Constructing Best Practice Guidance for Implementation of a “Joint” EMS: Serco Placement at the N+N Hospital

By

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Abstract

Despite limited literature on group or partnership approaches to EMS development, there are several situations where organisations work closely together and influence each other’s environmental impacts. For example, on construction sites several companies often work together to share risk, or where a subcontractor provides functional support for a client, such as facilities management. Public Private Partnerships, encouraged by Government, often entail organisations working closely together and so they could potentially effect each others environmental management. It may be beneficial for organisations working closely together, either in partnership or as client and subcontractor, to consider managing their environmental impacts together. Thus, the objective of this dissertation was to research the best practice and barriers of industry case studies to develop a generic framework for implementation of a ‘Joint’ EMS.

The practicality of this approach was evaluated through application to the Norfolk and Norwich University Hospital Public Private Partnership. Several potential barriers were identified, including: different cultures of private and public sectors; disparate management structures and daily procedures; differing priorities and drivers for environmental management potentially causing differences in commitment; the need to develop trust between the two partners; and the need to take a flexible approach to make the ‘Joint’ EMS applicable to both organisations. Solutions to these barriers were considered with reference to best practice from case studies and criteria for the hospital to follow were developed.
TABLE OF CONTENTS

1. INTRODUCTION ..................................................................................................... 4
   1.1. OBJECTIVE ..................................................................................................... 6
   1.2. AIMS ............................................................................................................. 6
   1.3. INTRODUCTION TO THE MAIN CASE STUDY OF THE N+N HOSPITAL .......... 7
   1.4. PPP GUIDANCE .............................................................................................. 9

2. BEST PRACTICE FROM LITERATURE .......................................................... 12

3. METHODOLOGY .................................................................................................. 24
   3.1. RESEARCH TO IDENTIFY BEST PRACTICE AND BARRIERS IN INDUSTRY .... 25
   3.2. DEVELOPMENT OF BEST PRACTICE CRITERIA AND APPLICATION TO THE N+N HOSPITAL ................................................................. 29

4. RESULTS AND DISCUSSION.............................................................................. 30
   4.1. BEST PRACTICE AND BARRIERS FROM CASE STUDIES ......................... 32
   4.2. APPLICATION OF RESULTS TO THE N+N HOSPITAL ............................... 42

5. CONCLUSIONS...................................................................................................... 55

REFERENCES .................................................................................................................. 57

APPENDIX ......................................................................................................................... 59

1. LIST OF INTERVIEWEES ................................................................................... 59
2. SEMI-STRUCTURED INTERVIEW PLAN FOR CASE STUDIES ......................... 60
3. SEMI-STRUCTURED INTERVIEW PLAN FOR THE TRUST AND SERCO ............. 61

TABLE OF FIGURES

FIGURE 1: ELEMENTS OF AN EMS CONFORMING TO ISO14001 THAT POTENTIALLY VARY IN A ‘JOINT’ EMS .................................................................................................................. 13

FIGURE 2: FLOW DIAGRAM OF BEST PRACTICE FROM LITERATURE .................. 14

FIGURE 3: FLOW DIAGRAM SHOWING THE RELATIONSHIP BETWEEN THE PROJECT AIMS AND THE METHODOLOGY USED .................................................................................................................. 24

FIGURE 4: FLOW DIAGRAM OF BEST PRACTICE FROM CASE STUDIES ............... 31

FIGURE 4: OVERLAPPING ACTIVITIES BETWEEN THE TRUST AND SERCO ........... 46

FIGURE 5: MANAGEMENT STRUCTURE FOR EMS IMPLEMENTATION ................. 49

TABLE 1: SUMMARY OF BARRIERS AND SOLUTIONS TO IMPLEMENTING AN EFFECTIVE ‘JOINT’ EMS .............................................................................................................................. 41
1. Introduction

The British Standards Institute (BSI, 1994) defines an EMS as:

“The organisational structure, responsibilities, practices, procedures, processes and resources for determining and implementing environmental policy.”

Companies choose to implement EMSs for many reasons. There is growing evidence that an EMS provides a solid framework for meeting environmental challenges and gaining advantages in financing, insurance, marketing, regulatory, and other areas of operation (ISO, 2002).

There are several situations where companies decide to take a group approach to EMS implementation, for example, when small to medium sized enterprises (SMEs) join ‘EMS groups’, or when a region wishes to promote a green image and the organisations within that area work together towards developing a ‘Regional EMS’. For example, Avonmore Catchment Conversion Project where several businesses joined forces to develop a catchment management system (O’Laoire & Welford, 1998). Other situations where organisations work together to decrease environmental impacts, include clients helping their suppliers develop EMS. Project Acorn helps ‘blue-chip’ companies such as British Airways, BT, Carillion plc, Roll Royce, Severn Trent Water, United Utilities and Vauxhall Motors, to act as mentors to suppliers and subcontractors encouraging and aiding environmental management by taking a partnership approach (Gascoigne, 2002). As part of BP’s environmental management, they launched the ‘Czysty Biznes’ programme to improve environmental performance of polish SMEs to ensure similar environmental standards throughout the company’s supply chain by sharing their environmental management experience and expertise (Serafin et al, 2000).

Supply chain partnering has been suggested as an effective form of alliance, whereby organisations are able to provide a service more effectively together than alone (Boddy et al, 2000). Benefits of alliance include: cost minimisation; gaining of specific capabilities; and spreading financial risk. Where a long-term relationship is expected companies are able to achieve these benefits by developing complementary capabilities, sharing information and engaging in more joint planning than is customary (Boddy et al, 2000).
More open discussion of problems may enhance quality and lead to improved performance.

However, little research has been done on this joint approach to EMS development, or more specifically, on two organisations following a fully integrated ‘Joint’ EMS. Much of the literature on this subject is about providing support and sharing information and financial costs, rather than a completely ‘Joint’ EMS. Contrary to this limited literature, there are several examples in industry where organisations are working together causing an impact on each other’s functions. In particular, where organisations work together on the same site either conducting the same work e.g. construction of the UCL Hospital where several construction companies are sharing risks by working together, or where a subcontractor provides functional support for a client, such as facilities management. There are only a few examples in the literature of certified ‘Joint’ EMSs, for example, Hackefors Environmental Group where thirty SMEs have established a ‘Joint’ EMS in accordance with ISO14001 within the Hackefors Industrial District in Sweden, in addition to their individual EMSs (Ammenberg et al, 2000).

Another example of a situation where organisations can work closely together is Public Private Partnerships (PPP). PPP is the bringing together of public and private sectors in long-term partnership for mutual benefit. This covers Private Finance Initiatives (PFI), the introduction of private sectors ownership into state-owned businesses and selling Government services into wider markets (OGC, 2002). The key objective of public procurement is to ensure that tax payers get value for money. As outlined in the Treasury Taskforce’s Partnership for Prosperity, it is Government policy to use the most efficient skills of both the public and private sectors to achieve this objective1.

Thus, over recent years the government encouragement of PPP has lead to an increase in partnering among local government, schools, hospitals, defence, and all other public services. An example of a recently formed PPP is that of the NHS Trust and Serco Systems Limited at the Norfolk and Norwich University Hospital. Within this partnership, Serco manage all the facilities at the hospital and, therefore, manage many of the hospital’s environmental impacts. There is potentially scope for organisations in PPPs to work

together to reduce environmental impacts of their common work. Reducing duplication, sharing information, and possibly developing a shared EMS may achieve environmental improvement more effectively.

1.1. Objective

To identify barriers and best practice in taking a joint approach to EMS implementation. Criteria will be developed for the NHS Trust and Serco Public Private Partnership to implement a ‘Joint’ EMS and achieve real environmental improvements.

1.2. Aims

- To research barriers and best practice in implementing an effective EMS between organisations and their major subcontractor or partners.
- To develop best practice criteria for EMS implementation in the Norfolk and Norwich University Hospital by the NHS Trust and Serco Facilities Management.
1.3. Introduction to the main case study of the N+N Hospital

The Norfolk and Norwich University Hospital (N+N Hospital) was selected as the main case study for this research to apply the theory of a ‘Joint’ EMS to, and to identify barriers and solutions to this approach. It was selected because two organisations work together on one site under a Public Private Partnership (PPP) agreement and neither of the organisations have a functioning EMS in place.

The N & N Hospital opened to patients in November 2001, providing 809 beds. In January 1998 the Norfolk & Norwich Health Care NHS Trust signed a contract for approximately £220m with Octagon Health Care Limited for the hospital development under the Government’s Private Finance Initiative (PFI) Scheme\(^2\), making it the largest PFI hospital in the country. Serco Systems Limited, a wholly owned subsidiary of Serco, is sub-contracted to Octagon for the provision of services for the first thirty years of the sixty year contract, with an annual value of approximately £10m.

A tripartite relationship exists between the building owner, Octagon, the facilities managers, Serco, and the NHS Trust. There is no direct contract between the Trust and Serco, but there are contracts between Octagon and the Trust, and between Octagon and Serco:

\[
\text{Octagon} \\
(3 \text{ employees}) \\
\text{The Trust} \\
(5000 \text{ employees}) \\
\text{Serco} \\
(500 \text{ employees})
\]

Theoretically, actions could be slowed down by three-way communication during decision-making. But in practice the Trust and Serco communicate directly with each other and Octagon are only included on high-level decision (pers. comm. Page, 11.03.03).

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\(^2\) [www.serco.com/newsStory.asp?scode=427](visited 12/02/03)
Serco have gained certification to ISO 9000/2000 and are now seeking to improve upon this by introducing an EMS. The Trust is encouraged by Department of Health, to implement an EMS. The Trust/Serco partnership was selected to apply the generic framework for a ‘Joint’ EMS, as they work closely together to run the hospital. Although it may be possible to have two separate EMSs, it may be more effective to reduce replication by forming a ‘Joint’ EMS together. Serco manage the facilities for the Trust and so there could potentially be many overlapping activities within the partnership. If their work on site is closely entwined it may be more efficient to implement a ‘Joint’ EMS, as an objective to decrease the environmental impact may only be met if both organisations follow the same procedures and work towards the same targets. Although, if there are clear boundaries between the activities of the Trust and Serco, it may be simpler for each organisation to follow their own exclusive EMS. However, it may not be so clear cut as to whether a ‘Joint’ EMS will be more effective than two separate systems. A ‘semi-joint’ EMS may be preferable still. It may only be beneficial to work together to reduce impacts on activities that have merged boundaries, and managing issues that do not effect the partnering organisation independently.

Aspects of supply chain management also apply to the partnership between the NHS Trust and Serco. For the Trust to make real environmental improvements they may need to include the key roles that Serco play as bought-in service providers, rather than develop an EMS for their activities alone. Supplier environmental improvement programmes can be an aspect of contract management, whereby the customer ensures that suppliers’ environmental credentials are up to the standard level (Foster & Morton, 2001). Effective programmes also enable customers to benefit from the higher levels of environmental knowledge or performance that their suppliers may have. Careful management and a good customer-supplier relationship are needed to ensure real value to the overall business and real environmental improvements to be achieved (Foster & Morton, 2001). Problems exist for public-sector organisations as they are subject to the EC’s procurement rules, limiting freedom to differentiate between potential suppliers. However, as Serco are subcontracted to the Trust under a PFI contract for facilities management they not only have benefits to be gained from increased reputation but also from potential financial savings and are therefore keen to implement a successful EMS.
1.4. PPP Guidance

Government guidance on PPP contracts encourages the incorporation of environmental management, however, little advice is given about how organisations should go about this. Government guidance on greening PPP has been written for developers and managers of PPP and PFI to provide practical help in greening the scheme (OGC, 2002). This guidance adds to the Government’s commitment to take forward best environmental practice and sustainable development on its own estate. Linking private finance and environmental issues, the guidance focuses on ‘value for money’ and the consideration of ‘whole life costs’ of the service to be provided. The emphasis on whole life costs in the Treasury rules means that public sector contracting authorities are required to take account of all aspects of cost, including running and disposal costs, as well as the initial purchase price of an asset (OGC, 2002).

The ‘Green Public Private Partnership’ guidance (OGC, 2002) emphasises that it is important to be clear about what environmental objectives are to be delivered when establishing a project. The addition of green requirements to the project specifications at a later date will inevitably require the project to refocus around the new requirement, which might have cost implications and lead to problems under the EC procurement rules, unless both parties undertake alterations voluntarily. The guidance goes on to state that there needs to be a commitment from both the service provider and the contracting authority to achieve quality objectives, such as reducing energy consumption, water and other resources, minimising waste and controlling pollution. Additionally, it advises, “an EMS will provide a useful framework for the day-to-day management of the systems provided under the contract.” Although the guidance emphasises that “it is essential that a real partnering relationship is established between contracting authority and contractor” (OGC, 2002) there is little advise on how the EMS should relate to the partnership or how it should be implemented at all. Thus, there appears to be a gap in the literature and government guidance on how PPPs should undertake environmental management.

There are several government publications providing guidance on the types of relationships and contractual agreements that should be formed in PPP, but little of this relates to environmental management. Several of the attributes that the guidance recommends PPPs should acquire could also be potentially important when considering joint environmental
management. For example, the ODPM (2000) paper on partnerships with local authorities identifies that key objectives and parameters of partnerships need to be established at the start. Defining the tasks, roles and responsibilities of each partner should be included in this. It is advised that amongst other qualities the partnership should have open and trustworthy relationships enabling the partners to share information; regular, well organised communication between partners and within each partner organisation; and clearly understood objectives and responsibilities for each individual partner (ODPM, 2000). Although these issues are not specifically related to environmental management, PPPs could potentially benefit from applying these traits to EMS development between the partners.

Newchurch were commissioned by the Department of the Environment, Transport and the Regions (DETR) to undertake a three year study of Partnerships Working in Local Government in England researching constraints on partnerships (ODPM, 2000). Concerns included being able to agree the distribution of power and the structure, scope and responsibilities of special purpose vehicles, companies and partnership boards within the local authority structure. Additionally, the use of different systems or applications, variations in operational practices and reporting as well as differences in the knowledge and training of staff were reported to have hindered partner organisations seeking to deliver cross border services. The results indicated process mapping exercises and the involvement of service provider and IT staff have proved essential in exploring and developing standardised approaches. Keeping staff and service recipients well informed, consulted and involved in the decision-making process throughout the development and implementation of partnership arrangements is seen as critical to the development of partnerships beyond initiation. Cultural differences have caused the most concern. Cultural changes are required in local authorities as well the private partners, as they need to examine how they operate and consider adapting to work in partnership. Suspicion about the public sector and unease about embarking on long-term partnering relations with authorities is a continuing theme of private sector partners (ODPM, 2000).

Despite these perceived barriers of PPP, the Newchurch research revealed that over 70 percent of local authorities have a partnership with one or more private sector lead organisation (ODPM, 2000). The greatest numbers of partnerships are within the areas of welfare and social services. Other areas with a high number of partnerships are economic
development, sport and leisure, housing, environmental services and education. 88 percent of the sample authorities are positively seeking new partners and only 10 percent of authorities did not wish to develop further partnerships (ODPM, 2000). Thus, PPP is widespread and likely to continue increasing in the near future and the need to consider the environmental impacts of these partnerships may become a growing concern.
2. Best Practice from Literature

Literature on development of a shared EMS is minimal. The majority of the guidance for EMS implementation is non-specific and written for implementation in a single organisation. Areas where literature does exist include for SMEs and group implementation, and the inclusion of subcontractors in EMS by contract specification as part of supply chain management.

Inferences have been made from the generalist literature about how an EMS should be implemented within a partnership. Thus, elements of EMS development that are not specific to a joint approach are not discussed in detail, for example, the specific content of the environmental policy, external communication or the need to collate a register of relevant legislation. Although these are valid stages of EMS implementation, they do not require specific alteration when taking a joint approach, as opposed to application to a single organisation. The diagram below (figure 1) depicts all the elements required by an EMS conforming to ISO14001 and indicates which of these have been considered in more detail through the literature review.
Figure 1: Elements of an EMS conforming to ISO14001 that potentially vary in a ‘Joint’ EMS

Key:
✓ Elements that need to be considered when implementing a ‘Joint’ EMS
x Not specific to the ‘Joint’ approach

✓ Top management shall review EMS to ensure continuing suitability, adequacy and effectiveness
✓ Review possible need to change policy, objectives and other elements of the EMS

✓ Top Management shall define the policy
✓ Appropriate to nature, scale, and environmental impacts; commitment to continual improvement; to comply with legislation; framework for O+Ts; documented, and communicated to employees; available to public

x Identify environmental aspects
x Identify legal requirements
✓ Establish O+Ts
✓ Establish an environmental management programme for achieving O+Ts

✓ Define roles, responsibility & authorities
✓ Identify training needs and raise awareness
✓ Establish procedures for internal communication
x Establish procedures for external communication
✓ Document the core elements of EMS
✓ Establish procedures for document control
✓ Stipulate operating criteria for activities associated with environmental aspects and include suppliers and contractors
x Review and test emergency preparedness & response procedures

✓ Establish procedures to monitor and measure key activities that can have significant impacts on environment
✓ Define responsibility for handling non-conformance, mitigation and taking corrective and preventive action
x Identification, maintenance and disposition of environmental records
✓ Carry out an audit to determine if the EMS conforms to standards and that it has been properly implemented and maintained

(Adapted from ISO14001, 1996)

The following flow diagram (figure 2) was created from the literature review. A description of each component of the diagram is given thereafter.
Figure 2: Flow Diagram of Best Practice from Literature

- **Planning**
  - Gain Top Management Commitment
  - Develop Comprehensive System
  - Clearly Define Responsibilities
  - Gain Commitment from Whole Workforce
  - Clear Lines of Authority
  - Reporting Channels
  - Communication Channels

- **Continual Improvement**
  - Checking & Corrective Action
    - Form Objective Audit Team
    - Management Review
    - Define Boundaries
    - Support from Management
    - Staff Participation

- **Implementation & Operation**
  - Participatory D-M
  - Workforce Cooperation
  - Reinforce Commitment
    - Staged Process
    - Training for all Levels
    - O+Ts Understood by all
    - Understandable Procedures
Planning Stage

Commitment

It is commonly cited in literature that commitment is important for EMS development, however, it is potentially particularly important for a ‘Joint’ EMS. Welford (1998) suggests that the most successful EMS will be found where senior management commitment exists, as this enables time, financial, human and other resources to be allocated. Commitment from senior management also has great implications for the status of environmental management within the organisation in comparison to other management issues, which in turn affects the workers’ attitudes towards the EMS (Welford, 1998). Thus, commitment of senior management is crucial, but real corporate change cannot be imposed from a distance. Commitment of the entire workforce is needed to be able to make real changes (Welford, 1998). When applied to a ‘Joint’ EMS it is likely to be important to make sure that senior management and the workforce of both organisations are committed to the EMS and working together.

Unequal commitment from partnering organisations may lead to negative knock on effects in the later stages of implementation. For example, one organisation may be fully committed and enthusiastic to make real improvements, whilst the other may lack commitment and not put as much time and resources into developing and maintaining procedures leading to failures on their part, which may negatively impact the other organisation. If partnering organisations have differing levels of commitment is it possible to implement a ‘Joint’ EMS at all?

Develop Comprehensive System

Welford (1998) suggests that no matter what the structure of a firm, it is the lack of a comprehensive and effective management system that can lead to failure. Ideally, the management system needs to be comprehensive, covering all the activities of both organisations. Gaps should not occur in this coverage, since this could potentially lead to failures. Every part of the organisations should be involved in the implementation of the system and every person needs to recognise his or her responsibility for putting the system into practice (Welford, 1998). This may be more complex for a ‘Joint’ EMS as it is likely that not only will the number of activities increase, but also their interconnections may be more complex. It is likely to be important to make sure that all activities of the partners, and their potential environmental impacts, be considered and included in the EMS.
Clear Structure

Ideally the structure of the EMS should be designed to fit into existing management structures and cause minimum upset to employees to be able to gain their co-operation (Roberts & Robinson, 1998). The literature gives various examples of possible structures a single organisation could use to develop their EMS. The following are common elements of suggestions that could be used when designing the structure for environmental management. Roberts & Robinson (1998) suggest that top management should appoint a management representative who has responsibility for co-ordinating the overall implementation and maintenance of the EMS. A steering committee made up of middle and lower management with some practical knowledge about the environmental impacts of the organisations’ operations can help to guide the direction of EMS implementation (Ammenberg et al., 2002). A working group can be formed with managers from different departments, and possibly different organisations, to push forward the implementation plans (Ammenberg et al., 2002).

Welford (1998) observes that an environmental committee is often created to help facilitate co-ordination and communication in the environmental management process in large companies. Departmental action teams can be used to systematically record and instigate environmental improvement. Inter-departmental action teams are sometimes developed to tackle common issues, such as energy management, waste and transport, in order to obtain a corporate overview of the organisation’s environmental performance in these areas. These teams can also ensure the effective spread of methods and techniques of environmental management across departments and provide a common basis for achieving targets (Welford, 1998). Where companies are working on one site to provide a service together, a similar situation may occur to that of a large multi-departmental organisation, therefore, these suggestions may be relevant to the ‘Joint’ EMS.

Clear lines of authority, reporting and communication channels should be identified. It is important to be aware that a functional system relies not only upon trained individuals but also communication between them (Roberts & Robinson, 1998). If a working group and steering committee are formed, they will need to communicate regularly and report progress back to the senior management. Welford (1998) advises that in large multi-departmental companies it is important that at all stages of the EMS there is a lateral as well as a vertical flow of information throughout the management structure. Effective
communication can ensure that departments are not wasting time and resources when developing techniques for environmental management by duplicating work, and that there is no compartmentalisation or isolation of activity (Welford, 1998).

Risk management literature is a source of advice on communication techniques. It is widely suggested that a two-way communication dialogue helps to increase trust, feelings of controllability and empowerment (Pidgeon et al., 1992). Early, on-going, open and honest interaction can lead to effective and ethical communication. It is emphasised that transparency helps to gain trust and open access to information can improve credibility (Hunt & Wynne, 2000; National Research Council, 1989). The openness of information carries a message beyond the content of the information itself, suggesting that the organisation is willing to accept and work with criticisms (Hunt & Wynne, 2000). This type of communication may be particularly important when organisations aim to work closely together on a ‘Joint’ EMS, as a trustworthy relationship between the partners may aid the effectiveness of the EMS.

Welford (1998) advises that through establishing clear communications, information and reporting channels in a system that covers the totality of operations, management and workers are able to see their place in the organisation and recognise the interdependence of all aspects within it. A clear and understandable organisational map laying out both responsibilities and reporting arrangements could aid this. If this is achieved functions are less likely to be overlooked and gaps in the system should not occur (Welford, 1998). This organisational map is potentially of particular importance where there are two organisations working together with overlapping functions and working arrangements. Any environmental groups that are formed are likely to benefit by having members from both organisations, backing up their commitment for the ‘Joint’ EMS and representing the priorities and cultures of each organisation, ensuring the developing EMS is applicable to both. Whatever specific structure is chosen, it should be clearly defined so that all employees understand authorities and responsibilities.

**Define Responsibilities**

For the EMS to function properly, all of the components of the structure should have responsibility attached to them. Management systems are used to pull potentially disparate functions together, thus, they entail not only management’s responsibilities, but also the
responsibility and tasks of every individual in an organisation (Welford, 1998). It is important that the responsibilities are clearly defined and understood by all relevant parties so that they understand how their actions affect the system as a whole. Responsibility refers to the roles, authorities and interrelations of the key personnel required to ensure the effectiveness of the EMS (Roberts & Robinson, 1998). The ultimate aim should preferably be the integration of environmental responsibilities into job descriptions and performance evaluation. These responsibilities can be allocated during workshops and departmental meetings with reference to the environmental review. It is also important to record these responsibilities to ensure they are not forgotten about or lost in any restructuring or personnel changes (Welford, 1998).

Although the defining structure and responsibilities elements are placed under the Implementation and Operation Stage in the ISO14001 requirements (see figure 1), they have been included in the Planning Stage in the Best Practice from Literature Flow Diagram (see figure 2). This is because within a joint approach it is possibly important to get the structure and responsibilities set up before starting to implement procedures and operations, as the situation may not be quiet so straightforward as within a single organisation. There may need to be a certain amount of strategic work, (setting up the management structure etc.), prior to identification of operational procedures to minimise environmental impacts, to ascertain how the EMS be implemented most efficiently, and whether or not it is actually practical to take a joint approach.

**Implementation & Operation**

**Workforce Co-operation**

Welford (1994) advises that no environmental improvement strategy will work without the full co-operation of the workforce that it affects. Employee access to information on environmental issues may help workers understand what they are being asked to do and possibly increase co-operation. If the staff feel that they are being listened to they may be more willing to co-operate. IBM have a system of ‘speak ups’, whereby staff are able to communicate anonymously with management about issues that concern them (Welford, 1994). Where two organisations working together in partnership create a large workforce between them, it may be particularly important to have mechanisms in place to make the staff feel valued and willing to co-operate.
Welford (1998) found that in many organisations the area of most inertia regarding environmental management was middle management. Thus, all levels of management from both organisations should be included in programmes to increase co-operation with the ‘Joint’ EMS.

**Participatory Decision-Making**

Welford (1998) points out that a central aspect of any management system will revolve around decision-making. Every member of an organisation has a role in the system and his or her value should be recognized. Involving workers in decision-making through participatory styles of management is said to be superior to giving a single individual all the power. Management pyramids often need to be flattened to allow for a freer flow of information from both top to bottom and bottom to top. Modern management methods call for flexibility and worker participation, leading to decisions being taken further down the hierarchy and improving their quality (Welford, 1998). Within a ‘Joint’ EMS, communication mechanisms would need to be well developed to allow for the inclusion of staff from lower down the hierarchy and from both sides of the partnership. This style of management could also potentially improve commitment through developing ownership of the EMS, rather than being the property of a distant management board.

**Reinforce Commitment**

The commitment needs to be periodically and continually reinforced to ensure that environmental issues are not marginalized over the long term (Welford, 1998).

**Staged Process**

When implementing an EMS over a large organisation it may be a very long and complex process. Thus, to make it simpler it could be taken on a step-by-step basis. This is, possibly, especially appropriate for implementing a complex ‘Joint’ EMS. This approach may also be more encouraging, as each step is achieved the progression becomes more apparent.

**Training for all Levels**

Welford (1998) comments that the success of the EMS is very dependant upon training of employees to promote an understanding of the issues involved and awareness of their roles and responsibilities within the whole process. It is important that training takes place at all
levels of the organisation (Roberts & Robinson, 1998). It should include senior management who have key decisions to make on resourcing environmental management, middle managers who are affected by environmental issues on a daily basis, and other staff who influence practices of the organisation (Welford, 1998). It is likely to be important that training is provided to both organisations to ensure that all staff involved with the ‘Joint’ EMS and the organisations’ activities that have environmental impacts, are fully trained on their roles and procedures to minimise impacts.

Roberts & Robinson (1998) state that it is essential that there is a procedure for identifying training needs, as it is an area that is often underestimated and is usually the source of problems during the certification process. This may be specifically important in a ‘Joint’ EMS with multiple levels of staff with varying roles.

Training needs to be a continuing process of human resource development and empowerment, not just a once off exercise. The training programme should continually reassert the importance of environmental issues to staff and affirm their own responsibilities to environmental management within the organisation (Welford, 1998).

If training is conducted effectively, it could help reduce suspicions about environmental management among personnel and facilitate the change in management strategies necessary for environmental improvement (Welford, 1998). Also, it could encourage ownership of the environmental management process among employees. The EMS is likely to function better if those involved feel that their contribution actually makes a difference, and that what they think about the organisation’s performance is fed back into the system and recognised (Welford, 1998).

**Objectives and Targets Understood by All**

The objectives and targets should be easily understood by all employees (Welford, 1998). Ideally, every player within the system needs to be aware of the policies and objectives and understand how their actions affect the EMS and the overall environmental performance of the site (Roberts & Robinson, 1998). It is potentially more likely that staff will aim to achieve targets if they understand why they are set, how their actions affect them, and what exactly they should be doing to minimise their environmental impacts. Again, it is likely to be preferable for this understanding to be across both organisations within the ‘Joint’ EMS.
Understandable Processes
The system and procedures need to be understandable by everybody involved. If roles and duties are not specified in an understandable way, they may not be carried out (Welford, 1994). This will usually involve documenting the system, training people fully in their tasks and responsibilities, and periodically reviewing what is actually happening (Welford, 1998).

Checking and Corrective Action
Form Objective Audit Team
The audit can be carried out internally or externally, but a general requirement is that there is a degree of objectivity involved. Thus, the auditors will need to be independent of the areas being audited within the organisations (Welford, 1998). Welford (1998) suggests that at least part of the audit team should not be employed by the company. The audit team usually comprises of 3-5 persons brought together from a range of backgrounds and disciplines. In a multi-departmental organisation or within EMS groups, audit teams are often formed in-house to audit other departments or organisations within the group (Ammenberg et al., 2000). This approach can potentially be applied to the ‘Joint’ EMS, with audit teams from each organisation auditing their partner.

Define Boundaries
The scope of the environmental audit should be defined with clear boundaries. Ideally it should use the same boundaries as the EMS. However, in large companies the scope and coverage may be too wide and unwieldy to assess using one single audit (Welford, 1998). If there are overlapping areas between organisations in a ‘Joint’ EMS it would potentially be important that the boundaries of each audit be clearly specified, to avoid repetition. It may be useful to include both organisations in determining the aims of the audits, especially if each organisation is auditing the other, to ensure that they both agree upon the desired outcome.

Support from Management
Welford (1998) states that as with much of environmental management, the role of senior management in the audit process is crucial. Without top management support an internal environmental audit programme is unlikely to succeed, as it is necessary to secure
manpower, resources and active follow up of results and recommendations (Welford, 1998).

With reference to the ‘Joint’ approach to auditing the EMS, it is possible that if support for the audit process is only one-sided it may not be as effective. For example, if organisation ‘A’ has a fully committed and trained audit team to audit organisation ‘B’, who do not have full support from top management, then it is unlikely that the audit findings will be used effectively, thus, diminishing the efforts of organisation ‘A’.

Additionally, if the audit team of organisation ‘B’ does not have full support and resources from top management they may not be able to conduct a comprehensive audit of organisation ‘A’, leading to insufficient recommendations and follow up actions on the part of the organisation ‘A’, even if they do have full management support.

Staff Participation
Staff participation is important for the success of an audit because the cause of any deficiencies can best be understood by the persons working there (Welford, 1998). Again, it is preferable that both organisations have full participation of the workforce for the audits to be successful.

Management Review
A management review is the formal evaluation, by management, of the audit findings and the degree to which organisation’s environmental policy, objectives and targets and procedures are leading to improved environmental performance and the suitability of the entire EMS. This should be carried out by top management and those who developed the EMS components being reviewed (Roberts & Robinson, 1998). Both organisations could potentially benefit from undertaking this review to identify if the ‘Joint’ EMS satisfies the individual organisations’ needs and is suitable for the partnership.
3. Methodology

The following diagram illustrates how the selected methodologies relate to the project aims.

**Figure 3: Flow diagram showing the relationship between the project aims and the methodology used**
3.1. Research to identify best practice and barriers in industry (Aim 1: Stage 1-2)

In order to be able to develop a generic framework for implementing a ‘Joint’ EMS, research was undertaken to identify best practice and barriers of current practice in organisations from a range of industry sectors (stage one of figure 3). This research was designed to build upon the literature research, to identify what is actually done in practice. Several organisations were contacted, however, only four were available for interviewing. The list of interviewees can be seen in Appendix 1.

A “semi-structured interview” was chosen as the most appropriate interview technique. This type of interview has pre-determined questions, the order of which can be modified during the interview, depending on what seems most appropriate (Robson, 2002). The question wording can also be changed and particular questions which seem inappropriate with a particular interviewee can be omitted, or additional ones added. This type of interview was chosen instead of an “unstructured interview” where only a general area of interest is planned and a more informal approach is taken, because a specific subject matter was of interest. However, a fully planned set of questions would not have allowed the freedom necessary to expand on un-foreseen subject matters of interest.

Additionally, undertaking the interviews face-to-face was deemed more appropriate than sending out questionnaires. This is because a specific set of questions would have only resulted in pre-determined answers instead of unexpected issues which would not have been found in the limited literature of. Although, if more in-depth literature were available it may have been possible to construct a questionnaire, which would have been likely to lead to a greater response rate than gained from requesting interviews. Telephone interviews may also have generated a higher response rate, however, it would have been more difficult to build a rapport with the interviewee and they could potentially have felt less at ease and less willing to disclose private details about the successes and failures of their EMS. Furthermore, the interviews undertaken spanned a period of one to two hours. It is unlikely that interviewees would have felt comfortable enough to sustain a telephone interview for such a long period and so the information gained would have been limited.

The semi-structured interview was designed and carried out in a manner to try and get the interviewees to talk freely and openly, by: listening more than speaking; asking questions
in a straightforward, clear and non-threatening way; and avoiding use of cues that might lead interviewees to respond in a particular way (Robson, 2002). Questions were designed to not be too long or double-barreled as the interviewee may only remember a part of the question. Open questions were used so as not to restrict the content or manner of reply, thus allowing more depth of answer and the possibility of unanticipated answers. Probes were used when it was necessary to get the interviewee to expand on a response, such as: “what is your own personal view on this?” or repeating part of what the interviewee just said.

The semi-structured interview plan can be seen in the Appendix 2. The Structure was based on Robson’s (2002) recommendations. The interview was initiated with an introduction by the interviewer explaining the purposes of the interview and asking permission to tape the interview. ‘Warm up’ questions were used as an easy non-threatening start to the interview. Then in the main body of the interview questions progressed to greater depth with riskier questions later on. The interview plan was altered to related specifically to each company, based on background research. To sum up the interview ‘cool off’ questions were used at the end to diffuse any tension that may have built up. In addition to recording the interviews notes were taken as a failsafe.

Four interviews were undertaken successfully. Norfolk County Council were interviewed to gain the public sector perspective. They are currently in partnership with Mott MacDonald for their road construction work. Mott MacDonald were interviewed as an environmental consultancy that aid implementation in other organisations and have EMSs within their own multi-departmental organisation. EcoTech were interviewed about their Supplier Support Scheme, which helps suppliers fulfil environmental requirements of their clients. Amec have developed a range of EMS systems for construction work, and they require their subcontractors to conform to their EMS and also work towards their clients’ EMS.

Linzie Forrester (pers. comm., 05.06.03), the Corporate Environmental Advisor for Amec, was interviewed to understand the relationship of Amec with their clients such as Shell and BP, and their subcontractors. Amec provide a huge range of services from civil defence to renewable energy technologies, facilities services (e.g. for NHS) to industrial PharmaChem. Employing over 80,000 people in 48 countries around the world, Amec is a
massive company with multiple certified EMSs, and great experience of interfacing these systems with clients, subcontractors and partners. Additionally, because Amec has grown by acquisition, they have had to evolve their EMSs to relate to companies that may have already had their own EMS previously.

Dominic Allan (pers. comm., 13.06.03) is developing the EMS for the Transport and Planning Department of Norfolk County Council (NCC). This is the first department of its type at County Council level to achieve certification for their EMS in England. The Transport and Planning Department gained ISO 14001 certification at the beginning of June and are now planning to roll this out to other departments within NCC. For example, the Norfolk County Services Department, which manages all the catering and waste management for the County Council and schools etc, plus the Norfolk Property Services Department, which manages the energy and building requirements of social service homes, schools, major administration establishments etc, are both starting to consider EMS implementation. When these departments start to implement EMSs it is likely that there will be potential to include services providers within their systems as much of their activities involve facilities management with subcontractors.

Simon Best (pers. comm., 12.06.03), Project Manager of the Supplier Support Scheme (SSS), was also interviewed to identify NCC inclusion of the supply chain and subcontractors in environmental management. The SSS was established in partnership with NCC as a pilot project aiming to provide practical support for companies in the supply chain to make cost-effective improvements in their resource efficiency. Over 400 hundred companies in the top half of NCC supply roster are involved, which include the larger companies and the key service providers. NCC outsource services such as IT and property maintenance. These subcontractors comply with NCC’s EMS where they are required to but not across the board, and remain relatively separated from their EMS. NCC do not require that subcontractors or suppliers implement their own EMS as this is not possible under EU Public Procurement Regulations, but instead encourage specific environmental impact minimisation techniques such as waste minimisation.

Andy Singleton (pers. comm., 17.06.03), of the environmental consultancy and construction company Mott MacDonald, is the Project Manager of Thales Environmental Support Project. He manages the process of assessing the Thales group to implement an
EMS across all their operating companies. The Thales group are a large electronics, high-tech IT defence company. Employing 14,000 people they form the largest defence company in the world. The structure is made up of a corporate group in the centre surrounded by about 40 operating companies. These satellite companies are totally different entities, crossing a range of industries from nuclear missile to mobile phone mast construction. However, where there are several companies working on the same site a working group is set up with representatives from each of the companies. Instead of having separate EMSs they take a joint approach with joint responsibility for all of the business’ activities. Thus, this is an example of a group approach to EMS implementation where the companies’ activities do not cross over, but they share information.

Stage two of the methodology (see figure 3) was to extract the key findings from the interviews relating to implementing an EMS across two or more organisations and develop the generic framework (see figure 4). The evolved framework was initially based upon the framework created from the literature review, which was transformed by the results of the case study research. This is evaluated in section 4.2.
3.2. Development of best practice criteria and application to the N+N Hospital (Aim 2: Stage 3-4)

In order to test the generic framework, developed from the case studies (see figure 4 in section 4.2), it was applied to the N+N hospital where a Public Private Partnership is in place but there is no EMS (stage 3 and 4 of figure 3).

Interviews with key Serco and Trust personnel (see Appendix 1 for list of interviewees) were carried out to review current practices in the N+N Hospital. It was the intention to interview management down to representative floor staff of both the Trust and Serco. Unfortunately, access was not granted as freely as anticipated due to time restrictions, so the interviewees were limited to middle management level. The interviews focussed on the management structure, communication and reporting lines, and areas of overlap between the two organisations. Areas where the Trust and Serco could benefit from shared procedures, training and combined objectives and targets were identified. A similar interview technique was used, as with the previous case studies, however, each interview was specifically tailored to the interviewee and their role within the Serco Trust Partnership (see Appendix 3 for interview plan). The generic frameworks from the general literature and the case studies currently adhering to an EMS, were applied to the N+N hospital to identify practical barriers and solutions to taking a joint approach.

Best practice criteria for the hospital to follow, to ensure effective implementation of a ‘Joint’ EMS, were developed based on the findings of the research (section 4.3). Criteria that were deemed to be specific to the joint approach were considered in more detail with regards to how this applies specifically to Serco and the Trust. However, time constraints prevented expansion of all the criteria for the hospital.
4. Results and Discussion

Several case studies across different sectors were used to identify best practice and barriers to implementing an EMS across partners and/or subcontractor and client. Unfortunately, it was difficult to find companies that were actually already performing this, perhaps indicating that it is a new concept that has not been developed very much. Additionally, many of the organisations contacted did not respond or could not afford the time for an interview.

The following best practice criteria were identified from the interviews and compiled to create the case study flow diagram (figure 4). The flow diagram has been developed from the initial diagram based on the limited literature available and has been expanded with the identified barriers and solutions from the industry case studies.
Figure 4: Flow Diagram of Best Practice from Case Studies

- **Flexibility**
  - Commitment
  - Trust
  - Communication

- **Documentation**
  - Continual Improvement

- **Build Relationship**
  - Planning
    - Secure Resources
    - Form Clear Structure
    - Allocate Resources
    - Assign Responsibility
    - Plan System Together
  - Awareness of Cultural Differences
  - Ensure Compatibility with Existing Practices
  - Identify Priorities

- **Implementation & Operation**
  - Staged Process
  - Joint O+Ts & Procedures for Overlapping Activities
  - Build System Together
  - Share Responsibilities
  - Training

- **Checking & Corrective Action**
  - Audit Partner
  - Joint Management Review
  - Report Progress
  - Develop Improvements Together
4.1. Best Practice and Barriers from Case Studies

Planning Stage

In the initial flow diagram (figure 2) it seemed appropriate to allocate the requirement for commitment in the planning stage. This finding was reiterated from the case study research, however, it was also emphasised that it is needed throughout the whole process. Therefore, the element of commitment has been shifted outside of planning stage to run alongside the whole process in the evolved flow diagram of best practice (figure 4). This element will be discussed after the three stages of planning, implementation and operation, and checking and corrective action, along with the other elements that are suggested to be continuously sort throughout the whole process.

Secure & Allocate Resources

Firstly, financial and human resources need to be secured from both partners to be sure that the EMS can be developed. Top management should be committed to the EMS and willing to set aside the necessary resources. Once obtained the resources need to be allocated to the departments and levels where they are needed across both organisations.

Problems may occur in a ‘Joint’ EMS where one organisation is not able, or willing, to allocate as much resources as the partnering organisation. This may be especially problematic where the organisation with fewer resources also has more significant environmental aspects. Thus, resource allocation should ideally be comparative to the nature and scale of the aspects and the organisations involved. This could potentially be a source of conflict if the resources secured and allocated are not appropriate.

Form Clear Structure

The need to form a clear structure, identified from the literature, was repeated in the case study research. Development of a clear structure for the ‘Joint’ EMS could help in the allocation of resources and identifying where responsibilities lie. Mott MacDonald’s (pers. comm. Singleton, 17.06.03) advise for companies within the Thales group is that the structure of the EMS should be based upon a steering committee, comprising of senior management staff who will be responsible for over overseeing EMS progress. They go on to advice that steering committee should assign a working group (or implementation team) comprising of middle managers organised around an environmental co-ordinator, to
manage the day-to-day EMS activities. Selecting a cross-functional team is a good way of building commitment and ownership of the EMS. The structure needs to be very clearly defined with individuals designated to carry out the work at company level, reporting and communication mechanisms specified and the type of relationships the company is aspiring to identified (pers. comm. Singleton, 17.06.03). These high-level groups are likely to benefit from including members from both organisations, so that both organisations have input into the direction the ‘Joint’ EMS takes and are involved in and are aware of new procedures for implementation.

If existing structures are dissimilar it may be a potential barrier to development of a compatible structure that would be relevant to both organisations.

Assign Responsibility
Responsibilities for the different components of the EMS should be shared out and assigned to specific individuals. Amec devolve “environmental responsibilities off to different disciplines on site who are interfacing in that particular way with that particular issue” instead of assigning an individual environmental manager to look after the whole EMS (pers. comm. Forrester, 05.06.03). The most suitable people on site may be from different companies but everyone works within the same framework, the structure of which brings everybody together.

In the Thales group responsibility is assigned on a basis of enthusiasm “It’s about who is best for the job, and more importantly who is enthusiastic and willing… There is no set formula” (pers. comm. Singleton, 17.06.03). Assigning responsibility was a core stage when starting the process of EMS implementation, Singleton (pers. comm.,17.06.03) commented, “The key thing is you have to recognise who has the key skills”. Allocating responsibility for achieving targets and reporting progress to individuals may help to create ownership of the EMS.

Plan System Together
Planning the system together, with the involvement of floor staff as well as management, could potentially increase ownership and commitment from employees. This should also help build the relationship between the organisations and may increase trust if this is done in an open way. In the experience of Mott MacDonald, “using a team approach to planning
and building an EMS is an excellent way to promote commitment and ensure that the outputs from the system are realistic, achievable and cost-effective” (per. Comm. Singleton, 17.06.03). “It’s actually inviting ideas from them [employees at company level]. Make these people feel as though they have come up with these decisions and that they are involved. So you have this dialogue and work shops to put this together and you have communication” (pers. comm. Singleton, 17.06.03).

Ideally, a ‘Joint’ EMS should be planned and developed by both organisations so that they both gain understanding and commitment to the system. Amec and Shell have a very long history, having worked together for about 30 years. Amec’s upstream oil and gas business has evolved an environmental system, which is complimentary to Shell’s, but can also stand-alone. Shell and Amec developed their EMSs by sharing ideas together. Amec employ environmental advisors that they lend to Shell to develop their systems. Amec are then able to know what is coming up as they are inventing their system with them, and both parties benefit from this relationship (pers. comm. Forrester, 05.06.03).

Ensure Compatibility with Existing Practices

The EMS should be designed to be compatible with existing practices to avoid negative attitudes from employees. Forrester (pers. comm., 05.06.03) advises to “…capitalise on systems that are already ingrained in to management systems” as this limits upset “because you have successfully infiltrated all the systems that people did anyway”. However, this may be complicated to do if the partnering organisations have very different procedures.

When Amec was asked how they integrate their EMS with a client’s system, they replied: “What we try and do is sit down with our system and find the common elements. Who’s got the best? Sometimes it might be an interbreed hybrid. It is very difficult to come with just one generic system that you can move from one building to another… If you find a way of dealing with environmental risk assessment, and your client has been doing something and has trained everybody, and you come in with a new system, you have to go away and do all that training again. There is no point in doing that if the system they already had in place was adequate.” (pers. comm. Forrester, 05.06.03). Thus, it is important to assess the adequacy of the systems already in place, and identify the missing elements.
As previously discussed, a barrier to developing a clear structure for the ‘Joint’ EMS may be ensuring its compatibility with both organisations. This barrier could also potentially apply to the existing practices and systems already in place within the organisations. Ideally, the ‘Joint’ EMS should be consonant with existing practices to make it less foreign and encourage uptake. If the current systems contrast greatly it might be a hindrance when designing the ‘Joint’ EMS.

Awareness of Cultural Differences
The need to be aware of and take into account cultural differences, existing practices and priorities when planning the ‘Joint’ EMS is an addition to the evolved framework (figure 4). Company culture and histories may be very different and this may need to be taken into account when designing the EMS. The EMS needs to relate to the company culture and so compromises may need to be made and a flexible approach taken. Forrester (pers. comm., 05.06.03) points out that “The environmental system has to take great cogniscience of the environment that you are working in. In particular environmental sensitivity, as well as social and cultural issues.” The cultural differences may be particularly acute within PPPs and so this maybe a particularly important issue.

When Mott MacDonald were asked about barriers to implementing a joint EMS they responded: “one of the problems we are encountering on the site with the group of companies, is that…they are neighbours they work for the same group, but they do slightly different things and they have different histories, different cultural ways of working. Also they have different systems of working, they’ll have different quality assurance systems. So it almost makes sense in a way for them to stay separate, to look at their own QA system. In a way it seems to make sense to have their own unique EMS. There has been a difficulty in identifying when to have a ‘Joint’ EMS and when to stay separate. It varies case by case.” (pers. comm., Singleton, 17.06.03). Again this issue could be magnified by the different cultures of the public and private sector. Creating a ‘Joint’ EMS that is congruous with the culture of both organisations may be a challenge if they are extremely different.
Implementation and Operation Stage

Share Responsibilities & Build System Together

This sharing of responsibilities and development of the system should be continued throughout the Implementation and Operation Stage. Unlike the literature, this finding was emphasised greatly by the case studies, and so is an addition to figure 4.

Training

Training is an essential element of EMS implementation and should be undertaken as early as possible. Everyone will need training in the overall direction the organisations are taking and what an EMS is. Both organisations should be trained together where appropriate and should be on the same training programme to ensure consistency between the organisations. Mott MacDonald advised that “You need to have lost of upfront training, saying what an EMS is, this why we are doing it, these are the resources we have to give to you. Get people’s heads round the concepts and telling them they can do it. Give encouragement…” Instead of just giving the companies EMS procedures to follow, Mott MacDonald continue to help them through the whole implementation as it is important that the workforce receive continuous training (pers. comm. Singleton, 17.06.03).

Staged Process

Singleton (pers. comm., 17.06.03) advises that the EMS should be split up into stages, so that it is more manageable and not such a daunting prospect. This would be especially helpful in development of a ‘Joint’ EMS, which could be fairly large and complex. Allan (pers. comm., 1.06.03) suggests that a potential barrier to implementing a ‘Joint’ EMS is that it would be likely to take a very long time, when taking into account the length of time it has taken to develop EMS for a single department in the NCC. Thus, if a staged approach is taken, the employees may be more encouraged by the visible progression and commitment should not be lost through a drawn out process.

Joint Objectives and Targets and Procedures for Overlapping Activities

Both organisations would need to follow the same procedures and work towards the same objectives and targets for common activities to comply with a ‘Joint’ environmental policy. If current practices vary greatly between the organisations, it may be difficult to implement procedures for both organisations to follow, as they may be reluctant to change entire
procedures but react more favourably towards an alteration of current practices to minimise environmental impacts.

Objectives and targets would need to have similar business aims and priorities as the participating organisations for them to be applicable. This maybe a challenge if the companies’ aims contrast greatly.

**Checking and Corrective Action Stage**

**Audit Partners**
When two or more companies are working together, sharing ideas and resources for EMS development, they can also use their knowledge of their systems to audit each other (pers. comm. Singleton, 17.06.03). It is important that the audit team is independent of the processes that they are auditing, but that they have knowledge of those systems. Through working together in the implementation stage they can identify common elements and gain an understanding of each other’s working processes. One option is that each organisation could form an audit team to audit their partner.

A potential barrier to successfully auditing partners operations could occur if the audit is not performed to the partners requirements either through a lack of training, resources, understanding of the organisations operations or the results required. Thus, the boundaries, aims, and results required should be established prior to the audit. If the audit team members selected are employees that already have a good understanding of the partners operations it may aid the success of the audit.

**Report Progress**
Progress should be reported to the central group steering the direction of the ‘Joint’ EMS through set mechanisms. It is likely that both organisations will need to be informed of progress.

**Joint Management Review**
It is important that the functioning of the managerial systems is reviewed to ensure continual effectiveness. Communication and reporting channels and lines of authority need to be suitable to the individual organisations and appropriate to the overall ‘Joint’ EMS.
Develop Improvements Together
The need to develop improvements together was not included in the literature but was identified from the case study research. It is widely recognised that EMS development needs to be a cyclical process to be able to attain continual improvement. Thus, the findings from the audit and management review should be fed back into the development of the EMS and improvements should be made together.

Continuing Actions
Documentation
It is very important that all the relationships and responsibilities between the two organisations are documented so that everybody is clear of their position. Amec advise that it is particularly important to document procedures in case a situation occurs where one member of the partnership becomes liable for a breach of legislation and it is necessary to identify exactly what has occurred and who is responsible (pers. comm. Forrester, 05.06.03).

Relationship Building
For the joint approach to be successful there needs to be an open and secure relationship between the two organisations. It is important that time and effort is put into building a relationship, however, most of the above points made at each stage should aid this. For example, planning and building the system together will require working closely together, communicating openly and lead to development of a trustworthy relationship. Forrester (pers. comm., 05.06.03) informs that successfully developing a ‘Joint’ EMS is “… very much about team working. It depends on what kind of relationship you build.” If there is not a well-developed or open relationship it is likely that there will be mistrust, and it is more likely that there will be gaps in the system, which may lead to failures. This element of a joint approach to environmental management was strongly emphasised by the case studies as key to successful partnering and has been included at every stage of the framework, however, it was not discussed in the literature.

Flexibility, Communication, Trust & Commitment
A primary finding from the case studies was that throughout the whole process of EMS development and implementation it is vital that both organisations be flexible,
communicate regularly, build trust and have commitment to environmental management. These four attributes were greatly emphasised by the interviewees.

Amec suggested that one of the most important things to do when considering a joint approach to EMS development is “…to have the element of flexibility…” (pers. comm. Forrester, 05.06.03). It is necessary to take a flexible approach to EMS development so that it is applicable to both companies.

Forrester (pers. comm., 05.06.03) suggests that one of the biggest barriers to implementing a ‘Joint’ EMS is gaining commitment. Thus, it is very important to bring people on board at an early stage and change their attitude and make them feel a part of the system. This can be aided by building the system together (pers. comm. Forrester, 05.06.03). To gain people’s commitment you need to market the EMS according to whom you are trying to bring on board. Forrester (pers. comm., 05.06.03) advises to “Find ways of talking to people in ways that help them to adjust their attitude” whether it is in terms of financial gains or environmental conservation. This will vary depending on the organisation and the position that the person is working at.

Trust is an equally important element to a ‘Joint’ approach. For the organisations to be able to work together and share responsibility for the EMS there needs to be trust. Communicating openly and honestly at all times and working closely together may aid the development of trust.

Communication itself is a very important aspect of implementing a ‘Joint’ EMS. Although, NCC do not have a ‘Joint’ EMS they work very closely with their partners May Gurney and Mott MacDonald, sharing ideas for EMS development through a separate board that sits between the two partners (pers. comm. Allan, 13.06.03).

Overall, the companies that were interviewed had mixed opinions about the appropriateness of the ‘Joint’ EMS approach. For example, integrating two EMSs together is preferable in Forrester’s (pers. comm., 05.06.03) opinion if the systems are compatible. However, she notes that “it is a very intensive thing to do”. Additionally, it depends on what Amec are contracted to do, it may make sense to keep the systems separate, for example if they have total control of their activities with little interface with the other
people. But if there are overlapping activities with the partner/client then they have to integrate the two systems, or create a whole new system. Often they select the best bits of the two systems and form a hybrid.

NCC are in partnership with Mott MacDonald and May Gurney for road construction. However, there is little overlap between their EMSs. Allan (pers. comm., 13.06.03) commented that there is room for broadening joint working and include environmental management in their partnerships, but was sceptical about implementing a ‘Joint’ EMS across partners when they have many disparate activities. At the moment the ‘Joint’ approach is limited to Mott MacDonald determining the audit schedule for the construction work with NCC, as apart of their quality management system.

The potential barriers and possible solutions that were identified from the case studies have been summarised in table 1. The list of solutions is by no means exhaustive and further research would need to be undertaken to identify a wider range of practical solutions.
Table 1: Summary of barriers and solutions to implementing an effective ‘Joint’ EMS

<table>
<thead>
<tr>
<th>Potential Barriers</th>
<th>Possible Solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Securing adequate resources from both organisations</td>
<td>Document agreements prior to implementing the ‘Joint’ EMS, laying out resource attainment.</td>
</tr>
<tr>
<td>Designing a structure that is compatible with both organisations’ existing structures</td>
<td>Take a flexible approach.</td>
</tr>
<tr>
<td>Creating a ‘Joint’ EMS that is compatible with existing practices in both organisations</td>
<td>Select best elements from the organisations’ exiting systems and form a hybrid, thus, at least some of the practices will be familiar.</td>
</tr>
<tr>
<td>Ensuring compatibility with both organisations’ cultures</td>
<td>Have members of both organisations in all EMS groups to represent the company culture and priorities, and ensure compatibility</td>
</tr>
<tr>
<td>Progression at different speeds</td>
<td>Undertake implementation as a staged process to ensuring that both organisations progress at the same speed.</td>
</tr>
<tr>
<td>Working towards joint objectives and targets for overlapping activities</td>
<td>Ensure that the organisations’ aims and priorities for environmental management are in-line through discussions and awareness raising programmes.</td>
</tr>
<tr>
<td>Design and follow the same procedures for overlapping activities</td>
<td>Co-operate and select the most appropriate procedures that minimise environmental impacts and are suitable for both organisations to follow.</td>
</tr>
<tr>
<td>Complex audit process of large organisations / partnership</td>
<td>Consider conducting several smaller audits based on environmental issues or departments.</td>
</tr>
<tr>
<td>Producing audit results that are useful to the organisations</td>
<td>Define: boundaries; aims; and results required prior to the audit. Select employees that have an understanding of the operations/ departments being audited.</td>
</tr>
</tbody>
</table>
4.2. Application of Results to the N+N Hospital

The general best practice from literature (see figure 2) and from the case studies (see figure 4) was applied to the N+N Hospital to identify the practical barriers and solutions to implementation of an EMS across a PPP. Criteria for the hospital to follow have been developed and are provided below in boxes. Due to the scale of the hospital and time constraints only select areas have been expanded on. These are limited to the more general criteria as there was insufficient time to obtain more detailed information from hospital staff. The members of staff from Serco and the Trust that were interviewed are provided in Appendix 1.

Planning

1. **Commitment**
   1.1. Secure top management commitment from Serco, Trust and Octagon board members
   1.2. Gain commitment from workforce through workshops

**Commitment (Criteria 1.1-1.2)**

Top management of Serco and Trust are committed to environmental improvements. The Trust board wish to implement an EMS, but unlike Serco, they do not specifically desire certification. The Trust and Serco have very different reasons for aspiring to develop an EMS. The Trust has external pressures to perform environmentally, as they have a high profile within the community (NHS Estates, 1992), whereas Serco are a more private company. However, Serco aim to be respectful of their client and perform well on their behalf (pers. comm. Page, 11.03.03).

The Serco managers have to perform in line with the company wide Health and Safety and Environmental Manual. They desire ISO14001 certification as a complimentary system to their ISO9000/2000 quality management system. The main drivers for Serco are to comply with their client’s system and the law under the influence of good business (pers. comm. Page, 11.07.03). The Trust is required to develop an EMS inline with the self assessment tools ‘Controls Assurance for Environmental Management’ and ‘NEAT’ (NHS Environmental Assessment Tool). These are both based upon ISO14001 but do not require the EMS to be certified. The Controls Assurance (CA) is written by the Department of
Health to inform the NHS boards about significant risks within the organisations for which they are responsible. It is intended to assist NHS staff to identify and determine unacceptable levels of risk and to then decide on where best to direct limited resource to reduce those risks (NHS Executive, 1999). ‘NEAT’ is part of a software package of measures, designed by the NHS Estates and DTI, to enable NHS to understand, identify and take action to reduce negative impacts on the environment.

The different drivers for EMS development between the Trust and Serco could potentially lead to differing levels of commitment, which could potentially hinder the ‘Joint’ EMS development. Additionally, different cultures among the workforce may give rise to varied commitment levels between the Trust and Serco.

A random sampling of hospital management and staff across the country by the NHS Estates revealed that motivation within the NHS is high with 69 percent being concerned about the threat to the environment and 68 percent of these being concerned that a more positive response was not being taken by their unit (NHS estates, 1992). 62 percent of this sample of nation wide hospital staff stated that they were committed to environmental preservation. Thus, theoretically NHS staff are generally concerned about their impacts on the environment and should be willing to work towards an EMS. However, this research does not look into issues of increased workload to follow procedures for reducing environmental impacts, but is limited to the staffs’ perception of environmental threat.

Research would need to be undertaken to identify levels of commitment amongst Serco’s catering, porters, cleaning staff etc., to gain an understanding of the baseline level. Once an understanding of current attitudes is gained, training can be planned appropriately, i.e. are the Trust staff more committed to decreasing environmental impacts that Serco and so do the Serco staff need more training?

As of yet no target date has been set for EMS implementation, and so it appears that commitment is not fully behind implementing the EMS. Once a date is set there should be more pressure and incentive to set up the system and put procedures in place.

Thus, before any further work is attempted, commitment to implementing an EMS to achieve real environmental improvements needs to be established between both Trust and
Serco staff from the workforce to top management. Additionally, target dates should be set for each of the stages of implementation, to encourage continuous movement towards the goal of an effective EMS, and to prevent enthusiasm becoming stagnant.

2. Environmental Policy

2.1 The Joint Environmental Policy needs to reflect the priorities and aims of both organisations and so will be distinct from the individual policies

Environmental Policy (Criterion 2.1)

Individual environmental policies for Serco and the Trust have been written. The board members of both parties have agreed upon an additional joint environmental policy. Thus, the board members have shown co-operation and willing to work together on environmental management. These policies should be made available to the entire workforce of both organisations, and an awareness workshop should be carried out to ensure full understanding of the policies and their implications.

3. IER

3.1. Identify areas of overlap between Serco and Trust activities
3.2. Assign and document responsibilities for different activities
3.3. Make sure a comprehensive approach is taken and that all activities are included
3.4. Assess Risk and identify who would be liable if an error occurred during any of the activities
3.5. Allocate resources between Serco and the Trust according to priorities and responsibilities

Overlapping Activities and Objectives & Targets (Criteria 3.1 and 10)

To be able to assign responsibility to different aspects, the boundaries between the activities of each organisation need to be established. Presently, there appears to be confusion about where boundaries of responsibility lie between the Trust and Serco middle management. Mapping out activities and responsibilities will help determine which aspects need to have joint objectives and targets and which can be managed by one organisation. For example, if the activity is solely conducted by one organisation then it is unlikely to be necessary to train or involve the other organisation. However, if the organisations have overlapping activities that have an impact on the environment they will need to work together to reduce that impact. Overlapping activities could include activities that are similar such as office work, or if one organisation’s activities affect the front end of a
process and the other organisation affects the other end, such as purchasing single use items and disposal of those items.

Serco have nine ‘Service Level Agreements’ with the Trust to carry out facilities management within the N+N Hospital, these entail:

- Car Parking
- Maintenance of Building and Engineering Services
- Patient, Non Patient & Retail Catering Services
- Domestic and Portering Services
- Grounds maintenance
- Laundry Services
- Security Services
- Energy and Utilities
- Waste Disposal

These activities have varying overlap with the Trust’s activities, but all have some degree of overlap of ownership as it is the Trust’s facilities that Serco are managing, e.g. disposal of the Trust’s waste, cleaning the Trust’s laundry, managing car parking for the Trust’s staff and patients etc. Thus, any environmental objectives to manage these facilities more efficiently would need to be agreed with the Trust board members first and fit within the remit of the service level specifications set by the Trust. Activities where this minimal level of involvement occurs between the Trust and Serco, where Serco mainly manages the activity without the involvement of Trust workforce, include: grounds maintenance; building engineering; portering services; catering services; and domestic cleaning services (see figure 5).

For example, domestic cleaning is the sole responsibility of Serco. A procedure to reduce the consumption of harsh cleaning chemicals, such as using lightweight microfibre mop heads that are changed after each room reducing the need to dispose of and replenish cleaning solution\(^3\), would be performed by Serco staff. Serco management would have the responsibility to put in pace effective procedures, but would need to check that they comply with the Trust’s requirements.

\(^3\) [www.kppc.org/Publications/Print%20Materials/Healthcare%20Guide/index.cfm](http://www.kppc.org/Publications/Print%20Materials/Healthcare%20Guide/index.cfm) (visited on 02.04.03)
In the case of security and laundry services neither the Trust nor Serco employees perform the work. Instead Serco are given the responsibility for subcontracting out the services. Thus, objectives to decrease environmental impacts of these activities would need to be stipulated in the criteria used by Serco to select subcontractors (pers. comm. Page, 11.07.03). However, if impacts could be reduced before, for example, the laundry was sent off-site to the subcontractor by reducing the amount of laundry in the first place, then the responsibility for setting objectives and procedures would lie with the Trust as it is their staff who handle the laundry before washing (pers. comm. Barber, 19.06.03).

Management of the car parking is under the Serco facilities management contract, however, it is the Trust’s staff and patients who use the car park. The Trust have a “Green Transport Policy” which encourages staff to use public transport and cycle to work, and they have reduced the number of staff car parking spaces to enforce this. The Trust is appointing a new post of ‘Transport Co-ordinator’ who will manage the park and ride, car sharing and cycling schemes (pers. comm. Page, 11.07.03). The boundaries of responsibility over arrangements for car parking seem to be clouded. Serco have a service
level agreement to manage the car parking but the Trust issue parking permits and have schemes to reduce the amount of cars on site. Currently there appears to be a culture of blame between Serco and the Trust, where they are blaming each other for parking problems. If responsibilities were more clearly defined then it would not be so easy to blame each other for failures, as it would be clear who should be managing each aspect.

Activities that are jointly managed and undertaken are waste disposal and energy and utilities management. Waste disposal requires the co-operation of both Serco and Trust staff to follow joint procedures. Without the co-operation of the Trust staff to place the waste in the correct bins for the Serco staff to remove and then Serco’s subcontractors to dispose of, negative environmental impacts are likely to occur. Thus, all of the cleaning, medical, office and other facilities staff need to follow the same procedures for waste segregation for disposal, and aim for the same targets.

Energy and Utilities is controlled centrally by the Serco manager via a computer system. Thus, there is little involvement of the workforce and an objective to reduce consumption would mainly require the co-operation of the manager (pers. comm. Barnes, 19.06.03). However, some measures could be taken by office workers, such as turning off computers/monitors when not in use. The Trust’s Energy Advisor who is effectively a contractor working for the Trust, works in conjunction with the Serco manager when selecting resources and deciding on energy efficiency measures.

Special waste is dealt with mainly by the Trust, but Serco deal with the end disposal and so consultation would be needed to reduce impacts. Procedures to reduce the environmental impact from the medical services would be the sole responsibility of the Trust. For example, an evaluation of processes for substitution of long-lived isotopes with short-lived isotopes (such as iridium-192 or cesium-137 in place of radium-266) would be conducted solely by the Trust\(^4\).

The Trust and Serco share some procurement contracts, but most supplies are independently sort. The Trust has utilities contracts through the Purchasing and Supply Agency (PASA). Serco has a smaller approach to purchasing for items such as detergents

for domestic cleaning services. Serco utilise the Trust’s supply links where possible, as they are a cheaper source, for example for paper products and for domestic services. There is not a joint a purchasing policy. However, it would be possible for Serco to adopt the Trust’s policy or to develop joint criteria for selecting suppliers (pers. comm. Page, 11.07.03).

Strategic Management Structure at the N+N Hospital (Criterion 4.1)

The structure for EMS implementation can be seen in figure 6. The terms of reference have only recently been formally recognised for the Joint Environmental Strategy Group (pers. comm. Page, 11.07.0), so the hospital is still at the early stages of establishing the environmental management structure. It is advisable that an environmental co-ordinator be appointed to oversee the EMS development between the two organisations. However, it is important to delegate environmental responsibilities and decision-making through the Joint Environmental Strategy Group with representatives from all departments of both organisations. It is important that members from both organisations are included in all EMS groups formed to represent their companies’ culture and priorities and ensure that all systems designed for the ‘Joint’ EMS are compatible with their organisation’s.

Currently reporting of progress is primarily to the Trust Board, but little is reported to the Serco Board. Reporting should potentially be made to the Serco Board inline with the Trust Board to encourage higher priority for environmental issues. It is possible that a steering committee could be formed, with top management from both organisations, to guide the direction of the continual improvement within the EMS, and to ensure that aims of both organisations are met.

<table>
<thead>
<tr>
<th>4.</th>
<th>Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1</td>
<td>Set up a clear structure for development and implementation with environmental working group and steering committee and audit groups including members from both organisations</td>
</tr>
<tr>
<td>4.2</td>
<td>Identify and document communication + reporting channels and authorities</td>
</tr>
</tbody>
</table>
The relationship between Serco and the Trust has improved over the time they have been working together. However, there is still a certain amount of mistrust amongst the Trust staff of Serco. There used to be an “us and them” culture despite the fact that the NHS Trust previously employed key members of Serco middle management (pers. comm. Barber, 19.06.03). Several members of the Trust and Serco middle management have been colleges for half a dozen years or more and so relationships are well developed at this level. But the medical staff appear to be more suspicious of Serco, for example, the Sisters have commented that they are not interested in segregating waste because they think that Serco only enforce procedures as a money saving mechanism (pers. comm. Barber, 19.06.03). Thus, Serco need to work hard to shed the image of a profit seeking private company, and push forward environmental protection measures and explain to the Trust
staff why these procedures need to be adhered to. Thus, the middle management relationships are well formed, but this needs to be extended to the rest of the workforce.

This may be aided by including the Trust ground staff in planning and developing the EMS. Thus, they can give practical suggestions and gain an understanding of reasons for implementing EMS. It is also important that all communication between the Trust and Serco is open and honest. Constructive discussions could lead to an insight into the partner’s opinions and the reasoning for their attitudes. An important function of consultation is to challenge institutional assumptions (Hurt & Wynne, 2000). Appropriate communication should aid better understanding and resolution of any conflict between the partners or between the workforce and management (Pidgeon et al, 1992).

**Implementation and Operation**

<table>
<thead>
<tr>
<th></th>
<th>Responsibilities</th>
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<tbody>
<tr>
<td>7.</td>
<td>Share responsibilities for implementation and operation between Serco and the Trust</td>
</tr>
<tr>
<td>8.</td>
<td>Commitment</td>
</tr>
<tr>
<td>8.1</td>
<td>Reinforce commitment and workforce cooperation</td>
</tr>
<tr>
<td>8.2</td>
<td>Build system together step by step, including the workforce in decision-making processes to encourage ownership of the EMS</td>
</tr>
<tr>
<td>9.</td>
<td>Training</td>
</tr>
<tr>
<td>9.1</td>
<td>Training for all levels from top management down to the shop floor. Training sessions should be undertaken with Serco and Trust staff together so that everyone receives the same message and to build trust and openness between the partners</td>
</tr>
</tbody>
</table>

**Training (Criterion 9)**

Training on the aims of EMS and continual improvement needs to be provided for the entire workforce, so that everyone is involved and understands the reasoning behind certain procedures. If undertaken comprehensively, training could potentially increase cooperation from staff and improve the attitudes towards environmental management and the PPP.

Specific training for staff whose work influences identified environmental aspects should be undertaken. Where these aspects are affected by both organisations, training should be undertaken together so that employees see how their activities affect the system as a whole.
and to convey that the Trust and Serco employees need to work together to reduce impacts. Learning together may also help develop the relationship between Serco and the Trust.

### 10. Objectives and Targets

10.1. Joint objectives and targets and procedures for overlapping activities to be set by joint environmental strategy group, agreed with board members, and understood by all staff

Joint Objectives and Targets (Criterion 10)

For all activities that overlap (see criteria 3.1) objectives and targets for reduction of environmental impacts should be agreed by both organisations and communicated to all employees that are affected within both organisations.

The NHS has a five-year plan to minimise waste (pers. comm. Barber, 19.06.03). Both Serco and the Trust influence the level of waste produced and so they would need to work together towards joint objectives and targets to minimise waste. Twelve months ago a breach of duty of care occurred when clinical waste from the N+N Hospital was sent to landfill with the domestic waste (pers. comm. Barber, 19.06.03). The Environment Agency agreed not to press charges so long as a repeat incident did not occur. Since this incident a tag system has been introduced to monitor the segregation practices. Two workers are employed to inspect all the domestic waste that leaves the site and they are currently recording several incidents everyday of incorrectly segregated clinical waste. To overcome problems of waste segregation joint training has been carried out for both Trust and Serco employees. However, there are still attitude problems, with staff complaining that they do not have time to put clinical and domestic waste in separate bins. This is reportedly a particular problem with doctors (pers. comm. Barber, 19.06.03).

Serco set a target to reduce annual clinical waste to 800 tonnes, and succeeded by reducing it to 600 tonnes by minimising the amount of domestic waste being incorrectly put in clinical waste bins. This aim to reduce the clinical waste stream could amplify the perception that Serco are mainly concerned about reducing costs instead of environmental impacts, because this target could potentially lead to an increase of clinical waste entering the domestic waste stream. If there were a higher priority on ensuring that clinical waste be meticulously segregated, even if this leads to staff being over precautious and increasing the clinical waste levels by disposing of domestic waste in the clinical bins, then
environmental issues would be placed higher than financial gain. Objective and targets need to have a clear environmental reasoning behind them for staff to want to work towards them.

An example of a target to improve waste segregation could be the following: To halve the amount of incorrectly segregated clinical in domestic waste within six months. To meet this target monitoring of domestic waste before it is sent to landfill would need to continue. Intensive training of both the Trust and Serco staff would be needed along with awareness raising exercises of the importance of segregation and legal compliance. Additionally, training of Serco cleaners and porter to ensure that segregated waste is handled correctly to prevent contamination of waste streams, would also be required.

A target to meet the objective of a reduction in resource consumption could be set as: Reduce energy consumption by 10 percent within one month. This would be relatively simple to do with the centrally controlled computer system. Additional training of Trust and Serco staff could be undertaken along with notices placed around offices to encourage computers/ monitors to be switched off when not in use.

A similar problem of skewed priorities occurs in energy management, as with waste. The Trust’s Energy Advisor commented that there is plenty of scope for conserving energy consumption, for example, reduction of lighting (pers. comm. Graves, 19.06.03). However, because Serco only manage the building on the Trust’s behalf but do not pay the running costs, they do not receive financial repercussions of increased or decreased resource consumption. Serco are reluctant to reduce energy consumption, unless the Trust share the financial benefits of doing so (pers. comm. Graves, 19.06.03).

It is this financial emphasis, rather than environmental, that has been observed by the Trust employees and dampens aspirations to follow Serco’s ‘environmental’ procedures. Therefore, if joint objectives and targets are to be set and followed by both organisations, there needs to be clear environmental reasoning. Support from both the Trust board (who may be seen as more trust worthy to the Trust staff) and Serco board would also be advantageous.
Monitoring and Auditing (criteria 11)

Neither the Trust nor Serco has set up an EMS auditing yet. The Trust have a monitoring team to ensure health and safety requirements are followed, and the Serco waste manager conducts regular checks to ensure that all bins are correctly placed and that segregation of waste is occurring.

If Trust and Serco audit teams were formed to audit their partners’ activities (as suggested from the case studies) an objective approach may be taken. However, if the Trust were to be audited by a ‘Serco Audit team’ it may not be very successful if there is mistrust and unwillingness to co-operate with Serco amongst the Trust workforce. For this joint auditing approach to be successful at the N + N Hospital, much work would need to be done to build the relationship and trust levels between the partners. If full trust is not gained then it may be preferable to have totally independent, external auditors.

Presently, the Trust’s and Serco’s monitoring efforts are exclusive and apply to their own activities irrespective of their partners’. For example, air emissions from the Trust’s lab work are not monitored by the Trust, or by Serco on their behalf. The Trust does not believe these emissions to be high enough to be of concern, and because it is not in Serco’s contract they are not interested in the Trust’s chemical use. There is no liasing between Serco and the Trust on the air emissions despite the fact that Serco’s facility provision

### Checking and Corrective Action

#### 11. Auditing
11.1. Form two audit teams. The ‘Trust Audit Team’ should audit Serco and the ‘Serco Audit Team’ should audit the Trust. Thus, the audit teams will be independent and objective but have an understanding of processes being audited.
11.2. Define the boundaries of each audit
11.3. Support is needed from senior management to ensure results feed back into the planning stage of the continuous cycle
11.4. Staff participation from both partners is essential
11.5. Audit Teams should report progress to the environmental strategy group, who will report to the board members

#### 12. Management Review
12.1. Management review to ensure system is suitable for both partners

#### 13. Corrective Actions
13.1. Develop improvements together
included air conditioning. Similarly, Serco has the responsibility to manage water discharges, but there is no mechanism in place to control chemical waste (pers. comm. Barnes, 19.06.03). The only control that occurs is through training staff not to put chemicals down the drains. However, this is not a failsafe method as can be seen with the failure of staff to segregate solid waste. The disposal of chemicals from labs is not monitored. Thus, the Trust and Serco may benefit from utilizing some form of audit, which evaluates all the activities in context of each other.

One of the overall benefits of implementing a ‘Joint’ EMS at the N+N Hospital are that most processes need to be agreed with the Trust board members anyway, so there is already managerial involvement. It may be more practical to take a ‘Semi-Joint’ approach with less involvement of partners for disparate activities. Gaining commitment and trust from the workforce may be the main stumbling block. However, if awareness of the EMS is created and the importance of measures to decrease environmental impacts is raised, more respect maybe given towards ‘Joint’ procedures and targets. This is unlikely to be achieved if management continue to set objectives and targets on a financial basis. To achieve the staff’s trust and commitment a strong environmental emphasis needs to be adopted. The practicality of many of the issues discussed above may only be identified through application.
5. Conclusions

This research has considered the theoretical and practical implications of a ‘Joint’ EMS for organisations working in partnership. There is limited literature available on the subject and thus it is a relatively unconsidered approach to EMS implementation, with plenty of scope for further research. Barriers and solutions were identified from research into current practice in industry and from application of the generic framework to the Norfolk and Norwich Hospital PPP. These barriers include: compatibility with existing structures, practices and cultures of both organisations; and designing joint policy, objectives and targets, and procedures that are applicable to both organisations.

Further research would need to be conducted and pilot studies undertaken to see how successful this framework would be when applied in full. Results from the case study research revealed that several forms of this ‘Joint’ EMS approach have been developed in industry. Various degrees of a joint approach have been developed from sharing information and procedures to working together entirely on a fully integrated EMS. One of the most apparent results was that the basis of whether a ‘Joint’ EMS would be more effective than two separate EMSs with varying degrees of overlap has to be determined on a case-by-case basis, as every situation and partnership relationship is unique.

Research at the N+N Hospital revealed that there are many areas of overlap between the NHS Trust and Serco their facilities managers and it may be preferable to have joint objects and procedures for these areas. However, there are many activities that are conducted independently where there are few apparent benefits to be gained from taking a joint approach. Additionally, areas where overlaps occur there appear to be several potential barriers, such as the need to build a relationship and develop trust. The barriers may occur to the extent that they are counter-productive and outweigh the benefits to be gained. Such as, different cultures of private and public sectors; disparate management structures and daily procedures; differing priorities and drivers for environmental management potentially causing differences in commitment; the need to develop trust between the two partners; and the need to take a flexible approach to make the ‘Joint’ EMS applicable to both organisations.
Despite these barriers a ‘Joint’ EMS is still worth considering by the Trust and Serco as it may reduce duplication and increase efficiency. However, it is likely that a ‘Semi-Joint’ approach may be taken up as the Trust and Serco perform many disparate activities which require little involvement from their partners. The barriers that would need to be overcome to ensure effective joint environmental management would also aid the PPP general working and should probably be aimed for anyway to improve the services delivered throughout the life span of their contract.

This ‘Joint’ EMS is applicable to a variety of partnerships and could potentially aid efficiency amongst many organisations working together. For example, when companies share risk and conduct the same work on the same site e.g. construction companies building the new UCL Hospital, through to clients subcontracting elements of their work e.g. facilities management or IT services. The practicality of this approach is worth researching further as PPP are being encouraged by the government and so are becoming more common. However, it likely that a ‘Semi-Joint’ EMS may be applicable to more situations as it is more common for organisations to have only a few areas of overlap, than for two companies to work together and conduct the same activities on the same site.
References


Appendix

1. List of Interviewees

Case Studies from Industry

<table>
<thead>
<tr>
<th>Company</th>
<th>Interviewee</th>
<th>Position of Interviewee</th>
<th>Date Interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amec</td>
<td>Linzie Forrester</td>
<td>Corporate Environmental Advisor</td>
<td>5th June 2003</td>
</tr>
<tr>
<td>EcoTech</td>
<td>Simon Best</td>
<td>Supplier Support Scheme Project Manager</td>
<td>12th June 2003</td>
</tr>
<tr>
<td>Norfolk County Council</td>
<td>Dominic Allan</td>
<td>Agenda 21 Officer</td>
<td>13th June 2003</td>
</tr>
<tr>
<td>Mott MacDonald</td>
<td>Andy Singleton</td>
<td>Thales Group Project Manager</td>
<td>17th June 2003</td>
</tr>
</tbody>
</table>

The N+N Hospital Case Study

<table>
<thead>
<tr>
<th>Company</th>
<th>Interviewee</th>
<th>Position of Interviewee</th>
<th>Date Interviewed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serco</td>
<td>Mark Page</td>
<td>Health and Safety Manager</td>
<td>11th March 2003</td>
</tr>
<tr>
<td>Serco</td>
<td>Mark Page</td>
<td>Health and Safety Manager</td>
<td>16th June 2003</td>
</tr>
<tr>
<td>Serco</td>
<td>Gerry Barber</td>
<td>Waste and Laundry Services</td>
<td>19th June 2003</td>
</tr>
<tr>
<td>Serco</td>
<td>Andy Barnes</td>
<td>Utilities and Controls Manager</td>
<td>19th June 2003</td>
</tr>
<tr>
<td>NHS Trust</td>
<td>Jim Graves</td>
<td>Energy Advisor</td>
<td>19th June 2003</td>
</tr>
<tr>
<td>Serco</td>
<td>Mark Page</td>
<td>Health and Safety Manager</td>
<td>11th July 2003</td>
</tr>
</tbody>
</table>
2. Semi-Structured Interview Plan for Case Studies

**Introduction:**

Thank you very much for taking the time to meet me today.

I am conducting research to identify best practice in implementing an effective environmental management system between organisations and their major subcontractor or their partners. Once I have identified best practice, from case studies such as you, I will develop criteria for EMS implementation for the NHS Trust, at the Norfolk and Norwich Hospital, and their facilities managers Serco.

May I record the interview?

**Main Questions:**

What is your position at …?
Does the organisation have a certified EMS?
How long have you had this?
Do you have a supply chain management programme?
Who are the major service providers?
Is the organisation in partnership with any other organisations?
Do they provide services primarily on site?
What level of partnering occurs?
Are elements of the EMS shared between partners (or clients/subcontractors)?
What are the boundaries of the EMS between the organisations?
How is responsibility for the EMS and its various components shared?
What do you think are the barriers to implementing a successful joint EMS?

**Cool Off Questions:**

How large is the organisation e.g. how many employees?

**Closure:**

Thank you
If I have any further questions is it possible for me to email you?
3. Semi-Structured Interview Plan for The Trust and Serco

Introduction:

Thank you very much for taking the time to meet me today.

I am conducting research to identify best practice in implementing an effective environmental management system across Public private Partnerships. I am interviewing members of the Trust and Serco to identify current practices in environmental management and the potential for implementing a ‘Joint’ EMS.

May I record the interview?

Main Questions:

What is your role within Serco/ Trust?
Is there an equivalent position in Serco/ Trust?
How do your roles interact?
What are the boundaries of responsibility between Serco and Trust within the your department?
What are the reporting, communication and documentation mechanisms in place?
Are these shared with Serco/ Trust?
What training do the workforce undertake?
Is this done in conjunction with Serco/ Trust staff?
Would it be possible for Serco and Trust staff to aim towards the same Objectives and Targets?
Would it be possible for Serco and Trust staff to perform the same procedures for overlapping activities?
What mechanisms have been used to reduce environmental impacts?
Do Serco and the Trust communicate when making decisions about these procedures?
What auditing is undertaken?
Do you have a joint environmental policy for your area (e.g. waste, energy etc.)

Cool Off Questions

Closure:

Thank you
If I have any further questions is it possible for me to email you?