

PRELIMINARY PROJECT CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN

for

LUCAN COMMUNITY COLLEGE, ESKER DRIVE, LUCAN, CO. DUBLIN

DUBLIN & DUNLAOGHAIRE EDUCATION AND TRAINING BOARD



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Project Description

The project is situated on Esker Drive, Lucan, Co. Dublin, in the administrative area of South Dublin County Council. The site of the works is located approximately 1.0km from Lucan Village, and 5.0km from the M50 motorway. Access will be via Esker Road with site access being opened up directly from Esker Road. The work will generally consist of the construction of a 5,616m² extension to Lucan Community College, refurbishment of the existing college and the removal of the existing single storey temporary buildings.

It is proposed to initially relocate an existing temporary building – area 163m² to the west of the existing school, to demolish a store area – 26m², construct the new 2/1 storey extension of 5,616m², carry out minor adjustments to the existing school, and at completion remove all temporary single storey accommodation (area 933m²). The temporary accommodation houses teaching spaces.

It is expected that the overall construction phase will take place over a period of 19 months over 4 phases and will typically result in the generation of a range of waste materials including excavated material, rubble, steel, timber, plastics, cardboard packaging, office waste, canteen waste, and possibly small quantities of hazardous waste (e.g. mastic, adhesives and paint containers).

Where possible this material is to be re-used or recycled while the remaining wastes shall be disposed of by licensed waste contractors to an approved landfill site in accordance with the relevant national and EU waste legislation.

Typically recyclable/reusable “waste” material would include timber, cut cable and cable tray, steel off cuts, cut aluminium sections, broken glass, piping off cuts. Material for disposal to licensed landfill is likely to include waste cladding, waste insulation e.g. rockwool, fibreglass etc., gypboard offcuts, cut ceiling tiles, cut cable and cable tray, piping offcuts and miscellaneous construction and domestic wastes.

Purpose of C&D Waste Management Plan

The purpose of the C&D WMP is to provide information necessary to ensure that the management of waste produced by the site is carried out in accordance with all current legal and industrial standards including;

- Waste Management Act 1996 and associated Regulations
- Litter Act 1997
- Packaging Regulations 2003
- Waste Management Plan for Dublin Region 2005-2010

One priority of the plan shall be to promote recycling, reuse and recovery of waste and diversion from land fill wherever possible. Guidance will also be given to ensure appropriate method of transportation of Waste is used to prevent littering or other serious environmental pollution.

In preparation of the C&D WMP, the following publications have been used as references; Best Practice Guidelines on the preparation of waste management plans for construction and demolition projects, Department of the Environment and local Government June 2006.

This is a Preliminary Demolition and Waste Plan. It must be noted at this stage a contractor has not been appointed to carry out the works. Traditionally the contractor when appointed prepares his Waste Management Plan for consideration by the Design Team and the Local Authority. In this case the contractor will be requested as part of the tender documents to include in the tender for the preparation of a Waste Management Plan broadly based on and elaborated from this preliminary plan.

Waste Prevention

The demolition of the existing temporary buildings contribute towards the overall waste arrisings of the project. It may not be feasible to retain these buildings as they are of a limited lifecycle.

Reuse of Waste

Full advantage will be taken of all opportunities for the reuse of construction materials, particularly in view of the prefabricated buildings which could be used on another school site by the DDL ETB depending on demand, economics and feasibility.

Excavated soil will be used creatively where possible in the landscaping works to Lucan Community College and for the construction of embankments and screening/noise abatement berms. Excavated clay and C&D waste derived aggregates will, where suitable, be used for certain on-site construction applications.

Recycling of Waste

C&D waste will arise on the project mainly from the demolition of the prefabs on site, and the unavoidable construction waste and surplus materials from the construction project. It may be feasible to reuse the prefabs on another school site. The purchasing manager shall ensure that materials are ordered so that the quantity delivered, the timing of the delivery and the storage is not conducive to the creation of unnecessary waste.

Excavated clay will be carefully stored in segregated piles on the site for subsequent re-use. Concrete waste will be collected in receptacles with mixed C&D waste materials for subsequent separation and recovery at a remote facility. Masonry and wood will be collected in receptacles with mixed C&D waste materials for subsequent separation and recovery at a remote facility. Packaging will be source segregated for recycling and/or return to the suppliers where possible. Hazardous wastes will be identified, removed and kept separate from other C&D waste materials in order to avoid further contamination, and contact with pupils and pedestrians of Lucan Community College. Other C&D waste materials will be collected in receptacles with mixed C&D waste materials for subsequent separation and disposal at a remote facility.

The design team and successful contractor will take note of a number of private C&D waste recycling facilities are in place that demonstrate the huge potential for recycling of this major waste stream. It is imperative that C&D waste arising are recycled to the greatest practicable extent. C&D waste-derived aggregates can be used as dry filling, hard-core or as granular fill in construction works. Besides cost savings, use of on-site crushers to produce such aggregates can reduce the transportation impacts of a project associated with the removal of C&D waste from site and the importing of quarried aggregates.

In the Greater Dublin Region, a range of facilities are in operation achieving high levels of materials recovery. Companies such as A1 Waste, Roadstone, and Marrakesh are all producing crushed concrete for use as engineering aggregate while recovering other materials such as metals and timber for recycling.

Quantity of Waste & Proposals for Minimisation/Reuse/Recycling

C&D WASTE MATERIAL	QUANTITY (tonnes)
Clay & Stones	TBC
Concrete	TBC
Masonry, roof tiles, etc	TBC
Wood	TBC
Asphalt	TBC
Prefab Classrooms	TBC
Hazardous Materials	TBC
TOTAL Arisings	TBC tonnes

These figures are to be confirmed by the appointed contractor who will confirm this data by his survey of the existing buildings and carpark.

The design team will endeavour to re-use and minimise excavated soil creatively in the landscaping works to Lucan Community College and for the construction of embankments and landscape features as passive and active recreation areas. Additionally excavated clay and C&D waste derived aggregates are considered suitable for certain on-site construction applications.

As per 'Reuse of Waste', the design team will endeavour to take full advantage of all opportunities for the reuse of construction materials, particularly in view of the site having 3 no. buildings of total area 908m² which could be used on another school site by the DDL ETB.

Overall Management of C&D Waste

Demolition activities on site could result in the generation of dust which could adversely impact ambient air quality. Transportation of loose materials that are not properly contained on or off site could also result in dust generation as would the transfer of mud/soil from the wheels of construction traffic onto surrounding roads. A number of factors will affect the extent of dust generation and potential impacts on air quality including wind speed and direction, the dryness of the soil, and the proximity of sensitive receptors to the site.

It is anticipated that waste materials will have to be moved off site. It is the intention to engage specialist waste service contractors, who will possess the requisite authorisations for the collection and movement of waste off-site and to bring the material to a facility which currently holds a waste license/permit. Accordingly it will be necessary to arrange the waste authorisations specifically for the project.

The following mitigation measures will be put in place to minimise any dust generation and thus prevent any significant impact on air quality:

- Good housekeeping and site management including the proper storage of spoil / loose materials on site;
- Wheel washing of construction vehicles leaving site as necessary;
- Proper containment of loose materials that are transported on or off site;
- Damping of site roads and soil storage area as necessary.

Taking the above mitigation measures into account, the construction phase of the development is not predicted to have any significant adverse impact on ambient air quality.

Record Keeping and Procedures

The C&D Waste Management Plan will provide for systems that will ensure that details of all arising, movement and treatment of C&D waste are recorded.

Special consideration should be given to the provision of a computerised monitoring tool, which can provide for convenient recording of information in a useful format and ultimately contribute to waste reduction through benchmarking of waste arising. Such a system will enable the contractor to measure and record the quantity of waste being generated, thereby allowing wastage to be more readily identified. It can highlight the most significant areas where waste products arise and the percentage of new material that is wasted. It identifies successes or failures as measured against performance targets and enables realistic Action Plans for waste reduction to be drawn up. The system could also be used to compare waste quantities arising from similar development projects. All materials being transferred from the site, whether for recycling or disposal, should also be subject to a documented tracking system which can be verified and validated.

Waste Auditing Protocols and Segregation

The C&D Waste manager shall arrange for full details of all arisings, movements and treatment of construction and demolition waste discarded to be recorded during the construction stage of the project. Each consignment of C&D waste taken from the site will be subject to documentation, which will conform table below and ensure full traceability of the material to its final destination.

Detail	Particulars
Name of Project of Origin	Lucan Community College, Esker Drive, Lucan, Co. Dublin
Material being transported	E.g. Soil, Demolition Concrete, Crushed Asphalt etc.
Quantity of material	e.g. tonnes TBC
Date of material movement	
Name of carrier	e.g. Authorized carrier
Destination of material	e.g. Residential Development, Co. Dublin
Proposed Use	e.g. Use as hard-core in dwelling sub-floor

Details of the inputs of materials to the construction site and the outputs of wastage arising from the project will be investigated and recorded in a waste audit which will identify the amount, nature, and composition of waste generated on site. The waste audit will examine the manner in which the waste is produced and will provide a commentary highlighting how management policies and practices may inherently contribute to the production of construction and demolition waste. The measured waste quantities will be used to quantify the cost of management and disposal in a waste audit report which will also record lessons learned from these experiences which can be applied to future projects. The total cost of C&D waste management will be measured and will take account of the purchases cost of material, including imported soil, handling costs, storage costs, transportation costs, revenue from sales, disposal costs etc. Costs will be calculated for the management of a range of C&D waste materials, using format shown below.

Material	Estimated Quantities & Costs (tonnes & euro)
Soil	
Quantity of waste soil	
Purchase Cost	
Material handling Cost	
Material Storage Cost	
Material Transportation Cost	
Revenue from Material Sales	
Material Disposal Costs	
Material Treatment Costs	
Total Waste Soil Management Costs	
Unit Waste Soil Management Costs	

A system of waste segregation is to be implemented on site with separate skips for:

- Timber
- Metal
- Plastic
- Rubble
- Canteen Waste
- Paper/ Cardboard

- Paint
- Oils and Greases

Each skip will have colour coded signage indicating contents. Subcontractors will be advised of this requirement at tender stage and re-iterated at pre-appointment meetings.

Subcontractors will be obliged to comply with the site construction Environmental Management Plan and the Method Statement contained therein.

Waste segregation will be "policed" primarily by the site foreman and safety officers but generally by all members of the Construction Management Team (CMT). Earthworks subcontractors will be required to produce the license of their proposed landfill and their own Waste Transport Permits prior to appointment. Disposal will be monitored for the duration of the contract.

All subcontractors will be required to supply separate skips for their own plastic and cardboard packaging waste, as well as other waste materials particular to their trade (e.g., electrical cable cuttings).

Training and Responsibilities for C&D Waste

Copies of the Project C&D Waste Management Plan will be made available to all relevant personnel on site. All site personnel and subcontractors will be instructed about the objectives of the Project C&D Waste Management Plan and informed of the responsibilities which fall upon them as a consequence of its provisions. Where source segregation, selective demolition and material reuse techniques apply, each member of staff will be given instructions on how to comply with the Project C&D Waste Management Plan. Posters will be designed to reinforce the key messages within the Project C&D Waste Management Plan and will be displayed prominently for the benefit of site staff.

A site manager shall be designated as the C&D Waste manager and have overall responsibility for the implementation of the Project C&D Waste management plan. The C&D waste manager will be assigned the authority to instruct all site personnel to comply with the specific provisions of the plan. At the operational level a site foreman from the main contractor and appropriate personnel from each subcontractor on site shall be assigned the direct responsibility to ensure that the discrete operations stated in the Project C&D Waste Management Plan are performed on an on-going basis.

Quantity of Anticipated Hazardous Waste Arising

Fuels used during construction will be classed as hazardous and this will be stored for site machinery etc., in suitable tanks with the draw-off points bunded. Where this is the case it is not expected that there will be any fuel wastage. Waste mixtures contain dangerous substances classified as hazardous waste. This will not be used as fill on the site and only disposed of in licensed hazardous waste facility.

The design team will consider the appointment of a specialist contractor to carry out environmental clean-up to remove traces of contaminated materials from the site. These should be licensed under Waste Management (Collection Permit) regulations 2007. This will be disposed of in a facility licensed under the Waste Management Act 1996 and waste management (Facility Permit) regulations of 2007.

Consultation with Local Authority

South Dublin County Council will be consulted throughout the Construction phase to ensure that all available waste reduction, reuse and recycling options are being explored and utilised and that compliant Waste Management is being carried out at the site.

Specialist companies, wherever required, will be contacted to determine their suitability and each company's record reviewed to ensure relevant current collection permits / licenses are held.

Companies will also be contacted to gather information regarding treatment of hazardous materials, if required (although not anticipated for this site), costs of handling and the best methods of transportation for recycling or reuse when hauling off site.

APPENDIX

OS Map -Location Map	1400-020
Survey	1400-027
Phasing Plan	1400-026