

Appendix K

The survey questionnaire and cross country survey form

QUESTIONNAIRE

www.bwassoc.co.uk/eucon

This survey form has been devised as part of a research project commissioned by the European Commission (ENTR G3)

'Benchmarking the Efficiency of the Use of Resources in the EU Construction Industries'

PART 1 - INTRODUCTION

Everyone who completes this simple survey form (15 minutes is the maximum recommended time) will be sent a FREE COPY of the Executive Summary of the findings of the study.

The Objective

The objective of the research project is to establish 'best performance' amongst the construction industries in the member countries as a means of improving the efficiency of construction across the whole of the EU.

The Modus Operandi

Further details of the project can be found on the internet :

www.bwassoc.co.uk/eucon

The first part of the study involves research into suitable methods of assessing the efficiency of constructing buildings in 10 countries – final choice of countries will depend largely on the responses received to this questionnaire and the availability of good published data.

The purpose of the survey is to help the researchers to get a better understanding of the importance of the factors which drive the quantities of human and material resources consumed in the construction process. In particular the researchers need to know how important you consider each of the factors to be and how well/badly they are addressed in practice if and when they are under the control of the project team. The results will be used to explain any differences between EU countries in terms of their efficient use of construction resources and to identify best practice in that respect and any obstacles to achieving it.

Completing and returning the survey form

You are invited to complete the attached survey form and return it by fax to John Amos on :
00 44 (0)208 464 1167

Alternatively you may complete it on-screen and e-mail the completed file to John Amos at :

john.amos@bwassoc.co.uk

To be of most use to the research team the completed questionnaires are needed **before 30th November 2005**.

Where you are required to select just one of a selection of options, simply click the appropriate box. Where you are required to insert a rating from a menu of options please put in the appropriate number.

If you have any queries regarding any of the terms used, please consult the help section (Part 8). If you require further assistance regarding completing the survey, please contact John Amos (see contact details above)

Period of Experience

Please indicate how recently you have had direct experience of the construction of the building type specified.

Currently	<input checked="" type="radio"/>
Within the past 3 years	<input type="radio"/>
Over 3 years ago	<input type="radio"/>

PART 5 - YOUR ROLE IN THE CONSTRUCTION PROCESS

Please indicate the classification most applicable to your own personal experience by selecting the appropriate box under 'Stakeholder Type'.

STAKEHOLDER TYPE (ROLE)

1 Ownership Related		3 Policy Related	
a) Owner (not occupier)	<input checked="" type="radio"/>	a) Urban Planner	<input type="radio"/>
b) Property Manager	<input type="radio"/>	b) Municipality/Local Authority	<input type="radio"/>
c) Real Estate Agent/Appraiser	<input type="radio"/>	c) Health and well-being	<input type="radio"/>
		d) Government Department	<input type="radio"/>
		e) European Institution	<input type="radio"/>
2 Production Related		4 Market Related	
a) Promoter/Developer/Project Manager	<input type="radio"/>	a) Occupier	<input type="radio"/>
b) Member of design team	<input type="radio"/>	b) Education and Training	<input type="radio"/>
c) Contractor/Construction Manager	<input type="radio"/>	c) Research	<input type="radio"/>
d) Manufacturer	<input type="radio"/>	d) Local community group	<input type="radio"/>
e) Member of labour force	<input type="radio"/>	e) Media	<input type="radio"/>
f) Utilities/Waste disposal company	<input type="radio"/>		
		5 Finance Related	
		a) Insurance companies	<input type="radio"/>
		b) Banks/Mortgage institutions	<input type="radio"/>

PART 6. COMPLETING THE SURVEY FORM

How to address the questions

The survey questions start from the basis that, in a 'perfect' scenario, the resource drivers listed would all be at their optimum, e.g. 'best practice' in terms of 'buildability' and 'labour relations'. You are asked to state your views on the 'weight of importance' of each resource driver in general principle and the extent to which such 'best practice' is achieved in each factor (or the significance of the factor where it cannot be controlled) in your specified country. However, if you have broader international knowledge you are very welcome either to contact the research team directly or, alternatively, to complete a survey form for each country for which you have relevant experience.

PART 7. THE COMPARATIVE IMPORTANCE AND LEVELS OF ACHIEVEMENT

The weight of importance

Please indicate in the first set of boxes (A) how important you think that each of the following factors (resource drivers) is in terms of its **possible influence on the quantities of the resources** (labour, material and plant/equipment) needed in constructing **buildings generally**, using the following ratings

- 0 = Not applicable
- 1 = Absolute minimum influence on resources required
- 2 = Fairly low influence
- 3 = Significant influence
- 4 = Fairly high influence
- 5 = Very high influence

Please **do not** try to relate your answers to any particular building type. You should consider the potential impact on each of the resources (labour, material, plant/equipment) before finally giving your rating; if you think the factor does not apply at all to any of the resources put 0 in each non-applicable box.

The questions about the weight of importance require you to give your opinion about how much each of the factors listed can affect the use of resources - in principle. Please do not confuse your ratings for these factors with the 'level of significance' or 'level of achievement' in your country for the factors; these are the subject of separate questions.

By way of example, if in your answer to Factor 3 - 'Change' (see Part 7A) you give a rating of 4 for 'weight of importance' and 2 for 'level of achievement' this should mean that you believe 'change' can have a 'fairly high influence' (4) on the use of resources (i.e. anywhere and in principle) but that in your country it is 'usually a weakness' (2) (i.e. it often occurs and with adverse effects).

The level of achievement

Specifically with respect to the building type you have nominated in Part 5 of this form please indicate how well this factor is addressed **in the specified country** using the following rating system :-

- 0 = Not applicable
- 1 = Nearly always a weakness
- 2 = Usually a weakness
- 3 = Quite often a weakness
- 4 = Sometimes a weakness, but not very often
- 5 = Very rarely a weakness

Please note that this question does not apply to Section B dealing with factors outside of the control of a project team

A. FACTORS (RESOURCE DRIVERS) WHICH THE PROJECT TEAM CAN CONTROL

This refers to factors which any one or more of a project team (including the client) are able to influence in practice.

Please click on the factor for help with the definition or refer to the Help text at Part 8.

On-Line : Click on term for HELP
or print Help File page

Weight of Importance - in principle	Actual level of achievement in the country and building type specified
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Factor		
1 'Buildability'	□	□
2 Communications	□	□
3 Change	□	□
4 Labour - skills	□	□
5 Management - skills	□	□
6 Labour - incentives	□	□
7 Management - incentives	□	□
8 Repetition of processes	□	□
9 Selection of components	□	□
10 Materials handling	□	□
11 Site security	□	□
12 Other (please state)*	□	□
13 Other (please state)*	□	□
14 Other (please state)*	□	□

* Please feel free to include other resource drivers. However, please do not include any factors which cannot be controlled by a project team such as those included in part B of this questionnaire. If you have further items please overwrite where it states "Other (please state)"

B. FACTORS (RESOURCE DRIVERS) WHICH THE PROJECT TEAM CANNOT CONTROL

This refers to factors which no one in a project can directly influence (in a legal manner). E.g. the designer may be able to control the extent of 'repetition of processes' (See factor 6 in section A above) but no-one involved can control the requirements of 'Health and Safety in the Workplace' legislation (See factor 1 below) as they apply, in principle, on construction sites.

Please use the ratings for the possible **weight of importance** as above..

Please use the following ratings to indicate the **significance** of the resource drivers where applicable for the specified country

- 0 = Not applicable
- 1 = Nearly always a problem
- 2 = Usually a problem
- 3 = Quite often a problem
- 4 = Sometimes a problem, but not very often
- 5 = Very rarely a problem

PART 8 Help text

Help text to PART 7A

These help-files refer to the ' Factors ' 1 to 11 listed on page 3 of the Questionnaire

1 ' Buildability '

The way in which the inherent characteristics of building design and specification influence the efficiency of the construction process. Factors include: complexity of arrangement; variety of materials/details; on/off-site resource distribution; on/off-site assembly; continuity of trade activities/return visits; sequence of operations – criticality; assistance to quality of workmanship; damage/waste.

Another important feature of 'buildability' is the extent of 'repetition' of details and systems which has a big impact on the 'learning curve' of the operatives. However, please address this factor separately when giving your answer to 'repetition' below.

2 Communications

The way information is passed between the parties. Eg: briefing from the client; instructions from the designer to the builder, builder to operatives, operatives to builder, information back from site to designer and client. The use or otherwise of Information and Communications Technology (ICT) should be considered when answering this question as should any issues regarding linguistic ability of all parties.

3 Change

This is mainly concerned with variations to the originally planned scheme as they impact on the efficiency of the ongoing construction process – including procurement of materials/plant.

4 Labour - skills

The knowledge and experience of tradesmen and managers with respect to the operations and systems of construction specified to be adopted on site.

5 Management - skills

The knowledge and experience of managers with respect to the operations and systems of construction specified to be adopted on site

6 Labour - incentives

The influence on the attitude and productivity of the workforce of factors such as bonus payments and personal benefits (eg: healthcare, training, education).

7 Management - incentives

The influence on the attitude and productivity of the workforce of factors such as bonus payments and personal benefits (e.g. promotion opportunities within the company, healthcare, further education)

8 Repetition of processes

Although this factor and the attendant 'learning curve' is an essential component of 'buildability' (*see above*) it is considered separately for the purposes of this survey. In particular the repetition of details, use of materials and systems – insofar as they occur across the whole spectrum of the industry as well as on any one project – should be considered.

9 Selection of components

The choice of materials and systems affects many aspects of productivity and cost-efficiency. Issues to be particularly considered are the extent of off-site assembly, vulnerability to breakage, ease of handling and storage, familiarity to operatives and management, availability, over-specification etc.

10 Materials handling

The way materials have to be transported to and around the site including the practicality of 'just-in-time' delivery and distribution on site. The likely effect on loss/damage is also a factor as is the effect of storage/multiple-handling on ease of movement of people and plant about the site.

11 Site security

The extent to which the risk of loss or damage to materials is controlled during and outside of site operating hours. The risk can be related to both unauthorised access or the actions of authorised site personnel.

Help text to PART 7B

These help-files refer to the ' Factors ' 1 to 15 listed on page 4 of the Questionnaire

1 Health and Safety at Work Legislation

In this context the main issue is the impact of safety regulations on the way construction processes are carried out.

2 EU Competition Legislation

The effect of competition legislation on the choice of constructor is an issue which could possibly impact on the Building Employer's ability to choose the best or most cost-efficient team for a project.

3 Building Regulations

The effect of the regulations on the choice of materials and systems is a matter of quality e.g. heat loss restrictions. However, the effect they have on use of resources will be variable in two instances:

- (1) where the performance addressed by the legislation is not normally a major issue e.g. heat losses in the warmer climates.
- (2) where local legislative requirements and/or control are lax.

Only the second of these issues must be addressed when answering this question (because the former is a matter of designed quality which is not being addressed within this questionnaire).

4 Hazardous Substances Regulations

The removal of materials such as Asbestos is more or less a universal issue but which mainly occurs in refurbishment and demolition -neither of which is the subject of this questionnaire.

On the other hand 'hazardous' ground conditions are a resource driver; how **important** this is in general principle - anywhere - and **how much of a problem in your selected country** need to be addressed here.

5 Minimum Wage Regulations

This will impact in one of four main ways:

- (1) The cost of labour resources will rise (but **cost** of resources is not a primary concern here)
- (2) More labour may come into the industry
- (3) Better labour may come into the industry
- (4) Management may seek to reduce levels of on-site labour

The **weight of importance** and **actual significance** are required but taking account of the latter three issues **only**.

6 Maximum working week regulations

This impacts particularly on:

- (1) Labour costs
- (2) Familiarity with operations ('learning curve')
- (3) Availability of labour
- (4) Retention of labour

The **weight of importance** and **actual significance** are required taking account of the latter three issues **only**

7 Weather - adverse conditions

Bad weather can occur anywhere and 'bad' can mean hot and dry as well as cold and wet. When it is bad, how **important** a factor is it? What is the general **extent** of the effect of bad weather on construction resources in your selected country?

8 Non-availability of suitable labour

This applies to management labour as well as site or factory labour. 'Suitability' relates to the presence of suitable skills or strengths for construction work. How **important** is that in principle? How **significant** as an issue is it in your selected country?

9 Non-availability of materials

This will affect:

- (1) price of materials (not a consideration by itself – but see below)
- (2) selection of less suitable lower quality materials
- (3) selection of less suitable higher quality materials (eg. more expensive than really needed)

Only the **importance** in principle and the **actual significance** of the last two consequences should be addressed here.

10 Non-availability of plant

This will affect:

- (1) price of plant (not a consideration by itself – but see below)
- (2) selection of less suitable lower quality plant
- (3) selection of less suitable higher quality plant (eg. more expensive than really needed)
- (4) selection of materials and/or labour which might otherwise have been more resource-efficient.

Only the **importance** in principle and the **actual significance** of the last three consequences should be addressed here

11 Adverse site conditions

Hazardous substances in the ground and the effects of bad weather are separately addressed in Q.4 and Q.7 respectively. The issue to be addressed here relates to restrictions on the site caused by, eg. neighbouring buildings and small or difficult site area, plus the problems of breaking out rock and old structures in the ground, working around or diverting utility services, protecting adjacent roads and sidewalks etc

12 Adverse site access

This relates to both direct access to sites and communications into sites from other regions.

This may affect the type of plant used or the use of large transported components. How **important** is this in principle? Is it actually a **significant** feature of many projects in your country?

13 Poor innate calibre of labour

This refers to the physique, natural intelligence, self-motivation and linguistic ability of both management and on/off-site labour as available for construction.

How important is this in principle? How much of a problem does this **actually pose** in your selected country?

14 Poor quality of home-produced materials

If this is an issue designers may have to specify imported materials and components (and maybe specialist labour) to meet building regulations or normally accepted levels of performance.

If so, how **important** is it in principle in respect of the overall topic of the use of resources? How **significant** is it in your selected country?

15 Poor quality home-produced plant

If this is an issue designers may have to specify less than resource-efficient materials and components (and maybe specialist labour) in order to overcome the lack of suitable plant.

If so, how **important** is it in principle in respect of the use of resources? How **significant** is it in your selected country?

Cross-border questionnaire

THE INFLUENCE OF CONTROLLABLE AND UNCONTROLLABLE RESOURCE DRIVERS															
Building Type : Please tick one box		Level of Achievement										Level of achievement (controllable resource drivers)			
One or two dwellings												0 = Not applicable			
Multi dwellings												1 = Nearly always a weakness			
Factories												2 = Usually a weakness			
Warehouses												3 = Quite often a weakness			
Schools												4 = Sometime a weakness, but not very often			
Universities												5 = Very rarely a weakness			
Hospitals												NOTES			
Offices (standard)															
Offices (prestige)															
Hotels															
Other (please state)															
Controllable Resource Drivers		Level of Significance												Significance (uncontrollable resource drivers)	
1	Buildability													0 = Not applicable	
2	Communications													1 = Nearly always a problem	
3	Change													2 = Usually a problem	
4	Labour - skills													3 = Quite often a problem	
5	Management - skills													4 = Sometimes a problem, but not very often	
6	Labour - incentives													5 = Very rarely a problem	
7	Management - incentives													NOTES	
8	Repetition of process														
9	Selection of components														
10	Materials handling														
11	Site security														
12															
13															
14															
Uncontrollable Resource Drivers															
1	Health & Safety at Work Legislation														
2	EU Competition Legislation														
3	Building Regulations														
4	Hazardous Substances Regulations														
5	Minimum wage regulations														
6	Maximum working week regulations														
7	Weather - adverse conditions														
8	Non-availability of suitable labour														
9	Non-availability of materials														
10	Non-availability of plant														
11	Adverse site conditions														
12	Adverse site access														
13	Poor innate calibre of labour														
14	Poor quality of home produced materials														
15	Poor quality of home produced plant														
16															
17															
18															

Survey responses overview

	Belgium	Czech Rep.	Denmark	Finland	France	Germany	Ireland	Italy	Netherlands	Norway	Spain	Sweden	UK
A. Responses received:	3	36	1	1	6	6	8	1	4	1	4	6	7
B. Type of respondent:													
<u>1. Ownership related</u>													
a.) owner.	1	3			1	2					1	2	1
b.) property manager.		3											
c.) real estate agent / appraiser.													
<u>2. Production related</u>													
a.) promoter / developer / project manager.	1	3	1	1		1	1		1	1		1	1
b.) member of design team.		6					5						5
c.) contractor / construction manager.		10			5	2	1	1	1		3	3	
d.) manufacturer.													
e.) member of labour force.		1				1			1				
f.) utilities / waste disposal company.		1											
<u>3. Policy related</u>													
a.) urban planner.													
b.) municipality / local authority.		4											
c.) health and well-being.													
d.) government department.							1						
e.) european institution.													
<u>4. Market related</u>													
a.) occupier		2											
b.) education and training									1				
c.) research	1	2											
d.) local community group													
e.) media													
<u>5. Finance related</u>													
a.) insurance companies													
b.) banks / mortgage institutions													