Material change for
a better environment

Material Logistics Plan

This template has been developed to enable you to prepare, implement and continuously update a Material Logistics Plan (MLP). The template has been designed to be used from project conception through to project close. The main purpose of the plan is to achieve savings in materials use and reduce the production of wastes.

The template provides tasks to complete the seven key steps of the MLP and space to record progress against each task in note form. Each step is supported by the 'Further information and checklist' document (found at the end of this document). The table below displays the contents of the MLP and the corresponding section(s) in the 'Further information and checklist'.

Good site waste management practices will reduce the amount of materials that will end up as waste. Therefore, the project's Site Waste Management Plan (SWMP) should link into the MLP to prevent duplication of effort. Further guidance on SWMP's can be found at www.wrap.org.uk/swmp

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Material Logistics Plan

Project Name, address and location:

Main Contractor:

SECTION 1: RESPONSIBLE PERSONS, TRAINING AND COMMUNICATION

Identify who is responsible for producing and implementing the MLP. Different individuals may be responsible during the various work stages. They must know that they are responsible, what they are responsible for and receive appropriate training or instruction. They must have sufficient authority and senior management support to ensure that others comply with the MLP. See sections 1, 2, 5 and 7 of the 'Further information and checklist'.

1.1. Name and contact details of the nominated logistics coordinator.

1.2. Identify responsible persons for developing and implementing the MLP. Details should include the name, company and contact details of each key person responsible for project timescales, material types and quantities, MLP training or dissemination and waste management at project setup and during design, construction and completion stages.

Name	Company	Contact details	Responsibility

1.3. Detail when the MLP and subsequent revisions will be disseminated to the responsible persons.

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SECTION 2: TRAINING AND COMMUNICATIONS PLAN

Identify key staff that need to be trained in material logistics and the completion / management of the plan and how all trade contractors will be either trained or instructed in the requirements of the MLP. See sections 1 and 6 of the 'Further information and checklist'.

2.1. Describe how key site staff have been / will be trained on the implementation of the MLP.

2.2. Detail the timescales for the training of site staff.

2.3. Detail how sub-contractors are to be trained and informed of the procedures for material delivery scheduling. Include details of the mechanism in place for monitoring sub contractor logistics and any training that takes place.

2.4. Provide evidence of key staff training on MLP e.g. site tool box talks.

SECTION 3: MATERIAL REQUIREMENTS

Identify the types and quantities of materials which will be required at all stages of the work programme and how they will be delivered. The information generated to complete section 2 should be linked to the Site Waste Management Plan (SWMP). The SWMP should detail the procedures for segregating wastes and moving them up the waste hierarchy as well as for their collection and end-use/disposal. See sections 1, 2, 3 and 4 of the 'Further information and checklist'.

3.1. Each responsible person should complete the relevant sections of the following table based on the materials used in the project. The method of delivering the materials impacts on the three key reasons for generation of design waste (i.e. off cuts), construction process waste and wastage (i.e. over-ordering, design and programme change, and damage). Justifications for contingency / wastage should include expected levels of wastage through actual use, accidental damage etc. Please duplicate the table for each person / work programme stage as required.

Completed By:									
Project Stage	**Expected construction period**	**Material**	**Quantity**	**Delivery method**	**Delivery timings**	**Design waste (i.e. off cuts) %**	**Construction process wastage %[1]**	**Justification of design & process wastage**	**Supply route**
Example Erection of Structure	*Example Jun 09 – Sept 09*	*Example Steel Frame*	*Example 732kg*	*Example Phased delivery to meet project programme. Open flat bed-lorry, crane needed to unload.*	*Example 3 call-off loads 4 May 09 6 Jun 09 4 Aug 09*	*Example 5%*	*Example 5%*	*Example Based on last project of similar design and size where design and construction process waste was between 5 – 10%*	*Example Direct from Manufacturers - Robinson Construction*

[1] *Quantities and types of materials that will end up as waste will be identified as part of the SWMP. This information will be gathered and managed by the site waste manager or waste champion for the project. It is important to ensure that the data obtained in the development of the SWMP feeds into the MLP.*

Key Performance Indicators (KPIs) are derived from baseline project data and are required to monitor the programme performance of material wastage, against the information supplied in Q 2.1. In the table below, KPIs are listed for key materials and their respective performance area and the baseline value of the KPI. An example is included.

KPI	Project element affected	Baseline KPI value (current or expected value)	Comments
Example *Level of wastage of aggregates*	*Example* *All build stages*	*Example* *5% of total ordered*	*Example* *Develop and implement methods to accurately monitor actual wastage*
Insert more rows as necessary			

3.3. When available, evaluate the detailed design to confirm that the materials requirements described in section 2.1 are accurate. Has this been completed?

Yes / No If 'Yes', Date: _____

3.4. Develop and detail a demobilisation plan for individual trade contractors and how the plan will minimise residual material arisings and equipment downtime. When completed, record the location and owner of each demobilisation plan below.

SECTION 4: MATERIALS RECEIPT, STORAGE AND MANAGEMENT

Identify the locations for receiving, storing and management of materials. See sections 2, 3, 6 and 8 of the 'Further information and checklist'.

4.1. The Logistics Coordinator is to review the design of the site and confirm that sufficient space and resources have been allocated for the receipt and storage of materials. For each material, identify any requirement for a Market Place and/or Construction Consolidation Centre (CCC) if required. Planning supply routes, the reception and storage of materials requires the development of guidelines for the safe, secure and appropriate storage of materials. Details of these guidelines should be recorded in the following table. Where required, the Logistics Coordinator should suggest amendments to the procedures for the receipt, storage and handling of materials.

Material / Resource	Receiving location (inc. CCC)	Storage location (inc. Market Place)	Guidelines for reception and storage of materials	Procedures for materials handling (inc. equipment)	Comments
Example Fluorescent Light Tubes	*Example Site office*	*Example Site office*	*Example Material management guidelines stored in site office which detail the lamp laydown area and security controls.*	*Example Lamps to be delivered in protective packaging unloaded manually and immediately distributed to point of use.*	*Example There is insufficient space to store the tubes in the site office and they should be delivered in consolidated loads, 'Just in Time' and moved to their point of use.*

4.2. Identify any restrictions or implications for the management of materials from the Planning Permission, EIA and Constructability Review and/or noted by third party bodies and/or individuals (e.g. which may be affected by the choice of receipt / storage locations and supply routes). If appropriate, describe how the restrictions are to be mitigated.

Restriction / Implication	Planning Permission (PP)	EIA	Constructability Review (CR)	Third party body or individual	Mitigation process
Example Vehicle Movements	*Example No vehicle movements such as the delivery of materials or removal of wastes will take place outside of the hours of 09:00 and 16:00 hrs to minimise disruption to local residents*				*Example Deliveries of materials and removal of wastes to be co-ordinated through the on-site Logistics Coordinator to ensure conformance to the PP restrictions.*

SECTION 5: MANAGEMENT OF SUB-CONTRACTORS

Implement and/or review the procedures in place for the management of sub-contractors. See sections 5 and 7 of the 'Further information and checklist'.

5.1. Supply details of the tender specification requirements that mandate attention to waste minimisation and the sub-contractors responsible.

5.2. Incorporate material usage and supply criteria into the tender selection criteria for the assessment of sub-contractors. Detail the criteria and weightings below.

5.3. Supply details of contractual requirements to adhere to, support and implement relevant aspects of the MLP.

SECTION 6: SITE MOBILISATION AND CONSTRUCTION

See sections 6, 7 and 8 of the 'Further information and checklist'.

6.1. Provide evidence that appropriate site staff, plant and equipment is available for materials management including handling.

Material	Site staff required	Site plant required	Site equipment required	Availability
Insert more rows as necessary				

6.2. Describe how changes in the design or construction activities are to be incorporated into the MLP. Provide details of the key management involved for amending and approving the MLP.

6.3. Describe how unforeseen activities which may cause a change to the programme are to be incorporated into the MLP. Provide details of the key management personnel involved for amending and approving the MLP. Examples of unforeseen activities are project slippage and broken machinery.

SECTION 7: PROJECT DEMOBILISATION AND COMPLETION

The main contractor should have compiled a demobilisation plan. The demobilisation plan is a continual phased process and includes the removal of plant, equipment, wastes and materials from site. See section 9 of the 'Further information and checklist'.

The project Demobilisation Plan (developed as part of Q 2.4) should now be implemented and monitored to ensure that residual materials and equipment downtime and timescales are minimised.

7.1. Assess the supply routes for the reverse logistics of surplus materials and provide details below.

7.2. Describe how excess materials and site facilities that are not waste, are to be recovered and removed from the site. Provide details and reasoning for the disposal of any excess materials as waste.

SECTION 8: REVIEW

See section 10 of the 'Further information and checklist'.

8.1. Provide information on how the MLP's performance is to be reviewed e.g. during project close-out meeting, who is consulted and how the outcomes are used.

8.2. Describe the process in which lessons learnt and potential improvements are to be recorded and made available for future projects.

8.2. Detail the retention period for information on past MLP performances and the location of this information.

8.4. Use the existing information and knowledge base from this and past MLP's to establish accurate KPIs for future projects. Detail how this will be managed.

8.5. Disseminate the findings of this MLP review to all relevant parties including sub-contractors. Provide the details of this dissemination process and parties below.

MLP: Further information and checklist

Project stages	Ref	Questions to consider	Tick if 'Yes'	Further information
1 Project Conception	**Material logistics planning is increasingly recognised as an aid to successful projects. It is important to consider logistical implications at the conception of any project to add certainty of delivery.**			
	1.1	Has logistics been considered amongst the project's key drivers?		Ensure that the logistics elements associated with each of your key drivers is considered at this stage to enable a coordinated and consistent approach throughout the life of the project.
	1.2	Have key logistics interfaces been identified?		Interfaces can include but are not limited to the project's end user (if known at this time), the developer, designer, planning supervisor, CDM coordinator and contractor. It is important to bring these groups together at the earliest opportunity to ensure the concept is clear to all interfaces regarding material logistics.
	1.3	Does your company have policy / processes in place for material delivery?		Where existing company policies and processes are in place they are to be reviewed to ensure they suit the project at this time. Any early indication that they may need re-issuing to be flagged at this point. If there is not a set policy or process then one should be established to enable a clear understanding of who is responsible for the quantifying, procurement and physical delivery of materials.
	1.4	Do you have a nominated person accountable for construction materials?		At project conception, a company representative should be nominated for all material logistics issues - a Logistics Coordinator. This will include identification of roles and responsibilities in relation to logistics and liaison with all interfaces (both internal and external) to ensure parties have a coordinated approach. This role will monitor the logistics requirements throughout the entire pre-construction stage. During construction this role may be transferred to another suitable person responsible for the delivery of the project's logistics i.e. lead contractor.
	1.5	Do you have data on material usage from similar previous projects?		Data capture is a valuable tool for informing future projects. If data from previous projects is available then it should be reviewed at this time as a 'lessons learned' exercise, identifying areas that can be improved on. Data may include previous supply routes, material purchasing, quantities and types of material used. The plant, equipment and other material related resources used previously can be assessed against proposed project costs as a cross check (providing confidence in project viability).

2 Project Location Selection / Pre-Defined Sites	**It is important to take account of material logistics when choosing site locations. This could include existing infrastructure for material delivery supply routes both local and long range. Some construction projects will be assigned to pre-defined sites; where this is the situation, consider questions 2.2 to 2.4 only.**			
	2.1	Is the person accountable for the MLP involved with the site selection?		It is advisable that the logistics coordinator is involved in the site selection process to ensure the locale is suited to material delivery whilst coordinating and liaising with interfaces. At this point you may be able to identify additional interfaces such as neighbours (public / private offices, schools, churches, residential areas) whose needs must be considered during site selection and logistic planning process.
	2.2	Are the logistics requirements of the project identified?		During site selection you should have identified the known logistics requirements to ensure they meet with the sites location e.g. is there a demolition or soft strip phase prior to construction/refurbishment. Requirements include material supply routes, personnel access routes, transport and parking, pedestrian access to site, welfare and office accommodation, temporary power supply, temporary water supply, drainage, wheel wash facilities, material laydown and distribution routes, security.
	2.3	Has a site MLP been created?		This should be prepared as a live document based on known requirements but flexible enough to be amended as circumstances change.
	2.4	Has material supply been considered during site selection?		Based on the project concept materials sources should, where possible, be included in the location assessment. This may be particularly important where materials are sourced from overseas.

3 Planning Permission	**The majority of projects will require Planning Permission from the relevant Local Authority (LA). For larger projects you may need to undertake an Environmental Impact Assessment (EIA) to determine all aspects, direct and indirect, of the project's effect on the environment. The EIA is a process, the findings of which are transferred into an Environmental Statement (ES). The ES may contain logistics related issues. Note: The design of the building (Section 4) will have commenced for this stage but may need amendment to comply with the ES.**			
	3.1	Has construction material usage been considered in the EIA?		Based on the building design the material types and quantities (although not exact) should be entered in the EIA. This covers all materials including earthworks and demolition spoil arisings, through to fixtures and fittings and site waste.
	3.2	Does the completed ES get passed on for tendering process?		Once the results of the EIA are entered into the ES it is important that the logistics coordinator retains this information and ensures it is referred to at tender, mobilisation and construction stages.
	3.3	Have you, or will you, undertake a Constructability Review?		As mentioned previously, the design will be underway concurrently. The logistics coordinator should be involved with the construction management department to ensure that a Constructability Review is undertaken. This is a high level process to determine how the designed structure can be built on the site selected. It is at this point that the design and logistics interface becomes key to ensuring there is space and resources within the project boundaries to deliver the logistics requirements to enable the build process.

	3.4	Has a programme for logistics been created?		Prior to this point a construction programme should have been created. The logistics coordinator should overlay the construction programme with a logistics programme which will be the basis for review and update throughout the project. This will include the logistics requirements and material usage. Although still not exact, it will be included in the EIA.

4 Design	**The design of a construction project is a process to create a description of a new facility that is typically represented by detailed plans and specifications and identifying the activities and resources required to make the design a physical reality.**			
4.1 Outline Design	The outline design will involve the preparation of a schedule of works, specification and/or construction drawings. A Bill of Quantities is used as a form of cost planning and mapping to monitor and control the construction cost during the execution or post-contract period of construction.			
	4.1.1	Does the design interface with the logistics requirements?		Assess the design against the logistics requirements within the constructability review. This gives opportunities to identify potential barriers that may arise and appropriate mitigation measures.
	4.1.2	Has a programme for logistics been created?		The logistics coordinator should overlay the construction programme with a logistics programme which will be the basis for review and update throughout the project. This will include the logistics requirements and material usage.
	4.1.3	Do you consider material logistics during design?		Ensure that the design actually allows for the physical delivery of materials. This can involve reviewing the location of common user plant and equipment such as hoists and tower cranes to be used and early identification of material distribution routes and on site laydown areas.
	4.1.4	Will material quantities be estimated during design?		Direct interface with the design and EIA is important to ensure the outline material quantities comply with Planning Permission. This includes all construction materials.
4.2 Detailed Design	The object of the detailed design is for the designers to develop the project concept and schematic design phases into a detailed design package to such a level that the information produced can then be transformed into documentation suitable for tender.			
	4.2.1	Have you, or will you, undertake a Constructability Review?		The logistics coordinator should be involved with the construction management department to ensure that a Constructability Review is undertaken. This is a high level process to determine how the designed structure can be built on the site selected. It is at this point that the design and logistics interface becomes key to ensuring there is space and resources within the project boundaries to deliver the logistics requirements to enable the build process.
	4.2.2	Are the logistics requirements facilitated?		Once the detailed design is completed you will be able to calculate more precisely the material quantities and confirm that the right material quantities have been identified for the project.
	4.2.3	Have modern methods of construction been considered?		If during design allowance is made for off-site fabrication then this will reduce the material usage on site and reduce overall waste. If the design utilises additional modern methods of construction (MMC) such as build on site opportunities then this may result in fewer individual deliveries and also reduce waste.

	4.2.4	Has the build process/logistics interface been considered?		Further to the constructability review it is important to review this against the detailed design. Over and above previous findings this will give early indication of internal material distribution, laydown and storage requirements.
	4.2.5	Is the weather considered when designating material marshalling areas?		Some materials and plant may become broken or damaged when subjected to rain, wind etc. Bad weather may hinder plant operation e.g. cranes.
	4.2.6	Has the need for a Market Place, Construction Consolidation Centre (CCC) or similar been considered?		Upon completion of the design a decision is required as to whether a CCC or Market Place is required. The Market Place is a centralised store for the smaller, common use material items such as nuts, bolts, tapes and mastics. It can ease material delivery quantities and permit accurate stock taking to aid productivity and reduce waste. The use of a CCC will rationalise material delivery via 'just in time' consolidated loads to meet planned productivity. The location of the CCC is dependent on many factors e.g. the journey time from the CCC to the site.

5 Tender Process	**If you are intending to sub-contract any element of the works then this will most likely be via a competitive tender process. Logistics must play a major role during the tender process as sub-contractors will become the key logistics interface during the construction programme (note: If the works are to be undertaken direct then this section, in part(s), can be used as an internal reference). The report Reducing Material Wastage in Construction 2007 (available via www.wrap.org.uk/construction) provides useful guidance on how to actively reduce waste on projects by focusing on the role of contractors and sub-contractors who procure and use materials.**			
5.1 Pre-qualification and Tender	**5.1.1**	Do you have a Pre-Qualification process and does it include a logistics requirement?		In order to ascertain suitable sub-contractors prior to invitation to tender do you have a process that gives you confidence in their ability in terms of quality, safety, financial stability, industrial relations. These are the core elements of most PQQ's however you should consider the logistical support elements of their business to give confidence in their ability to deliver the sub-contract.
	5.1.2	Is the person accountable for the MLP involved with sub-contractor selection?		The person responsible for the MLP should have access to all companies that will impact upon the plan through the procurement, use, handling, storage and/or disposal of materials to enable accurate and robust data to be gathered.
	5.1.3	Is material usage/supply a criterion for sub contractor selection?		Material usage and supply must be assessed to ensure it meets commitments of the EIA and MLP.
	5.1.4	Have material usage performance targets been set?		Material usage and performance should be measured against commitments made in the EIA and MLP.
	5.1.5	Is material usage information requested at tender stage?		Proposed material suppliers and manufacturers to be assessed to measure their previous performance in the delivery of materials and confirm they have the capability to supply bespoke material sizes in order to reduce waste.

	5.1.6	Are material quantities calculated at this stage?		During the tendering process the potential sub-contractor should be asked to provide details of the estimated material usage in line with the design to ensure all materials are accounted for in the contract. The logistics coordinator should collate this information from each tenderer.
	5.1.7	What logistics methods are used? e.g. off site pre-fabrication / pre-assembly		Ensure that short listed sub-contractors are given opportunities to influence the amount of potential waste coming to site.
5.2 Materials Procurement	**5.2.1**	Do you have a material procurement strategy?		Potential suppliers to be assessed on whether they have a material procurement strategy and if this can be integrated as part of the project's MLP.
	5.2.2	Are materials procured directly from site?		Within the material procurement strategy potential sub-contractors are to identify how they purchase materials. If the responsibility for ordering materials is not onsite then the site based sub-contractor's knowledge or input may be challenged.
	5.2.3	Are materials called off in line with productivity?		It is important that the materials are purchased to arrive on site to meet planned productivity. However note that on occasions it may be beneficial to 'load out' some areas in advance to permit the release of plant or equipment or to progress the design. This will have been identified at the design stage.
5.3 Transport	**5.3.1**	Do you have a material transportation strategy?		It is advisable to establish whether potential sub-contractors have a transport strategy which can be adapted to suit / become part of the MLP. Identification of out sourced hauliers is to be taken into consideration as, if appointed, they become a key interface with the sub-contractor and logistics coordinator.
5.4 Material Delivery	**5.4.1**	Will you use a material delivery booking/ scheduling tool?		The MLP will adopt a material delivery scheduling tool. This will either be a paper based system or detailed electronic / web system depending on the type of project. It is important that sub-contractors / material suppliers / hauliers have the ability to access and use whatever system is used
	5.4.2	Do you have a planned material delivery regime?		Potential sub-contractors should be assessed on whether a material delivery regime or process is in place which can be integrated into the MLP.

6. Site Mobilisation	**During site mobilisation it is important that all physical aspects of the MLP to date are implemented so that the project is prepared for planned operational implementation. This includes the instalment of plant and equipment and ensuring the human resources are in place. Many sub-contractor's representatives active during tender process are no longer involved during mobilisation or the construction activity, therefore the logistics coordinator should also set up material logistics workshops to be delivered to sub-contractors prior to site works.**			
6.1 Materials Plan and Matrix	**6.1.1**	Has a detailed material matrix been compiled?		Compile a matrix of material usage per sub-contract and cross check against the logistics requirements and programme.
	6.1.2	Has a material delivery programme been created?		Create a long term material delivery programme to ensure resources are available to meet needs.
	6.1.3	Has suitable plant and equipment been provided for unloading?		This is part of the logistics requirements however check that the material matrix does not contain materials types / quantities that cannot be unloaded / distributed. Specialist plant may be required on a 'one off' basis on occasions.

	6.1.4	Are opportunities to utilise plant and equipment explored?		In line with the design, opportunities may arise to utilise equipment such as lifts prior to completion to facilitate the logistics requirements.
	6.1.5	Have sub-contractors been issued with the MLP?		Post Tender (in addition to key interfaces) sub-contractors should be issued with the MLP to ensure guidance on and compliance to procedures. This can be done via workshops.
6.2 Transport	**6.2.1**	Has reference been made to the site EIA and planning conditions?		Ensure transport routes comply with the EIA.
	6.2.2	Are road / rail / river routes re-assessed during mobilisation?		Transport routes may change, e.g. check that traffic systems have not been altered by Local Authorities.
	6.2.3	Has a Traffic Management Plan been prepared?		Prepare a Traffic Management plan and issue to all users and stakeholders.
6.3 Material Unloading and Distribution	**6.3.1**	Is plant and equipment provided?		Provision of plant and equipment must be in place at this time. Note: a centralised supply will reduce costs, congestion and carbon emissions.
	6.3.2	Is the material distributed to the point of use?		Provision of labour to distribute the material to point of use will reduce double handling, potential for damage, accidents, and costs for craftsmen taken away from core task. This in turn will increase productivity.
	6.3.3	Are there materials acceptance 'sign off' controls?		Upon material arriving at the point of use, controls should be in place to ensure the sub-contractors have confirmation of receipt. This can be either a paper based system requiring a physical signature or an electronic bar coding system depending on the size of project.
6.4 Storage and Use	**6.4.1**	Have material laydown / marshalling areas been provided?		During design, opportunities will have arisen to identify material laydown/ marshalling areas. These should be created and designated at this stage.
	6.4.2	Has a programme of on-site storage been developed?		Materials should be programmed for the amount of time they can be held on site prior to actual usage. As a rule of thumb the preference is generally for 'just in time' delivery. A programme must be in place to ensure material laydown area usage does not extend beyond planned use in case it impacts on planned productivity. This should be created in relation to the construction programme.
	6.4.3	What security controls do you implement?		Over and above perimeter security, measures should be in place to monitor materials on-site to ensure their secure storage. This can permit the use of secured material laydown areas using temporary barriers / fencing and mobile (wheeled) containers.
6.5 Personnel	**6.5.1**	Does the labour requirement allow for material management?		You should allow for a bespoke team, either full or part time role(s) to manage the materials once on site. This is more effective than if it is a part of everybody's role but nobody's hands on accountability.

	6.5.2	Will this labour receive specific training?		The labour designated for the management of materials should be suitably qualified and experienced to undertake the material management role. Furthermore they should receive training on plant usage to current approved industry standard prior to the start of works. If not, do you need to implement training at this stage before material deliveries arrive on the project? Training can include manual handling, safety awareness, logistics NVQ, plant operation and traffic marshalling - all to industry standards.
	6.5.3	Has the labour requirement been sourced internally?		If you internally resource then are they always available for redeployment and do you sometimes need to recruit additional staff for material management?
	6.5.4	Are mechanisms in place to ensure availability of labour?		The project should have a resourcing team to support the MLP throughout the life of the project. The labour market is prone to change; contingency is required to ensure demand is fulfilled throughout the works.

7 Construction	**At the point of construction, interfaces are more dependent on project management and sub-contractors. The logistics coordinator's role may involve a change of personnel; therefore the person undertaking logistics management of the project should be suitably qualified and experienced in direct construction related activities. With functions identified and process and resources in place, the logistics role should now centre on operational implementation, to include detailed short term planning and live data capture.**			
7.1 Control of Contractors	**7.1.1**	Are sub-contractors regularly updated with logistics requirements?		The MLP may be subject to change due to unforeseen events, such as ground conditions this may include changes to the design and construction programme which may in turn have an effect on the logistics requirements. At this stage the project manager and sub-contractors become the key interface and must be kept informed at the earliest opportunity to enable any amendments to their functions or procedures.
	7.1.2	How are logistics change control processes managed?		Many projects have change control procedures in place for design, construction activity etc. These processes may not always consider the impact on the material logistics strategy. It is important for the logistics coordinator to be part of any change approval process.

8 Site Waste Management	**For construction projects costing more than £250,000 a Site Waste Management Plan (SWMP) must be developed and implemented. SWMP's aim to reduce the amount of waste produced on construction sites and to prevent fly-tipping.**			
	8.1	Do you have a SWMP in place?		A SWMP should be drafted at the pre-planning stage and take account of design and waste minimisation issues. The developer / client/ architect's representative should be responsible for developing the SWMP. If the SWMP is not written until tender stage it is likely that the contractor will be responsible for developing and implementing the plan.

	8.2	Does the SWMP consider optimising material supplies and procurement and feed into the MLP?		The amount of waste generated on-site can be reduced significantly by looking at the way in which materials are procured and supplied to site. Wastage rates for materials can be reduced through better ordering systems, less packaging and take-back schemes. Initiatives include: ■ specifying products that create less waste and are not hazardous wastes if they enter the waste stream; ■ greater use of off site prefabrication and modular construction; ■ setting up agreements with suppliers to take back excess materials and packaging, e.g. plasterboard and insulation off-cuts; ■ adopting systems such as 'just-in-time' delivery and procurement; ■ specifying re-usable and recyclable packaging; re-using waste generated on-site, e.g. demolition waste; ■ using materials and products with a high recycled content; ■ on site batching of materials; and ■ good quality control systems to inspect materials delivered to site for damage before acceptance.
	8.3	Does the SWMP include a review and report activity?		Upon handover of the of the construction project to the occupant, a full review of the quantities and types of wastes generated and their end-use / disposal route should be conducted. The findings of this review should be reported into the MLP review to identify potential improvements in materials management to prevent wastage.

9 Demobilisation, Commissioning and Completion	**During construction it is important that the project is prepared for planned operational demobilisation. This includes the removal of plant, equipment, wastes and materials.**			
9.1 Demobilisation	**9.1.1**	Is demobilisation planned?		The demobilisation strategy should be pre-planned to include the programmed removal of plant and equipment, labour and facilities.
	9.1.2	Is the strategy subject to regular review?		The MLP may be subject to change due to unplanned events which may have an effect on the demobilisation time scales or procedures.
	9.1.3	Has a demobilisation programme been created?		In order to facilitate a controlled approach to demobilisation a separate programme should be created for material delivery and waste estimates to ensure the project does not either retain unnecessary equipment or labour. This will also ensure that resources are not removed which may still be required at a later date.
9.2 Commissioning and Completion	**9.2.1**	Is there a strategy for material usage during this period?		Towards the end of the project it is particularly important to manage material usage to ensure excess material (which may result in waste) does not come on-site. Controlling measures may include daily communication to facilitate short term material planning requirements and daily stock checks of materials currently on site. This, on occasions, can be difficult to plan as much of the material requirement is controlled by snagging requirements.

	9.2.2	How are redundant materials managed?		Ideally there should be no excess material remaining on site upon completion of the project. However, on occasions this is not the case. Rather than materials becoming waste, you should consider redeploying materials to another project where required, consolidating or storing until such a time as they are required, selling back to the supplier or donating to any charitable construction project if possible or recycle.

10 Review and Auditing	**The benefits of conducting a thorough audit and review of the effectiveness of the MLP are the good practice procedures which can be applied at other sites and lessons learned will enable the informed development of a revised, more effective MLP aiming for continuous improvement**.			
	10.1	Have you reviewed the project MLP?		Post project completion the logistics coordinator should review the MLP to identify good / poor practice and areas for improvement. This can be carried forward for the next project to improve your material logistics.
	10.2	Have you recorded the key logistics data?		It is important to collate data throughout the life of a project to benchmark forecasts against actuals. Key data includes material usage, delivery vehicles quantities, material delivery times / departures, where materials came from, waste quantities, plant and equipment usage / duration on site, labour numbers. It is also important to investigate if there are any significant mitigation factors that have to be considered when compiling this data to ensure it reflects a true account of overall performance.
	10.3	Have you conducted interviews with project personnel?		As part of data collation you may wish to consider interviewing project representatives at various levels / responsibilities. This could vary from the project manager to labourer. Interviews should be consistent and cover appropriate aspects of the MLP. Results from these interviews are to be collated by the logistics coordinator and assessed against other data.
	10.4	Have you disseminated the findings of the review to key personnel?		The key findings of the review and lessons learnt should be disseminated to all relevant organisations (such as sub-contractors) so that relevant improvements can be implemented by all.