Client Report :

Progress Report for Contract PPD113 “Marketing and Performance Information”

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Prepared for :

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Forestry Commission

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Executive Summary

This paper presents a Progress Report for contract PPD 113 'Marketing and Performance Information' for Marcus Sangster of the Policy and Practice Division of the Forestry Commission.

The project's goal is to derive dissemination methods for clearly and quickly disseminating environmental information. This Progress Report presents initial findings from a survey into the role of environmental information in the companies of users and producers of wood-based products. It also presents a development draft of a dissemination method aimed at including environmental information in the process of selecting products or materials.

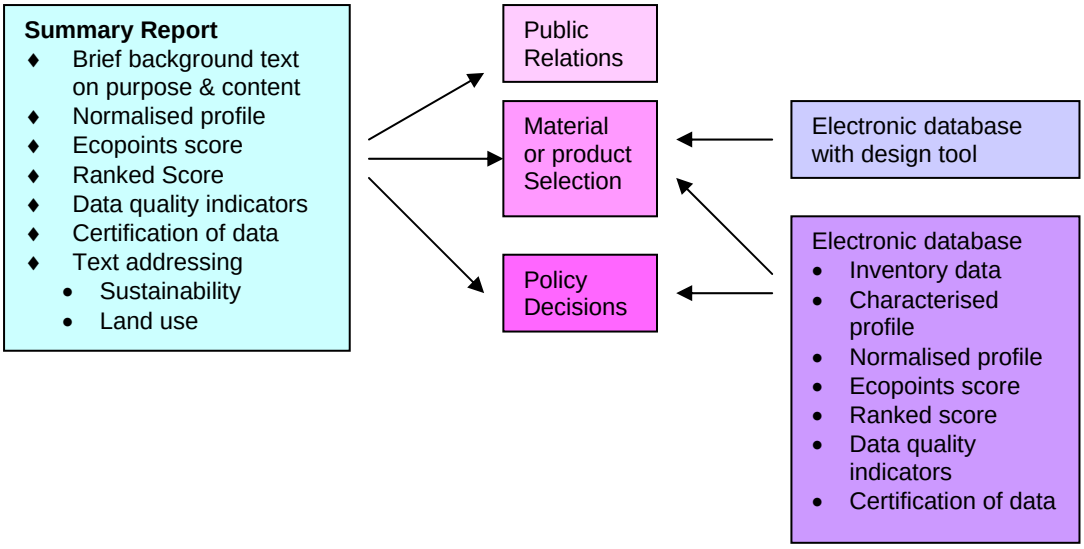
The results to date from the survey (with a response rate of at least 25%) indicate that the majority of users and producers take environmental issues seriously. This is shown by 17 out of 18 respondents having an environmental policy and ranking environmental issues highly in product and material selection, policy decision making and public relations activities. However, only 61% of the companies monitored their environmental performance with 27% reporting it publicly.

The interpretation of what made an environmental issue was very variable with issues that were only partially environmental (eg sustainability) being rated very highly by many. Legislation was identified as the key driver for regarding an issue as environmental but it was also evident that views were strongly influenced by the respondents' position within the construction supply chain. Housing Associations and Local Authorities tended to rate issues related to real estate ownership (for example, contaminated land, land use, recycling, sustainability and waste disposal) as highly important environmental issues. The manufacturers tended to focus on production related issues such as climate change and energy, unless there was a specific issue for them. This is illustrated by the panel manufacturer's identification of indoor air quality as being highly important, which is due to formaldehyde emission from panel products becoming a pressure group issue in recent years. The finding that each group was generally only interested in the life cycle stages that came under their direct concern backed this up. Overall, it was evident that product users place a greater emphasis on environmental information than producers do.

It became clear that whilst environmental information is being used for many applications and is widely disseminated, the links between environmental issues and their implications were not well understood. This is not unexpected since most of the respondents did not have any background in environmental science.

The results indicate that dissemination methods are needed to enable environmental information to assist with: material or product selection, policy decision making and public relations. The information disseminated needs to be a mix of detailed information with clear, concise explanations of the issues presented and their importance.

The diagram below illustrates the material needed for the potential dissemination approaches.



Ensuring that the intended meaning of environmental results is disseminated will mean that environmental performance can be used more reliably as a basis for decision making and information transfer. This would increase confidence in the use of environmental information and, in turn, encourage both the use of environmentally responsible products (such as timber and wood-based materials) and further improvements in environmental performance throughout the construction chain.

The remainder of the work will focus on developing appropriate dissemination methods and testing their effectiveness with a range of audiences.

Contents

Introduction

Environmental considerations are increasingly being included into the selection process, but there is considerable potential for misinterpretation of the complex information needed to make such choices. Consequently, materials with poor environmental performance may be chosen because the information upon which the decision was based was not presented in a clear or user friendly way.

The work aims to:

- Identify options for disseminating complex environmental information in a clear and straightforward manner.
- Determine how different groups interpret environmental information and if there is any discrepancy between perceived meaning and intended meaning.
- Derive optimum method of unequivocally disseminating environmental information.

The work requires use of both environmental assessment and market research expertise to deliver the objectives. Environmental expertise is needed to ensure that the data is of the highest quality, and that its meaning is understood so that the interpretation of information contained in the developed presentation methods can be properly assessed. Marketing expertise will ensure that underpinning information is obtained on how the target audiences of industry producers and product users currently get their information and what methods work best for them.

The project will use the excellent data from a previous PiT project on the environmental performance of UK forest products (which involved the Forestry Commission) to develop and test the dissemination methods. Consequently, the target audiences will be sawmillers and wood-based panels' producers, and housing associations, local authorities and construction professionals.

The project makes a substantial contribution to the PhD thesis of Jo Mundy.

This work is being carried out for the Policy and Practice Division of the Forestry Commission under contract PPD113 'Marketing and Performance Information'.

The following sections present the approach adopted by the project, progress to date, findings, implications and conclusions to date on the role of environmental information for producers and users of wood-based materials, and the plan of work to the project's conclusion.

Description of the project

To develop effective means of quickly and accurately disseminating environmental information, it is necessary to first determine how and why environmental information is being used.

The project uses market research techniques to identify the role of environmental information in companies producing timber and wood-based materials, and companies using these products.

The level of understanding of environmental issues is also being assessed, since this is key to ensuring that any information is correctly interpreted.

Knowing how companies use environmental information and why they are interested in environmental issues will help in the development of effective dissemination formats. The content of the dissemination material will be influenced by the identified needs. The presentation manner will be based on cognitive psychology research into how people most easily understand complex data.

The final stage will be testing the effectiveness of the approaches produced and making any refinements needed to produce fully developed dissemination methods.

The following section sets out the approach more fully.

Method

Task 1 Market Research

Task 1.1 Questionnaire

Develop questionnaire with BRE's market research experts to determine the following for the target audiences (sawmillers and wood-based panels producers, and housing associations, local authorities and construction professionals)

- How do they currently receive and assimilate information?
- Are they interested in environmental information?
- How would they use environmental information?
- Who do they get their information from?
- What approaches are the most effective?
- Which sources do they trust the most?

- Are they aware of BRE?
- Do they trust the information BRE produces?

Task 1.2 Market data acquisition

- Use questionnaire to gather information using:
- Face-to-face interviews
- Telephone interviews
- Postal surveys.

Task 2 Analysis

Analyse market research results and use as basis for developing up to four appropriate dissemination methods for environmental information. Carry out SWOT analysis for the identified methods.

Task 3 Effectiveness assessment and analysis

Test effectiveness of developed dissemination methods using questionnaire directed at representatives of each group.

Determine if any discrepancies exist between intended meaning of information and perceived meaning for the different methods.

Task 4 Development of optimum method

Develop optimum method of accurately and clearly disseminating environmental information to the different groups.

Progress

Work to date has focused on:

Task 1 (the gathering of information on the understanding of environmental issues, how environmental information is being used, why it is being used, how it is being obtained and how it would preferentially be obtained) and;

Task 2 (analysis of results and development of new presentation methods).

A questionnaire was developed, in consultation with BRE colleagues working in environmental assessment and questionnaire design and analysis, to carry out Task 1. The questionnaire contains 8 sections:

1. **Company approach to environmental information and issues** –*gives information on the standing of environmental issues in the company's structure, for example, it asks if the company has an environmental policy.*
2. **Company view of environmental issues** –*investigates what the company regards as 'environmental issues', how important these issues are and why.*
3. **Uses of environmental information** – *looks at what environmental information is being used for, why it is being used for that purpose and who it is being disseminated to.*
4. **Relative importance of environmental information** – *asks for environmental information to be ranked against other influencing factors in the company's decision making process.*
5. **Sources of environmental information** – *looks at where environmental information is being gathered from and how well liked the sources are.*
6. **Type of environmental information required** – *examines the degree of break down in environmental information wanted and the methods used to get it.*
7. **Format of environmental information** – *looks at how environmental information is received, if a different method is preferred and how preferred methods are achieved.*
8. **Information about you** – *asks for contact details and professional background.*

The questionnaire has been sent to 60 product users: 20 Local Authorities (LAs), 20 Housing Associations (HAs) and 20 Architects (Arcs). Each group of 20 was divided into 10 companies that were known to be environmentally aware and 10 that were of

unknown environmental leaning to investigate any influence of stated existing environmental interest. The survey has also been sent to all of the UK and Ireland's wood-based panel manufacturers (MFPs), the UK sawmillers (MFSs) responsible for producing 80% of UK-grown sawn timber. Under the auspices of another Forestry Commission funded life cycle assessment project, the UK timber-frame manufacturers representing over 70% of UK production will also complete the questionnaire.

The questionnaire was set out so that most questions could be answered by ticking the relevant box. However, the need to address many aspects of the role of environmental information meant that the questionnaire was relatively long (8 sides of A4). Also, several areas required a degree of importance to be attached to the response (ranking on scales of 1 to 5) and this gave the appearance of complexity.

In response to difficulties encountered by a pilot survey with product users, the form was simplified and more formatting added to aid ease of completion. The refined questionnaire is attached as Appendix A.

This stage of the project has taken much longer than anticipated. This has largely been due to the principal researcher's maternity leave and the considerable amount of time expended in encouraging participants to respond and following up on unclear responses.

At the end of October, returns had been received from 15% of the Local Authorities, 20% of the Housing Associations, 25% of the architects and 20% of the producers. Interestingly, the majority of responses have been from those who were not known for their environmental awareness.

Early responses from both users and producers indicated a need for environmental information for product selection use. Whilst chasing further responses, a paper-based format has been developed to meet this need and is included as Appendix B.

PhD Status

Jo Mundy has successfully completed her Transfer Exam and is now confirmed on the PhD course at Imperial College with a thesis submission deadline of October 2003.

Results and Discussion

Overall

At the end of October 2002, 18 responses had been received: 5 from architects (Arcs); 4 from Local Authorities (LAs); 5 from Housing Associations (HAs); 3 from sawmillers (MFSs) and 1 from a panel producer (MFP).

Section 1 Company approach to environmental information and issues

17/18 respondents had an environmental policy but only 11 of the 18 monitored their environmental performance. Of these 11, only three used a published environmental method to do this; one (a sawmilling group) used ISO 14001 and two Local Authorities used DEFRA reporting guidelines on carbon dioxide (both Local Authorities), water (both Local Authorities) and waste (1 Local Authority). The remaining 8 used an in-house system.

Only 5 reported publicly on their environmental performance (3 Local Authorities and 2 manufacturers).

16 had personnel responsible for environmental issues (only 1 Housing Association and 1 architect did not). Some had a Management Board member responsible for environmental issues, almost 25% had a full time dedicated environmental officer (but none of the architects did). Over 50% had the environmental role combined with another for a full-time post.

Section 2 Company view of environmental issues

Figure 1 is a radar diagram presenting the issues identified as ‘environmental’ and the rankings given to each issue for the four groups: a rank of 1 indicates ‘highly important’ and a rank of 5 ‘low importance’.

No strong patterns are revealed by the basic data. However, housing associations tended to awarded higher importance (lower rankings) than local authorities whilst sharing similar views on the issues they regarded as highly important. Architects considered a broad range of issues to be environmental but generally at a lower level of importance than the housing associations. The manufacturers regarded the fewest number of issues as environmental and only had a limited number of the same highly important issues as the users of their products.

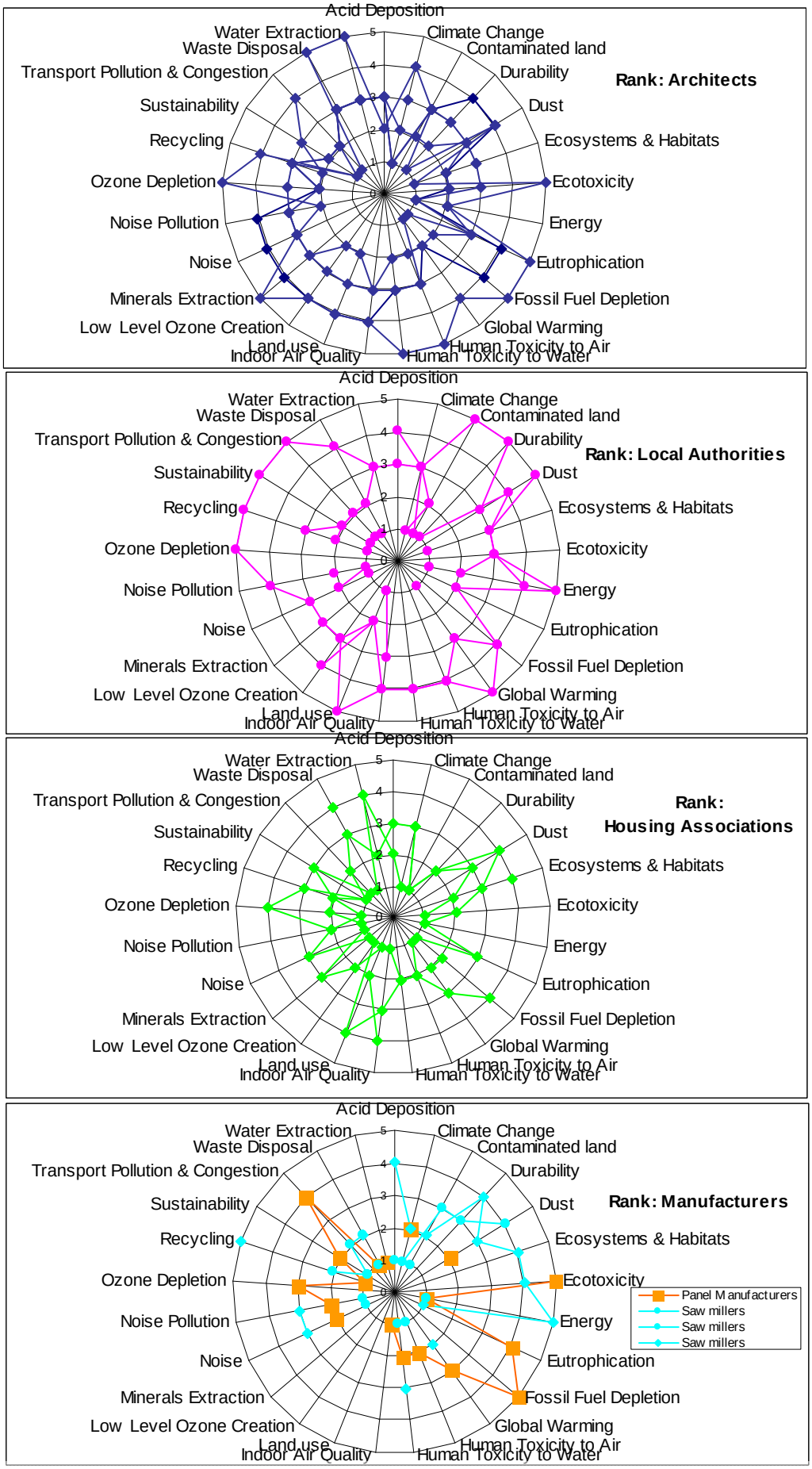


Figure 1. Issues identified as environmental by the four groups and the rank given: 1 = highly important; 5 = low importance.

Two approaches to investigating the results were adopted. The first was to look at the issues ranked 1 ('highly important') by anyone in each group. The second used a weighting system to derive an overall score for all issues for each group.

Table 1 shows the issues identified as 'highly important' by any member of the five groups.

Table 1. Issues ranked as highly important by the five groups.

Architects	Local Authorities	Housing Associations	Manufacturers: Sawmills	Manufacturers: Panelmill
			Acid deposition	
Climate Change	Climate Change	Climate Change	Climate Change	
Durability	Contaminated land	Contaminated land	Contaminated land	
Ecosystem and Habitat	Ecosystem and Habitat	Ecotoxicity	Eutrophication	
Energy	Energy	Energy	Energy	Energy
Fossil fuel depletion		Fossil fuel depletion	Fossil fuel depletion	
Global Warming	Global Warming	Global Warming	Global Warming	
		Indoor Air Quality	Human Toxicity to Air	Indoor Air Quality
	Land use	Land use	Human Toxicity to Water	
		Photochemical ozone creation		
		Minerals extraction		
	Noise	Noise	Noise	
	Noise pollution	Noise pollution	Noise pollution	
		Ozone depletion		

Architects	Local Authorities	Housing Associations	Manufacturers: Sawmills	Manufacturers: Panelmill
	Recycling			Recycling
Sustainability	Sustainability	Sustainability	Sustainability	
Transport pollution & congestion	Transport pollution & congestion	Transport pollution & congestion		Water extraction
	Waste disposal	Waste disposal	Waste disposal	Waste disposal

The issues identified by the different groups as 'environmental' strongly reflected their standpoint (particularly the problems they have to deal with) and the legislation controlling their operations. For the Housing Associations and Local Authorities, this is illustrated by their identification of contaminated land, land use, energy, noise, sustainability, transport and waste disposal as environmental issues. It is interesting to note that the architects did not identify noise as a highly important environmental issue. This may indicate a greater level of understanding of the term 'environmental issue' on the part of architects or that they are generally removed from the noise problems encountered by those using the buildings they design.

For the manufacturers, the issues identified largely relate directly to the pressures the manufacturers encounter whilst producing their product, not to the problems that may arise from their products further down the line. For example, the identification of contaminated land as an issue for sawmillers relates to problems encountered during the historic use of creosote. Further, noise pollution relates to the levels of noise produced by the sawmilling equipment and waste disposal to the need to remove large amounts of organic sawmilling residues (currently, largely dealt with by selling the materials to panel producers). The environmental issues identified by the panel producer can largely be traced to the production process (it is highly energy intensive, requires considerable amounts of water and the material source includes recycled timber). The only exception is that of indoor air quality, which specifically relates to the issue of formaldehyde emission, mainly from MDF, which has become a pressure group issue during recent years.

Looking now at the second analysis method of weighted scores. The following weighting scheme was used:

Rank	1	2	3	4	5
Weighting multiplier	10	8	6	4	2

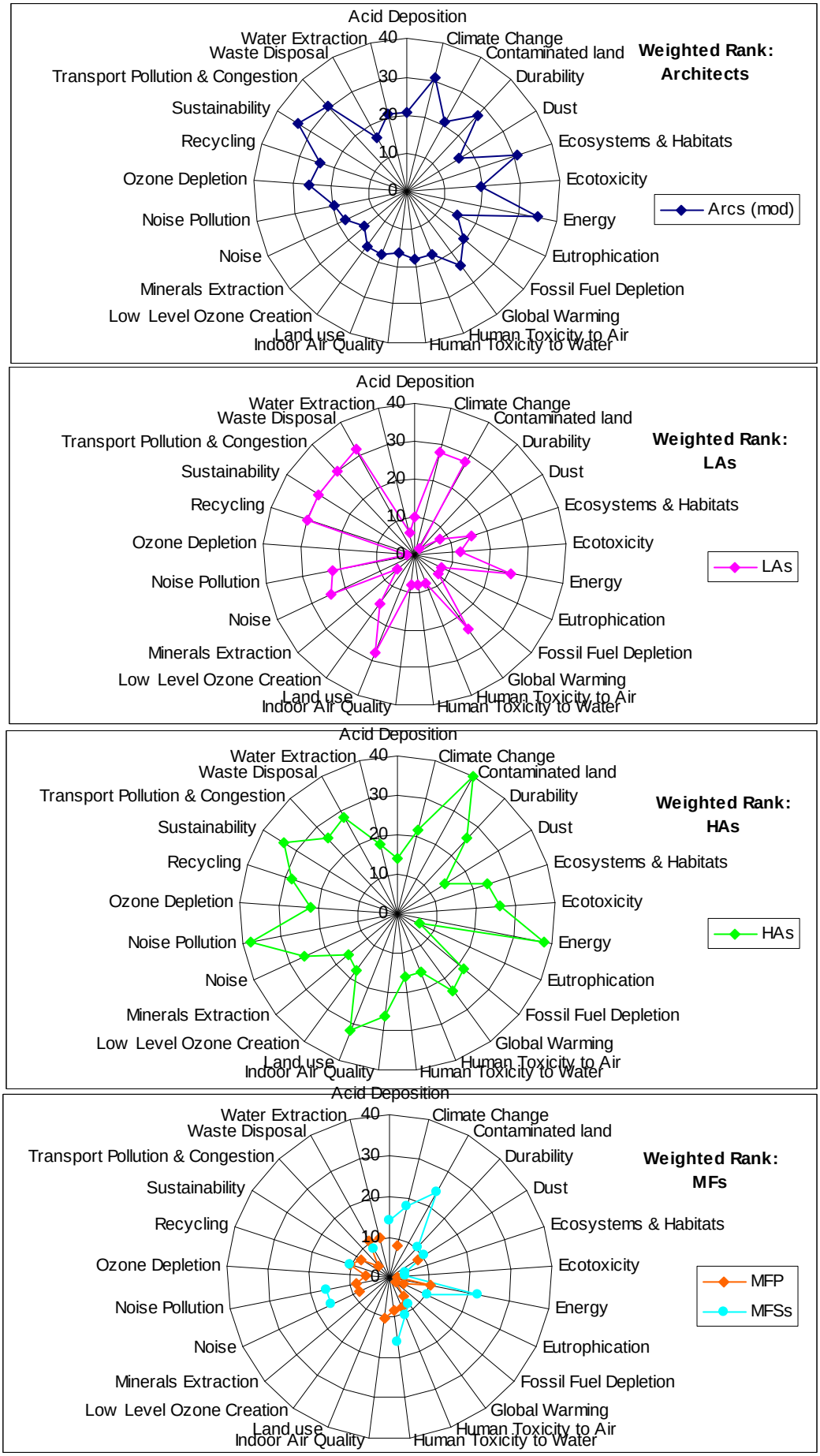


Figure 2. Weighted score for each issue for the four groups.

Weighted scores for each issue were calculated by multiplying each awarded rank by its multiplier and summing the weighted ranks across the group. Each group's weighted score for each issue is shown in Figure 2. The scores of the architects have been reduced by 20% to allow comparison with the other groups: results are for the returns received by the end of October and there were 5 respondents from the architects' group and 4 in the others. The general pattern of greater importance attached to environmental issues by product users than product manufacturers is clearly shown.

The weighted approach is useful because it ensures that issues given a highly important rating (rank of 1) are given greatest importance but that issues regarded less import but widely recognised are not overlooked. Table 2 gives the environmental issues that achieved a weighted score of 26 (being 66% of the maximum score of 40) or more.

Table 2. Environmental issues achieving a weighted score of 26 or more.

Architects	Local Authorities	Housing Associations	Manufacturers*
Climate change	Climate change		Climate change
	Contaminated land	Contaminated land	
Durability		Durability	
Ecosystems & habitats		Ecotoxicity	
Energy	**Energy**	**Energy**	**Energy**
		Indoor Air Quality	
	Land use	Land use	
		Noise	
		Noise pollution	
Ozone depletion			
	Recycling	Recycling	
Sustainability	Sustainability	Sustainability	
Transport pollution & congestion	Transport pollution & congestion	Transport pollution & congestion	
	Waste disposal	Waste disposal	

*Combined score for sawmillers and panelmill.

The architects' list is very similar to that of issues ranked 1 but the LA, Housing Association and manufacturer lists are much reduced (indicating that only one or two within each group gave some of the issues a 1 rating). Energy remains the only common issue given high importance. It is interesting to note that the not entirely environmental issues of durability (material physical performance influenced by environmental factors) and sustainability (where environmental considerations are a component along with economic and social issues) achieved such high status with all the product users but not the material producers.

The term 'environmental' was shown to mean a lot of different things to different people, as well as to the different groups. Issues which were only part environmental (sustainability and durability) and strictly not environmental (eg noise) were ranked as highly important by several of the groups. Confusion was also apparent in the finding that climate change and global warming were not accorded the same ranks by many. The implication is then that definitions of 'environmental' issues are not currently well explained or shared between different parts of the supply chain. Consequently, any information dissemination method needs to include a degree of explanation to ensure that all parties understand what each of the environmental issues presented actually means.

It was also apparent that little knowledge existed of how different issues link together, eg Fossil Fuel Depletion, Energy, Climate Change, Acid Deposition, Photochemical Ozone Creation and Human Toxicity to Air. Indoor air quality was identified as highly important by both Housing Associations and the panel manufacturer but neither identified human toxicity to air as highly important.

The issues highlighted in this way indicate the strong tendency for each group to mainly consider the issues that relate to the parts of a building's life that they are directly concerned with.

Section 3 Uses of environmental information

3.1 Applications for environmental information

The results for the uses of environmental information are shown in Figure 3. They show that, overall, material or product selection and policy decisions were the most frequent applications for environmental information, followed by use in public relations, then marketing, then process improvement and finally product development.

It is interesting to look at the stated drivers for the two most frequent applications for environmental information: material or product selection and policy decisions. Architects said that they used environmental information for material or product selection because of research and pressure from stakeholders and pressure groups. Architects used environmental information to make policy decisions because of client pressure and research. Local authorities cited research, stakeholders, pressure groups and client pressure as reasons for using environmental information in material or product selection, with client pressure, pressure groups and legislation leading them to use it for policy decisions. Housing associations used environmental information for the two purposes because of legislation, research, client pressure, stakeholders and pressure groups.

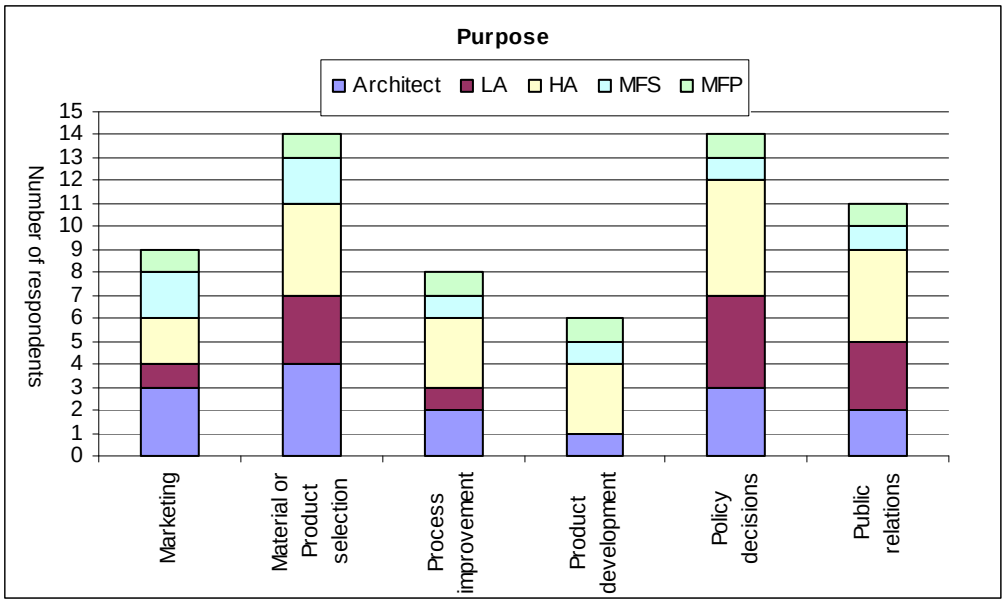


Figure 3. Applications for environmental information with the level of use for each group. LA = Local Authority; HA = Housing Association; MFS = Manufacturer Sawmill; MFP = Manufacturer Panelmill.

Sawmillers cited legislation, client pressure and pressure groups as their reasons for using environmental information for these purposes. Legislation was the sole reason given by the panel producer for using environmental information for these two activities.

Legislation was given as the main reason why any of the issues were ranked as highly important, followed by client or shareholder pressure and pressure group actions. Research only directly influenced the views of Local Authorities and Housing Associations and then it was ranked low. It would, therefore, appear that for research to influence any of the groups' views, it needs to be via input to legislation and information to clients, shareholders and pressure groups.

3.2 Audience for environmental information

The results are given in Figure 4, which shows that the audience for the information varied considerably between the groups with Housing Associations and sawmillers distributing it the most widely. Architects tended to only supply the information to members of their companies and to their clients and shareholders. Local Authorities, Housing Associations and manufacturers provided the information to people within the company, their clients and shareholders, regulators and government and interest groups. The audience, therefore, reflected the position that each group holds within the construction supply chain: material producers and real estate owners supplied the information to both the people using their products and the people ensuring they comply with the relevant legislation.

Section 4 Relative importance of environmental information

This section looked at how important environmental information was compared to other factors in the applications set out in Section 3. Results are presented here for the three main applications identified (material or product selection, policy decision and public relations) in Section 3.

Not all respondents completed this section (even when this was followed up by telephone) and some of the rankings given indicated that other factors must be more influential than the ones included in the questionnaire, however, no-one used the opportunity provided to add in alternative factors. Consequently, these results are less indicative than they might have been. Nevertheless, the results show that environmental performance is generally considered at least as important for each of these uses as the other influencing factors are.

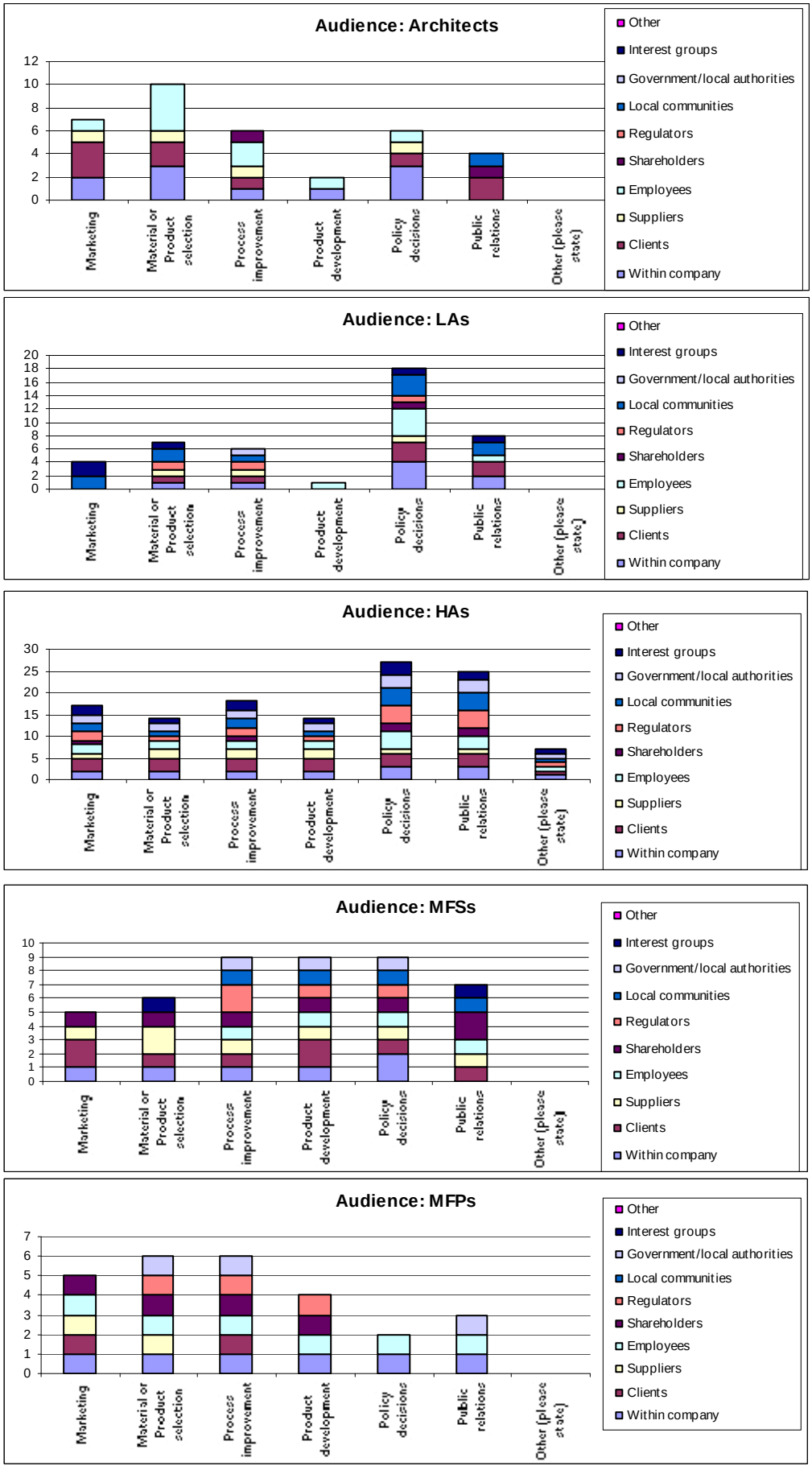


Figure 4. Audiences for environmental information for the different groups, showing the number of respondents disseminating information to each audience..

Because of the range of rankings given to each factor within each group, the same weighting scheme as used in earlier sections was employed to show the overall importance attached to each factor by the different groups. The results of the weighting exercise are given in Figure 5 and examined below for the three main applications identified in Section 3.1.

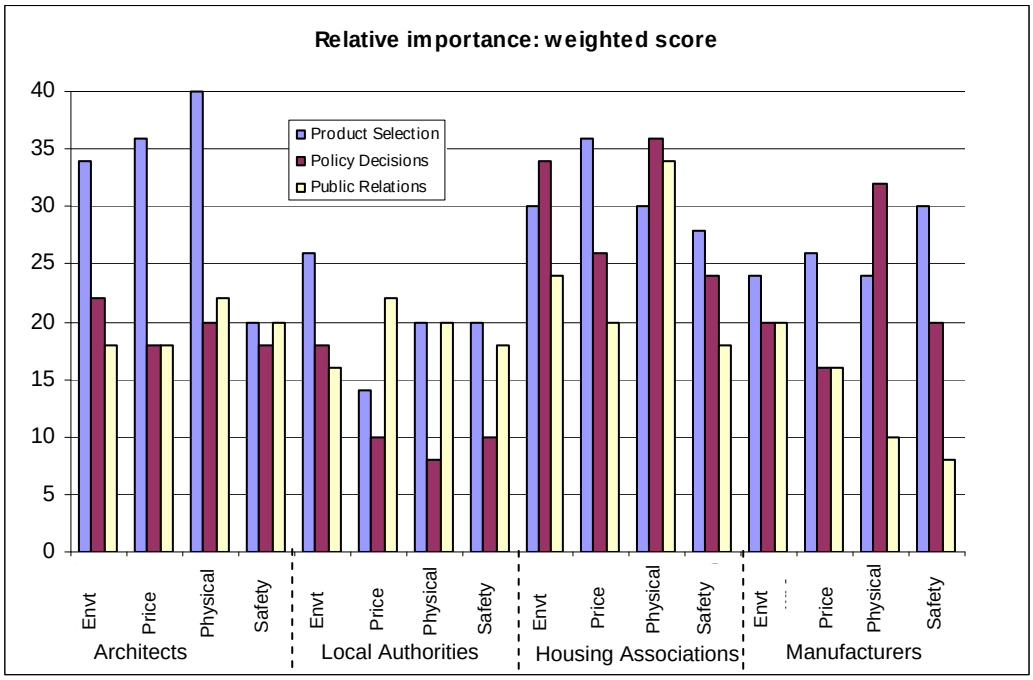


Figure 5. Weighted scores for relative importance of environmental information for three uses for the four groups.

Material or product selection

The architects placed physical performance as the most important factor with price in second place but environmental performance was given greater importance than safety. The Local Authorities' weighted score gave the highest importance to environmental performance, followed by physical and safety and finally price performance. The housing associations gave a similar picture but overall ranked price performance slightly higher than environmental performance. The manufacturers placed safety first, then price with physical performance achieving the same score as environmental performance.

Overall, users tended to put a higher importance (shown by a higher score as well as the scores relative position) on the environmental performance of the materials they selected than the manufacturers did.

Policy decisions

Architects placed the most importance on environmental performance but physical performance was close behind, followed by price and safety on equal importance. Half of the Local Authorities analysed here did not answer this section, so it is not appropriate to look for any patterns until more responses are obtained. The Housing Associations regarded physical performance as the most important factor closely followed by

environmental performance with price and safety someway behind. The manufacturers tended to place physical performance above environmental and safety performance, with price performance ranked lowest. Again the material users generally gave environmental performance greater importance than the material producers for making policy decisions.

Public relations
Architects tended to attach slightly more importance to physical and safety performance than environmental performance. The Housing Associations generally regarded physical performance as the most important issue with environmental performance second. The manufacturers ranked environmental performance first for public relations use but the rank varied considerably from manufacturer to manufacturer.

Section 5 Sources of environmental information

The data revealed that the different groups obtain their environmental information from a wide range of sources and that the level of trust placed on the sources varies greatly within and between the groups.

BRE was very well used as a source of information (only 2 of the respondents did not use BRE for environmental information) and was given the most 'preferred' rankings. BRE faired least well amongst the manufacturers where only one ranked it as 'preferred'. This may be a reflection of the site-specific issues that concern most manufacturers, eg land contamination, for which local environmental consultants would generally be employed. However, it may indicate that BRE has some work to do with the manufacturers to improve its standing with them as a source of environmental information.

Three Local Authorities and one Housing Association ranked the Internet as a preferred source of information. There are some very good sources of information on the Internet but this level of preference is a little concerning, as the information published there is not refereed and its accuracy is completely unknown.

To make pattern discerning easier, a weighting scheme was applied to the data. The following weighting factors were used:

Rank	1	2	3	4	5	Not used	Not known
Weighting multiplier	10	8	6	4	2	1	0

Figure 6 shows that BRE achieved the highest total score, followed by the Internet and manufacturers, then environmental consultants and trade associations, then press releases and finally 'other' (which tended to be trade journals or group related federations).

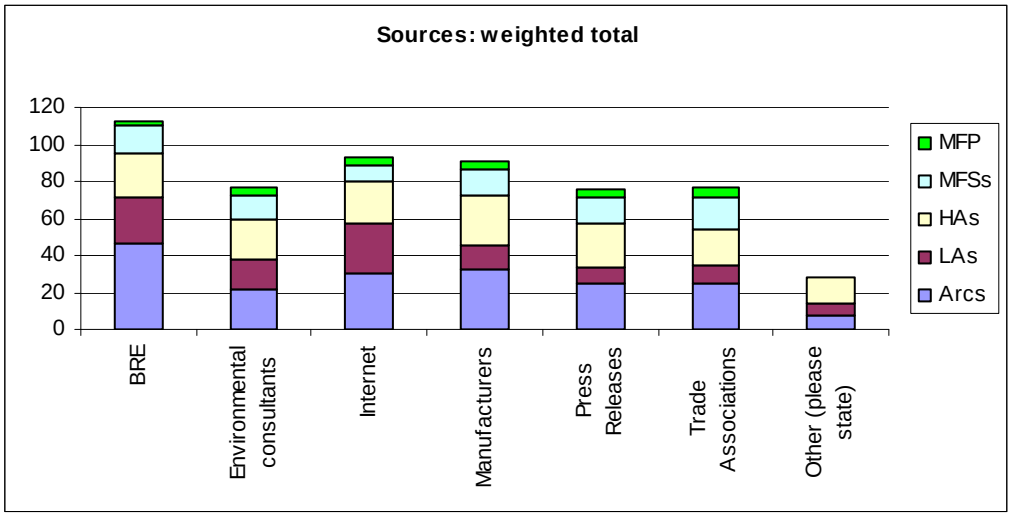


Figure 6. Weighted score for different sources of environmental information, showing the number of respondents.

The results revealed that environmental information is taken from a wide range of sources. This is likely to be a reflection of the wide range of issues taken to be environmental and the need to use different sources to provide information to meet specific needs.

Section 6 Type of environmental information required

6.1 Life cycle stages of interest

The results from this section confirmed the implication of the results from previous sections, namely that most respondents were not interested in the stages of a building's life that did not come under their direct concern. This is shown graphically in Figure 7.

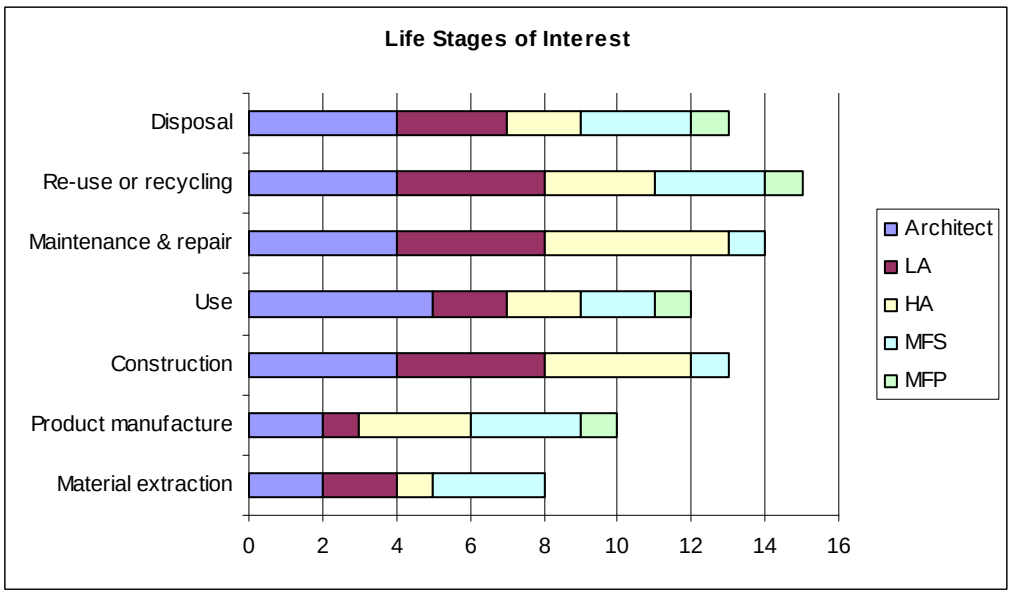


Figure 7. Life cycle stages of interest to the four groups, showing the number of respondents.

All 5 of the architects were interested in the use stage and were generally only interested in the stages from construction onwards. However, 2 were interested in all life stages.

Of the Housing Associations, only one was interested in all the stages. Most focused on construction and service life with all 4 being interested in maintenance and repair.

Most of the Local Authorities were interested in construction to disposal (all 4 were interested in construction, maintenance and repair, and reuse or recycling). Only one was interested in all the stages.

The manufacturers tended to focus on pre-construction and post-use phases with only one being interested in all the life cycle stages. The panel producer's interest in the use stage reflected their ranking of indoor air quality as highly important in Section 2.

6.2 Methods used to obtain environmental information

Generally, a degree of mixing and matching of techniques was used to get answers for the stages of interest. Figure 8 shows the methods used by the different groups to get information on the stages of interest to them.

Architects favoured whole life costing, environmental impact assessment and LCA for all 7 stages. They also used risk assessment and technology assessment for construction, use and maintenance and repair, and added environmental audit for information on use.

Local Authorities used whole life costing, environmental audit and LCA for all 7 stages and environmental impact assessment, risk assessment and technology assessment for construction, maintenance and repair, re-use and recycling and disposal.

Housing Associations used LCA for all 7 stages but particularly for construction and maintenance and repair. They used whole life costing, environmental impact assessment and risk assessment for the stages of product manufacture, construction, use and maintenance and repair, and environmental audit for construction.

Of the manufacturers, the sawmillers stated use of LCA for all stages. This was somewhat surprising since environmental impact assessment would have been relevant for sites with contaminated land issues and the sawmill using ISO 14000 for environmental reporting presumably uses environmental auditing to do this. The panel producer did not use LCA at all but rather used two or more techniques to obtain the information they wanted for the four stages they were interested in.

On the one hand, it is heartening to see that a wide range of environmental techniques is used but on the other it is worrying that the information produced by each different technique is seen as comparable across the different stages. This implies that decisions are being based on environmental information that may well not be answering the questions being asked.

6.3 Level of detail for LCA derived data

For those using LCA to obtain their environmental data, the level of data wanted varied considerably. The results are shown in Figure 9.

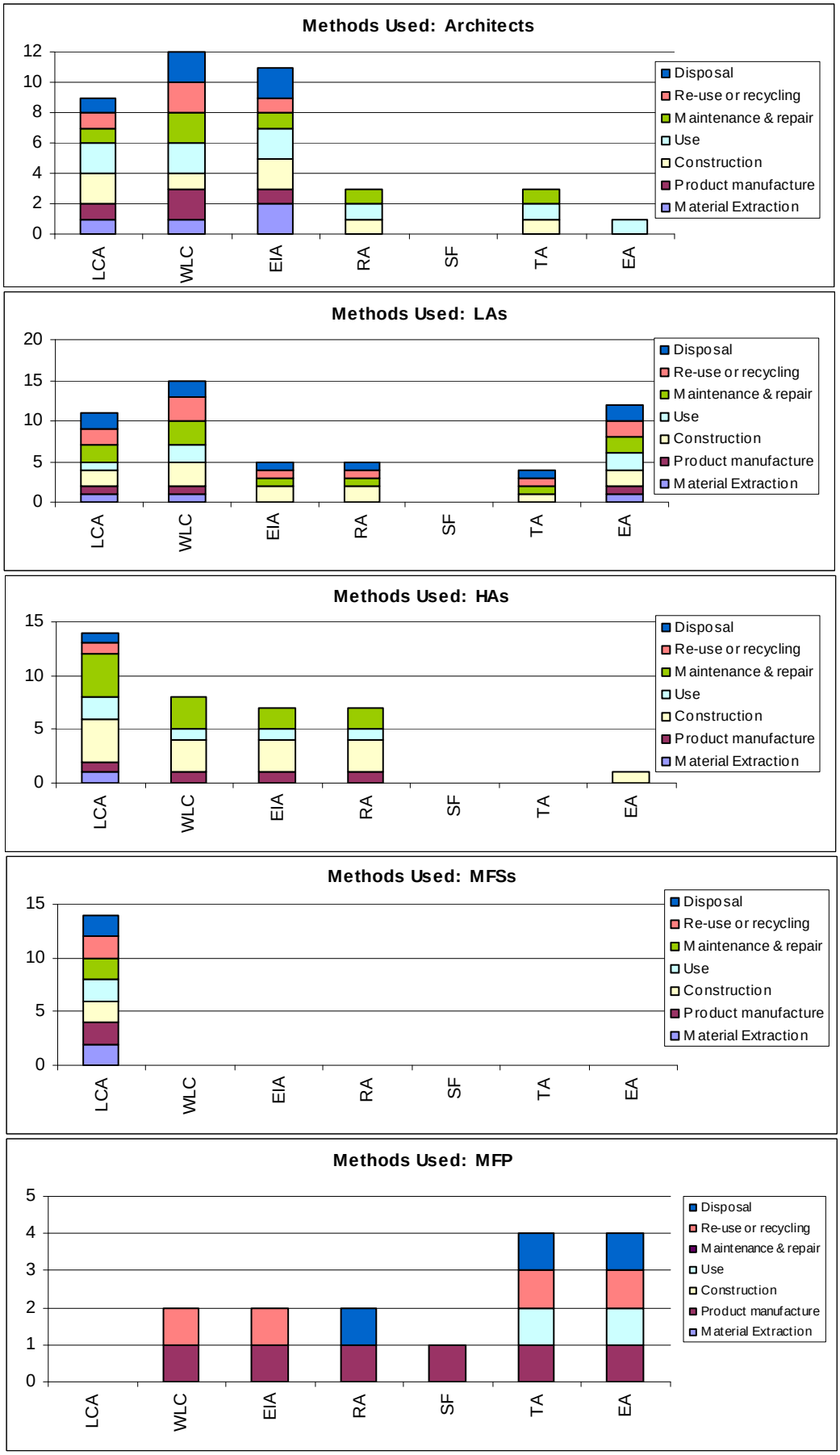
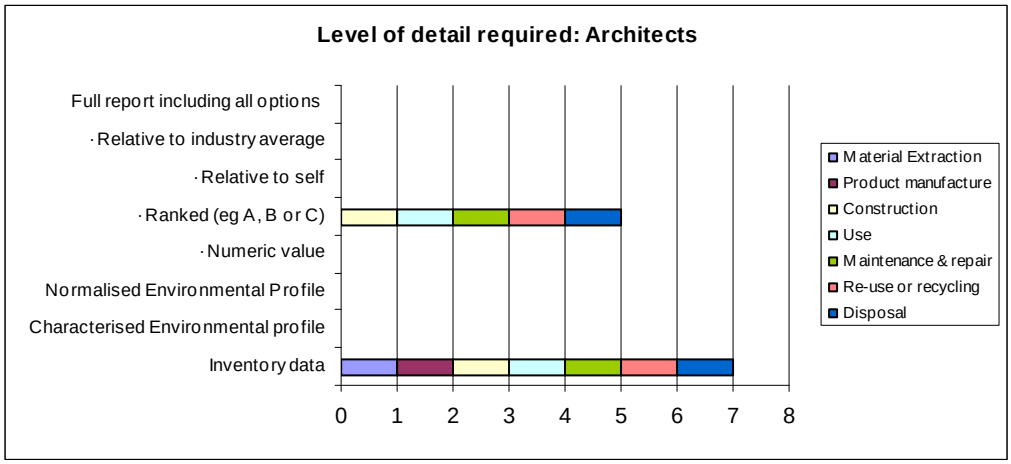
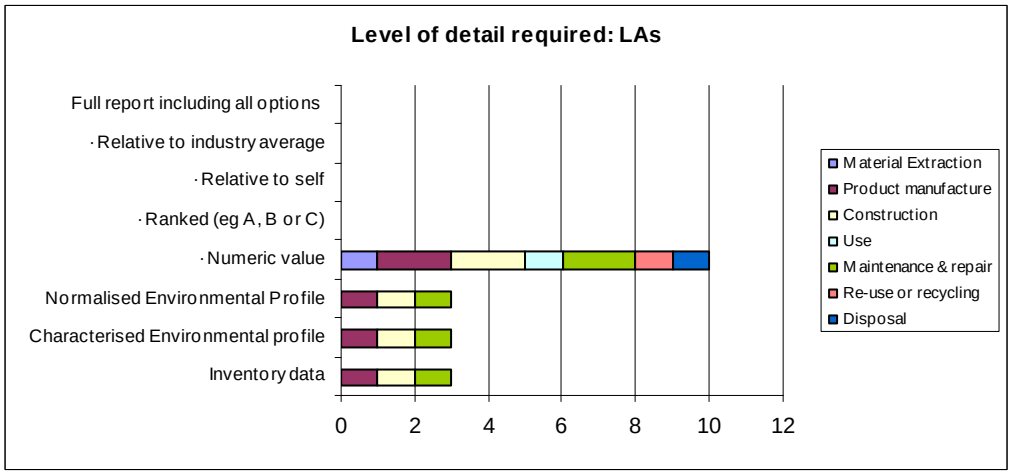
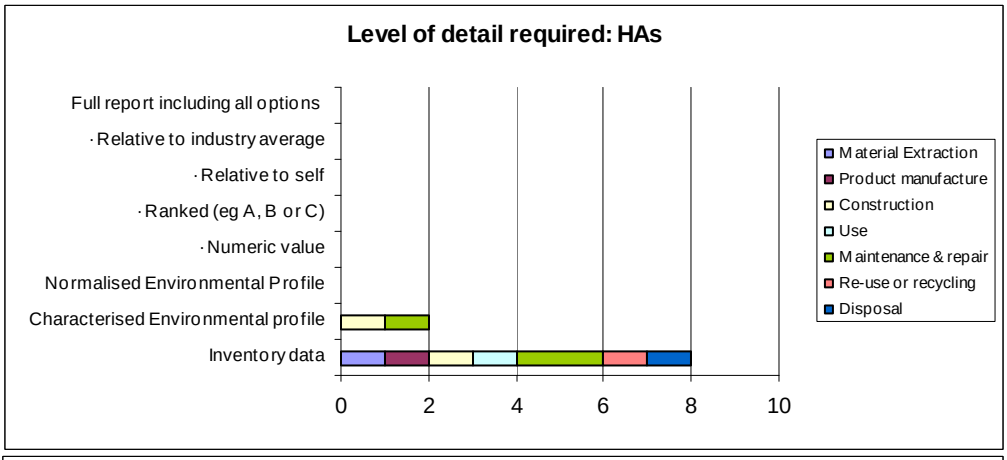


Figure 8. Methods used by the different groups to obtain environmental information, showing the number of responses.
LCA = Life Cycle Assessment; WLC = Whole Life Costing; EIA = Environmental Impact Assessment; RA = Risk Assessment; SF = Substance Flow; TA = Technology Assessment; EA = Environmental Audit.







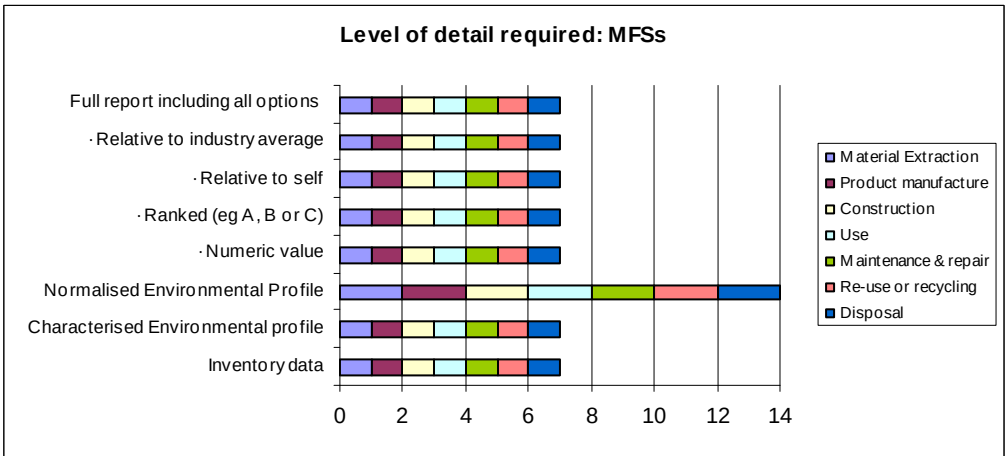


Figure 9. Level of detail required for LCA derived data, showing the number of responses.

The architect interested in all 7 stages wanted inventory data for each. The architect interested in construction through to disposal wanted a ranked score only.

The housing association interested in all 7 stages also wanted inventory data for each stage. The other Housing Association wanted inventory data for maintenance and repair and a characterised environmental profile for construction and maintenance and repair. The Local Authority interested in all stages wanted a numeric score for each. The other LA using LCA data wanted inventory data, and characterised and normalised profiles for product manufacture, construction and maintenance and repair.

Of the manufacturers, the panel mill did not use LCA at all and one of the sawmills does not use LCA at the moment. Both remaining sawmillers were interested in all stages; one wanted only normalised profiles for each but the other wanted all options given for all stages.

Section 7 Format of environmental information

Figure 10 shows how information is received and how it would be preferred. The results revealed that architects received full and summary paper reports. Most preferred the electronic approach (either as just a database or as a database embedded in a design tool) but none received their information this way. Local Authorities received data in paper reports & in electronic databases and wanted it as summary paper reports and electronic databases with and without a design tool attached. One Housing Association received information via an electronic database with a design tool, most preferred to receive it as summary reports or as an electronic database.

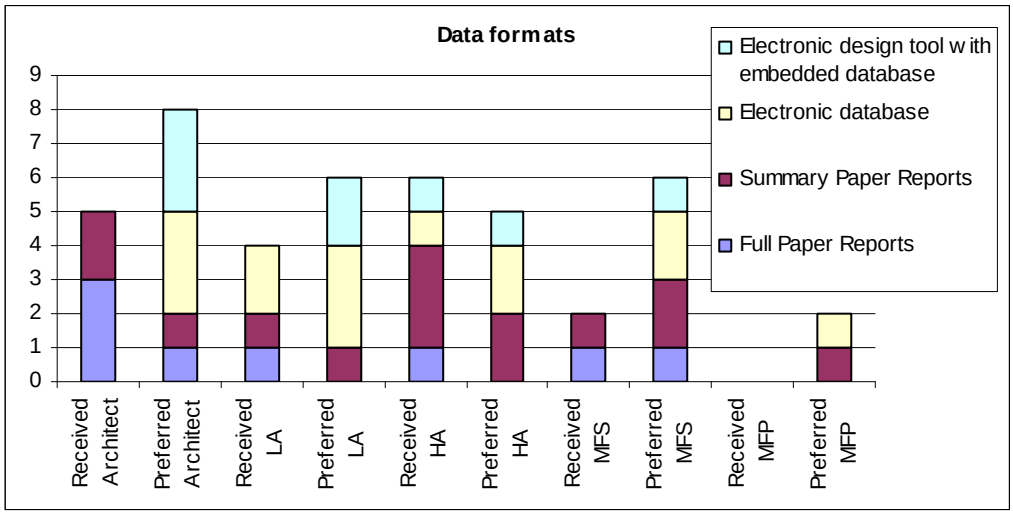


Figure 10. Data formats received and preferred by the four groups, showing number of responses.

All groups had at least one respondent preferring a summary paper report.

Only one architect and one sawmiller preferred full paper reports.

An electronic design tool with an embedded database was most preferred by architects and Local Authorities.

Only one group (a single Housing Association) received data via a design tool with attached database.

Section 8 Backgrounds

The results are illustrated in Figure 11 and show that the background of the respondents was most polarised for the architects who all came from a solely architectural background. The other groups had people with different or varied professional backgrounds; for example one of the housing association respondents had experience in architecture, environmental science, management, marketing and product development.

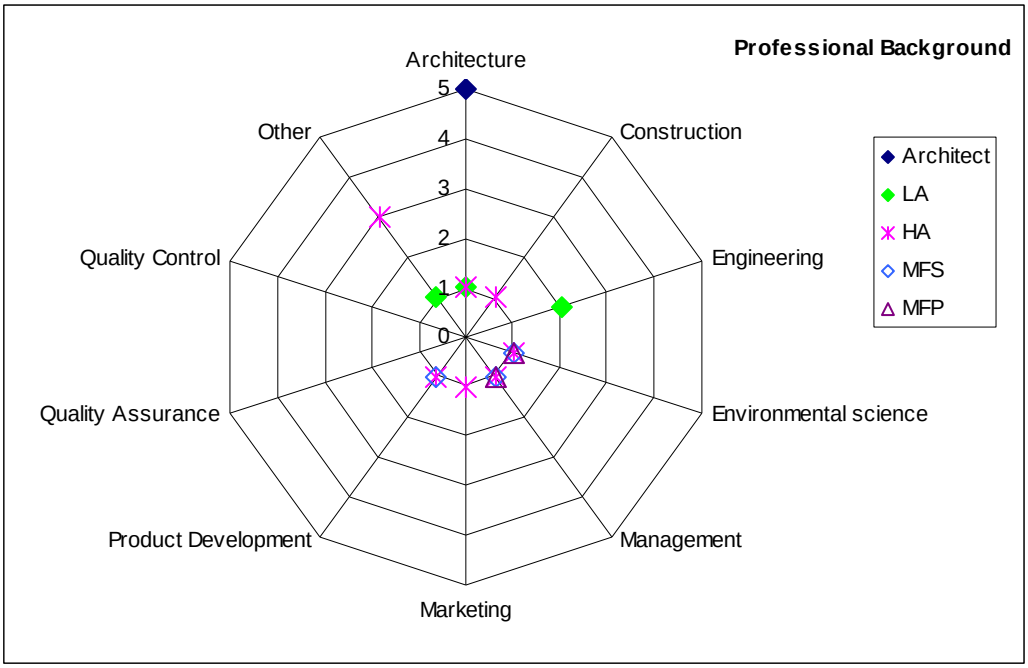


Figure 11. Professional backgrounds within the different groups, showing number of responses.

Two of the LA respondents had backgrounds in engineering, one in architecture and one in landscape architecture. Housing Associations had the most diverse backgrounds (mostly due to one respondent), including chartered surveying, building development and economics.

Two producers had backgrounds in environmental science and one of the Housing Association respondents had it as part of a diverse range of skills.

The results indicate that, whilst most of the respondents place a high degree of importance on environmental issues, they do not have the specialist knowledge needed to interpret a lot of the environmental information produced.

Conclusions

The following conclusions have been drawn from the initial analysis. They will be revisited when further results have been received.

1. 94% of respondents had an environmental policy but only 61% monitored their environmental performance, with just 27% reporting it publicly.
2. 89% had personnel responsible for environmental issues, with almost 25% having a full time dedicated environmental officer.
3. The term “environmental issue” meant many things to different people with issues such as durability (physical performance affected by environmental conditions) and sustainability (only partly environmental since it also requires social and economic issues to be addressed) being rated highly by many material users.
4. Material users tended to regard a higher number of issues as environmental, and to attach a greater degree of importance to them, than did the material producers.
5. Many of the issues regarded as environmental and important by LCA methodologies (including BRE’s) were not strongly identified by the groups as environmental issues. Links between issues (and their implications) were generally not picked up.
6. All the groups identified energy as highly important. Climate change was identified by 3 groups as highly important (but global warming was not), however, most of the issues for which energy has implications were generally not highlighted, eg, acid deposition, photochemical ozone creation, fossil fuel depletion (most energy comes from non-renewable sources) and human toxicity to air.
7. Greater explanation of terminology and environmental concepts is needed to ensure consistent understanding of the information that is being imparted and why it is regarded as important.
8. The issues identified as ‘environmental’ strongly reflected a group’s position in the construction supply chain; material users were generally interested in construction onwards and producers mainly in pre- and post-use stages.
9. Legislation was given as the main reason for regarding an issue as environmental, followed by client, stakeholder or pressure group demands.
10. Three main uses for environmental information were identified: material or product selection, policy decisions and public relations. Legislation and client, stakeholder and pressure group demands were the main drivers for using environmental information in these applications.

11. The audience for the environmental information depended on the group: material producers and real estate owners supplied information to both people using their products and the people ensuring that they complied with the relevant legislation.

12. All groups considered environmental performance to be at least as important as physical performance, price performance and safety. But material users tended to place higher importance on environmental information than did material producers.

13. BRE is a very well used and trusted source of environmental information, achieving the greatest number of 'preferred' rankings and the highest weighted score.

14. Most groups were only interested in the stages of a building's life that came under their direct concern.

15. A wide range of methods was used to obtain the environmental information needed by the groups, with LCA being used by all groups except the panel producer.

16. No clear level of detail emerged for the use of LCA data but greatest overall interest was in characterised and normalised profiles, inventory data and summed scores (numeric or ranked).

17. Environmental information was generally received via paper reports, was preferred as summary reports and electronic databases (with or without an attached design tool).

18. Most recipients and users of environmental information did not have an environmental science background.

19. Dissemination methods are needed for environmental information to assist with: material or product selection, policy decision making and public relations. The information needs to be a mix of simple graphics containing detailed information with clear, concise explanations of the issues presented and their importance. Figure 12 illustrates the material needed for the potential dissemination approaches.

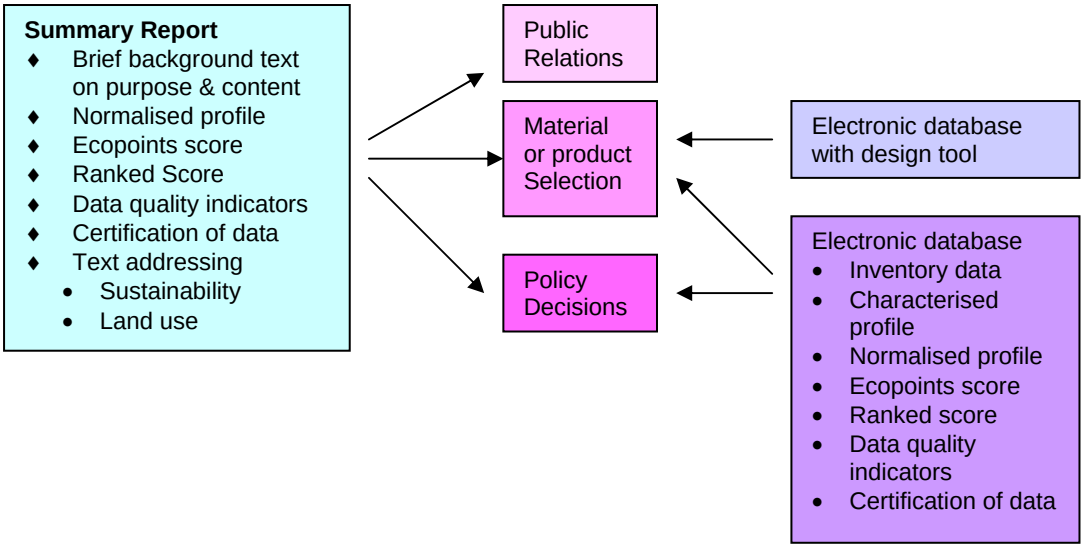
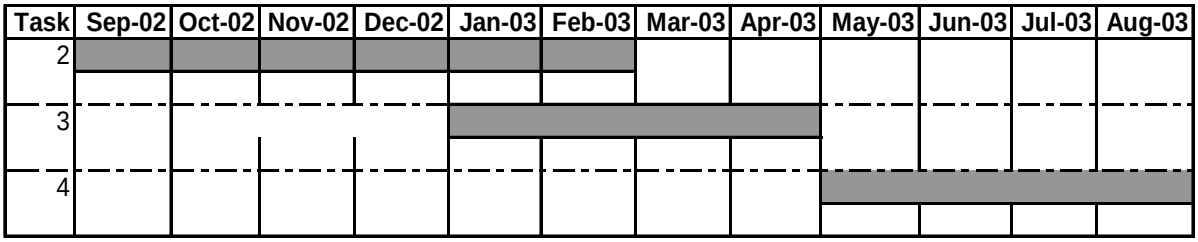


Figure 12. Dissemination options for the three main applications of environmental information.

Work Plan

The Gantt chart below sets out the planned schedule of work till project completion in September 2003.



Appendix A – Stage 1 Questionnaire

Appendix B – Developmental draft of Product or Material Selection Dissemination Method