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SMEs and Their Response to Environmental Issues in the UK

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Contents

Abstract

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Executive Summary

This report presents the findings of an Economic and Social Research Council (ESRC) funded study into the responses of UK small and medium-sized enterprises (SMEs) to environmental pressures. The methodology was qualitative, involving face-to-face interviews with twelve 'key informants' drawn from industry and government, and 40 SME owner-managers in the construction and restaurant industries in London and Leeds.

In keeping with the ideas of ecological modernisation (EM) theory, which emphasise the complementarity of economic and environmental goals, a concerted attempt has been made by UK policymakers to encourage industry to voluntarily embrace environmental good practice on the basis that it will be good for business. This study aimed to explore whether SME owner-managers have a connectivity with this 'win win' philosophy. A summary of the findings are presented below in terms of the objectives of the study, which were framed within the following core tenets of EM theory (as described by Mol, 1997).

1. The increasing importance of economic and market dynamics in environmental reform: Are SME owner-managers ecologically restructuring? Are market dynamics driving this?

There appears to be limited environmental reform taking place amongst SMEs within the construction sector, with market dynamics actively discouraging proactive behaviour. Key informants highlighted that barriers to entry into the building industry are almost non-existent, and the vast numbers of small firms mean that to survive and compete, profit margins are often very low. Respondents consistently highlighted that the enormous competitive pressure on small firms in the industry meant that cost and speed of build were the top priorities whilst environmental management remained a secondary, even negligible, concern for most owner-managers. At the top of the supply chain, architects claimed that whilst lip service was paid to sustainability issues within the industry, there was currently little in the way of environmental design occurring in the UK, and sustainability was difficult to build into their own work. Although they acknowledged that their industry should be at the forefront of sustainability, most firms felt they could not push the environmental agenda forward for fear of alienating their clients, who were reportedly driven by commercial interests rather than environmental or social considerations. These market dynamics were clearly having a knock-on effect down the supply chain as the builders interviewed perceived a low demand for sustainable buildings and

construction methods, and were therefore not incentivised to differentiate themselves on environmental credentials or to improve their environmental performance.

The majority of restaurateurs in the sample claimed to be too busy coping with daily business pressures to contemplate environmental issues. Many owner-managers spoke of the considerable time pressures they felt themselves to be under and explained that it was difficult to contemplate managerial activities that were not core to their business, such as improving their environmental performance. Market dynamics were doing little to encourage environmental reform amongst most restaurateurs, who did not feel that being environmentally-friendly would be a particular draw for customers. Customers and clients rarely asked respondents about their environmental practices, or about whether their ingredients were locally sourced, organic, or GM free.

2. Changing discourses and emerging ideologies: Is there an acceptance of EM's 'win-win' philosophy amongst SME owner-managers? Do they see the business case for sustainability?

The responses of builders and architects illuminate the discord between the need to make profits and environmental protection within the construction industry. Respondents perceived sustainable design and construction to involve extra costs, and many feared that this would reduce the competitiveness of their tenders and potentially result in a loss of business. Most respondents felt that neither developers nor end-users were interested in adding 'green' credentials to a building, even if such measures reduced running costs, because they were likely to raise short-term building costs. Resistance to the business case for sustainable construction did not stop with the design of buildings. On site, the business benefits of eco-efficiency measures such as minimising energy usage and waste were not clear to the majority of builders. There was reportedly little financial incentive to pursue energy efficiency measures as mains electricity was used that was paid for by the client. Materials were rarely recycled due to the perception that recycling was prohibitively time-consuming and would therefore add unnecessary labour costs to the job. Even reusing old material was considered to be more expensive than buying it new, once the storage and labour costs were factored in.

For many restaurant owners, the business benefits of eco-efficiency measures remained elusive as they encountered barriers to recycling (such as limited storage space for recycling bins, poor local recycling infrastructures) and reportedly did not have the resources to invest in energy efficient equipment. Even though many owner-managers claimed to be advocates of organic food, most felt that it did not make financial sense to promote it in their restaurants when there were high quality non-organic ingredients available at much lower

prices. They also envisaged problems with supply due to the fact that there were as yet so few organic farms in the UK.

3. Transformations in the role of the state: Are the environmental policies of the state encouraging environmental reform amongst SMEs?

Respondents in the construction industry felt that government had become more consultative in recent years, with lots of committees and confederations set up to hear the views of industry. However, it appeared that some of its policies had yet to make a significant impact on the environmental practices of small firms. Market-based incentives, such as the landfill tax, had done little to encourage a change in behaviour amongst builders due to the perceived cost and effort involved in recycling and reusing material. A perceived lack of viable substitutes meant that the aggregates tax had not encouraged a switch to environmentally benign material. Instead, legislation was seen as the key driver of environmental reform within construction. Waste disposal regulations had encouraged builders to dispose of waste in an appropriate manner, and amendments to the building regulations had encouraged much greater levels of energy efficiency in the design of buildings. However, it appeared that low levels of compliance and a lack of adequate enforcement were undermining the effectiveness of regulatory drivers within the building industry. 'Cowboy builders' were considered to be a major -and ubiquitous- problem, the numbers of which were reportedly proliferating at an alarming rate due to the limited enforcement targeted at smaller firms.

Restaurateurs saw legislation as the most effective way to improve the environmental practices of their industry, yet it appeared that little in the way of environmental regulations were impacting the sector currently. This reinforced restaurateurs' perception that the environmental impacts of their firm were too small to warrant much attention. Many respondents expressed frustration at the government's lack of partnership and consultation with the restaurant industry. Some highlighted that it was often difficult to receive advice from local authorities, and that government rarely listened to the views of restaurateurs when making policy decisions. Owner-managers felt that there should be much more dialogue and support from government so that restaurants were better able to respond proactively rather than reactively to policy measures.

Conclusion

Our findings point to a major problem with the win-win philosophy of EM and its fundamental faith in the market for solving environmental problems, as SME owner-managers currently have few incentives to improve their environmental practices whilst they remain unconvinced that environmental management is

good for business survival and competitiveness. Given this, it is questionable whether the government's policy emphasis on self-regulation for SMEs is the most effective way of stimulating environmental reform. Instead of continuing to exhort win-win arguments for voluntary uptake of environmental management, a more effective approach for policymakers might be to acknowledge the possibility that firms may not always be able to 'have their cake and eat it'.

Whilst it is currently unfashionable to advocate state regulation because of the onerous bureaucracy it entails, the inescapable conclusion from the study is that it may be the only way to affect change within the SME sector. Legislative sanctions are clearly one way to be certain that the environment becomes a top business priority for small firm owners. Regulation makes the environmental obligations of firms clear from the start, and offers SMEs the security of a 'level playing field' so that environmental good practice is not perceived as a threat to competitiveness.

As part of an integrated policy mix, market-based incentives such as environmental taxes also have the potential to be an effective mechanism for stimulating change. However, they cannot always be relied upon as owner-managers may perceive more pressing and profitable things to be working on than 'win win' opportunities for improving their environmental performance that would also save them money. For instance, SMEs may feel that a tax credit on recycled materials is not enough to compensate for the extra effort required to set up and manage the appropriate recycling systems. To be truly effective, market-based incentives need to be combined with the kinds of infrastructure developments that make it easy for firms to be more proactive environmentally. Clearly, the government has a major role to play, not just in encouraging firms to reduce their environmental impacts, but in making it physically and financially possible for them to do so.

1. Background

SMEs are central to the UK economy and comprise 99 per cent of all businesses, providing 43 per cent of private sector employment and 36 per cent of turnover (SBS, 2003). The vast numbers of small firms mean that in aggregate they undoubtedly have a significant impact on ecological systems. It has been estimated that up to 60 per cent of the carbon dioxide emitted by UK business results from the activities of SMEs (Marshall Report, 1998). The Environment Agency (2003) estimates that 60 per cent of commercial waste and eight out of ten pollution accidents result from SMEs in the UK.

Given this recognition that the 'ecological footprint' of small firms is indeed significant, the environmental practices of this sector have become an emerging field of enquiry in the UK. However, studies have found that SMEs tend to have a low level of engagement with environmental agendas (see Appendix 2: extended literature review). Much of this evidence is empirical and so far there has been little attempt at formulating a broader theoretical framework of SME socio-environmental relations.

In this paper we present the findings of an Economic and Social Research Council (ESRC)[1] funded study into the responses of SMEs to environmental issues, using ecological modernisation (EM) theory as an analytical framework. EM theory is useful not only because it provides a more theoretical framework from which to discuss the responses of small firms but because it has a particular significance within environmental policy debates due to the increasing predominance of EM discourse within European and UK politics (Barry, 2003).

In the following sections a summary of two strands of EM theory is presented, followed by a brief analysis of EM ideas within environmental policy discourse in the UK. The findings from the ESRC study are then presented, followed by a discussion of their implications for both EM theory and UK policy.

1.1 Ecological Modernisation Theory

EM theory arose in the 1980s as a challenge to the steady-state and zero-growth ideologies dominant in the 1960s and 1970s. In opposition to the Club of Rome's 'limits to growth' argument, the architects of the theory (Joseph Huber, Martin Janicke and Udo Simonis) postulated that through human ingenuity the economy could continue to grow whilst also ensuring environmental protection. They claimed that this would be achieved via resource efficient technical innovation that would allow greater productivity to occur without the need for more material and energy usage, thereby de-linking economic growth from environmental degradation. Since then, EM theory has developed considerably

and is now a mainstream theory within disciplines that focus on socio-environmental relations.

EM theory is complex in that there are many strands and subdivisions. For instance, Hajer (1995) focuses on the role of EM discourse in cultural politics, Mol (1996) on EM theory and institutional reflexivity, and Murphy and Cohen (2001) on EM theory and consumption. Some scholars (such as Christoff, 1996) describe EM as a political programme and assess whether EM has normative merit as a policy strategy. Others (such as Weale, 1992; Mol, 1995; and Spaargaren, 1997) use EM as an analytical tool to explore processes of environmental reform in industrialised nations.

Of relevance to our study is the approach by Mol (1997) who stresses the analytical merits of EM by presenting it as a theory of unplanned social change with the following core tenets:

De-linking environmental degradation from economic growth: Mol argues that both economic and environmental gains have been made in some industrialised nations (such as the UK, Germany, Denmark, and the Netherlands), providing evidence that economic growth can be de-linked from environmental degradation. For instance, the OECD (2002) reports that carbon dioxide emissions have decreased in the UK whilst economic growth has continued to increase.

Transformation of social institutions: the de-linking of environmental degradation from economic growth is seen to have occurred due to the reform of social institutions, clustered into the following five trends.

1. **The changing role of science and technology**
   Rather than being the culprits of environmental degradation, modern science and technology are perceived to hold the key to ecological reform by identifying appropriate solutions to environmental problems. In the era of reflexive modernity, science and technology have advanced from the end-of-pipe technologies so criticised in the 1970s to radically alter production processes and products into more environmentally sound ones. Science and technology are hence seen as the central institutions in overcoming the environmental crisis.

2. **The increasing importance of economic and market dynamics in environmental reform**
   It is argued that transformations in state-market relations have engendered environmental reform amongst innovators, entrepreneurs and other economic agents. Whilst a strong state and social movements have been key to encouraging these actors to articulate environmental goals in the past, changing economic cost-benefit relations mean that

they no longer have to apply so much pressure on industry. Firms see environmental protection as a potential source of economic growth as consumers/customers increasingly demand environmental goods and services. Moreover, the growing emphasis placed on the environmental credentials of businesses amongst private sector actors such as shareholders, credit institutions and insurance companies have provided further impetus to the ecological restructuring of industry.

3. **Changing discursive practices and emerging ideologies**
As environmental considerations have become increasingly important within business, public and political arenas, the counter-positioning of economic and environmental interests is commonly rejected in favour of ideologies which emphasise the business case for sustainability.

4. **Transformations in the role of the state**
A process of 'political modernisation' is perceived to be taking place within industrialised nations as governments shift from command-and-control policy styles to a 'steering' approach that emphasises market-based incentives (such as environmental taxes and voluntary agreements), the self-regulation of industry and increased public participation in policy making. Reflecting the retreat of the state since the 1980s, processes of political modernisation include a transfer of responsibilities and incentives for environmental reform from the state to the market. This ostensibly accelerates processes of ecological modernisation because the market is considered to be a more effective mechanism for tackling environmental problems than the state. Stakeholder participation and negotiated decision-making are key characteristics of policy networks that adopt an ecological modernisation approach, as environmental policy is increasingly seen as a partnership, especially between industry and the state (Blowers, 1998; Leroy, 1999).

5. **Changing role and ideology of social movements.**
Instead of emphasising a radical de-modernisation ideology, which relegates them to the periphery of environmental policy networks, social movements have become more reformist in recent years and, as such, have become increasingly influential within environmental policy making.

In its normative dimension, ecological modernisation is an ideology based on the fundamental premise that environmental protection is a precondition for long-term economic advancement (Weale, 1992). Environmental and economic goals are thus seen as a positive-sum game. Proponents of EM as a political programme conceive of environmental protection as a potential source of future growth by stimulating innovation, providing new market opportunities for environmental products and services, and lowering clean-up costs.

Environmental degradation is not considered an inevitable outcome of capitalism or industrialisation, but as an opportunity for institutional learning. In this view, capitalism can evolve to accommodate environmental problems by increasing the 'eco-efficiency' of the economy and thus limiting material and energy throughput. Whilst it is recognised that industrialisation has caused environmental problems, the solution is seen to lie in the promotion of more and better modernisation, not (as many radical environmental groups hold) in radically altering or rejecting modernisation. In this approach the market is seen as the best medium for solving environmental problems whilst the state is prescribed a 'steering' rather than 'commanding' role in encouraging industry to voluntarily adopt practices that reduce pollution and increase resource efficiencies. Regulatory controls are not ruled out, but the rhetoric strongly favours voluntary agreements and economic incentives to encourage environmental reform.

1.2 Ecological Modernisation discourse and UK policy

Berger ***et al*** (2001) argue that EM theory is of particular significance because it underlies the mainstream environmental policies and practices of Western industrialised nations. Strandbakken and Stø (2003) maintain that ecological modernisation is the perspective guiding the World Commission for Environment and Development, and is the new name for current environmental politics in the European Union. So, to what degree do EM ideas influence the environmental policies and discourse in the UK?

Whilst not referring specifically to 'ecological modernisation', since its ascendance to power in 1997, New Labour has increasingly emphasised the complementarity of economic and environmental goals, and has referred to 'environmental modernisation' in key environmental speeches. For instance, in a speech on sustainable development Tony Blair stated that:

> "Tackling climate change or other environmental challenges need not limit greater economic opportunity… economic development, social justice and environmental modernisation must go hand in hand." (Tony Blair, 2003)

In a speech at the Fabian Society conference, the deputy Prime Minister John Prescott stated that:

> "There is a widespread view that environmental damage is the price we have to pay for economic progress… Modern environmentalism recognises that… an efficient, clean economy will mean more, not less economic growth and prosperity… Treating the environment with respect will not impede economic

> progress, it will help identify areas of inefficiency and waste and so unleash whole new forces of innovation." (John Prescott, 2003)

Like EM discourses, policy rhetoric emphasises the business case for sustainability by linking environmental management with greater efficiency and competitiveness:

> "The environment is a business opportunity... there are economic benefits in reducing waste, avoiding pollution and using resources more efficiently… Reducing pollution through better technology will almost always lower costs or raise product value/ differentiation." (DTI, 2000, p7)

The emphasis is thus on voluntary environmental action from industry on the win-win premise that it will be good for business. The notion that economic and environmental goals might be in serious tension is excluded from the government's rhetoric on the environment; it is certainly not presented as a possibly problematic issue for industrial production processes or for global capitalism. Instead, environmental protection and economic growth is portrayed as a positive-sum game. Arguably it is this win-win premise that gives EM strength as an ideology for policymakers. It is a particularly attractive discourse for electorally sensitive politicians attempting to respond to the competing demands of industry, consumers and environmental groups, because it reconciles the need for growth with environmental protection.

However, what seems to be lacking in much of the policy rhetoric is a consideration of the perception of business owners themselves. If industry is to assume a central role in processes of ecological modernisation, it seems pertinent to explore whether the SMEs which make up 99 per cent of UK industry, have a connectivity with the win-win philosophy of EM. For instance, do owner-managers agree that the environment is a potential source of economic growth? Do they perceive the 'business case for sustainability'? Are they becoming 'greener' as a result of market forces and gentle government interventions?

2. The Research

Funded by the Economic and Social Research Council (ESRC), under its ***Environment and Human Behaviour*** programme, this study aimed to provide some answers to these questions.

2.1 Research Objectives

The research propositions were framed within the following core tenets of EM theory (as described by Mol, 1997):

1. The increasing importance of economic and market dynamics in environmental reform: Are SME owner-managers ecologically restructuring? Are market dynamics driving this?

2. Changing discourses and emerging ideologies: Is there an acceptance of EM's 'win-win' philosophy amongst SME owner-managers? Do they see the business case for sustainability?

3. Transformations in the role of the state: Are the environmental policies of the state encouraging environmental reform amongst SMEs?

2.2 Sample and Methodology

Much of the research to date on SMEs and environmental issues has utilised quantitative research methods to gather data. Whilst useful in setting out some broad comparative parameters, such methods do not facilitate a deeper examination of the reasons why small firm owners approach environmental issues in the way that they do. In view of the fact that the research objectives required an understanding of the values and world view of SME owner-managers regarding the environment, a qualitative methodology was chosen for this study. The research team felt that 'thick descriptions' from detailed cross-sectional data would inform the objectives of the research more appropriately than 'thin descriptions' using quantitative data from a larger sample. In-depth face-to-face interviews allowed respondents' motivations to be explored in detail, enabling a richer understanding of the reasons behind particular environmental practices and attitudes.

The following methodology was used:

Stage 1
12 face-to-face interviews with 'key informants' within industry, government and academia

Stage 2
20 face-to-face interviews with SME owner-managers in the restaurant sector in London and Leeds

10 face-to-face interviews with SME owner-managers of architectural practices in London and Leeds

10 face-to-face interviews with SME owner-managers of building firms in London and Leeds

(A more detailed description of the sample is contained in Appendix 1)

In-depth interviews were deemed to be the most appropriate method for both stages because they allow a more detailed exploration of individual motivations, values and actions. Focus groups were considered to be less appropriate because of the tendency for respondents to be 'politically correct' when discussing environmental issues in a group. It was felt that the rapport between moderator and respondent might encourage a more candid response.

Fieldwork was conducted between April and July of 2003. First, key informants from relevant trade associations, professional bodies, central and local government departments were interviewed in order to build a picture of the political and economic context for each industry sector, particularly regarding environmental policy and small firms. This overview added triangulation to the research design by allowing emergent themes and issues to be explored from different perspectives. Audio-recorded, interviews typically lasted between one-and-a-half to two hours.

The second stage involved 40 audio-recorded interviews with owner-managers[2] in the construction and restaurant industries of London and Leeds. The interview guides were designed to 'fit' with sector nuances gleaned from the key informant interviews. The sample was split north and south to highlight any regional differences that might be occurring in the environmental practices of small firms, especially in the light of local initiatives and actions (such as ***Local Agenda 21*** processes).

A sectoral comparison was considered important because past studies demonstrate fundamental significant differences between SMEs according to sector (Curran and Blackburn, 1994; Baylis, 1998b). The construction industry was chosen as it has a significant environmental impact and a high public profile

and, as such, is the subject of numerous government and industry led initiatives to promote best practice (DTI, 2003). The 'business case' for sustainability is a key theme in the DTI's strategy on sustainable construction:

> "The UK's strategy for more sustainable construction, ***Building a Better Quality of Life***, suggests key themes for action by the construction industry… Most of these [themes] simply make good business sense - eg minimising waste increases efficiency. Sustainability is of increasing importance to the efficient, effective and responsible operation of business," (DTI, 2003, p1)

Within construction, respondents were drawn from the architectural and building sectors to investigate the influence of supply chain dynamics on SME environmental practices.

The restaurant industry was chosen to augment previous research conducted by the SBRC on the environmental practices of restaurant SMEs in the UK, The Netherlands and Japan; as it was felt that some interesting cross-national comparisons might result (see Revell, 2003; Rutherfoord ***et al***, 2000). The restaurant industry was also considered pertinent in that there has been very little in the way of government or industry-led environmental initiatives targeting the sector in the UK, in contrast to the construction industry.

Although the sample size precluded a statistical representation of the results, business selected for interview were chosen randomly from trade association databases, with no bias towards the selection of firms that were more or less environmentally proactive. (Please see Appendix 1 for recruitment procedure, topic agendas and analytical procedure.)

3. Findings

The findings are presented in terms of the aforementioned objectives of the study which relate to the core tenets of EM theory as described by Mol (1997). The responses of architects, builders and restaurants are discussed within their own contexts because of the significance of inter-sectoral differences.

3.1 Architects

Within the sample there were two medium-sized practices[3], whilst the remaining firms were small[4], reflecting the fact that small firms constitute 86 per cent of all architectural practices in the UK (RIBA, 2003)[5]. The sample had a range of design foci, from commercial and domestic 'new builds' to refurbishment and extensions of existing buildings. Two key informants who were experts in sustainability issues within architecture were also interviewed. Key informant 1 was a specialist in sustainable design for an international built environment consultancy and had previously worked at the Building Research Establishment[6]. Key informant 2 was Vice President in Sustainability for the Royal Institute of British Architecture (RIBA) and was the chairman of its 'Sustainable Futures' committee.

3.1.1. Are architects showing signs of ecological restructuring?

Open-ended responses indicate that the main environmental consideration impacting the design process for architects was energy efficiency. Amendments to Part L of the building regulations came into effect in 2002, stipulating an increase in the conservation of fuel and power in all new buildings and large-scale renovations. Architects involved in the design of new buildings were particularly concerned with these new amendments as standards were more stringent than for existing buildings. Key informant 1 claimed that Part L had encouraged architects to look at innovative, cost-effective ways of creating energy efficiencies such as utilising orientation and natural ventilation, which had prompted a significant improvement in the sustainability of buildings.

> "I think [developers] probably are constructing buildings which are kind of 'light green' without realising it now, because Part L has brought that in." (Key Informant 1)

However, beyond energy efficiency, responses suggest that most architects rarely considered how to reduce the environmental impacts of their designs. Many architects claimed that whilst 'lip service' was paid to sustainability issues within the industry, there was currently little in the way of environmental design

occurring in the UK, and sustainability was very much a minor issue in terms of their own work.

> "In my sector of architecture[refurbishment] I think there is very little importance attached to [sustainability]… I think there are some members of the profession who are sort of [sustainability] pioneers, who are trying to push forward new pastures, but I think they're a very small part of the whole."(Architect 5, London, 2 staff)

> "We should be [environmentally aware] because we're supposed to be leading the design and that's correct, but at the same time, I think it's a lot of lip service." (Architect 4, London, 2 staff)

The key informant from the RIBA felt that greater education on sustainability was needed in architectural schools, which were not equipping graduates with enough knowledge on how to design with practical sustainability issues in mind:

> "Sustainability is now part of the so called curriculum of university courses for architects. I think schools struggle. I'm not a great expert on the education system, but they struggle even to teach them basic technical stuff and so including anything meaningful on sustainability is seen as an impossible additional challenge. Because they just haven't got the resources. Again there's a lot of arguments within the profession about it having become an academicised course which concentrates on theoretical and design content rather than practical knowledge under which sustainability is pigeonholed."

3.1.2 Are market pressures encouraging the 'greening' of architects?

Respondents claimed to be aware of the importance of sustainability in the design of the built environment, but felt that a major barrier was the fact that clients rarely showed any interest in environmental issues. Typical comments from respondents were:

> "I don't think any clients have [environmental specifications] written into any brief we've got. It's very much design led [ie style and form]. I'd like to think that we have the chance and the opportunity to spend the time to look at [environmental impacts] a little bit more and to actually make informed suggestions. I think there are very few practices who'll have the time and the client base to do that to be honest. I think you'll

> probably find that people tend to be either commercially driven or driven by the clients to get the best value for money." (Architect 7, Leeds, 5 staff)

> "I think architects do feel very sensitive to environmental issues. Unfortunately in our business you have to really force environmental issues into the market place. Because most of our clients are not really coming from that end." (Architect 3, London, 40 staff,)

> "[Clients] are not interested in renewable resources. They're not aware of carbon emissions and the amount that's given off… Clients are interested in speed and economy and the way that the market is at the moment." (Architect 6, Leeds, sole proprietor)

Many respondents emphasised the need for greater education about the benefits of sustainable design in order for clients to overcome their natural conservatism.

> "I think developers tend to be very conservative. They'll do what worked last time and what worked the time before and they'll put in what they think an institution will be wanting and what a blue chip tenant will require. And if you talked to top people within blue chips, they'll say that they want a specification which will be air-conditioned because they won't have seen the other options - usually." (Key Informant 1)

> "People are used to this [technology] and if suddenly you tell them [they] need to rely on the sun for light, people don't believe it… The implementation has not been done [for so long] so people don't really trust [it]." (Architect 4, London, 2 staff)

> "I think that it would do architects enormous good to put more emphasis on educating their clientele just as they put a lot of emphasis on educating new architects. Having brilliantly educated architects and ill educated clients is not very satisfactory." (Architect 5, London, 2 staff)

Key Informant 1 argued that awareness of the importance of sustainability needed to be promoted not just amongst developers and end-users but amongst the pension funds that buy leases from developers:

> "The pressure needs to come in from the pension funds because they're the entity picking up that particular package, that investment. They need to be aware of where energy costs are going to go in future [because]… as more and more pressure

> comes on as the EU labelling schemes come in and so on, in five or six years that building may be a white elephant, out of date… So pressure needs to come in from the institutions as well as the lessee, [and] the tenant."

3.1.3 Do architects perceive the business case for sustainability?

One of the biggest barriers to environmental best practice within architecture appeared to be the perceived cost of sustainable design. Many architects were of the opinion that there was not much of a business case for sustainability to present to clients, and clients were unwilling to pay the premium for a more sustainable building. Typical comments were:

> "Its no good us saying we're environmentally friendly when no-one wants to buy it and its going to cost them £1000 more. We're not really worried if people recycle at the end of its use. Unless people are personally concerned about the environment, which I don't think people are very much… it's just money driven." (Architect 1, 85 staff)

> "Environmental solutions cost maybe much more." (Architect 7, Leeds, 5 staff)

> "You can't rely on altruism, its got to be economic. In our business cost is the main barrier [to sustainability]." (Architect 3, London, 40 staff)

Respondents explained that developers wanted capital outlay to be as low as possible in order to get a high return on their investment. This meant that they would often prefer to go for the cheapest option and compromise on other factors such as quality, durability and energy efficiency as this would mainly benefit the end-user. Key informant 1 argued:

> "Now you look at what drives the developer and it's lowest capital cost, highest profit, best tenant, best covenant [lease]. So there's nothing in there for the developer to spend a little bit more in putting in high efficiency air conditioning systems in or high efficiency lighting or presence detection or external shading devices or many of the green features because that developer has no interest in the running costs… [also] the developer thinks that all the tenants aren't interested in these green type issues, so they're not prepared to pay more."

Many architects concurred with this view:

> "It costs [developers] more to put [sensor lights] in and although it will be great for whoever moves into the building in terms of lower cost it makes no difference to them as they won't be paying the bills." (Architect 1, London, 85 staff)

> "Developers come and as long as they make the money that's all that counts… most of the time they are cowboys." (Architect 4, London, 2 staff)

End-users were also considered to be cost-conscious, and even though they had a greater incentive to invest in energy-efficient designs to reduce running costs, raising the standard beyond regulatory requirements was rarely a priority because they preferred to keep their capital costs as low as possible.

> "Our clients are usually the clients that are going to move into the building, but they don't think about energy efficiency and stuff. I've never heard anyone mention it." (Architect 1, London, 85 staff)

This highlights the issue of discounting and the fact that investments with long payback periods are not so attractive to many clients. Moreover, because energy costs are comparatively low compared to other capital costs there may be less incentive to improve energy efficiency.

Many respondents felt that there were significant cost barriers to the use of green materials[7] in construction, especially if they were specialist products as these tended to command a premium price tag. However, because they were rarely asked to explore greener options with clients, many respondents confessed that they did not know whether green materials were more expensive overall. A few architects felt that there was a lack of accessible information on the environmental impact of materials, particularly on lifecycle comparisons, which made it difficult to compare equivalent products to identify the most sustainable option. Other barriers to using green products included design tastes and the accessibility of materials. Typical comments were:

> "[I do] the building and you get the costs back. I don't go around comparing costs [with green materials]. It's not part of my job." (Architect 6, Leeds, 5 staff)

> "Some [green materials] don't cost more, but generally they do cost a bit more… we try and give [clients] options and they will always go for the cheaper option… It's got to do with British tastes I think as well… a green toilet as it were, it looks absolutely horrendous." (Architect 2, London, 2 staff)

> "If you've got a massive project and you need tonnes of the stuff, you're dealing with small providers and there's bound to be a supply and availability problem… [also] the builders will hike their costs up [if green materials are specified] because they've never used it before." (Key Informant 1)

Because of the perceived commercial focus of clients, most of the architects in the sample claimed to be reticent to promote environmental issues for fear of alienating them or losing their business. They hence tended to pursue environmental designs only if clients expressly asked for them.

> "If you go the full length on environmental issues you lose [the brief]." (Architect 4, London, 2 staff)

> "I don't think [our company] really push[es] environmental concerns. They would generally wait for the client to say something, take the lead… you have to be careful that it doesn't sound like you're trying to con them into buying more expensive stuff from the start." (Architect 1, London, 85 staff)

Nevertheless, there were two architects within the sample who, because of their strong personal belief in the importance of sustainability, attempted to promote environmental options with their clients[8]. An interesting finding of this study was that these 'eco-architects' (Eco-architect 1 and 2) viewed the business case for sustainable design more positively than the other architects. Echoing key Informant 1, Eco-architect 1 claimed that many aspects of sustainable design in new builds were in fact cost-efficient because they reduced the need for expensive air conditioning and heating systems. However, the business case became less clear beyond a certain level of investment:

> "Up to a certain point things cost the same, then they become cost-efficient by utilising things like orientation and natural ventilation. Then it'll be a little bit of extra spend because you're going to reduce running costs and it adds credentials to the building. And then it gets to another stage where it becomes almost a glass sealing where there is a question over the return." (Architect 10, Leeds, 100 staff)

> "We talk about it in terms of 'light green', 'middle green', 'deep green' and there are elements that you can do that have no additional cost, which will have a positive impact on the environment and reduce running costs. Things like orientation, things like natural ventilation, things like daylight penetration, things like the reflectance of surfaces… external shading devices which diffuse light in… And then there's a big leap to middle

> green because that involves new technology, more capital costs, and the business case is less clear." (Key Informant 1)

Eco-architect 1's firm had won awards for the sustainability of their designs and actively tried to promote designs that were 'darker shades of green' with their clients by highlighting to end-users the long-term savings to be made from energy efficient measures that reduced running costs. For developers, the focus was on the possible financial returns to be made from differentiating the building by adding 'green credentials' that would to attract a top-end market looking to please stakeholders. However, he claimed that one of the key problems in convincing clients to invest in a more sustainable building was that arguments for the business case were often based on guesswork.

> "People are doing things from a moral standpoint, but they don't have the facts at their fingertips and so they can't convince people. With our work we really have to work at our argument to convince people. And stick our necks out."

Eco-architect 2 described themselves as only 'medium green' because they felt that there was a limit to how far they could push an environmental agenda with clients. This was particularly important as they tended to become suspicious if the architect consistently promoted green materials that were more expensive. Because clients were so cost conscious, she tried to convince them of the 'win win' based on other factors such as quality and durability.

> "The normal way we do it is to do a specification and get it priced by a quantity surveyor first so they can compare prices. We weigh up the benefits of using that particular material, compared to using something else. Green materials usually are of better quality and last longer." (Architect 2, London, 2 employees)

3.1.4 Are government policies encouraging the 'greening' of architects?

Across the sample, environmental legislation was seen as the main stimulant of change within the construction industry. Some architects expressed concern at the rising bureaucracy resulting from the ever-increasing number of building regulations and health and safety legislation that they had to comply with. One respondent claimed:

> "Architects are just worried all the time about legislation. So much legislation… This is a double edged sword. The trouble is bureaucracy. Bureaucracy stifles creativity. We've just had a huge

> draft of legislation from the HSE [Health and Safety Executive] and if we're going to have an environmental raft of legislation, someone's got to think it through so it's not more paper work." (Architect 3, London, 40 staff)

Nevertheless, many respondents felt that more legislation was needed to push the sustainability agenda forward.

> "One has to take the construction industry on and possibly force them into [reducing environmental impacts] by some other building regulation conditions, just as Part L of the building regulations requires energy conservation. I think there is a very wide lack of knowledge and absence of education in this whole field… [so] you've got to be forced into it." (Architect 5, London, 2 staff)

> "[What will drive change] will be more regulation. I think regulation will force the hand on [sustainable design]." (Architect 10, Leeds, 100 staff)

> "Its got to be both taxes and regulation." (Architect 3, London, 40 staff)

> "I think if you're looking at [removing] barriers, there's kind of carrots and sticks really, the sticks being regulation and legislation and in my view the sticks have a bigger impact than the carrots. You've only got to look at the impact of the review to the building regulations - Part L." (Key Informant 1)

Market-based incentives did not appear to be a key stimulus for change within the industry. Of the few architects that had heard of the aggregates tax (a levy on quarry material) it was claimed that switching to more environmentally benign materials had not resulted because there were not many viable substitutes. The landfill tax was also thought to have had little impact on the volume of waste produced within the industry, with the cost simply passed on to the customer.

> "[The aggregates tax] just put the price of things up because there aren't many substitutes for aggregates." (Architect 3, London, 40 staff)

> "At present I don't think [the landfill tax] has much impact in the construction industry." (Architect 5, London, 2 staff)

Despite this, some respondents highlighted the potential of market-based incentives to affect change:

> "Maybe if you get a reduction in something, like cheaper rates if you use environmentally sound products." (Architect 1, London, 85 staff)

> "I think any policy that has an environmental edge to it has got to have an economic base. Somewhere along the line it's got to save money. Whether that's by tax relief it doesn't matter. But that's the thing that gets people's attention. It's not just education. It's actually that kind of policy which has teeth. That makes the difference." (Architect 3, London, 40 staff)

Both Key Informant 1 and the Eco-architects argued that voluntary initiatives such as BREAM (Building Research Establishment's Environmental Assessment Method)[9] had begun to make some in-roads in terms of promoting the credentials of sustainable buildings. BREAM is a voluntary labelling scheme that assesses the environmental performance of both new and existing buildings.

> "I think regulation and legislation is the key. But I also think the growth and the mainstreaming of labelling schemes like BREAM has caused the ability to now differentiate between buildings." (Key Informant 1)

> "I think BREAM, what that did was it actually brought the issues to do with sustainability more to the front and it is quite a good ready reference. It's not a detailed one. You can do much more detailed energy assessments and I believe that that will probably come in in the future… I think regulations will actually force the hand on that." (Architect 10, Leeds, 100 staff)

Although most respondents felt that policy-makers could do much more to make the environment a higher priority for the construction industry and for society as a whole, it was felt that government had at least endeavoured to become more consultative with the construction industry, with lots of confederations and committees set up to hear industry's views on policy. Key Informant 1 felt that ***Rethinking Construction***[10], the Construction Task Force's report to the Deputy Prime Minister on the scope for improving the quality and efficiency of UK construction, had helped to promote consultation on the sustainability agenda within industry:

> "[***Rethinking Construction*** is] sort of like a look in the future I think. I think more of that will become statute because a lot of that thinking has actually come into play."

The Royal Institute of British Architecture (RIBA) was seen as a potentially good way for government to disseminate information and promote

environmental best practice within the architectural industry - approximately 80 per cent of architects in the UK are RIBA members and, it has an unusually wide reach for a professional body. Some respondents mentioned that they received regular emails and newsletters that helped to keep them informed of current issues. Continuing Practice Development (involving lectures and seminars on various issues which architects are required to attend or get struck off the register) was also considered a good avenue for environmental dissemination. However, the key informant from RIBA claimed that despite the many seminars, case studies and presentations on sustainability it was difficult to engage people:

> "There's tonnes of information out there, but it's getting to the right bit of it at the right time, which is the trick that we're going to try and do. So most architects are sort of lucky if they're going to read one book a year, so what book should that be?… I think people are a bit bored with the 'S' word"

3.2 Builders

Reflecting the predominance of small firms in the construction industry, the builders interviewed were all owner-managers of small and micro firms, with the exception of two medium-sized firms. The projects undertaken ranged from house-building and domestic refurbishments to commercial developments. Key informants included a specialist consultant for the construction industry plus representatives from the Federation of Master Builders (FMB)[11], CIRIA[12], the Building Centre Trust[13], and the Construction Sector Unit of the Department of Trade and Industry[14].

3.2.1 Are builders showing signs of ecological restructuring?

Spontaneous responses revealed that the main environmental consideration for builders was waste disposal, driven by duty of care and special waste legislation. Duty of care regulations required respondents to complete a waste transfer note which ensured that waste was managed correctly and disposed of safely. Special waste regulations governed the treatment, storage and disposal of hazardous waste. Whilst respondents showed an awareness of their waste disposal obligations, none specifically mentioned duty of care and special waste regulations by name. Often waste disposal protocols overlapped with health and safety issues and were therefore of particular concern to site managers. One respondent explained:

> "You've got to keep a check on site for things that might result in chemical spillages… You've got to be seen to be doing the right

> thing with these products… Toxins, glues and tile adhesives and things like that will always be kept aside to dispose of in a different way." (Builder 1, London, self-employed)

Beyond vigilance with toxic materials and compliance with waste disposal regulations, it was felt that most tradesmen in the building industry rarely considered environmental issues:

> "if you're trying to implement a good health and safety policy [on site] and you can't even do that - and that's involving people's lives - how on earth are you going to get them to use sustainable materials?" (Builder 3, London, 30 staff)

> "I would say 95 per cent of people in our industry on the trade side, they don't really look that deep into things [like the environment]." (Builder 10, Leeds, sole proprietor)

> "95 per cent of [men on site] wouldn't even think of recycling."(Builder 2, London, 25 staff)

> "I mean your average man on the tools isn't the [brightest] person so, you know, if you talk to them about the environment you're not going to get very far." (Builder 7, Leeds, 20 staff)

A key informant from the Federation of Master Builders (FMB) claimed that environmental issues were not a priority for the construction industry as a whole:

> "There has not really been a tremendous constraint on the ability of firms to do whatever they want without regard for environmental or sustainability issues… The environment with regard to construction is a lower order issue."

3.2.2 Are market forces encouraging the greening of SMEs?

All respondents highlighted that a major barrier to more sound environmental practices was the fact that environmental issues were not a priority for clients and their architects. Typical comments were:

> "Occasionally clients may pay lip service to the environment and put in a question like, 'What is your policy on the environment?' or, 'What efforts are you intending to make to use of environmentally friendly materials?' So you'll say, 'Yeah, well we're thinking of doing this, that and the other.' 'Oh, that's

> great,' they'll say. But another company might do nothing, and guaranteed their price will be cheaper than yours because of it and they'll always get the job." (Builder 2, London, 25 staff)
>
> "What we're asked to build has no recognition to anything environmental at all." (Builder 5, London, 28 staff)
>
> "Architects should be at the forefront of [sustainability] because they are supposedly coming up with new designs and ways of improving it beyond what's considered standard. In theory builders just build what they built last time and make sure it complies with whatever the architects ask for. That's how traditionally in theory it should work, but of course most architects are fairly lazy and do the same as well." (Builder 3, London, 30 staff)

The key informant from the FMB concurred that supply chain dynamics were doing little to encourage environmental reform amongst small firm builders currently.

> "Not at all so far as I am aware, apart from the odd high level case, is the architecture profession promoting environmentally friendly and sustainable design. In terms of clients/major contractors pushing small sub-contractors on sustainability, no. Cost, price. Perhaps whole life cost, but that is still done in financial terms and the environmental aspect is simply not an issue. There are clearly one or two high profile people pushing it, but by and large, not at all."

He went on to explain that, depending on whether an architect was involved in the construction process, there were varying degrees of influence that builders had in terms of reducing environmental impacts:

> "At the very lowest end there will be commodity products like tap washers and the consumer will want to pay the commodity price. At the top end, probably from medium sized extensions and upwards people are likely to have their own architect, or at the very least a surveyor, in which case the builder's hands are tied. The builder is usually not involved in establishing the specification in the first place. …In the middle are projects where it is just the builder and the client, whether it be a loft conversion or a kitchen refurbishment, and those are an opportunity for green materials to be suggested as part of the design."

Across the sample, it was claimed that sustainable options were rarely specified by architects. Many of the specifications used by builders were 'generic' specifications where the architect names a particular product 'or equivalent'. This allowed the contractors to substitute a specified product and thus have a degree of influence over the materials used within the construction process. Respondents claimed that the usual criterion for choosing a product was price.

> "Most jobs 'it's cost is king' and you cut on the cost and you get what you pay for and people don't want to pay that extra ounce. But if a building is being designed by an architect and he specifies those materials, we fit those materials." (Builder 10, Leeds, sole proprietor)

Those builders that dealt directly with customers confessed that the environmental impacts of materials were rarely considered in consultations. One respondent felt that it was not really his role to promote environmentally-friendly options:

> "You ask me about environmental issues, yet people want me to fit hardwood doors for them that have come from tropical rainforests, so what can you do? …It's not really my remit to sort of tell people what they want. They tell me what they want really." (Builder 10, Leeds, sole proprietor)

Beyond the use of timber from sustainable sources, most builders were not even aware of which materials could be considered 'greener' than others. Information about environmental impacts was thought to be difficult and time-consuming to obtain and so respondents did not attempt to guide customers towards more environmentally sound options. Many felt that manufacturers and suppliers could do much more to encourage the use of green materials in construction, such as eco-labelling schemes to differentiate products with lower environmental impacts.

> "There's no rating. There's no environmental rating for you to make a decision. So you don't know… The building manufacturers and suppliers are really the ones that government should be targeting. We only use what's available." (Builder 1, London, self-employed)

> "The manufacturers have got to start supplying the stuff and what it'll be is it'll become second nature for us. I'll start using stuff that is greener without even knowing it." (Builder 5, London, 28 staff)

Manufacturers were also blamed for the increasing toxicity of modern building materials.

> "Another big issue for us is MDF because MDF dust is one of the worst things… I think it's banned in America, but we still use it here as second nature." (Builder 5, London, 28 staff)

> "The amount of chemicals that are in buildings these days, it's unbelievable." (Builder 10, Leeds, sole proprietor)

3.2.3 Do owner-managers perceive the business case for sustainability?

Across the sample, the extremely competitive nature of the construction industry was highlighted as a major barrier to voluntary environmental action. A key informant who was a specialist on the construction industry argued:

> "It is an incredibly competitive industry. It is probably the most competitive sector of the economy. Because there are so many firms, barriers to entry are almost non-existent, margins are subsistence level - there is no fat in the industry. …By and large the industry is a subsistence industry and doesn't have any money to invest in people, technology, training, anything."

All respondents saw environmental measures as involving extra costs, therefore it was considered difficult to take voluntary action to reduce impacts because cost-effectiveness was the number one concern of builders. Typical comments were:

> "You've got suppliers pushing up costs for material and you've got clients knocking down prices… Everyone's trying to make a fast buck. It really is cut throat… the principal contractor [sees the environment] as a cost because that would add more money onto the job." (Builder 4, London, 85 staff)

> "The way tenders are won at the moment is on cost and time. I mean there's companies going in that are making 1 per cent profit on jobs and making money with their sub-contractors just to get the work. They're buying the work. Now not for one instance is separating materials for waste going to enter their minds because they know they've got the job on a time scale because X firm said they could do it in six weeks and you say you can do it in three - so that's how it goes." (Builder 4, London, 85 staff)

> "[A job's won on price] absolutely. Regardless of what they say. They say in every estimate, the lowest estimate may not be accepted. Rubbish… We've been as tight as £15/£20. It's been as close as that." (Builder 6, Leeds, 12 staff)

> "Apart from one's own personal attention to it, there's no commercial incentive to do anything about [the environment]." (Builder 3, London, 30 staff)

The key informant from FMB explained that it was not just financial costs but also the time involved in environmental management that was a barrier for owner-managers:

> "Energy efficiency and waste minimisation are ways to reduce costs, but the take up of those for small firms is dependent not just on the theoretical savings that can be made but the short-term investment in time and effort to make the change. On top of everything else they have to deal with. Bearing in mind that 60 per cent of our firms are 1-5 staff, the employer will not be in an office but will be on-site doing the work. He'll be getting up at 6am, doing a full day's work then going out and do estimating, then coming home and doing his invoicing, Vat return, PAYE, CIS, material supply, organising the next day's work, getting back to people who want variations on their contract… So when does he get the chance to do the other stuff? Unless you can mainstream environmental management so they are a natural by-product of things that the builder would have to do anyway, there simply is no time in their day."

There was only one owner-manager who felt that a business case for greater environmental responsibility was slowly emerging within the industry. This respondent's firm was in fact a subsidiary of a large construction company, and had acquired ISO14001 accreditation at the parent firm's behest. This respondent felt that whilst price was the key determinant of who won a tender, commercial clients might choose the firm with the best safety and environmental track record if quotes were similar. He explained that new legislation had recently been enacted which placed responsibility on the client as well as the building contractor for environmental and health and safety practices on site. This had started to have an impact on the market as large commercial clients were becoming more interested in the environmental and safety record of the companies they employed. However, he admitted that this was only an emerging trend as many clients still only paid lip service to environmental concerns.

> "…there may be very little in a price. You know, there may be two companies tendering and there may be five grand in it and then there may think, 'Well, his safety record is a lot better. He's got the right attitude to the environment, so we'll go with them even though they're a little bit more expensive."(Builder 2, London, 25 staff)

The business case for using green materials in construction was not apparent to builders across the sample; they were often imagined to be more expensive because they were less mainstream and were therefore thought to hold little appeal for most customers. A few respondents imagined that the use of green materials might be problematic for builders in terms of accessibility, quality or durability.

> "It's probably the [lack of] durability of [green materials] or the quality, the finish, the practical aspects." (Builder 4, London, 85 staff)

> "We had somebody a little while ago… one of his things that he wanted to do was he wanted to have a condensing boiler which costs three times as much as a normal boiler and is much more energy efficient, but the cost implications are just massive… It's not always that [it costs more]. Sometimes the whole issue in building is just getting them on time. It's trying to get hold of the material. It's more difficult to get hold of." (Builder 5, London, 28 staff)

In terms of the business case for energy efficiency, some respondents highlighted that this was more of an issue for designers than builders as it was in the end-use of a building that most energy savings could be made. It was also highlighted that there was little financial incentive to pursue energy efficiency measures during construction on site as mains electricity was used that was paid for by the client.

> "You're doing a six-floor building and you're leaving the lights on. Things like that. Because you're not paying for it. It's not your money." (Builder 4, London, 85 staff)

Waste minimisation was another area where the business case was not apparent. Many respondents were quick to highlight the huge volume of unnecessary waste that was produced in construction, exacerbated by the increasing trend for refurbishment in the UK. One respondent explained:

> "In general, people move house a lot more now than they ever did…People now [think], "Well, we'll put this cheap kitchen in

> because we might not be here in three years,' and then they go to another house. The first thing they do, 'Well, let's have a kitchen fitted. We don't like this kitchen. Rip it out. We'll have what we want.' People have got the expendable money to do it. It's a throwaway society - cheap, cheap, cheap. It's soul destroying." (Builder 10, Leeds, sole proprietor).

Most felt that there was little builders could do to minimise waste:

> "if you're chopping the building back to a shell, what's got to come out has to come out. It's broken down, put into the skip and taken to landfill." (Builder1, London, self-employed)

> "You've still got to build a house, right… in the cold light of day you've still got rubbish to get rid of and in a way it's got to be done the stage before that at the person who's producing the product in the first place, how they can make that more environmentally friendly to the community so that there's less wastage." (Builder 7, Leeds, 20 staff)

> "We're filling skips up and you think, 'Crikey, why all this packaging?' There's so much packaging these days. There's no need for it." (Builder 10, Leeds, sole proprietor)

Whilst much of the blame for waste was attributed elsewhere or to factors beyond our interviewees' control, one builder admitted that over-ordering of material was prevalent in the industry and that unused material was put in the skip rather than recycled. He explained that this was because taking it back to the suppliers would be considered an act of disposal under the duty of care regulations and would therefore require a licensed carrier to transport the waste.

> "If you have concrete left over its against the law because you're disposing of materials. However you get it there, if they're not licensed to transport that waste or to accept that waste it's against the law." (Builder 2, London, 25 staff)

Whilst it was acknowledged that many of the materials put in the skip were perfectly reusable, most respondents claimed that the expense of keeping material for reuse was more than the expense of buying it new, once the cost of storage and labour (for instance to de-nail timber) had been factored in. Often, the used material was not quite to the specification required for the next job, so it was just easier and cheaper to buy material new. Typical comments were:

> "It's easier [to throw reused material away] unless you really want to put yourself out to do it… The more stuff you store, the

> bigger yard you need, the more rent you pay and then so your cost [goes up]… If you just go and buy when you need it, it's… what do you call it? Just in time. Just in time's cheaper." (Builder 10, Leeds, sole proprietor)

> "Sometimes you think to yourself, 'I'm going to keep that piece of wood.' What's the point? Sometimes you might as well burn it by the time you've done messing about." (Builder 8, Leeds, 4 staff)

However, some materials were considered of high enough value to reuse:

> "Welsh slate we'll re-use that. That's recycled - or will be eventually - because it's very expensive." (Builder 10, Leeds, sole proprietor)

> "If there's a good quantity of metal, clean metal, then, yes, that might get recycled." (Builder 1, London, self-employed)

Only one builder claimed to reuse material on a regular basis:

> "We don't waste anything that we can use again. Never." (Builder 8, Leeds, 4 staff)

Most respondents felt that there was little incentive to recycle on a regular basis because it was not cost-effective. Many claimed that the management and labour time involved in separating waste was prohibitive.

> "It's [ie the time] too long. It affects the labour. I mean if I've got 10 labourers on site, I'm not going to bring another labourer in just to make sure that copper is over there and plasterboard's there and metal's over there." (Builder 4, London, 85 staff)

> "Huge amounts are thrown away because it's difficult to organise and slower if you're trying to re-use stuff… We can have a policy of not doing certain things and yet it's quite difficult to get down to the guy on the site to think the same way because they're not worried about that sort of stuff." (Builder 3, London, 30 staff)

Other respondents claimed that if there was a more developed recycling infrastructure they would be more incentivised to recycle. However, there were reportedly few markets for recyclable materials due to structural barriers such as low demand or due to the cost of treating the used material.

> "There must be many occasions when that's recyclable, but there isn't a recyclable place to take it to." (Builder 6, Leeds, 12 staff)

> "I think we'd still actually be quite happy to pay for [recyclable materials] to be taken away… It doesn't have to be worthwhile. It just has to be made accessible. Worthwhile isn't an issue because you've got to pay for it to be taken away [anyway]. I'd rather the timber went somewhere where it could be used. As a small firm we waste huge amounts, but there's no business option." (Builder 5, London, 28 staff)

> "They might not pay you for it, anything significant, because of the cost of getting it somewhere to destress it. It doesn't work. Recycling doesn't really work that well." (Builder1, London, self-employed)

Because of the perceived barriers to waste minimisation, the landfill tax had had only a limited effect on waste management practices, with the cost simply passed on to the customer.

> "Whose going to pay for taking off the wood gently, stacking it, de-nailing it, shortening it, inspecting it for woodworm? You can slap another tax on and I'm just going to pass it on." (Builder 6, Leeds, 12 staff)

> "In a way it doesn't really come out of our pockets. It's priced into the job for a skip to get rid of waste. Someone's paying for it at the end of the day and it's the customer basically." (Builder 10, Leeds, sole proprietor)

It was felt that any increases in the tax would just encourage fly tipping, which was claimed to have become increasingly prevalent as less scrupulous builders attempted to keep down costs.

> "I would think the only thing [the landfill tax] might lead to is if you had a sort of a builder at one time who thought, 'I'll get a skip in,' now might be thinking, 'Hey these skips are a hundred quid a go. I'm going to do a bit of fly tipping here and we'll just dump it and I'll save my hundred quid'." (Builder 6, Leeds, 12 staff)

Reportedly, cost pressures had also encouraged bad practice regarding the handling of toxic waste within the industry.

> "There's a lot of fly tipping that goes on… an awful lot of fly tipping and also a lot of cowboys will try and get out of waste fees by dumping asbestos into holes or trying to cover up the asbestos with bricks and things and passing it off as normal waste. People would rather do that and risk prosecution to save a few bucks." (Builder 10, Leeds, sole proprietor)

> "We saw bloody trucks full of [asbestos] to be dumped in this land fill! It's still happening." (Builder 1, London, self-employed)

Of the few respondents that had heard of the aggregates tax (a levy on quarry material), it was claimed that, rather than encouraging substitution, the increased costs were just passed on to the customer.

> "Concrete roof tiles have gone up in price and we pay aggregate tax, so it's just passed onto the customer… Concrete for foundations, breeze blocks that use aggregates, everything… what else can you use?" (Builder 10, Leeds, sole proprietor)

3.2.4. Are the environmental policies of the state encouraging environmental reform?

Key informants highlighted that because of the construction industry's high public profile, there have been numerous government and industry-led initiatives to encourage best practice, for instance ***Rethinking Construction***, ***Partners in Innovation,*** and the ***Construction Best Practice Programme***, all with sustainability as part of their remit. These schemes were felt to have raised awareness of issues to do with sustainable construction.

Nevertheless, it was legislation that respondents saw as the real stimulant for of environmental reform within the sector. Whilst unpopular because of the bureaucracy it entailed, both key informants and owner-managers felt that more stringent environmental regulation was the only way to ensure that the industry reduced its environmental impacts. Typical comments were:

> "I think the building trade in particular wants [ie needs] regulating. I know people say, 'We don't need regulating.' You do. If people aren't working in a way that's going to be friendly to the environment, then we need to make sure that they do. We need to have licensed builders with identification somewhere that people can go back and lift up that image of the building trade. Nothing happens voluntarily now." (Builder 6, Leeds, 12 staff)

> "[Environmental action] would probably be [encouraged] most significantly by building regulation. You could use more in there and perhaps define that you've got to prove that the hard wood timber that you're using is from an approved source and what an approved source means. But the thing is then you're creating a bigger bureaucracy, which at the end of the day costs money." (Builder 3, London, 30 staff)

> "At the end of the day, unless it is in black and white and law, I think the building industry are going to get away with as much as we can to save time and it doesn't matter how much impact it's going to have on the environment. We're going to do it." (Builder 4, London, 85 staff)

Despite the fact that neither the landfill tax nor the aggregates tax had been particularly effective in changing behaviour and encouraging environmental reform within the sample, key informants felt that market-based incentives such as environmental taxes were beginning to drive change within the construction industry:

> "We have just begun to start looking at… and we're starting at it from a defensive aspect… which is members are seeing problems whether its landfill tax, aggregate tax, inability to dispose of waste etc, how can they get around that, and we've been on these issues for a while now. But that is then turning people's mind to become more proactive - how can I reduce the environmental impact of my business. How can I turn these things into a positive. If I'm going to have to pay landfill tax, how can I reduce the amount of waste in the first place. So that is beginning to be a driver of change in the way things are done." (Key Informant, FMB)

> "People can see yes, reducing my waste is going to save me money. And even now it's outrageous the amount of rubbish that goes into skips that shouldn't need to, because that's the cultural thing with the construction industry, but I think gradually that is going to change and it is changing because of cost. It is changing slowly and it will change quicker and you can see some companies are thinking about it." (Key Informant, CIRIA)

Across the sample it was felt that a major factor hampering the potential of policy measures to engender reform was the apparent culture of non-compliance amongst cowboy builders within the industry. Respondents consistently claimed that low levels of compliance were creating significant competitive pressures on

firms as cowboy builders undercut them at every opportunity. Typical comments were:

> "We can't compete against other builders on jobs say over a £100,000 if they don't follow health and safety regulations. If we price a job to run it safely and efficiently and to the law which is already in place and has been for quite a while and they don't, they could undercut us by a significant amount of money." (Builder 3, London, 30 staff)

> "There's are so many fiddles going off in our game and people seem to be getting away with it. And when they catch them they don't seem to do an awful lot with them. So, if you're trying to be honest and hardworking, you find it difficult when you hear these stories." (Builder 6, Leeds, 12 staff)

> "There's no policing whatsoever. I do know you're always going to compete with a builder that's just got a van, bungs stuff up, goes in, gets his money and gets out again." (Builder 5, London, 28 staff)

> "I don't like it when we do it properly and other people get away with it." (Builder 9, Leeds, 2 staff)

Respondents frequently emphasised the lack of enforcement within the construction industry as a key factor contributing to the proliferation of cowboy builders.

> "You've got a duty to actually make sure that the law's upheld, but what tends to happen is everyone just passes the buck down and in the end it doesn't work because who's regulating it? [Enforcement officers] just don't come [round], do they? Occasionally they do, if a serious accident happens they do, and what happens is people get seriously fined or put in prison or whatever, but of course that only happens once in a blue moon." (Builder 3, London, 30 staff)

> "[The regulators] can't be everywhere. They might have 30 or 40 jobs on the go and plus they want to go shopping with the wife… So they just leave you alone." (Builder 8, Leeds, 4 staff)

> "For me it is an unsupervised business really… Enforcement is the [problem]… Off the top of my head I would guess between 30 per cent and 50 per cent [of small firms don't comply with building regulations] and then if you remember the other 50 per

> cent are probably not inspected as they should be… the council inspectors are just massively under funded." (Builder 5, London, 28 staff)

A lack of education and awareness about environmental issues was considered to be a factor fuelling low levels of compliance. When asked whether this could be ameliorated via environmental best practice programmes run by trade associations, the responses were generally positive:

> "I would say that it's a start. If you're talking about it being an issue in the UK then something has to start somewhere and if you hit 5 per cent, at least it's 5 per cent. It's a change. That's all you can do… There's no better source than the FMB [Federation of Master Builders]." (Builder 5, London, 28 staff)

> "It would be beneficial having more information in our trade organisations. It would make the trades probably think a bit more about things and then pass that information on to the customer. But it's getting that information across. People watch TV these days. They don't read as much." (Builder 10, Leeds, sole proprietor)

> "I think [trade associations] are a good possibility for disseminating information and going along to speak, to do awareness raising campaigns etc." (Key Informant, CIRIA)

However, key informants highlighted that one of the main problems with the delivery of awareness raising programmes by trade associations was the high degree of fragmentation within the construction industry.

> "You would have to talk to all these minute individual firms and their trade organisations which is an insanity. And that is the problem the government has - they can't get to them. They just don't appear on the radar - they are not large enough. And the way they do their stuff is from project to project. And there aren't any trade associations that are big enough to pull these disparate interests together. It stops the development of trade associations with any kind of strategic view of the industry. So that is the really difficult thing. It's incredibly difficult to get anything done. And inevitably you end up having to focus on the big guys at the top of the food chain ie the big clients, the BAA's of this world. You focus on the big clients and the big contractors." (Key Informant, industry specialist)

> "I think trade associations have to play a major role. But bearing in mind the number of people who aren't members of trade associations, I think you have to look at various other broadcast media, whether its advertising in trade press." (Key Informant, FMB)

> "The trouble with the construction industry is that there are so many small and medium-sized companies, reaching them is very difficult." (Key Informant, Construction Sector Unit, DTI)

3.3 Restaurants

There was a broad range of restaurants within the sample, which consisted of 16 independent restaurants and four franchises. Some were fairly new, others were well established. The sample offered a mix of European, English and American cuisine. In terms of size there was one micro-restaurant[15], one medium-sized restaurant and 18 small firms, reflecting the dominance of small firms within the sector.

3.3.1 Are restaurants showing signs of ecological restructuring?

The spontaneous answers of respondents revealed that many restaurant owner-managers did not see the environment as a key business concern. Most saw their firm's 'ecological footprint' as negligible and therefore environmental measures were not something that they considered in their daily business practices. As one owner from Leeds put it:

> "There are a lot more pressing issues I would have thought to green this country than looking at restaurants. I mean all restaurants do… is they buy liquor, they buy wine, they buy food and then they serve it back out. There's not a lot that we can do to further green our cause I don't think, is there? All right, we use gas, but a fairly limited amount of gas compared with some." (Restaurant 12, Leeds, 36 staff)

Many owner-managers spoke of the considerable time pressures they were under and explained that it was difficult to contemplate managerial activities that were not core to their business, such as researching how they might improve their environmental performance. When presented with the idea of receiving a booklet on environmental management respondents did not think many restaurateurs would find the time to read it.

> "I don't particularly think that many people would find the time or bother to actually [read a booklet on environmental management]." (Restaurant 9, London, 11 staff)

> "[If] people who wish to [promote] health and safety or waste management come along and say, 'This is how you can do it and this is a cost effective way for you to do it,' of course we'll listen. But meanwhile we've got our hands full. I mean you know, we're in the business of feeding people, entertaining people and sending them away happy. That's what we do." (Restaurant 12, Leeds, 36 staff)

On prompting, waste disposal was an area where owner-managers saw their firms as having an environmental impact, yet the majority of respondents felt that there was limited scope to minimise waste. Some restaurants recycled, but most claimed that they had neither the storage capacity nor the resources required to ensure adequate waste separation. Most restaurant owners had attempted to implement common sense energy efficiency measures such as turning lights and equipment off when not in use. However, most saw their energy bills as a more or less fixed overhead and had not considered buying energy saving equipment due to the initial cost of making such an investment. Water usage was also seen as an inevitable overhead cost that was difficult to reduce as kitchens required a certain amount of water to cook and clean with. Measures to combat water pollution from drains were limited to recycling oil from fryers, which was a requirement of health and safety regulations.

Within the sample there were three respondents who proactively attempted to reduce the environmental impacts of their restaurant. This may reflect a research bias as owner-managers with an interest in the environment may have been more likely to agree to take part in the research. One owner-manager from Leeds was particularly environmentally conscious; he had set up an award winning organic restaurant where almost everything on the menu was organically certified and locally sourced, and where every attempt had been made to reduce the environmental impacts of the firm. The restaurant was run by three partners who were all driven by a strong ethic to be environmentally and socially responsible:

> "And of course it doesn't stop at the raw produce. You're not just looking at organics. You're looking at the environmental issues in setting up the restaurant that is organic or environmentally friendly. Like with the extension next door and to an extent with all the stuff that we did here, we're using a lot of reclaimed, recycled materials. The restaurant itself - all the cleaning materials are all bio-degradable. All of our bottles are all recycled. All of the cardboard is all recycled. When we set the restaurant

> up we had a grease pit out the back where most restaurants wouldn't." (Restaurant 13, Leeds, 12 staff)

Another respondent was an owner of a sushi restaurant chain and had a policy of only buying farmed or line caught fish to ease the pressure on wild fish populations.

> "Environmental issues are a concern in the way that we impact upon the environment and because we spend £600,000 a year on fish obviously we are concerned that we're not making too big an impact on the environment." (Restaurant 1 , London, 8 staff)

The third respondent owned an organic farm and offered an organic children's menu within his chain of restaurants.

> "Where we can move towards organic, particularly in our children's menu which is the burgers are all organic." (Restaurant 6, London, 13 staff)

Apart from these three 'eco-restaurants', the rest of the sample focused solely on the issue of quality rather than environmental protection when considering the sourcing of their food. Many respondents bought their ingredients from local suppliers, both to support local industry and because these suppliers were considered to offer fresh, quality produce. The issue of minimising transport-related environmental impacts was never considered. Quite a few respondents bought the occasional organic ingredient, but this was because they were thought to be of high quality and to taste better rather than because of the environmental benefits of organic production. One restaurant specialised in free-range chicken, again because of the quality of the meat rather than for ethical considerations.

> "Well, we believe in supporting local industry anyway so that's part of our own policy and we've always worked closely with a lot of our local suppliers… It's just always been a deliberate policy to have the best products really and that may or may not be organic." (Restaurant 17, Leeds, 25 staff)

3.3.2 Are market pressures encouraging the 'greening' of restaurants?

Most respondents felt that being environmentally-friendly was not a particular draw for customers, and therefore any costs that were incurred would be difficult to pass on. Instead, it was felt to be the quality of the food and wine, the service and the ambience of the restaurants that won restaurants a regular clientele.

> "[The environment] is not a high priority because as yet there's revenue [costs] involved in implementing the systems and usually in a business you need a return on something and there's no natural return. It's a stumbling block because people aren't going to come to your restaurant because you dispose of your bottles and waste in an environmentally friendlier manner than anybody else. You can't advertise or get any increase in custom from it." (Restaurant 18, Leeds, 12 staff)

> "I don't think that the average person decides they want to go to a restaurant for their environmental practice. They'll go for the food. They'll go for the ambience and they'll go for the wine." (Restaurant 10, London, 10 staff)

Interestingly though, there were a minority of respondents who reacted quite positively to the idea of an 'environmental star' - an accredited award given to restaurants who had made efforts to improve their environmental performance. Some of these respondents felt that such a scheme might have a particular appeal for new restaurants that were looking to attract customers.

> "Absolutely [an environmental star would bring customers in]. Especially in some areas because there are issues about recycling… I think it would. An award? Definitely!" (Restaurant 4, London, 25 staff)

> "Many [restaurants] wouldn't be bothered probably, especially if they're a well-established place anyway, so it's like, 'Why bother?' But some of them who are perhaps opening up their businesses, trying to market themselves, probably they would go for that." (Restaurant 9, London, 12 staff)

Whilst there was a general feeling amongst respondents that the public had become more health-conscious, more concerned about where their food came from and more aware of the benefits of organic produce, most felt that these trends had yet to impact their businesses. Restaurateurs were rarely asked by customers where their ingredients had come from or whether they were organic or GM free. Whilst the BSE scare in the UK had prompted an initial concern about the traceability of meats, respondents felt customers were less concerned about this now. Nevertheless, this had promoted some owner-managers to be more vocal about the sourcing of their produce, and some restaurants also mentioned on their menu that they were GM free.

> "[Customers] don't ever ask if [the food is] organically made… [although] the meat definitely they know more because I know more as well, especially the organic foods. Most probably the

> thing is that all the supermarkets are changing their product areas and designate… they say organic foods." (Restaurant 4, London, 25 staff)
>
> "No, [customers are] not really [asking about the sourcing of food]. We tend to have our little note on our menus and say that we're not aware of any genetically modified food that we use." (Restaurant 20, Leeds, 20 staff)
>
> "It's our policy, not just here but within the Academy [of Culinary Arts], to promote sourcing and traceability of our products."(Restaurant 5, London, 26 staff)

Whilst some respondents used the odd organic ingredient to enhance the taste of their cuisine, most felt that there was not much demand for organic food in restaurants because it was so expensive and because environmental considerations were not perceived to be key to customer choice.

> "My wife buys everything organic. She has an organic bag on Friday afternoon. We've organic butter, organic this… [yet] she comes out and never even thinks about it in a restaurant; never even considers it once ever… [if] you gave her an option between organic egg and fois gras or something, she's going to go for fois gras or something! I don't think [customers] worry too much and my wife's probably the same as the majority of my customers if you like." (Restaurant 17, Leeds, staff)
>
> "At the moment, no I don't think [organic food is a good selling point]. I don't see if you open a restaurant and you put 'organic', tomorrow you're going to be full. I don't think people trust it yet… It's not that they don't care. I think they don't know about it. They haven't got enough information through." (Restaurant 5, London, 26 staff)

In two cases, respondents' perception of the limited appeal of expensive organic menu options was supported by experience. The owner who had included an organic children's menu at his chain of burger restaurants felt that parents were more likely to buy organic food for their children than for themselves when they ate out. This had been borne out by the fact that the children's menu had been successful but attempts to put organic options on the adult menu had failed due to lack of demand. Another respondent had offered organic wine that was also dropped due to lack of sales.

> "On the main menu we have offered an organic burger and an ordinary burger and most of our customers move towards the

> ordinary burger… I think it's price. It is more expensive. Our previous position is to move everything to that end but customers, there is a price problem in the customer's mind, by and large they tend to say I'm not going to pay that much because I can't taste the difference." (Restaurant 6, London, 13 staff)
>
> "I tried organic wine because one of my suppliers was doing organic wine and I thought, 'That'll be good.' I put down on the wine list, 'Organic Wine' and six months later I took it off. I hadn't sold one bottle. I was amazed because I really thought… because everybody was talking organic and I think it was the time of the BSE and things like that, so I thought maybe that would be a good thing to do." (Restaurant 14, Leeds, 9 staff)

This perception of low demand is clearly in stark contrast to the restaurateur who had opened up an organic restaurant. He felt that demand for 'organics' was growing fast, particularly amongst '30-plus' professionals, (often women and vegetarians), who were prepared to pay more to eat organic food in restaurants. Whilst he admitted that this was a niche market, he felt that the market was growing and that restaurants in the premium price bracket were increasingly offering organic options because there was a demand for it. Whilst he considered it to be an emerging trend, he argued that many celebrity chefs were endorsing organic food and that this was having a trickle down effect on the restaurant industry as a whole. These are some of his comments:

> "A lot of places like the Ritz and a lot of top chefs are all preparing organic dishes which they put on their menu… As usual change trickles down from the top and not the bottom."
>
> "Part of our success as well is the fact that it's good food, it's organic food, so there's ethical elements in there and we get a lot of 30 plus professionals, who are not comfortable going into town and being served, wined and dined very formally. …We're just a very friendly, informal service. So we get people who are very comfortable with that."
>
> "[Vegetarian food] is one where we score very, very highly. There's two trends - one especially mid week. Midweek it's quite a common phenomenon for the restaurant to be full virtually of women. When we first opened it seemed that two-thirds of our clientele were women. The second really common phenomenon is that we get tables of vegetarian eaters because half our menu is vegetarian."

A key informant from the Restaurant Association, the lead trade body for the restaurant industry. also concurred that demand for organic food was growing.

> "[Organic food is] becoming more and more [popular]… and certainly restaurateurs, you know, they're buying organic. They will state on the menu 'All our vegetables are organic,' and they'll use that. It's a nice selling line. People will look at that and say, 'Oh! That's good!'"

3.3.3 Do owner-managers perceive the business case for sustainability?

The business benefit of improving the environmental performance of their firm was not clearly seen by most restaurateurs. Even though some owner-managers claimed to be advocates of organic food, most felt that it did not make financial sense to promote it in their restaurants when there were high quality non-organic ingredients available at much lower prices. They also envisaged problems with supply due to the fact that there were as yet so few organic farms in the UK. Some were concerned that they might not be able to rely on a consistent supply of ingredients, or that it would not be as fresh if farms were further away or if produce had to be imported.

> "[Organic] products are double the price, so for mushrooms or lettuce or things like that, it's a high cost for us. So we don't actually buy organic products… the products are good, but they're not organic… For example, if we buy all our products organic, the cost would probably jump by at least 20 per cent and there's 20 per cent less profit." (Restaurant 14, Leeds, 9 staff)

> "[Organic food] varies in quality. The bigger issue, I suppose, is transportation - how long it takes to get to you - and how long it lasts. So that is an issue for us. There's not that many in the nearby vicinity though we do use some and we've used organic suppliers for certain things in the past with some success. It varies and, of course, there's some expense to it as well… We're always prepared to pay more for the product rather than less because we always feel that it's right, but it becomes a price problem when you can only get so many and you can only sell it at a certain price point. So it is a difficulty. There is a balance." (Restaurant 17, Leeds, 25 staff)

> "It's not a policy yet or not a consideration yet to promote organic produce. It's not always available to us. I mean for a

> business and a restaurant to offer totally organic, that is very hard… It's costly… Somewhere along the line if it all backfires… if something's not available, there is no substitute." (Restaurant 5, London, 26 staff)

In contrast, the owner of the organic restaurant clearly felt that there was a business case for being an environmentally-friendly restaurant, evidenced by the fact that his restaurant was ready to expand:

> "Well, it's not unfeasible. I mean we've done it. We're not making great profits at the moment, but we are making some profit and we're working quite hard. We're not getting the proper return that most people would expect, I mean the three of us as individual partners, but that will change. There's no doubt about that especially when we expand. There's a point in the restaurant business where you need so many people coming in and hopefully we're going to cross that threshold. So it is viable, but a lot of current places just wouldn't look at it because they would think their costs were too high and they wouldn't be prepared to sacrifice their own professional return for that."

Nevertheless, he admitted that supply issues and the high cost of organic produce was still a major issue for his business:

> "Well supply is one of [the difficulties in buying organic] and then the cost. I mean chicken is unbelievable in comparison to factory hens. I think the minimum is probably 50 per cent more… Yes, [our customers] are [happy to pay extra], but if were charging half the price for a chicken dish then we'd probably get a lot more people in. If we were a lot cheaper we'd get a lot more people in. Of course we would."

> "The problem with [an] organic café is that it doesn't face the same problems as us in terms of supply. The stuff they're getting is fairly basic and there's a steady supply whereas we're getting meat from Wales or there is a place here in Leeds and we're getting vegetable supplies from two, three or four suppliers… It's quite difficult to get the supply of food that we need for the kind of operation that we've got here… [organics] is not mainstream at all."

For many restaurateurs, the business benefits of waste minimisation and recycling remained elusive. Most owner-managers felt that there was little scope to limit their waste; food waste was reportedly minimal due to the fact that careful attention was paid to stock take and portion control, and packaging

waste was considered out of their control as only some suppliers took packaging such as boxes back when they delivered, and the rest had to be disposed of by the restaurant.

Whilst owner-managers could see the potential business case for recycling, such financial benefits often remained intangible because of problems with storage space. Many respondents had not looked into recycling opportunities as they claimed that this would create storage difficulties in terms of organising separate bins in restaurants with limited space. Moreover, the storage problems that might eventuate if bins were unable to be collected daily by recycling companies were seen as a potential barrier.

> "To have all that [recycled] it takes space and we haven't got the space to do it. We've got one bin and that's it [because that's all the] space we can use." (Restaurant 14, Leeds, 9 staff)

Others felt that waste separation procedures would create problems for busy staff and the effort required by managers to police such practices would be prohibitive.

> "[Separating waste would be] very hard to enforce. On a Saturday night when you've got a restaurant the size we have… we've got 20, 25 people in the building… to stand by the bins and sort of say, 'No, not that one. That one there,' and at the end of the day you want to grab a plate and shovel the leftovers into a bin." (Restaurant 15, Leeds, 60 staff)

Some owner-managers imagined that recycling could raise costs:

> "We could probably be as an industry more aware of things like as I say putting out plastic and stuff, the biodegradable stuff, but we don't. But I think a lot of that comes down to the fact that restaurants aren't the most [dirty] industry and we've got quite tight budgets, so it is a cost thing [involved in] separating out four or five types of rubbish. How are we going to get it all collected and is it going to cost?" (Restaurant 15, Leeds, 60 staff)

Moreover, disposing waste at designated recycling banks was not usually seen as an option due to parking problems, the inconvenience of having to take smelly refuse bins in staff cars, plus there were health and safety issues with handling bin bags full of glass.

The majority of respondents thus saw waste collection fees as an inevitable overhead cost. It was felt that increasing waste disposal fees would not incentivise change unless there was an adequate infrastructure that made it easy

for restaurants to recycle their waste. Such measures could include daily collection of recyclable materials, or the provision of recycling banks conveniently nearby.

> "If we had a system where there was a central place across there which we could put all our cardboard, our waste and various other things or a bottle bank, we'd be very happy to use it, but they never… the council would never provide this. They'd much rather charge you, you know, and have these damn lorries go round, so we're in a total Catch 22 situation… There's nothing we can do about it. Nothing we can do about it. We have no incentive [for waste management], nobody's coming into partnership at all with us. Nobody's helping us out on this. Nobody's making it cost efficient." (Restaurant 1, London, 8 staff)

Within the sample there were five firms who claimed to actively recycle. Two firms had overcome storage issues by investing in compactors and two had managed to acquire bottle banks on their premises. Only the organic restaurant went to the trouble of taking bottles and cardboard to their local recycling bank. Financial as well as altruistic reasons were cited as reasons for recycling.

> "[We chose to recycle] I think to ease up the load for the main dustbins because adding all the bottles in the other rubbish - it soon fills up and therefore we need more lifts for the bin. For example, [because] we have a bottle [bank], it does take off some of the load for the bins and therefore we don't need so many lifts for the bins and it saves us money as well." (Restaurant 20, Leeds, 20 staff).

> "Well the bottle thing, again there's a financial factor there because if I fill my other bins… I used to use three big bins to collect the waste. Now because of the bottle bank which is collected free of charge, it relieved the third one, so I cut it down so I'm saving one third of my collection fee." (Restaurant 19, Leeds, 18 staff)

> "From the company's point of view, no, [cost] has never been the primary reason to control [waste]. The control has got to be environmental, not just from a cost point of view." (Restaurant 5, London, 26 staff)

In terms of energy usage, the business benefits of implementing energy efficiency measures remained intangible to many respondents, who found it difficult to see how they could reduce their energy bills. Kitchen equipment such as ovens

tended to be left on constantly as it took too long to warm up again once turned off. Lights also tended to be turned on during the day as well as at night to create the right atmosphere in the restaurant. Heating in the winter and air-conditioning in the summer was considered essential for restaurants and so most respondents felt there was little scope to reduce energy usage. Moreover, energy saving technology was not considered worth the initial investment required, although a few respondents claimed that they had invested in low energy light bulbs. Some respondents explained that energy efficiency was not a core business concern and that they were they were often too busy to consider energy saving measures.

> "Electricity and gas - there's only so much you can cut it down because of the type of work we do." (Restaurant 15, Leeds, 60 staff)

> "We're busy on other things. We haven't got the resources to suddenly say, 'I know what, I wonder if a new boiler would serve the community'. It's difficult to say [this], but I don't really care." (Restaurant 12, Leeds, 36 staff)

> "I think that sometimes a manager or whoever might think they've got so much on their plate already that the last thing they'll think about is how can I save on energy as well. It's the sort of thing that should happen. I must admit I wouldn't have time to do that." (Restaurant 10, London, 10 staff)

3.3.4 Are the policies of the state encouraging environmental reform?

When respondents were asked whether there were any environmental regulations that applied to their restaurants, many conflated this with food hygiene and environmental health legislation, possibly due to the fact that health and safety inspectors were called 'environmental health officers'. Owner-managers' environmental obligations were therefore considered to extend only to their food safety practices. The regular health and safety inspections that restaurants were given were generally seen in a positive light because owners could see the value of having stringent hygiene standards. Most respondents felt that although burdensome, regulations were the best way for the government to ensure environmental best practice within industry.

> "The government can and has got the power to make people think. Unfortunately we do need regulations… sometimes they are a bit excessive. We should say so. But we do need them." (Restaurant 8, London, 20 staff)

> "I suppose in a way [regulation] is a form of education. It scares a lot of people, but it should be seen as a positive thing and it's obviously not. The more it happens the healthier the environment." (Restaurant 18, Leeds, 12 staff)

A key informant from ***Visit Britain***, (a government quango formed from the merger of the British Tourist Authority and the English Tourism Council), explained that apart from waste fees there was currently very little in the way of environmental policy targeting the restaurant industry, and that new regulations were unlikely.

> "I'm sure you could introduce legislation to says that, you know, as a business you have to do X, Y and Z, but at the moment the government is not about to regulate anymore than to deregulate. So I wouldn't see that as an option. It is an option, but it's one that is unlikely to happen."

Instead, he claimed that the government was attempting to encourage voluntary improvements within the restaurant sector under its ***Tomorrow's Tourism***[16] initiative. For instance, ***Visit Britain*** was in the process of developing a voluntary scheme to encourage environmental best practice amongst businesses within tourism. The idea was to allow firms to apply for an environmental award if they demonstrated that they had fulfilled the specified environmental criteria. The key informant explained that the award would be marketed on the basis that it was good for business:

> "It's actually a business case has to be made for the business to actually first of all want to get involved [in the initiative]. It has to be seen that it'll either pay them money or give them some credibility… but it's got to be a benefit."

When asked about the role of restaurants within the government's plans for tourism, the key informant from ***Visit Britain*** highlighted that the restaurant industry was not the main focus of ***Tomorrow's Tourism***:

> "[Restaurants are] included within [***Tomorrow's Tourism***], but for some reason [they] are a fairly low priority."

Many restaurateurs expressed frustration at the government's lack of partnership and consultation with the restaurant industry on policy. Owner-managers felt that there should be much more dialogue and support from government so that restaurants were better able to respond proactively rather than reactively to policy measures. Some also highlighted that local authorities did not disseminate enough information about changes to legislation, undermining the guarantee of

a 'level playing field' as some restaurants were not up to date with their legal obligations.

> "I think the Restaurant Association tries extremely hard to be involved in [government policy making], but seems to get very little time. I'm sure that they would give you the feeling that as one of the biggest employers in the country, they get probably least time… I mean we have got a Minister for Tourism, but it's only just happened! I mean that's absolutely ridiculous!… I think what it should do is have far more consultation with the authorities such as RAGB [Restaurant Association of Great Britain] and BHA [British Hospitality Industry] and far more rigorous consultation before making those policies and putting those policies into place." (Restaurant 17, London, 25 staff)

> "Hospitality and tourism, it's the number one tourist attraction in England and yet it's a hard slog, you know, to get advice or to get the government to listen to us. And yet, you know, for such an industry… for such a wealthy industry from a tourism point of view, just take that away, the country would go down the pan… Most of the time restaurants are just left on their own, left to get on and do it." (Restaurant 5, London, 26 staff)

> "We need to try to establish a relationship where… now in this very moment I don't think there is. I mean it's like two different roads. We are on one, [policy makers] are on another. We don't really talk to each other. We don't really have any sort of relationship as such." (Restaurant 8, London, 20 staff)

A key informant from the Restaurant Association felt that government consultation with the tourism and hospitality industry was improving:

> "I think if you take something like tourism now and hospitality and tourism, they're much more aware now than they were. I mean Ken Livingston has lots of initiatives going with the hospitality industry. They recognise the key part of tourism and they're doing much more now."

However, he highlighted that whilst the Restaurant Association was acknowledged as the 'voice of the industry' a key barrier to strengthening its voice within government was that its membership represented only 8 per cent or 9 per cent of the industry. The fact that restaurateurs were not "very good joiners" made it more difficult for the industry to lobby government effectively, but he claimed this was improving now that the Restaurant Association had joined forces with the British Hospitality Association.

4. Discussion

This study has highlighted a number of important findings on the environmental practices of SMEs:

i. Are SMEs ecologically restructuring? Are market dynamics driving this?

There appears to be limited environmental reform taking place within the construction industry. At the top of the supply chain, most architects do not feel they are able to push the environmental agenda forward for fear of losing clients. One of the key barriers is that clients tend to be commercially driven and do not perceive sustainable designs to be financially viable. Most builders see the environment as a secondary, even negligible, concern and attribute this view to clients and their architects for a lack of interest in sustainability. Given this perceived low demand for sustainable buildings and materials, most firms are not incentivised to differentiate themselves from their competitors on environmental credentials. It appears, therefore, that the market is doing little to encourage environmental reform amongst small firms in the construction industry. If anything, the market is discouraging environmental management as competitive pressures exacerbate owner-managers' preoccupation with price imperatives. Similarly, the majority of restaurateurs do not believe that being environmentally-friendly will be a particular draw for customers and are therefore not being incentivised by the market to reduce their environmental impacts.

ii. Do SMEs see the business case for sustainability?

Environmental issues appear to occupy a peripheral position in the minds of most owner-managers and environmental goals are rarely seen as compatible with economic imperatives. Most architects do not perceive there to be a sufficient business case to risk promoting sustainable designs to clients. Whilst the eco-architects emphasise that environmental designs can benefit clients by adding value and reducing running costs, most architects feel that neither developers nor end-users are interested in sustainability if it means raising short-term capital costs. Even the eco-architects acknowledge that there are limits to which darker shades of green result in financial returns for clients. The findings from the interviews with builders further illuminate the perceived discord between profits and environmental protection within the industry. The business case for using green materials and for undertaking eco-efficiency measures is not apparent to most builders. The enormous competitive pressures on firms has

meant that cost and speed of build are the number one issues whilst environmental measures are resisted as an unnecessary cost burden.

For many restaurant owners, the business benefits of eco-efficiency measures remain elusive as they encounter barriers to recycling and do not have the resources to invest in energy efficient technology. Although many are advocates of organic farming, restaurateurs do not see the business case for offering expensive organic food that may be in limited supply.

iii. Are the environmental policies of the state encouraging environmental reform amongst SMEs?

Whilst government is perceived to have become more consultative with the construction industry, it appears that its 'steering' policies have yet to make a significant impact on the environmental practices of small firms. Market-based incentives such as the landfill tax have done little to encourage eco-efficiency amongst builders due to the perceived cost and effort involved in recycling and reusing material. A perceived lack of viable substitutes has meant that the aggregates tax has not encouraged a switch to environmentally benign material. Instead, legislation has been the key driver of environmental reform within construction. Waste disposal regulations have encouraged builders to manage waste appropriately, and amendments to the building regulations have been effective in encouraging greater levels of energy efficiency in the design of buildings. However, it appears that low levels of compliance amongst small firm builders and a lack of adequate enforcement are undermining the effectiveness of regulatory drivers.

Restaurateurs saw legislation as the most effective way to improve the environmental practices of their industry. However, it appeared that little in the way of environmental regulations were impacting the sector currently, reinforcing restaurateurs' perception that the environmental impacts of their firm were too small to warrant much attention. Market-based incentives such as waste fees have not been so effective in encouraging waste minimisation due to the lack of storage space amongst inner-city restaurants and the paucity of local recycling infrastructures.

The research suggests that SME owner-managers are reluctant to change and responses to taxation incentives for example, are more likely to lead to increases in costs for clients rather than a change in their behaviour and practices.

5. Implications of the Research

5.1 Implications for EM Theory

The findings of this study challenge some central assumptions in EM theory, as there is clearly only a limited amount of ecological restructuring occurring within the sample, with market dynamics discouraging proactive behaviour in many cases. One of the reasons for this is that most small firms have yet to accept the 'business case' for sustainability. The financial returns to be gained from eco-efficiency measures are not perceived to be significant enough to warrant the short-term investment in time, money and effort required to pursue them. Moreover, the market is not signalling to owner-managers that product value can be raised or that customers can be won by embracing environmental best practice. What little environmental reform that is occurring appears to be driven mainly by 'command and control' regulations rather than the 'steering', market-based policies of the state.

Two conclusions may be drawn from this analysis. The first is that ecological modernisation theory is of only limited use in explaining social change amongst SMEs in the UK's construction and restaurant industries. Whilst further evidence is needed to confirm whether this conclusion can be generalised to a wider sample and to other sectors of the economy, the evidence from this study suggests that owner-managers generally view the environment as a threat rather than an opportunity to their competitiveness. The second conclusion involves the prescriptive merits of ecological modernisation. Advocates of EM as a policy strategy view 'political modernisation' as a vital catalyst for the ecological modernisation of industry because of the key role that 'steering' policy approaches play in encouraging industrial reform. Extrapolating from this idea, it may be hypothesised that processes of ecological modernisation have been slow to occur amongst SMEs in the construction and restaurant industries because the state has not done enough to remove barriers to innovation and to stimulate environmental reform.

5.2 Implications for Policy Makers

This research suggests that a major gulf exists between government rhetoric on the environment and the perceptions and behaviour of SME owner-managers. Whilst politicians may espouse the win-win philosophy of ecological modernisation, it seems that many small firms have yet to accept the compatibility of environmental and economic goals. In light of this, one may question the government's policy emphasis on self-regulation for SMEs.

As existing regulatory standards mainly target larger firms, the government has attempted to encourage voluntary environmental action amongst smaller enterprises. For instance at the local level, waste minimisation and environment-business clubs have been set up, and at the national level there are various awareness-raising initiatives such as the ***Energy Efficiency Best Practice Programme*** and business support programmes such as ***Envirowise***. Several reasons can be given for why this emphasis on voluntarism is unlikely to have a huge effect on the environmental practices of the SME sector:

5.2.1 SMEs fear a loss of competitiveness

Clearly many small business owners may not be convinced that embracing environmental management is a good way of reducing costs or winning customers. Voluntary environmental action will obviously be resisted if owner-managers think there is a chance that it will adversely affect their firm's competitiveness.

5.2.2 SMEs lack resources and support systems

Even if owner-managers accept the business case for making environmental improvements in some cases, this does not mean that they will feel they have the time and capacity to carry out such measures. As Levett (2001, p4) points out:

> "Companies continue to neglect huge 'win-win' opportunities for improving environmental performance which would also save money. The reason is simple: companies do not make such improvements whenever they offer a financial payback, or even when it is a very quick payback, but only when it is the quickest and surest payback out of all the inessential, optional projects competing for attention - and then, only when the core business can spare any management attention or investment capacity to progress them."

5.2.3 Voluntarism encourages SMEs to see the environment as a peripheral issue

This brings us to the problem that the environment is not yet seen as a core business concern for most SMEs. Small firms have not been subjected to the same stakeholder pressure for environmental management as large firms. Policy strategies which emphasise voluntarism without the threat of sanctions tend to reinforce the idea that the environment is a peripheral issue. Whilst it appears

that the environment practices of SMEs is not a priority for policymakers or stakeholders, it is unlikely to become a self-generated priority for SMEs.

If neither the state nor the market are forcing the environment onto the business agenda of SMEs, owner-managers will always tend to feel there are other more urgent and lucrative things to be working on. Levett (2000, p9) argues that this is why after years of information provision on environmental best practice the government has not been successful in bringing about reform amongst SMEs. He suggests that:

> "Information is not the point. Two methods actually work. The first is direct, face-to-face site specific advice and support, which takes a lot of the management time and uncertainty out of the enterprise… The second is simple good old fashioned regulation, which shifts environmental improvements from midway down managers' 'mañana' pile to the top of the 'must do in order to stay in business' pile."

Whilst it is currently unfashionable to advocate regulation because of the onerous bureaucracy it entails, the inescapable conclusion from this study is that it may be the only way to truly affect change within the SME sector. Whilst regulation may certainly be less palatable to EM protagonists than market-based or voluntary approaches, legislative sanctions are clearly one way to be certain that the environment becomes a top business priority for small firm owners.

Regulation makes the environmental obligations of firms clear from the start, and offers SMEs the security of a 'level playing field' so that environmental good practice is not perceived as a threat to competitiveness. However, to ensure that there really is a level playing field, it is clear that a robust system of enforcement is essential. A major problem, that this study has highlighted, is the lack of adequate enforcement within the construction industry. Until this is addressed, more stringent legislation is likely to increase levels of non-compliance and push more small firms into the shadow economy. Regular inspection and 'spot checks' would go a long way towards encouraging SME builders to view their environmental obligations as a legitimate business concern, rather than an optional extra if they find the time.

Protagonists of EM, as a policy strategy, advocate the use of market-based mechanisms to encourage environmental reform. As part of an integrated policy mix, economic incentives certainly have the potential to successfully stimulate change. Environmental taxes can be effective because they make voluntary action profitable; taxing environmental bads and incentivising environmental goods provides the price signals needed to establish the business case for sustainability. WWF-UK's (2002) report entitled ***Fiscal Incentives for Sustainable Homes*** identifies a list of potential market-based incentives that could promote more

sustainable construction. The list includes 'carrots' (such as reduced VAT on accredited supplies, stamp duty relief on sustainable homes, capital allowances for expenditure on sustainable conversions and abolition of the zero percent VAT rate on new builds), as well as 'sticks' (such as a 'greenfield' levy and product charges on non-sustainable building materials and equipment). The report views fiscal measures that reward desirable behaviour as more promising than those that punish undesirable behaviour.

However, economic incentives cannot always be relied upon to affect change amongst SMEs because (as previously highlighted) owner-managers may continue to ignore win-win opportunities whilst there are more pressing and profitable things to be working on. For instance, builders may feel that a tax credit on recycled materials is not enough to compensate for the management attention required to police proper waste separation procedures on site. To be truly effective, market-based incentives need to be combined with the kinds of infrastructure developments that make it easy for firms to be more environmentally proactive. For instance, the landfill tax might be more effective in incentivising SMEs to minimise waste if there was perceived to be a convenient and cost-effective infrastructure for recycling. Similarly, the aggregates tax is more likely to encourage firms to switch to more environmentally benign materials if substitutes are perceived to be readily accessible. Clearly, the government has a major role to play in encouraging firms to reduce environmental impacts, but it must also provide an infrastructure for them to do so.

5.3 Conclusion

Our findings point to a major problem with the win-win philosophy of EM and its fundamental faith in the market for solving environmental problems. SMEs have little incentive to improve their environmental performance whilst they remain unconvinced that environmental management is good for business. Instead of continuing to exhort win-win arguments for the voluntary uptake of environmental management, a more sensible approach might be for policy-makers to acknowledge the possibility that firms may not always be able to 'have their cake and eat it'. The kind of environmental reforms required to make progress towards sustainability may incur financial hardships for enterprises, as the true environmental and social costs of production are internalised. With the formidable changes that sustainable development requires in the years ahead, surely the energies of policymakers would be better spent encouraging firms to view their environmental obligations as a legitimate business expense, rather than consistently a win-win game? Given this more realistic position, and the commensurate level of legislative compulsion for changes in business practices, the behaviour of owner-managers would be more likely to change towards more environmentally sustainable practices.

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Appendix 1

1. Sample

1.1 Key Informants

Representatives from the following organisations were interviewed as Key Informants:

Table 1

Restaurant Association	**Trade Association**
Visit Britain	Government-funded body promoting British Tourism
Federation of Master Builders	Trade Association
Building Centre Trust	Independent charitable organisation to provide support for educational, research and cultural activities connected with the built environment
CIRIA	Independent broker of construction research and innovation
Royal Institute of British Architects	Professional Body
Consultant in sustainable design for an international built environment consultancy	Industry expert
Specialist in software design for the management of construction projects	Industry expert
DTI Construction Sector Unit	Government
Small Business Service	Government
Royal Borough of Kensington and Chelsea	Local Authority
Leeds City Council	Local authority

1.2 Architects

Table 2

Architect	No of staff	Location
1	85	London
2	2	London
3	40	London
4	2	London
5	2	London
6	Sole proprietor	Leeds
7	5	Leeds
8	2	Leeds
9	100	Leeds
10	5	Leeds

1.3 Builders

Table 3

Architect	No of staff	Location
1	Self employed	London
2	25	London
3	30	London
4	85	London
5	28	London
6	12	Leeds
7	20	Leeds
8	4	Leeds
9	2	Leeds
10	Self employed	Leeds

1.4 Restaurants

Table 4

Restaurants	No of staff	Location
1	8	London
2	13	London
3	23	London
4	25	London
5	26	London
6	13	London
7	46	London
8	20	London
9	12	London
10	10	London
11	10	Leeds
12	36	Leeds
13	12	Leeds
14	9	Leeds
15	60	Leeds
16	8	Leeds
17	25	Leeds
18	12	Leeds
19	18	Leeds
20	20	Leeds

2. Recruitment Procedure

The architects were recruited from the Royal Institute of British Architect's web-based directory (http://www.riba.org/go/RIBA/Home.html). As approximately 80 per cent of all architectural practices in the UK are RIBA members (RIBA, 2003)[17] it was felt that a sample from their membership list was likely to be representative. Builders were recruited from the Federation of Master Builder's (FMB) web-based directory (http://www.fmb.org.uk). According to the key informant at the FMB, its members represent around 13 per cent of all SME builders[18], therefore this indicates a built-in sampling bias. However, this was felt

to be permissible as the FMB is the UK's leading trade association for small firm builders and has a membership accreditation procedure which involves checking each prospective member thoroughly to ensure they have impeccable credentials. This process weeds the 'cowboy builders' out and provides assurances that FMB members are models of good practice. It was felt that, in theory, the environmental practices of FMB members should therefore be a 'best case scenario', indicating the degree to which environmental good practice is being taken up more generally within the SME building sector.

As many restaurants are not members of trade associations, restaurateurs were recruited from local business directories as this was considered to be the best way to get a representative sample. Fast-food restaurants were excluded from the sampling list. Sorted alphabetically, the first 80 restaurants, 40 architectural practices and 40 building firms (ie four times the required sample size) were selected from the directories. Letters were sent out to each potential respondent inviting them to take part in the research. After a sufficient lapse of time those who had not replied were telephoned until the sample had been recruited. A strong response rate of roughly 25 per cent was achieved via this method in all three sectors.

3. Interview Guides

Due to the depth and breadth of the issues, key informer interviews lasted for one-and-a-half to two hours, and typically following the following format:

- Introduction and information about key informants' organisation
- Overview of construction/restaurant industry characteristics
- Key environmental issues/policies relevant to SMEs in the construction/restaurant sectors
- Key sustainability initiatives within the construction/restaurant sectors
- Barriers to and drivers of environmental reform amongst SMEs in the construction/restaurant sectors
- Perceptions of the business case for sustainability in relation to SMEs in the construction/restaurant sectors
- SME representation in industry bodies/environmental policy networks

- Government consultation with SMEs in the construction/restaurant sectors

- Future changes needed to ensure the sustainability of the construction/ restaurant industry

Interviews with SMEs were shorter, usually lasted one to two hours, and explored the following themes:

- Introduction and information about the firm

- Awareness of the environmental impact of the firm

- Specific environmental practices - eg resource/energy efficiency, waste management, pollution control

- Barriers to and drivers of environmental reform - probe market forces vs legislation

- Perceptions regarding the business case for sustainability

- Perceptions regarding who should take lead responsibility for protecting the environment

- Perceptions regarding government consultation with the SME sector on environmental issues

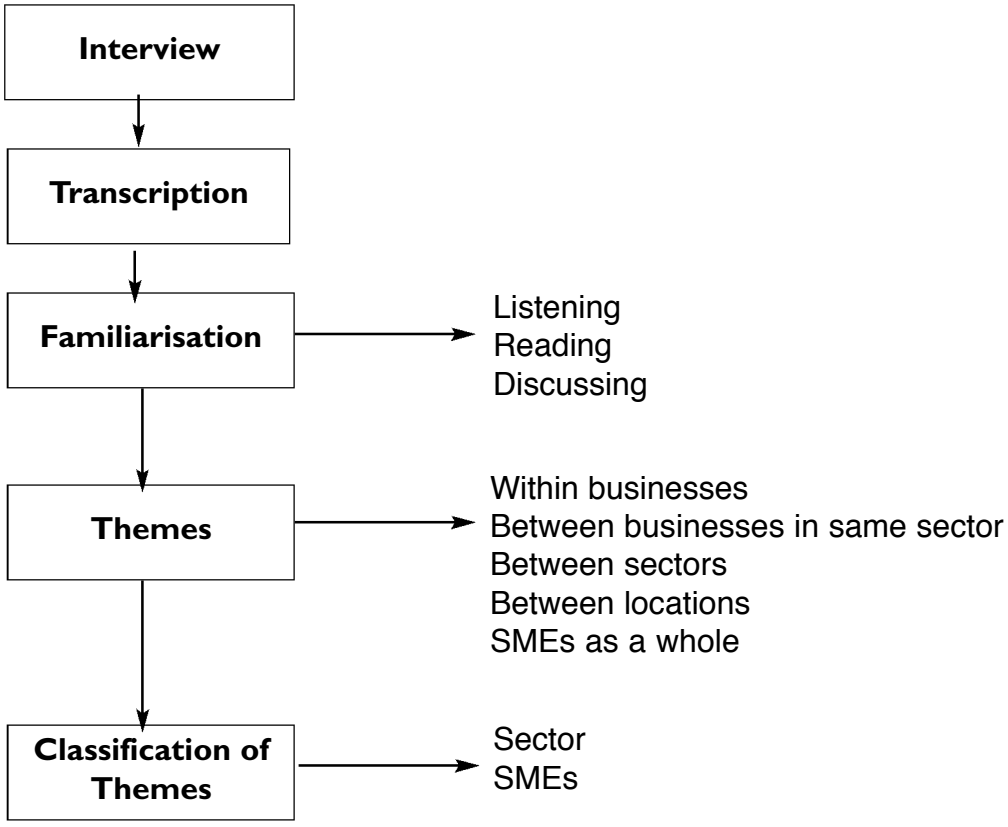
- Role of trade associations in disseminating environmental information and advice.

4. Analytical Procedure

All interviews were audio-tape recorded and transcribed. The analytical procedure employed followed what could be termed an interpretivist approach to the data collected (Miles and Huberman, 1994). This involved both interviewers (Revell and Blackburn) familiarising themselves with the material collected, including making notes after the interviews, listening to the audio-tapes, reading the transcripts and building up themes within and between businesses. In some instances these themes followed the structure of the interview guide (eg awareness of the firm's environmental impact) whilst in others they emerged from the unstructured discussion within interviews (eg restaurateurs views on organic food). The themes emerging from each business were then classified according to industry sector. This process allowed summaries

of themes to be drawn up to provide source material for the first draft of the findings and discussion. This analysis enabled both a cross-sector comparison, as well as a general analysis of environmental practices in SMEs. On completion of the first draft of the main report, each transcript was read again to ensure that the findings were consistent with the industry and business settings.

Outline of analytical procedure:



The following files were maintained for the study:

1. Raw data from interviews (transcriptions).

2. Categorisation of raw data into key themes; summaries and field note annotations (next to the data).

3. Written summaries of each theme, according to each sector (including notes, insights, developing interpretations).

4. Drafts of report (including literature review, sample and methodology, findings, discussion and conclusions).

5. Research proposal, timetable, fieldwork administration, interview guides, notes from meetings.

Appendix 2

Extended Literature Review

1. Ecological Modernisation and the SME sector

Like others in the environmental field, EM scholars have tended to ignore the special case of small firms. In Mol and Sonnenfeld's (2000) compilation of studies on EM theory from around the world, Sonnenfeld concludes that the theory "must be broadened to include small-and-medium-sized… enterprises" (Sonnenfeld, 2000; p254). In the absence of a body of work on EM theory and SMEs in the UK, the following literature review provides a summary of SME-environment research pertinent to the themes in EM theory.

1.1 Are SMEs ecologically restructuring?

In Hillary's (2000, p18) compilation of current research in the field, she concludes that the SME sector is:

> "oblivious of the importance of sustainability… difficult to reach, mobilise or engage in any improvements to do with the environment."

A survey[19] of over 1000 UK SMEs by the Environment Agency (2002) found that 86% of firms did not believe they had an impact on the environment. This is a significant finding, given that when prompted with specific examples of hazardous activities, the reality turned out to be quite different: 58% acknowledged conduct that was potentially harmful to the environment, 69% stored chemicals, fuels or oils, 35% stored waste, and 29% had high energy consumption

The fact that SMEs perceive their environmental impacts to be negligible is perhaps why they appear to take such little interest in environmental management. When asked what firms were doing to improve things, the survey found that: 42% said they recycled but only 9% said they were attempting to minimise waste, 12% said they were attempting to reduce energy consumption, 5% said they were attempting to reduce harmful substances, 9% had carried out an environmental assessment and 6% had been ISO14001 accredited.

1.2 Do SMEs perceive the business case for sustainability?

In direct contrast to the win-win philosophy of EM theory, a survey by ENDS (1995) found that only one in five SMEs believed that environmental action would generate cost savings. Size appears to be a major factor influencing perceptions of the business case for sustainability; a survey of 300 SMEs by Groundwork (1998) found that just under 60% of micro-firms, 40% of small firms and 20% of medium firms cited that there was no business benefits of improved environmental performance[20]. The Environment Agency's (2002) survey found that 78% of medium sized firms cited reduced costs as a benefit, compared with 49% for small firms. Sectoral as well as size differences were also evident, for instance, hotels and restaurants were least likely to see the business case for taking environmental action.

A comparative study in the UK and the Netherlands by Rutherfoord ***et al*** (2000) highlighted how in both countries small firm owners perceived economic and environmental interests as far from complementary. Owners generally felt that environmental measures were costly to undertake and rarely resulted in economic benefits. Because of the perceived 'burden of environmentalism', small firms in the UK resisted voluntary action and viewed regulation as the only way to provide a 'level playing field'. Responsibility for the environment was thus ascribed to the government and individual efforts were seen as more or less meaningless in the face of structural barriers.

Baylis ***et al*** (1998) found that 51% of SMEs in their sample of 914 UK firms saw the possibility of increased profits as a potential stimulus for environmental reform, but only 18% of owner-managers believed that cost savings would actually result in reality. Baylis et al suggest that this finding may be

> "linked to more than a mere failure of governmental and non-governmental organisations' promulgation activities [of win-win arguments]. Rather… it may imply that cost savings are not an inevitable outcome of environmental improvements… Such a position reflects the traditional perspective on environmental protection but contradicts ecological modernisation theory which holds that economic and environmental imperatives can be reconciled."(Baylis ***et al***, 1998; p288)

1.3 Are market pressures (or regulation) encouraging the 'greening' of the SME sector?

In contrast to the prevalence of market forces in environmental reform within EM theory, studies suggest that neither supply chain pressure nor consumer demand are driving environmental reform to any great degree amongst SMEs in

the UK. In Hillary's (2000) review of 33 studies, she found that SMEs experienced little external pressure from stakeholders such as customers or suppliers to adopt environmental management systems. Berger ***et al's*** (2001) study found that cost, quality and delivery rather than reducing environmental impacts were the main concerns of suppliers. Baylis ***et al*** (1998b) found that only 26% of SMEs reported customer pressure as a driver to green production processes (compared with 46% for large firms). Instead, regulation was found to be the most significant stimulus for environmental reform for 64% of SMEs.

The Environment Agency's (2002) survey found that good customer relations was a driver of environmental reform for 66% SMEs. Regulation was the number one motivator for 83% of SMEs, but only 18% of owner-managers could name any environmental legislation that applied to them. In Petts ***et al's*** (1999) study of over 1000 SMEs in England and Wales, it was found that most SMEs were only 'vulnerably compliant'.

> "While the majority of SMEs are not deliberately non-compliant they are vulnerable to this state, particularly where there is a lack of awareness of, and empathy, with regulation. Combined with the apparent failure to see the environment as a cost advantage, the capacity and feasibility to act in the majority of SMEs does not match the generally positive culture." (Petts ***et al***, 1999, p28)

The European Observatory's (2002) report on the levels of social and environmental responsibility amongst SMEs also found that most are 'vulnerably compliant' in that they do not know enough about environmental legislation to make sure they are compliant. An extensive survey of 8064 SMEs by the Environment Agency (2003) found that only 24% of firms had heard of Duty of Care regulations, which apply to all UK businesses.

1.4 Is government policy encouraging the 'greening' of SMEs?

Whilst the aforementioned studies highlight the considerable internal barriers to environmental management that exists within the small firm sector, governance structures and policy arrangements play an equally important part in influencing the environmental practices of small firms. Revell and Rutherfoord (2003) highlight three reasons why it is very easy for SME owner-managers to ignore environmental issues due to the current policy approach taken in the UK.

i. Sectoral approach

Current environmental policy initiatives tend to take a sectoral rather than size approach (eg the Department of Trade and Industry's ***Sectoral Sustainability***

Strategies. As such, they tend to ignore the fact that small firms have unique characteristics which distinguish them from large firms and that approaches used successfully on larger companies are less likely to be effective when small firms are the target. The Performance and Innovation Unit's (2001) report on resource productivity highlighted that:

> "the focus of Government policy measures to date has been on larger companies, where action to reduce pollution, improve energy efficiency and cut down on waste is likely to deliver better value for money and bigger savings." (PIU, 2001b).

ii. Lack of participation in policy dialogue

Revell and Rutherfoord (2003) argue that the reactionary stance on the part of owner-managers may also be due to a lack of representation of SME views in environmental policy dialogue between government and industry. The business lobby has little real input from the small firm sector due to low SME membership levels in trade associations and chambers of commerce. Because there are few formalised networks of intermediary bodies which represent small firms at the government level it is the interests of large firms which are usually dominant in environmental policy dialogue.

iii. The focus on voluntarism

As the environmental impacts of small firms are usually too small to be regulated, the government has attempted to encourage voluntary environmental action from the SME sector. For instance at the local level, waste minimisation and environment-business clubs have been set up, and at the national level there are awareness-raising initiatives such as the Environmental Technology and the Energy Efficiency Best Practice Programmes. However, the problem with this voluntary approach is that many owner-managers are not aware of the business case for sustainability and may fear a loss of competitiveness due to the perceived cost of making environmental improvements. They thus tend to be resistant to the idea of voluntary action. Instead, small firms prefer regulation to ensure a 'level playing field', yet so far SMEs tend not to be specifically targeted by environmental legislation.

In summary, the existing evidence appears to challenge some central assumptions in EM theory, specifically:

i. That small firms are ecologically restructuring.

ii. That owner-managers see economic and environmental goals as harmonious.

iii. That the greening of the SME sector is being encouraged by market signals.

iv. That the greening of the SME sector is being encouraged by the government's participative and 'enabling' approach to environmental policy.

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End Notes

1. ESRC award reference number: RES-221-25-0042

2. Research on small firms tends to focus on owner-managers because of their fundamental role in the mission, management and operation of the enterprise. Whilst it is accepted that this study is limited to the views, experiences and actions of owner-managers, the research still represent a major contribution to understanding the responses of SMEs to environmental pressures.

3. A medium sized firm is defined as having between 50-250 employees.

4. A small firm is defined as having 50 employees or under 249.

5. Royal Institute of British Architects (2003) ***Architects, employment and earnings 2003***, RIBA, London.

6. The Building Research Establishment provides consultancy, testing and commissioned research services covering all aspects of the built environment and associated industries. Previously a government body, BRE is now owned by the Foundation for the Built Environment (FBE), a registered charity.

7. 'Green Materials' are defined here as materials that are made from sustainable sources and have lower environmental impacts than standard products.

8. This may reflect a research bias as firms with an interest in sustainability were more likely to want to be involved in the research.

9. The Building Research Establishment used to be a government agency, which was privatised in 1997. BREAM (introduced in 1991) was therefore a government-led initiative until BRE was privatised.

10. 'Rethinking Construction' refers both to the Construction Task Force's report to the Deputy Prime Minister on the scope for improving the quality and efficiency of UK construction, and the industry led initiative to improve the performance of the UK construction industry

11. The Federation of Master Builders is the UK's leading trade association for small firms within the building industry, with 13,000 members.

12. CIRIA is an independent broker of construction research and innovation in the UK.

13. The Building Centre Trust is an independent charitable organisation providing support for educational and research activities connected with the built environment.

14. The Construction Sector Unit is part of the DTI and leads for government on construction issues. A micro-firm is defined as having under 10 employees.

15. A micro-firm is defined as having under 10 employees.

16. 'Tomorrow's Tourism' is a report published by the UK government's Department for Culture, Media and Sport setting out the governments plans for the tourist industry. The restaurant industry is included as a sector of tourism.

17. Royal Institute of British Architects (2003) ***Architects, employment and earnings 2003***, RIBA, London.

18. This is an approximate figure only. For more information on construction industry statistics please refer to the DTI's ***Construction Statistics Annual*** (http://www.dti.gov.uk/construction/stats/).

19. A caveat applies when interpreting the findings of large quantitative surveys on the environment. Firstly, such surveys tend to view SMEs as a homogeneous sector without taking into consideration the significant sectoral differences that are present in the environmental practices of small firms. As such, aggregate percentages of small firm environmental practices are rendered less useful. Also, they are prone to a research bias as it is only the more environmentally proactive firms that tend to make the effort to respond to postal surveys on the environment.

20. Micro firms have 1-10 employees, small firms have 1-50 employees, medium-sized firms have 50-249 employees, (SBS, 2003).