

BAE Systems PLC

BAE Waterlooville

**Framework Site Waste Management
Plan**

Project Ref: 26365

June 2012

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Project Name: BAE Waterlooville
Project Ref: 26365
Report Title: Framework Site Waste Management Plan
Date: June 2012

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Revision	Date	Description	Prepared	Reviewed	Approved
00	15/06/2012	Planning Submission	SB	MW	MW

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1 Introduction

1.1 Background

- 1.1.1** Peter Brett Associates LLP (PBA) has been commissioned by BAE Systems PLC to prepare a Framework Site Waste Management Plan in relation to their proposed redevelopment of their Waterlooville site.
- 1.1.2** The Site Waste Management Plan Regulations (2008) currently require a Site Waste Management Plan (SWMP) to be prepared for significant construction projects
- 1.1.3** A SWMP is ideally prepared at the commencement of the construction process when key roles and responsibilities on the project are known, along with key construction process and arrangements for waste minimisation and management.
- 1.1.4** The Coalition Government, in its March 2012 review of environmental 'red tape', announced the intention to revoke the SWMP Regulations as soon as possible, which could be in the autumn of 2012.
- 1.1.5** This Framework Site Waste Management Plan (FSWMP) has therefore been prepared to document the overarching approach to waste management to be adopted during construction which can then be refined as the project progresses to construction. The strategy has been prepared to be consistent with the SWMP Regulations should they remain in force or, should they have been revoked in advance of the commencement of construction, a best practice strategy for sustainable waste management.

1.2 Proposed Development

- 1.2.1** The BAE Systems Technology Park is located within the Brambles Farm Industrial Estate on the western edge of Waterlooville. The whole complex covers 5.6 hectares (ha); however, the planning application boundary only encompasses approximately 4.4 ha.
- 1.2.2** BAE Systems is seeking outline planning permission to redevelop the site with the following mix of uses:
- Buildings for Class B uses in the western part of the site (around 8,500m² of floor area);
 - A 60-bedroom hotel at the east of the site;
 - A restaurant in the south-east of the site;
 - A restaurant with drive-through facility in the north-east of the development;
 - A car showroom and forecourt to the east of the access from Elettra Avenue from the north; and
 - Associated access and parking provisions.

1.2.3 It is estimated that the development of the site will provide 265 new permanent jobs, along with temporary construction employment.

1.2.4 The layout of the proposed development is provided in **Appendix A**.

1.3 Purpose of this FSWMP

1.3.1 In accordance with the requirements of the SWMP Regulations 2008, as currently in force, it is considered that this project will require a SWMP. The project is not considered to be "exempt" as the construction value is estimated to be above the £300,000 threshold for which a SWMP is required.

1.3.2 This FSWMP has been prepared to demonstrate to Havant Borough Council (HBC; the local planning authority) the overall approach to site waste management during the construction of the proposed development. This is based on the level of information available at the time of preparing the FSWMP.

1.3.3 The FSWMP will be progressed, as the project progresses, to a formal SWMP (in accordance with legal requirements at the time) that will set out in detail the waste management arrangements and will be prepared prior to the commencement of construction.

1.4 Peter Brett Associates LLP

1.4.1 This FSWMP has been developed by PBA. PBA is a licensed Waste Broker as defined by the Waste Management Regulations 2006 – Certificate number EAN/957491/B. PBA provides a full range of waste management services and in particular they include:

- Asbestos management;
- Waste audits and due diligence;
- Waste management strategies for planning submission and local authorities;
- Waste management plans for developers, local authorities and businesses; and
- Waste transport assessment for road, rail, sea and canals.

1.4.2 PBA also provide staff that are certified as a "Qualified Person" as outlined in the CL:AIRE "Definition of waste, code of practice"¹.

¹ http://www.claire.co.uk/index.php?option=com_content&task=view&id=149&Itemid=28

2 Policy Context

2.1 Introduction

- 2.1.1 A review of relevant waste management legislation and policy has been undertaken, including international, national, regional and local waste strategies and plans. These policies and legislation should be considered throughout the project to ensure that the project complies with relevant legislation.

International and European Policy:

- EU Waste Framework Directive;
- EU Waste Catalogue;
- EU Landfill Directive;

UK Legislation:

- Environmental Protection Act 1990 Part II - Controlled Waste and the Duty of Care;
- Environmental Protection Regulations 1991;
- Waste Management Licensing Regulations 1994;
- Landfill Tax Regulations 1996;
- Aggregates Levy 2002;
- Landfill Regulations 2002;
- Anti Social Behaviour Act 2003;
- Clean Neighbourhoods and Environment Act 2005;
- Hazardous Waste Regulations 2005;
- Environmental Permitting 2008;
- Waste Electrical & Electronic Equipment Regulations 2006;
- Waste Management Regulations 2006;
- Planning and Compulsory Purchase Act 2004;
- Town and Country Planning Regulations 2004;
- UK Sustainable Development Strategy 2005; and

- National Waste Strategy 2007.

National Policy and Guidance:

- National Waste Management Strategy 2000; and
- National Planning Policy Framework (2012).

2.2 Local Policy

South East

- 2.2.1** The Coalition Government has made very clear its intention to revoke the Regional Spatial Strategies and this will occur once the necessary environmental and sustainability assessments have been completed. As a result the RSS has little weight in the planning system.

Hampshire County Council

- 2.2.2** The Hampshire Minerals and Waste Core Strategy was adopted in 2007. As well as providing a development plan document for the planning of waste management and mineral facilities, the document also requires sustainable waste management. This includes managing waste close to its point of production and in accordance with the waste hierarchy.
- 2.2.3** Policy S1 Sustainable Design, Construction and Demolition states that *"New built development should facilitate the efficient use of resources through... Construction and demolition methods that minimise waste production and re-use/recycle materials, as far as practicable on-site."*

Havant Borough Council

- 2.2.4** Havant Borough Council's Core Strategy was adopted in March 2011 and is the most significant document in the Local Development Framework. The Core Strategy sets the overall framework for development in the borough.
- 2.2.5** The Core Strategy includes Policy CS14 Efficient Use of Resources. This identifies various requirements to enhance the sustainability of development, including the efficient use of materials. The policy also requires major non-residential developments should achieve a 'very good' rating under BREEAM.
- 2.2.6** The Core Strategy also states that "Waste is a major issue for our sub-region as the landfill sites are exhausted." Reference is therefore made to Site Waste Management Plans as a tool to minimise waste from construction.

3 Responsibilities

The Client

- 3.1.1 Overall responsibility for waste management, in the context of the SWMP Regulations, lies with the client. Currently the client is BAE Systems. It is likely that the development will be constructed in phases, which gives the potentiation for different clients being responsible for different phases of the development. If appropriate therefore the client for each phase will therefore have overall responsibility for waste management on that phase.
- 3.1.2 The client should make sure that all contractors engaged in a particular phase have an obligation to reduce the quantity of construction waste likely to be produced.

The Architect & Design Team

- 3.1.3 The proposed development is at the outline planning and masterplan stage. There has therefore been little potential to design waste out of the proposed development.
- 3.1.4 As each phase of the development progresses to detailed design, the architects and engineers should consider how the design of the development can minimise waste during construction and operation. This will include the potential for demolition materials to be re-used on the site or in the local area.
- 3.1.5 Detailed estimates of material specification and purchase volumes should be undertaken under responsibility of the quantity surveyor to ensure reduction of waste from over ordering and incorrect ordering.

Materials Procurement Manager

- 3.1.6 The materials procurement manager for each phase should take responsibility for defining materials for purchase that contain recycled content, have low or no packaging and for purchasing materials from those suppliers that have a "buy-back" strategy for unused materials, where possible, or use returnable packaging. If possible contracts should be set up to all just in time deliveries and where materials are delivered damaged that they are returned to source. All material suppliers should where possible have certified environmental standards.
- 3.1.7 The materials procurement manager should also take responsibility for assigning appropriate waste management contractors, ensuring they are suitably licensed and approved and that they are aware of, and in compliance with their duty of care obligations.

The Principal Contractor

- 3.1.8 It is likely that a Principal Contractor will be appointed for each phase of the development.
- 3.1.9 The Principal Contractor will be charged with responsibility for management and co-ordination of all waste streams during development. This will involve responsibility for the

waste segregation, storage and collection regime on-site, ensuring all sub-contractors are aware of the waste management arrangements. The responsibility for all waste issues lies with the Principal Contractor including (but not exclusively). It is important that all waste management documentation is recorded and monitored appropriately in line with waste management and duty of care regulations in place at the time of construction. This should be managed by the Principal Contractor, and updated on a regular basis and verified at the end of the project.

- 3.1.10** The Principal Contractor should control matters such as waste disposal and chain of custody documentation. The Principal Contractor, waste transfer company and the receiving waste disposal site will be fully responsible for waste classification and retain legal responsibilities for fulfilling waste management duty of care requirements and ensuring that waste is deposited lawfully. Waste arisings for off-site disposal or any other discarded materials require classification as 'Directive Waste'.
- 3.1.11** The Principal Contractor should that all employees and subcontract staff are provided with appropriate training (e.g., tool box talks) so that everyone understands the waste management arrangements.

Sub-contractors

- 3.1.12** Sub-contractors are responsible for compliance with the waste management arrangements enshrined by the Principal Contractor, for adoption of good practice in waste management and efficient materials storage and use.

4 Waste Management

4.1 Construction Materials

- 4.1.1** On a typical construction site 15-20% of new materials brought on to that site become waste without having been used. This wastage can be due to a number of factors and includes the following: packaging, materials damaged on arrival, damage due to methods of work, vandalism, off-cuts, rework due to errors, design information problems, excess materials, decayed materials, adverse weather, etc. The Principal Contractor and sub-consultants will adopt procedures to manage these potential sources of waste materials.
- 4.1.2** The BRE has compiled benchmark data on typical construction waste volumes² and the likely percentage of wastage (Waste Rate) of certain materials entering a building site in their Green Guide Materials Handbook³. For example it is considered that 5% of all building blocks brought onto site will be wasted due to poor material management.
- 4.1.3** These benchmark figures have been applied to the proposed development to identify the potential construction waste arisings, see **Table 4.1**. The estimated volume of waste likely to be generated during construction has been split into likely volumes based, see **Table 4.2**.

Table 4.1 Estimated Construction Waste Arisings

	Floorspace (m ²)	Average Waste (m ³ /100m ²)	Estimated Waste (m ³)
Industrial Units	8,588	14	1,202
Hotel	2,265	23.8	539
Car Show Room	930	22.1	206
Restaurants	890	15.6	139
TOTAL			2,086

Table 4.2 Estimated Construction Waste Composition

Material	Typical Composition (%) ⁶	Volume (m ³)	Weight (tonnes)
Timber	19	396	198
Concrete	6	125	275
Non-recycled Inert	11	229	441
Ceramic	3	63	100
Insulation	3	63	2
Plastic	13	271	326
Packaging	25	521	444
Metal	3	63	329
Plaster and Cement	3	63	56
Miscellaneous	14	292	248
TOTAL	100	2,086	2,419

- 4.1.4** The above tables have identified that the construction of the proposed development is likely to generate 2,086m³ or 2,419 tonnes of waste
- 4.1.5** The above estimations do not include waste that would be generated by the demolition of the existing buildings. The quantity of such waste will be heavily dependent on the extent to

² http://www.smartwaste.co.uk/filelibrary/benchmarks%20data/Waste_Benchmarks_for_new_build_projects_by_project_type_30_November_2011.pdf

³ <http://www.bre.co.uk/greenguide/files/SiteWastageRatesForIndustryConsultation.xls>

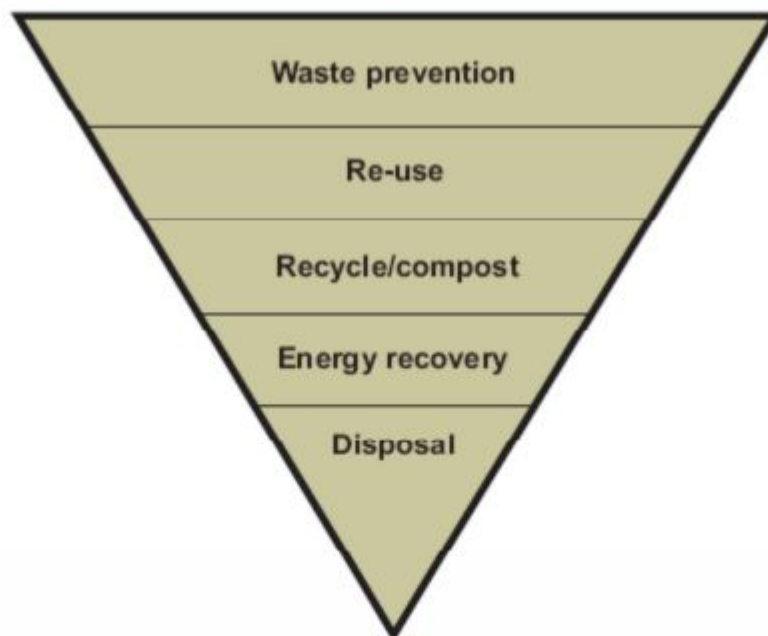
which such materials can be re-used or recycled. The relevant principal contractor will be responsible for undertaking an audit of likely construction materials prior to demolition and this should be reported in SWMP prior to the commencement of demolition, along with how such materials are to be managed in accordance with the waste hierarchy.

- 4.1.6** Given the nature of the site there is limited potential for the generation of waste due to earthworks and the provision of infrastructure. Again such wastes should be considered by the relevant principal contractor, with likely volumes and the management strategy should be reported in the SWMP.

4.2 Waste Management Options

- 4.2.1** The waste hierarchy is a concept that encourages the management and reduction of waste material. The aim is to recover the maximum value from projects by reducing financial losses through material loss during construction. The waste hierarchy is a complex process influenced by the optimal management of any given product/waste, for example it may be more sustainable to recycle materials on site than to be reused site or disposed of through a local land reclamation site than transported further afield for recycling. A basic representation of the waste hierarchy is provided below in **Figure 1**.

Figure 1: Waste Hierarchy



4.2.2 A hierarchy of waste management shall be adopted for each phase construction. The hierarchy in order of merit are:

- Waste Prevention – through good design and procurement mechanisms.
- Material Reuse– to use materials in their current state and form (for example removing all doors and using them in new buildings). This can be on-site or off-site.
- Material Recycling by using materials won on site and recycling them into an alternative form that can be used for any construction purposes (for example crushing concrete for hardstanding). By recycling on site carbon emissions are reduced from taking materials away from the development.
- Energy Recover – using waste materials as a fuel within an Energy from Waste plant to capture the energy from waste materials and minimise the volume of material going to landfill.
- Disposal – the least preferred option where the waste stream would be subject to a final disposal route such as landfill or incineration. Some waste streams will inevitably end up with such a solution (for example asbestos).

4.2.3 The Principal Contractor, in collaboration with the sub-contractors as appropriate, will review each of the options in the waste hierarchy and assess which materials are suited to each option. This will be undertaken in parallel with a review of local waste management operators at the time of construction such that the logistics of using individual operators can be factored into waste management decisions.

4.2.4 Provisions should be made for segregation of waste on site for example with different skips. The Principal Contractor should appoint a Waste Champion to visually manage the skips, their content, volumes and removal. If materials are taken off site for sorting and recycling a report from the waste management facility used should be commissioned to state where materials were sent and the proportion that was recycled.

4.2.5 Only a small area of the site should be provided for storage of new materials and for waste management and segregation. In the event when hazardous waste is encountered on site or hazardous materials are brought onto site, the waste will be separated and transferred into a secured container and dealt with by a specialist contractor in the appropriate manner.

4.2.6 The use of materials required throughout construction should be evaluated by the appropriate contractor, to avoid future over-ordering. There might be a potential for returning unused materials to the supplier or reusing on another job, and this should be a condition of the principal contractor's contract, as should be the potential for use of secondary or recycled materials in construction wherever possible.

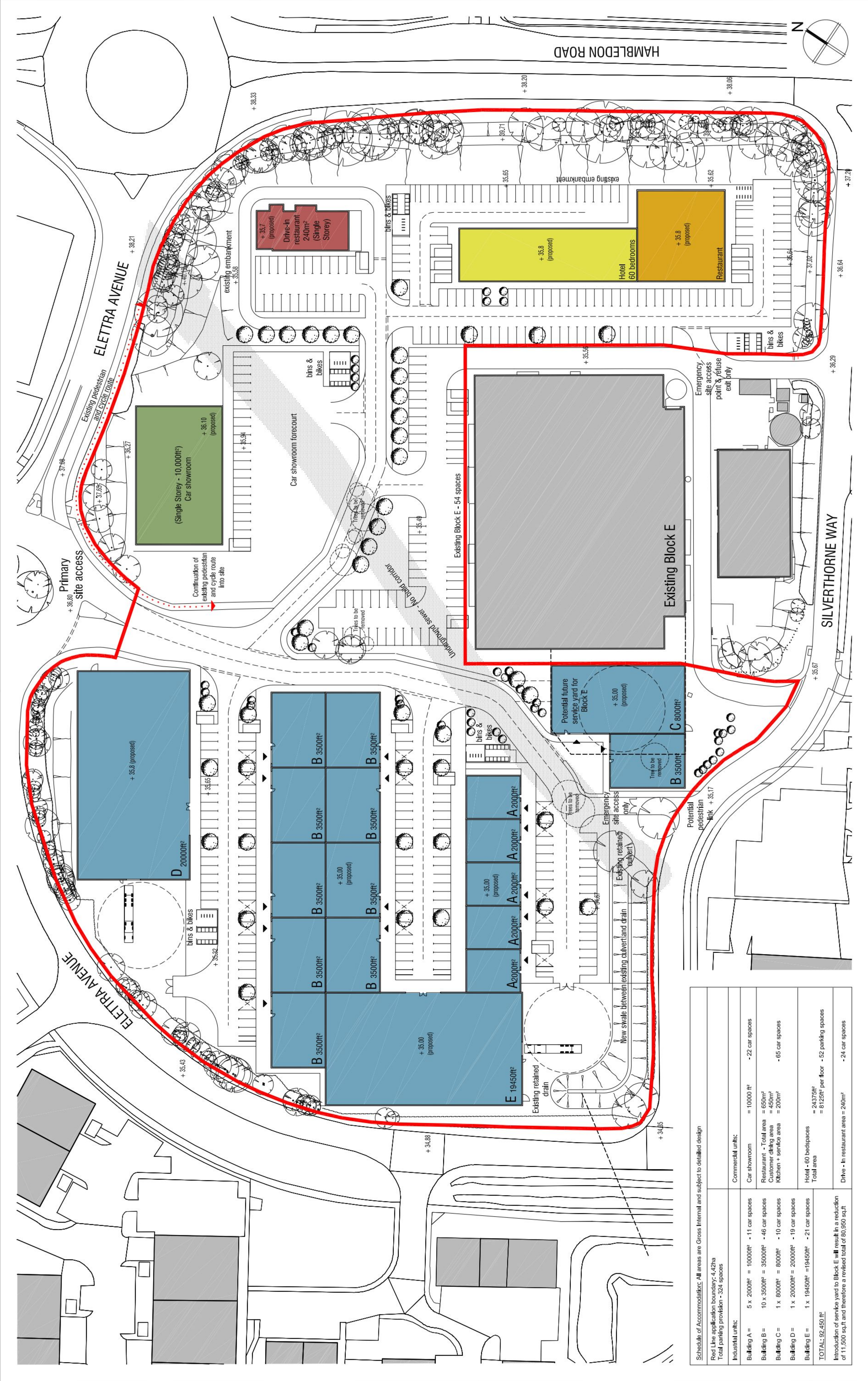
5 Monitoring and Evaluation

- 5.1.1** Monitoring and evaluation is an important tool in driving improved performance and identifying lessons that subsequent phases of the development can learn from.
- 5.1.2** Wastes generated during construction period should be recorded and monitored in accordance with requirements at that time the works are being undertaken. The volume of waste generated (or sent off site) as well as the percentage or volume reused, recycled or landfilled should be recorded for each phase of the development should be recorded. This data will enable stakeholders to review how waste arisings can be reduced in later phases of the development and allow the SWMP to be updated as appropriate.

Appendix A: Site Layout

BAE Waterlooville

Framework Site Waste Management Plan



Schedule of Accommodation: All areas are Gross Internal and subject to detailed design			
Red Line application boundary: 4.42ha Total parking provision - 324 spaces			
Industrial units:	Commercial units:		
Building A = 5 x 2000m² = 10000m²	Car showroom	= 10000 m²	- 22 car spaces
Building B = 10 x 3500m² = 35000m²	Restaurant	= 6500m²	
Building C = 1 x 8000m² = 8000m²	Customer dining area	= 450m²	
Building D = 1 x 2000m² = 2000m²	Kitchen + service area	= 200m²	- 65 car spaces
Building E = 1 x 19450m² = 19450m²	Hotel - 60 bedrooms		
TOTAL: 92,450 m²	Total area	= 24375m² = 8125m² per floor	- 52 parking spaces
Introduction of service yard to Block E will result in a reduction of 11,500 sq.ft and therefore a revised total of 80,950 sq.ft			
	Drive - In restaurant area	= 240m²	- 24 car spaces

THE BAE Waterlooville
Proposed Masterplan

BAE Systems

PROJECT

BAE Waterlooville
Proposed Masterplan

11.074.002

REVISIONS

Rev	Date	Description	By	RM

OUTLINE PLANNING

Scale @ 1:1500
Date: 06 June 2012

Drawn by: CK
Checked by: GS

Author: -
Reviewer: -

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