multi-storey buildings, public buildings and infrastructure. Regarding the price of multi-storey buildings, the timber homes industry believes construction is cheaper using timber frames than it is using other materials. The fact that timber frame has a cost benefit is also used forcefully in timber frame marketing. Timber is also marketed by more practical means. People are invited to come and visit timber-framed multi-family buildings, to come in and "get the feel" of what it is like. The purpose of this type of marketing is to convey the feeling and atmosphere of living in a timber multi-storey building. The timber industry promotes its message through seminars, workshops, competitions and exhibitions. A book has also been published, entitled "Sverige bygger åter stort i trä, 55 exempel på modern träbyggnadsteknik i stora konstruktioner" [Sweden is again building in timber on a large scale, 55 examples of modern large structure timber construction techniques]. The purpose of the book is to show that there now are a large number of examples of modern timber buildings and to provide inspiration for building more. The timber industry also works actively to convey the skills of building in timber for colleges and universities throughout Sweden. Getting young people involved and interested contributes to the characterisation of timber construction as trendy and modern. Modern to the extent that it is an innovation.

Below is a presentation of a selection of the arguments used by the Swedish timber industry in its marketing of multi-storey buildings with timber frames.

- A timber frame is an eco-friendly alternative, emitting less carbon dioxide.
- Buildings constructed on a timber frame are lightweight and well suited to poorer ground conditions.
- It is cheaper to build using a timber frame than it is with concrete or steel.
- Timber is a natural, Swedish material.
- Research and the development of joists now permit timber-framed houses to have acoustic insulation to equal that of a house built of concrete. Measures have also been taken to deal with the risk of damp and mould.

- It is quicker to build with timber since no lengthy drying periods are required, such as those linked to concrete.
- Developments in the use of timber frames for constructing multi-storey buildings leads to regional growth and increased employment.

SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> - Strong collaborative partners - Multiple marketing channels - Swedish - Environmentally correct - Natural material - Governmental support 	<ul style="list-style-type: none"> - No trade organisation focusing on construction - Fire risk - Damp and mould
Opportunities	Threats
<ul style="list-style-type: none"> - Increased exports 	<ul style="list-style-type: none"> - Raised export duties in Russia - Price trends - Research reports

2.8 United Kingdom

Market Share (revenues and volumes): the share of value of UK produced goods consumed rose in 2007 to 31% (29.3% in 2006) as the share from Europe and Asia fell slightly.

Volume: the volume of timber and panels traded in the UK in 2007 increased to 18.2 million m³, from a revised total of 17.0 million m³ in 2006. Consumption of solid timbers (softwood and hardwood) rose to 11.2 million m³ in 2007 from 10.4 million m³ and the total for all panel products combined reached 7.0 million m³ compared to 6.6 million m³ in 2006.

Trade organisations and objectives

The Timber Trade Federation (TTF) represents the interests of the wood and wood products industry to a diverse range of stakeholders, from the UK Government and EU to specifiers and consumers of wood. Members benefit from the TTF's expertise in all aspects of timber - from best environmental practice to technical standards - as well as exclusive discounted added-value services. Membership of the TTF is open to any company or organisation with an interest in timber.

The Timber Research and Development Association (TRADA) is an international centre of excellence on the specification and use of timber and wood products. The association aims to provide members with the highest quality information on timber and wood products to enable them to maximise the benefits that timber can provide.

The British Woodworking Federation (BWF) is the trade association for the woodworking and joinery manufacturing industry in the UK. It has over 500 members drawn from manufacturers, distributors and installers of timber doors, windows, conservatories, staircases, all forms of architectural joinery including shopfitting, timber frame buildings and engineered timber components, as well as suppliers to the industry. The Federation provides service to its members. Further, the BWF brings together individuals and companies within the industry to share problems and experiences and find solutions together. The federation also provides its

members with an influential voice in the development of woodworking and joinery product standards in Britain and Europe.

The UK Timber Frame Association (UKTFA) was launched to provide a strong, unified voice for the UK industry. Three people are working within the association. According to the UKTFA they are the single organisation speaking for timber frame in the UK. Member companies includes Timber Frame Manufacturers; Industry Suppliers; Architects and Engineers; builders and contractors; erectors; and other trade associations. The purpose of UKTFA is to inform and educate about timber frame constructions to the construction industry, policy makers and the general public. Provide information and guidance, both technical and consumer oriented. Promote higher standards through their Q-Mark quality schema and training service. Help all construction sectors of the UK to exploit the benefits of timber frame.

Marketing strategies

The TTF produces a number of publications regarding trading issues and environmental topics.

The TRADA organise on-going programmes of information and research.

The BWF promotes its members, their products and the woodworking and joinery industry as a whole using a variety of media such as their website, guides and publications, the BWF technical helpline, inspections, detailed reports and expert witness statements, PR programme, publicity and advertising in national, local and trade press publicists.

Some of the marketing activities used by the UKTFA are promotional literature, improvement of the communication within the industry, PR, media, exhibitions, providing information.

Arguments used by the UKTFA:

- Wood is engineered to the highest level of accuracy and quality
- Significantly simplifies on-site construction
- Promotes greater efficiency and supply chain integration
- Brings predictability and greater control to the construction process
- Meets and often exceeds all current building regulations
- Performs well in terms of fire and flood resistance
- Improves construction health and safety
- Has fewer defects and high customer satisfaction
- Is by far the most environmentally friendly way to build
- Thermal and acoustic excellence
- Durability
- Design flexibility

SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> - Sustainable and renewable nature - Environmentally friendly, less CO2 - Ethical industry 	<ul style="list-style-type: none"> - Growth slowing down due to the combination of economic slowdown and rising prices of energy and raw materials
Opportunities	Threats
<ul style="list-style-type: none"> - Bringing mutable benefits - Maintenance of its rare ability 	<ul style="list-style-type: none"> - Increasing litigation - Maintenance of its rare ability - The industry continues to be negatively affected by the current economic situation

2.9 Analysis and conclusion

The presented information shows that the timber industry overall has a well developed trade organisation structure. Important to point out, however, is that these trade organisations are in general in charge for the whole wood industry and not specific for the timber frames industry. Examples of countries that do not have trade organisations especially for its timber frame industry is Belgium, Italy and Sweden. In special regard to Italy no studies have been carried out analyzing the timber industry due to the fact that the Italian timber frame industry has never been seen as a competitor to concrete. The Italian report points out however that decision to start with marketing campaigns for the concrete branch need to be taken in order to promote and differentiate the products against other materials. The report further highlights that sustainability issues will become the most important point of view in regards to choice of material for new constructions in the future. This is as well emphasised in the report from the Netherlands, which indicates that the trend of sustainable purchasing may result in the increase of timber frame constructions.

According to the majority of the country reports the timber industry has been very successful in terms of marketing. Both in Belgium and Sweden the industries use multiple marketing channels and the timber industry marketing success is also pointed out in the Austrian and Irish reports. The reason for that may be a result from the governmental support the industry receives in some of the countries but also that several of the industries mentioned have specific organisations/sections focusing only on marketing activities as well as developing strong collaboration partners.

A summary of activities made by the marketing sections of the industry are trade fairs, seminars, different kind of prizes with focus on architects, designers, and students, in order to encourage the use of timber in constructions. The Belgium wood industry also markets its main building as all interests of the industry is gathered in one place.

The listed advantages, strengths and opportunities for timber frames are that wood/timber is perceived as a natural material and therefore environmentally correct and ecological. The Irish report indicates as well that due to excellent use of advertising media including radio, television, and printed media the Irish timber industry has been very strong in getting their 'environmental' and 'thermal insulation' messages across. Further, the UK report also include that a great majority of wood-based products in the UK are now also Certified - as coming from legal and responsible sources. This presents specifiers, buyers and users with the confidence that they are dealing with an ethical industry intent on protecting its precious

natural resource. The report indicates however that the greatest challenge for the UK timber industry is to maintain its rare ability of offering an unparalleled combination of commercial, social and environmental benefits. This is closely linked to CSR, corporate social responsibility, where a company seeks legitimacy and approval from the population in a country through CSR and where the legitimacy from the public is obtained where there are some responsibilities that the company must consider such as social and environmental. The UK wood industry, or TTF, has been undertaking some research into CRS in the timber trade with the funding from the UK Department for International Development. The aim is to develop guidelines on best practise and policy advice to government. Through the CRS the industry is creating a positive public image.

The weaknesses pointed out in most of the reports are the damp and mould issues as well as the fire risks linked to timber frames. The fire risk is especially pointed out in the UK report where the timber frame industry is seriously threatened by a series of ongoing high profile fires on multi-storey buildings. The Swedish report mentions this problem as well; it indicates however that time will show the negative but also dangerous effects of the use of the timber frame from a fire safety perspective. Another weakness is that even if the wood industry and its marketing is well developed many of the included countries in this paper is lacking a trade organisation focusing on constructions in wood, as mentioned earlier.

The more acute of the threats or challenges facing the timber industry are rising prices of energy and raw materials but also the effects of the current economic situation which makes the growth slow down. The raised export duties in Russia does as well effect the Finnish and Swedish market negatively, where the Finnish report specify that some 20% of wood needed in Finland traditionally comes to come from Russia.

More threats facing the wood industry may however arise, since the wood industry as well as many other industries are facing difficult times due to the global credit crunch.

3. Section 2: Steel

3.1 Austria

Trade organisations and objectives

Österreichischer Stahlbauverband (ÖSTV) is the only organisation for the most important companies in the steel branch. Its objective is to represent the interest of its members vis-à-vis legislator, authorities. ÖSTV main focus is research. Website: www.stahlbauverband.at

Fachverband Maschinen & Metallwaren Industrie (FMMI) is an interest organisation for all industries within the machine and hardware industry and therefore also for the steel construction industry. The organisation also deals with marketing and lobbying as well as norms for steel building. Approx. 18,000 people (2007) are working within the steel building branch. Website: www.fmmi.at

Big companies within the Austrian steel branch are, Voestalpine AG, Haslinger Stahlbau GmbH, Waagner-Biro Stahlbau AG, Doubrava GmbH & Co. KG.

Marketing strategies

The steel industry in Austria does not have any formulated market activities or argument for the use of steel.

SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> - Static properties – “lean construction/production” - Prefabrication – “fastness” in building etcetera - Immediate capacitance - Homogeneity of the material – quality assurance - Good exact calculability - High variety of possibilities – “everything is possible” with steel - Lots of research in this field 	<ul style="list-style-type: none"> - Fire control – steel loses half of its consistency when it reaches 500 degrees - Fear of corrosion – attendance is relevant for security matters - Dependence on raw materials and energy – “price increases” possible - Few aggregations of firms – no joint appearance of companies - Some planners have a lack of knowledge
Opportunities	Threats
<ul style="list-style-type: none"> - Strong exports due to good quality - Innovations in the field of material and assembly - Unused potential in house building so far – light constructions with light steel as new possibility 	<ul style="list-style-type: none"> - Dependence on raw materials and prices - High costs of labor due to high demands on quality

3.2 Belgium

Number of employees in the Belgium steel industry is approx. 16 960 people in 15 different companies.

Total turnover: 12 billion Euros.

Change of turnover during 2007: + 9 %

Export: 8,3 billion Euros.

Big industries within the field are Groupe Duferco and Groupe Arcelor/Mittal.

Trade organisations and their objectives

The *Groupement de la Sidérurgie* (GSV) is the trade organisation for steelworks companies in Belgium. The GSV has 15 members and 960 directly employed. Thirteen of its members are located in the southern parts of the country. Website: www.steelbel.be.

In 2007, important programs of investments in energy material, environmental processes, innovation products and promotion of the co-producing were launched out. The programs manifest the trust of the international groups in their site of production in Belgium. These investments are the motor of progress, growth and strengthening of competitiveness facing the competition of other producers or other materials.

The Belgian steel sector also aims to establish programs of promoting training in updating knowledge, competence and know-how of the personnel, and to improve their skills.

The *Groupement de la Sidérurgie* has four main responsibilities which are listed below.

- To represent and protect the Belgium steelwork sector internationally, in Europe and from the federal and regional points of view.
- To assure its members benefits and services.
- To study and analyse developments in the sector related to the market, to the social matters, to the environment, to the transport, in energy and in raw materials.
- To inform the public of the achievements in the sector and to contribute to the “Centre Information Acier” in the promotion of the material steel.

Marketing strategies

The promotion of Belgium steel is mainly made by the *Groupement de la Sidérurgie* and *le Centre Information Acier*. Website: www.infosteel.be. They promote and reinforce the use of steel in buildings as well as making sure of the transfer of technical knowledge in steel building between different actors of the sector. The *Centre Information Acier* is also responsible for lobbying.

Le Centre d’Information Acier focuses its message on the quality and as a result lasting usage of the material steel in building. In order to do that it puts the emphasis on an usage of the steel correspondent to prescripts techniques. *Le Centre d’Information Acier* also have two plans for topics that they deal with in more depth. A first plan concerns the publication of textbooks which represent how to use the material steel correctly. Secondely, they offer detailed techniques of building which answer to all new thermal norms, acoustics and energetics, as well as in protection.

A selection of marketing channels used to promote steel are different publications, a review “staal-acier”, yearly events – “Concours Construction Acier “ [steel construction competitions] and “Journée Construction Acier” [steel construction day], events for professionals working in the sector as well as events for students and professors. Exercise books gathering examples of application of new legislation (Eurocodes).

Networks are also an important part of the marketing strategies used by the Belgium Steel industry. The networks consist of different centres following the same purposes as *Le Centre d'Information Acier*. The purpose of the network is to assure a wider broadcasting and more efficient and knowledge about the applications of steel.

SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> - The intensity of the investment drives metallic and mechanical building towards a new top - Multiple marketing channels 	<ul style="list-style-type: none"> - Strong increases in prices of raw materials and of energy
Opportunities	Threats
<ul style="list-style-type: none"> - Recyclable character of steel - Increasing consumption in the development of the emergent countries (population growth, need of facilities) 	<ul style="list-style-type: none"> - The insurance of the supply of raw materials in the long term. - The import from China which is multiplied by 10 during the last two years. Supplier outside in the zone EU27 do not have to answer to the same norms as those of the zone EU27. A need for all suppliers to submit to the same prescripts is therefore required.

3.3 Finland

Trade organisations and objectives

Suomen Teräsrakenneyhdistys TRY [Finnish constructional Steelwork Association] which six persons are working. The association's objective is to improve the usage of steel and metal constructions in Finland. The most important financing partner is Rautaruukki Oyj, the Finnish steel producer. They have a division named Ruukki Construction, which operates in the Nordic, Baltic, eastern European countries and in Russia. Website: www.terasrakenneyhdistys.fi

Standardisation is taken care of by MET (Finnish Technology Industry), they have also labour affairs.

Marketing strategies

Technical projects, standardisation, information material and computer programs for designers. The arguments they use in promoting their products is that it is modern, fine, economical, easy to recycle and light.

SWOT

Strengths	Weaknesses
- Dimensional tolerances somewhat better than for concrete - Dry connections	- Very few bigger companies which really develop the branch
Opportunities	Threats
- Light metal claddings - Steel balconies - Long span structures in industrial halls and super markets - European lobbying for better fire regulations	- World market price of steel and construction in Far East

3.4 Ireland

Steel frame house construction in Ireland is almost negligible and represents about 2% of market share.

3.5 Italy

Trade organisation

The Steel trade association that represents the steel used for frames is weak in Italy, only four or five people are working in the organisation.

Marketing strategies

Over the last two years the association has however started to organise events around Italy targeted to the designers in order to promote "to build using steel". Arguments they are using are durability, steel fit for complex structures, fire resistance, use of stainless steel, surface treatment for durability. They also promote for the use of steel when building in seismic areas (use of eurocodes).

They have also recently pressed the Italian government to take some action against the increase in price of steel as raw material.

3.6 The Netherlands

Business structure in the Netherlands is one steel mill and many hundreds of production plants of steel structures

Overall sales and profits: 750.000 tons (= € 750 million) of steel delivered to the construction industry of which 350.000 ton(s) of beams. (of which beams represent 350 000 tons?)

Pricing information: € 1000,-/ton average.

Trade Organisations and their objectives

The foundation Bouwen met Staal is a national organisation for the use of steel in the Construction industry, 14 people are working within the organisation. The foundation offers a platform to the 2500 members to exchange knowledge and experience. It also wants to support all parties in the Construction industry – from sponsor till subcontractor – with the application of steel. The activities are as far as possible tailored to steel applications in the industrial Construction, residential, housing and infrastructure. The foundation organises the following activities: excursions and seminars, free evening sessions, annual graduation price Steel, adjust commissions, etcetera.

Marketing strategies

National Steel Construction day, seminars, student Steel Award, national steel award, student steel day, branch magazine “Build with Steel”. Arguments they use is that steel is versatile, flexible and sustainable.

SWOT

Strengths	Weaknesses
<ul style="list-style-type: none"> - Short delivery - Light weight - You can built fast with steel 	<ul style="list-style-type: none"> - It takes a long time to do the drawing there is barely thermal mass
Opportunities	Threats
<ul style="list-style-type: none"> - Flexible - Light weight - Recyclable 	<ul style="list-style-type: none"> - High price of steel

3.7 Sweden

Number of people directly employed approx 19,300 (2007).

Export value SEK 71 billion.

Import value SEK 42 billion.

Trade organisations and objectives

The Swedish steel industry’s trade organisation is Jernkontoret (the Swedish Steel Producers Association), whose daily operations are run by around 25 people. Jernkontoret represents the steel industry in issues concerning trade policy, research and training, standardisation, energy and the environment, and taxes and fees. Jernkontoret is leading the collective Nordic steel research. The association also draws up industry statistics and carries out geological research. Website: www.jernkontoret.se

Stålbyggnadsinstitutet – SBI (the Swedish Institute of Steel Construction) is an independent organisation financed via Stiftelsen Svensk Stålbyggnadsforskning [the Swedish Foundation for Steel Construction Research], industry, and national and international research financiers. The Foundation’s partners are companies with interests within the steel construction industry. The activities of Stålbyggnadsinstitutet are based on providing the players involved on the construction market with information, training and technical resources for constructing steel buildings. The institute’s task is to make the use of steel more efficient, and thereby to increase the competitiveness of steel as a building material. Website: www.sbi.se

Companies within the industry are SSAB, Ovako, Sandvik, Fagersta Stainless, Outokumpu Stainless Tubular Products.

Marketing strategies

The SBI awards the Stålbyggnadspris [Steel Design Award] every second year. The Stålbyggnadspris is awarded to a construction project utilising steel in its load-bearing structure in an innovative and architecturally appealing way. The purpose of the prize is to encourage the use of steel in construction projects and to give rise to new ideas and inspirational designs. But, perhaps most specifically, the prize is intended to bring attention to architects, engineers and companies that choose to utilise the properties of steel in a clear, well executed manner. The SBI also issues a magazine *Nyheter om stålbyggnad* [Steel Construction News]. The magazine contains articles about construction projects in Sweden and abroad, information about new construction methods and various design issues. It also contains articles on factors such as the fire protection, manufacture and assembly, joining and rust protection of steel structures. *Nyheter om Stålbyggnad* is issued twice a year (spring and autumn) and is distributed free-of-charge to designers, building contractors, architects, purchasers, steel construction workshops, materials manufacturers, teachers and students at universities etc. It has a print-run of 5000 copies. The steel industry also markets itself via the Internet and by gathering industry people together at Stålbyggnadsdagen, the annual steel construction conference, at which courses and seminars are organised.

The steel industry makes an annual investment of around SEK 1 billion in research into steel. The majority of the research (80-90 %) is carried out within the various steel companies, and the remainder (10-20 %), is performed as joint research within Jernkontoret's technology areas and at institutes and colleges. Swedish steel research focuses on concentrated resources within specialist niches and on maximum utilisation of the opportunities for collaboration within the Nordic countries and within the EU. One area in which vigorous investment is going to be made is climate research.

The steel industry and, in particular, steel research collaborates with colleges, research institutes, trade organisations and public authorities. Since 1969, the Jernkontoret network has included participants from all of the Nordic countries. Important financiers within the field of research for environmental improvements and energy savings include Mistra and the Swedish Energy Agency. Vinnova is also a significant financier of other projects within the development of steel industry production processes, new materials and manufacturing methods as well as advanced modelling. In addition, the SBI has a network of specialists to refer to, both inside Sweden and abroad.

Below is a presentation of a selection of the arguments used by the steel industry in its marketing of multi-storey buildings with steel frames.

- Steel is not organic and therefore safe to build with in regards to damp and mould.
- Steel is a highly durable building material.
- Steel is 100 % recyclable.
- Steel is a multi-faceted material and has many good material characteristics such as high strength. That means that this material can be customised precisely for the area of application, which means that smaller volumes of material are required to fulfil its intended function.
- Smaller volumes of material lead, in turn, to fewer transports, lower extraction of resources, fewer emissions and lower energy use.
- Buildings using steel frames provide good levels of safety, comfort and acoustic insulation. Steel building systems provide good thermal insulation and therefore lower energy consumption.

- Steel makes lightweight structures possible, and therefore reduced loadings on foundations and soils.

SWOT

Strengths	Weaknesses
- Major focus on research	- No direct trade organisation
Opportunities	Threats
- Exports - Industrial construction processes	- Price trends - Insufficient resources for research

3.8 United Kingdom

Business structure: Most steel-frame buildings are erected by UK specialist contractors represented by the UK Constructional Steelwork Association. Two thirds of the steel sections are imported, one third are supplied by Corus, now part of Tata.

Market share: Constructional steel accounted for 1.4 million tones of market demand in 2007. Main markets are framed buildings and bridges. Steel frame has 2% of the residential market; 90% of the retail and industrial market and 70% of the commercial market. It also holds 95% of the small agricultural buildings market.

Trade organisation and objectives

Corus is a part of the UK Steel Association representing all forms of steel production including reinforcement mills. Approx. 80 people are working within the organisation but *Corus* as a monopoly performs many of the roles of a trade body. Website: www.corusconstruction.com

Fabricators are part of the *British Constructional Steelwork Association Limited*. The association is the UK's national organisation for the steel construction industry. The principal objectives of the association are to promote the use of structural steelwork; to assist specifiers and clients; to ensure that the capabilities and activities of the industry are widely understood and to provide members with professional services in technical, commercial, contractual, quality assurance and health & safety matters. The Association's aim is to influence the trading environment in which member companies have to operate in order to improve their profitability. Website: www.steelconstruction.org

Research is focused through the *Steel Construction Institute*. Website: www.steel-sci.org

Marketing strategies

Press releases, awards such as “About Living Steel” which is a worldwide programme to stimulate innovation in the design and construction of housing. The programme was launched in February, 2005. Other awards are “Structural Steel Design Awards” and “Corus Student Awards”. *Corus* also organise seminars and courses.

Advantages of the use of steel presented by the British Constructional Steelwork Association are:

- Low cost
- Strength
- Durability

- Design flexibility
- Adaptability
- Sustainability
- Recyclability

3.9 Analysis and conclusion

Regarding steel as a material for frames for the multi-story residential market their market share is rather small in most of the countries. Steel is instead the market leader in industrial buildings, commercial buildings and bridges.

A lack of trade organisations focusing on steel construction exist in the steel industry. An example is the Swedish trade organisation Jernkontoret who acts on behalf of the entire steel industry which may result in the steel construction industry and issues relating to steel construction not being given the focus required. In Italy the market share for wood and steel is far less than concrete and therefore steel has never been regarded as a big competitor to concrete. Similarly in Ireland where the market share for steel frame house construction is about 2%, steel is not seen as a real competitor to concrete.

Promotion carried out by the steel industries is manifested through different kind of awards and prizes to encourage the use of steel in construction projects and to give rise to new ideas and inspirational designs. But the aim is also to bring attention to architects, engineers and companies that choose to utilise the properties of steel in a clear, well executed manner. Other marketing activities are steel construction days (in the Netherlands and Belgium for example) and seminars.

One of the clear advantages and strengths of the use of steel in construction is its sustainability. Steel is said to be the world's most recycled construction material by far. A recent study in the UK by the University of Wales indicates that 99% of structural steel in demolition is either recycled or re-used. Another strength pointed out in the Finnish report is that steel allows longer span construction which improves the building's flexibility. Further strengths mentioned in the reports is the efficiency by using steel in construction as well as the amount of research which is made within the field. In addition, one of the main opportunities available to the industry is increasing export possibilities.

The biggest threat towards the steel industry is the increasing cost of raw material and energy. The Dutch report indicates that due to the high steel price costumers are looking for alternative solutions. The UK reports stress that steel has increased in price due to a dramatic increase in global demand for steel, iron, ore, coal, shipping, etcetera, particularly from China and India. The UK report indicates however that steel will remain competitive through continuous improvement in production, design and construction.

The UK report does further point out that there is no doubt that the worldwide credit crunch and the loss of consumer confidences are having an impact on the UK construction market. This may be a situation other construction markets around Europe are facing or will face in a near future as well. The UK report specify however that the UK steel construction supply chain is the world's best and is well positioned to weather any significant downturn. The underlying global steel construction demand will continue to grow in the medium/long term and will present opportunities to UK companies both in home and export markets.

4. Appendices

	2002	2003	2004	2005	2006	Annual change
Round wood	5,503	5,503	5,919	6,408	6,918	6%
Sawn wood	1,429	2,259	2,218	2,327	2,627	16%
Veneer sheets	44	48	51	52	56	6%
Plywood	152	156	171	117	116	-7%
Total	7,128	7,966	8,359	8,904	9,717	8%

Figure 1: Belgium's industrial demand for all timber 2002-2006, in 1,000 m³ Source: CBI

	2002	2003	2004	2005	2006	Annual change
Round wood	60,711	61,683	61,717	62,399	59,468	-1%
Sawn wood	5,461	5,915	5,722	5,117	5,077	-2%
Veneer sheets	22	16	12	19	24	2%

Figure 2: Finland's industrial demand for all timber 2002-2006, in 1,000m³. Source: CBI

	2002	2003	2004	2005	2006	Annual change
Round wood	7,315	6,952	7,481	7,758	7,485	1%
Sawn wood	9,346	8,863	9,084	9,156	9,442	0.3%
Veneer sheets	626	624	628	622	623	-0.1%
Plywood	804	861	865	776	671	-4%
Total	18,091	17,300	18,058	18,312	18,221	0.2%

Figure 3: Italy's industrial demand for all timber 2002-2006, in 1,000 m³. Source: CBI

	2002	2003	2004	2005	2006	Annual change
Round wood	868	651	421	675	639	-7%
Sawn wood	2,930	3,032	3,060	2,891	3,109	1%
Veneer sheets	20	29	19	21	30	11%
Plywood	491	495	496	486	543	3%
Total	4,309	4,207	3,996	4,073	4,321	0.1%

Figure 4: Industrial demand for all timber in The Netherlands 2002-2006, in 1,000 m³. Source: CBI

	2002	2003	2004	2005	2006	Annual change
Round wood	7,499	8,414	8,069	8,122	8,053	2%
Sawn wood	10,506	11,101	11,054	10,634	10,278	-1%
Veneer sheets	28	23	25	65	52	17%
Plywood	1,080	1,186	1,383	1,342	1,371	6%
Total	19,113	20,724	20,531	20,163	19,754	0.8%

Figure 5: UK's industrial demand for all timber 2002-2006, in 1,000 m³. Source: CBI

Imports Value

		year			
country		item	2006		
	Austria	Roundwood +	739376.00	1000 \$	A
	Belgium	Roundwood +	172822.00	1000 \$	A
	Finland	Roundwood +	754756.00	1000 \$	A
	Ireland	Roundwood +	74584.00	1000 \$	A
	Italy	Roundwood +	583422.00	1000 \$	A
	Netherlands	Roundwood +	33253.00	1000 \$	A
	Sweden	Roundwood +	412854.00	1000 \$	A
	United Kingdom	Roundwood +	143683.00	1000 \$	A

A = May include official, semi-official or estimated data

Exports Value

		year			
country		item	2006		
	Austria	Roundwood +	80886.00	1000 \$	A
	Belgium	Roundwood +	83108.00	1000 \$	A
	Finland	Roundwood +	67581.00	1000 \$	A
	Ireland	Roundwood +	13688.00	1000 \$	A
	Italy	Roundwood +	7051.00	1000 \$	A
	Netherlands	Roundwood +	33981.00	1000 \$	A
	Sweden	Roundwood +	171918.00	1000 \$	A
	United Kingdom	Roundwood +	48949.00	1000 \$	A

A = May include official, semi-official or estimated data

Figure 6: Import and export values of roundwood. Source: FAOSTAT

Country	Type of steel	Price (€/ton)			Forecast period	Percentage		Notes
		12/2003 - 01/2004	End of March 2004	Forecast		End of March 2004	Forecast	
Austria	Not specified	330	480	520	End of April	45%	58%	
Belgium	Reinforcement (rigid)	200	395			98%		
	Wires	365	605			66%		
	Wire mesh	425	680			60%		
Germany	Not specified	375	585			56%		
Finland	Not specified	330	470			42%		
Italy	Prestressed	625	740			18%		
Norway	Not specified	350	550			57%		
Spain	Not specified	400	750	1000	End of the year	88%	150%	Importing steel from other countries is forbidden by the law.

Figure 7: Steel prices in seven countries. Source: Betongvaruindustrin

Steel vs Concrete - cost comparison

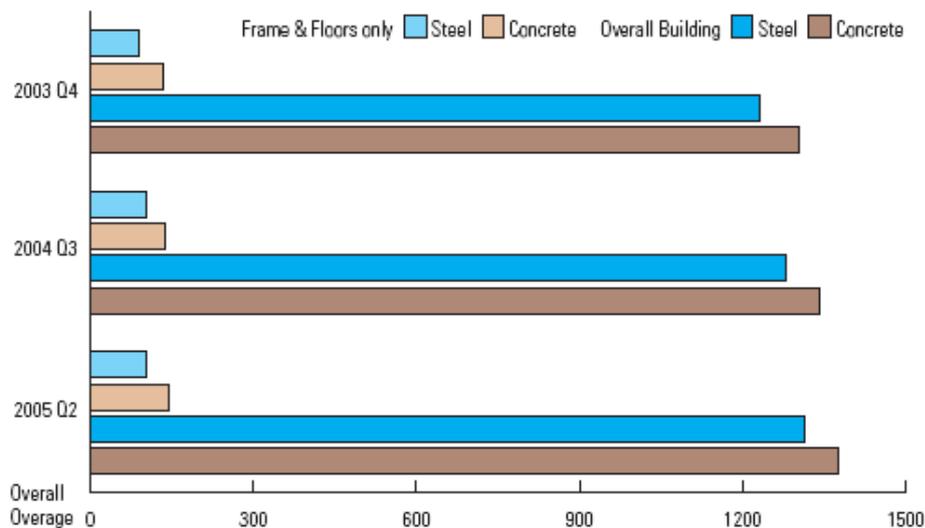


Figure 8: Steel vs. Concrete – cost comparison in the UK. Source UK report



Figure 9: Market share for the steel and concrete frames in the UK. Source UK report

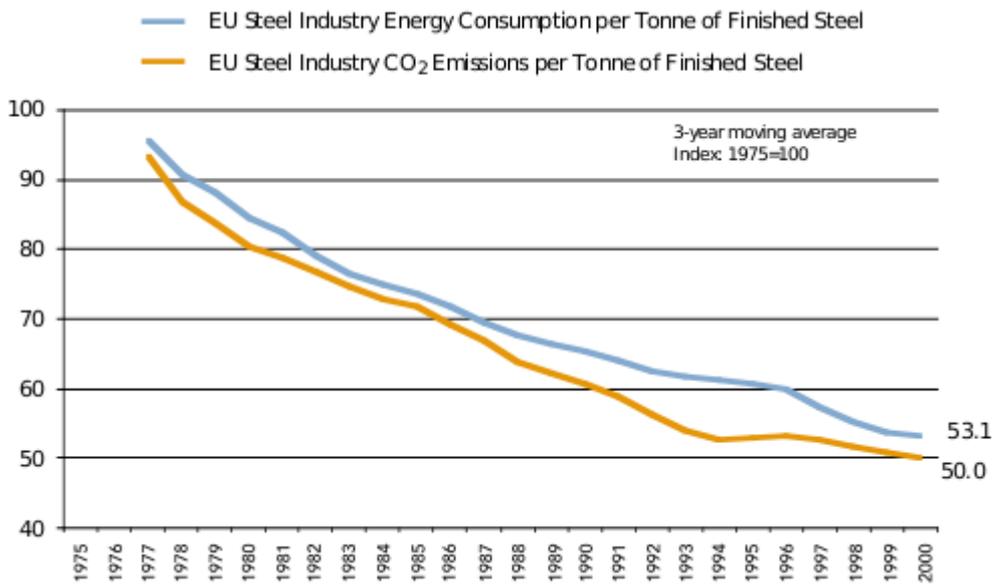


Figure 10: Specific energy consumption and CO₂ emissions, 1975-2000. Source report from European commission

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