PUNCH
consulting engineers

Carnegie Library Kilkenny
Part 8 Application

Outline Construction Environmental Management Plan
244175-PUNCH-XX-XX-RP-C-0006

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1 Introduction

1.1 Background

PUNCH Consulting Engineers have been appointed by Kilkenny County Council to prepare this Outline Construction Environmental Management Plan (OCEMP) for the proposed restructuring and renovation of the Carnegie Library on John's Quay, Kilkenny City, County Kilkenny.

The principal objective of the OCEMP is to avoid, minimise and control adverse environmental impacts associated with the redevelopment of the library.

It is intended that this OCEMP will be used to communicate key environmental obligations that apply to all contractor organisations, their sub-contractors and employees while carrying out any form of construction activity on the site.

The OCEMP will then form part of the main construction works contract. The contractor will be required to take account of the contents, methods and requirements contained within the various sections of this OCEMP as part of their contractual responsibilities and will also be required to update the document with their project specific information. The OCEMP is considered a 'live' document and as such will be reviewed on a regular basis. Updates to the plan may be necessary due to changes in environmental management practices and/or contractors. The procedures outlined in the OCEMP will however be audited regularly throughout the construction phase to ensure compliance with the key objectives of the plan.

This OCEMP will be developed further and/or amended where necessary to take account of site-specific requirements or conditions arising from the planning process.

1.2 Nature of the Existing Development

The Carnegie Library site is located along John's Quay on the east side of the River Nore which runs through Kilkenny City. It is located within the remit of Kilkenny County Council (KCC). The site is approximately 0.2534ha and comprises a library building and associated car park with approximately 64 no. car/accessible/motorcycle parking spaces. To the rear of the Library car park is Butler Gallery, which underwent refurbishment in 2020. Refer to Figure 1-1 below.

Carnegie Library is listed in the Record of Protected Structures for Kilkenny, Reference Number B113. It is a detached single-story library constructed between 1908-1910, and opening in 1910.

Figure 1-1: Site Location

1.3 Nature of the Proposed Development

The development will consist of:

(1) Repurposing the former Carnegie Library into a Kilkenny Local Studies Hub, preserving its original architectural character while enhancing its role as a cultural and heritage resource.

(2) Reconfiguring the building layout to create a continuous finished floor level aligned with the original double-bay configuration (Staff Only c.90sq.m. GFA + Public Space c.144.2sq.m. GFA + Ancillary / Circulation Space c.24.1sq.m. GFA = Total c. 258.3sq.m.):

(i) Northern bay comprising of: 8 no. staff workspaces; a staff canteen; storage facilities with roller shelves; a restroom; and a heat pump room.

(ii) Southern bay comprising of: a county librarian / meeting room; open-plan local studies facilities and reading areas; utility and storage rooms; a flexible exhibition space

adaptable to the hub's needs; and a zinc-clad and glazed rear extension in the south-east corner (c.10sq.m. GFA extension) to expand the exhibition space and enhance public visibility.

(iii) Central circulation space comprising of: a maintained central circulation space; an extended rear elevation (c.10.2sq.m. GFA extension; finishes matching the proposed south-east projection), including 2 no. restrooms (including 1 no. wheelchair accessible), designed for potential segregation when the main building is closed.

(3) Access Improvements comprising of: enhanced front access with stone paving and metal railings matching the original features; and secondary accessible entrance at the rear with a ramp (1:20 slope) extending south and metal railings.

(4) Public Realm Enhancements comprising of: soft and hard landscaping; biodiversity planting; public lighting; and Sustainable Urban Drainage Systems (SUDS).

(5) A designated loading area for the Kilkenny Local Studies Hub.

(6) The provision of 27 no. car parking spaces, including 2 no. designated accessible space.

(7) The provision of 10 no. bicycle parking spaces (5 no. Sheffield bike stands) to the north-east of the building.

(8) All associated site development works, including above- and below-ground services.

2 Responsibilities

2.1 Key Contacts and Roles

The detailed CEMP will need to confirm and add to the following information as a minimum:

Table 2-1: Key Contacts

Description	Name	Address	Name and Contact
Applicant	Kilkenny County Council	81 John Street Lower, Collegepark, Kilkenny, R95 PK20	
Contract Manager			
Site Manager			
Environmental Compliance Officer			
Consulting Engineer			

The key responsibilities of those persons listed in Table 2-1 above are as follows:

Table 2-2: Responsibilities of Key Contacts

Description	Responsibility
Developer/Applicant	To provide that all environmental requirements are implemented in full
Contract Manager	To be responsible for development of the CEMP in line with contents of this plan
Site Manager	To advise site personnel on all requirements at the site and areas where improvements may be made on-site and off-site
Environmental Compliance Officer	To be responsible for undertaking environmental audits to check compliance with the environmental mitigation measures set out in the CEMP
Consulting Engineer	To be responsible for implementation of detailed design including design compliance with all planning conditions

The contractor appointed to carry out the construction works shall produce detailed method statements and risks assessments based on the outline method of works, procedures and environmental requirements set out in this OCEMP. The CEMP will form part of the site induction for all employees who shall be required to comply with the requirements set out in the plan.

2.2 Relevant Legislation and Reference Documents

It is proposed that all works will be carried out using best practice and in conformance with the requirements of the relevant regulatory authorities and legislation. A non-exhaustive summary of key legislative documents and guidance is provided below.

2.2.1 Legislation

Current legislation as well as published guidance documents must be taken into account in the production of the final CEMP plan. Legislation must cover all relevant areas, including water pollution, fisheries protection, wildlife species protection, waste and noise.

2.2.2 Key Guidance

The Environmental Protection Agency (EPA) has produced Pollution Prevention Guidelines. Some of these are of particular note with regard to the drafting of this OCEMP which include:

- IPC Guidance Note - Guidance Note on Storage and Transfer of Materials for Scheduled Activities
- National Hazardous Waste Management Plan 2008-2012 (EPA 2008)

Key Guidance pertinent to this OCEMP from other bodies include:

- Construction and Demolition Waste Management - A handbook for Contractors & Site Managers
- Best Practice Guidelines in the Preparation of Waste Management Plans for construction and demolition projects - Department of the Environment, Heritage & Local Government
- Risk Assessment of Chemical Hazards (HSA)
- Containment systems for the prevention of pollution (CIRIA - 736F)

3 Environmental Impacts

The following is intended as a framework of anticipated measures in order to mitigate potential construction impacts identified. The framework is intended to form the basis of a future CEMP including detailed action plans and method statements once a contractor is appointed.

The main environmental impacts which have been identified as relevant to this project and which are covered by this OCEMP are as follows:

- Water pollution arising from silt/sediment from construction works;
- Water pollution arising from cement and concrete;
- Soil/Water pollution arising from solid waste disposal;
- Soil/Water/Air pollution arising from hydrocarbon emissions;
- Air/Noise pollution and vibration impacts arising from construction related traffic and other activities;
- Impacts on the road network local area due to vehicles involved in the construction process;
- Air pollution arising from dust generated by construction activities.

The following sections of this plan describe each of the above environmental impacts identified and the proposed measures to be adopted for eliminating/mitigating the associated impacts.

4 Surface Water and Wastewater Management

4.1 Site Facilities during Construction

There will be sufficient space on site for the construction of site welfare compound. A Construction Traffic Management Plan (CTMP) will be developed by the contractor prior to the commencement of works on site and will be prepared in consultation with Kilkenny County Council. All contractor vehicles will park within the development site area. There will be no parking permitted on the surrounding road network or estate roads by the contractor or site operatives. Construction staff vehicle movements will also be minimised by promoting the use of public transport, shared use of vehicles, cycling and walking.

The site facilities will include site offices along with canteen, toilets, and drying room for all staff/workers. The contractor shall either connect to the existing foul sewer connection located within the site or make available portable water closet facilities for staff on site.

4.2 Management of Surface Water on Site

All surface drainage within the existing bunded area is served by an existing combined sewer. The drainage network is discussed further in the Infrastructure Design Report accompanying this planning application.

Additional surface water drainage from the proposed extension to the rear of the library is to discharge into the existing sewer as outlined in the Infrastructure Design Report accompanying this planning application.

Road sweeping will be undertaken daily during the construction stage to ensure the removal of dust and debris from the roads and regular inspection of the existing drainage will be undertaken during the construction works.

Environmental Requirements

- Sediment traps/silt fences will be provided to prevent run-off to the existing drainage system. Daily inspection of total suspended solid levels in all discharge systems will take place where required.
- A surface water settlement tank will be installed to remove suspended solids from flows prior to discharge at the site of excavation works;
- To ensure that there will be no contamination of surface water, any excess excavated material will be immediately removed and not stored on the site;
- The contractor will undertake an inspection and maintenance program during construction phase to ensure compliance with discharge limits.
- An emergency-operating plan will be established to deal with incidents or accidents during construction that may give rise to pollution within any watercourses. This will include means of containment in the event of accidental spillage of hydrocarbons or other pollutants.
- Through all stages of the construction phase the contractor will ensure that good housekeeping is maintained at all times and that all site personnel are made aware of the importance of the adjoining environments and the requirement to avoid pollution of all types.
- Road cleaning will take place to ensure that any wastes which may be tracked onto roads do not result in a negative impact to road users and subsequently drain into the existing drainage system.

4.3 Dewatering

It is not envisaged that dewatering will be required.

5 Waste Management

5.1 Waste Management Control Policy

This section has been prepared in accordance with the 'Best Practice Guidelines on the Preparation of Waste Management Plans for Construction & Demolition Projects' 2006. This section should be read in conjunction with the Construction and Demolition Waste Management Plan, which the contractor will produce.

The management of construction and demolition waste should reflect the waste management hierarchy, with waste prevention and minimisation being the first priority succeeded by reuse and recycling. The subsequent use of recycled materials in reconstruction works also reduces the quantities of waste which ultimately needs to be consigned to landfill sites.

5.2 Quantities of Waste

Given that the nature of the works involves the restructuring and renovation of the library building and the development of a public realm to the rear of the building, the majority of waste is anticipated to be soil from the re-landscaping works. It is expected not to exceed 50 cubic metres.

5.3 Prevention of Waste

The primary effort therefore should be to engage in waste prevention and reduce the amount of waste generated in the first place i.e. minimise the resources needed to do the job.

Prevention is financially advantageous as it reduces the purchase of construction materials and obviates the need to remove wastes from site. It is important to emphasise the potential for certain purchasing procedures to contribute to a reduction in excessive material wastage on site. Examples include:

- Ensuring tasks and activities are thoroughly planned well in advance of work being done to help accurately quantify materials required so materials are ordered on an "as needed" basis to prevent over supply to site;
- Ensuring correct storage and handling of construction materials to minimise generation of damaged materials/ waste e.g. keeping deliveries packaged until they are ready to be used;
- Preventing fuel and oil spills through good housekeeping practices and making readily available emergency clean up spill kits to deal with any spills that arise thereby eliminating hydrocarbon contamination and generation of additional waste;
- Ensuring correct sequencing of operations; and
- Assigning individual responsibility (through appropriate contractual arrangements) to sub-contractors for the purchase of raw materials and for the management of wastes arising from their activities, thereby ensuring that available resources are not expended in an extravagant manner at the expense of the main contractor.

5.4 Reuse of Waste

Material that is generated should be reused on site or salvaged for subsequent reuse to the greatest extent possible and disposal should only be considered as a last resort. Initiatives should be put in place to maximise the efficient use/ reuse of materials.

5.5 Recycling of Waste

There are a number of established markets available for the beneficial use of C&D waste:

- Waste timber can be:
    - recycled as shuttering or hoarding, or
    - sent for reprocessing as medium density fibreboard;
- Waste concrete can be utilised as fill material for roads or in the manufacture of new concrete when arising at source;
- Waste steel and other metals can be processed for other uses at metal recycling centres.

5.6 Overall Management of Construction and Demolition Waste

Waste minimisation, reuse and recycling can best be managed operationally by nominating a "Construction and Demolition Waste Manager" to take responsibility for all aspects of waste management at the different stages of the Project.

This C&D Waste Manager may well be a number of different individuals over the life-cycle of the Project, but in general is intended to be a reliable person chosen from within the Contracting Team, who is technically competent and appropriately trained, who takes the responsibility to ensure that the objectives and measures within the Project Waste Management Plan are delivered and who is assigned the requisite authority to secure achievement of this purpose.

Specifically, the function of the C&D Waste Manager will be to communicate effectively with colleagues in relation to the aims and objectives for waste management on the Project. The primary responsibility for delivery of the objectives of the Waste Management Plan will fall upon the C&D Waste Manager designated at the demolition/ construction stage. A key objective for the C&D Waste Manager should be to maintain accurate records on the quantities of waste/ surpluses arising and the real cost (including purchase) associated with waste generation and management.

The preparation, application and documentation of a Project Waste Management Plan should enable all parties - including contractors, designers and competent authorities - to learn from the systematic

implementation and assessment of best practice, particularly through the recording of summary information on performance outcomes.

In general:

- Regular shaped skips measuring 6m in length by 2.5m in width by 1.8m in height, will be used for the duration of the construction works. All skips will be situated within the designated site compound area with ample space around the skips to facilitate thorough segregation of the different demolition materials.
- Skips will be available for each of the following waste types and will be labelled accordingly: wood, metal, brick/ rubble, canteen waste, plasterboard, paper and cardboard, other general waste and special bins for any hazardous wastes as required.
- Throughout the construction zone, covered labelled wheelie bins will be placed at designated waste depots. These bins will be taken and used by the operatives/ sub-contractors and returned to the depots after use.
- The waste segregation area banksman will co-ordinate the movement of skips to and from the construction zone. The banksman will also co-ordinate the scheduling of the approved waste collector to transport waste to the relevant permitted/ licensed waste facility.

5.7 Control of Fuels and Lubricants

5.7.1 General Site Procedures

In order to provide fuel to the relevant items of plant on site, a certified double skinned metal fuel tank with integrated pump, delivery hose, meter, filter and locking mechanism will be situated in a secure area on the construction site. It will be situated within a bund. This tank will be certified for lifting when full.

Emergency clean up spill kits will be readily available in the event of a fuel spill. A hazardous bin will also be available to contain any spent soak pads.

New metal gerry cans with proper pouring nozzles will be used to move fuel around the site for the purposes of refuelling items of small plant on site.

Drip trays will be used under items of small plant at all times. Any waste oils etc. contained in the drip trays or the bunded area will be emptied into a waste oil drum which will be stored within the bund.

Metal gerry cans and any other items of fuel containers will be stored in certified metal bunded cabinets. Any gas bottles will be stored in a caged area at a secure location on the site. All will be properly secured at point of work.

All refuelling activities on site will be subject to a permitting system. It will be the responsibility of the Site Manager to ensure that the permitting system is adhered to. The Environmental Health and Safety (EHS) officer will be responsible for issuing each permit. The permitting procedures will require key information to be gathered and recorded on the Permit to Refuel form prior to permit being issued.

6 Traffic Management

6.1 Traffic Management Procedures

The volumes of traffic that will be generated during the construction phase of the proposed development will be small in comparison to the existing traffic volumes. Given its use and location, access to the site by heavy goods vehicles is not deemed to be a concern.

It is predicted that there will be a maximum of 10 personnel on site during peak construction activity associated with these works. Car parking spaces and site storage locations are to be agreed with Kilkenny County Council and all activity are to be limited to designated areas to ensure that any impacts on the surrounding transport environment are minimised. These are all within the Kildare County Council (KCC) lands.

A Construction Traffic Management Plan will be required for the project. The appointed PSCS (typically the appointed contractor) shall prepare a fully detailed Construction Traffic Management Plan to be coordinated with the KCC. The Traffic Management Plan shall be co-ordinated by the PSDP. The primary objective in the planning and design is to maximise the safety of the workforce and to keep traffic flowing as freely as possible and keep the impact of the works to a minimum.

6.2 Parking Arrangements

Parking for site workers will be provided within the development site area in agreement with Kilkenny County Council.

7 Air Quality Management

7.1 Emission Sources

Construction vehicles, generators etc., will give rise to some exhaust emissions.

Considering the existing traffic levels in the area, along with the use of the surrounding buildings, the likely air quality impact associated with construction traffic will not be significant. Measures will nevertheless be taken to minimise dust and maintain acceptable conditions for nearby workers and other members of the public. This will include regular housekeeping procedures.

7.2 Mitigation Measures

A dust minimisation plan will be formulated for the construction phase of the project. Potential for dust to be emitted depends on the type of activity being carried out in conjunction with environmental factors including levels of rainfall, wind speeds and wind direction. The potential for impact from dust depends on the distance to potentially sensitive locations and whether the wind can carry the dust to these locations.

As part of the dust minimisation plan and in order to ensure that no dust nuisance occurs for nearby business's, a series of measures will be implemented. Roads shall be regularly cleaned and maintained as appropriate. Hard surface roads shall be swept to remove mud and aggregate materials from their surface.

Vehicles delivering or removing material with dust potential to/from the site shall be enclosed or covered with tarpaulin at all times to ensure no potential for dust emissions.

Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to wind. Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods.

At all times, the procedures put in place will be strictly monitored and assessed. In the event of dust nuisance occurring outside the site boundary, satisfactory procedures will be implemented to rectify the problem.

The dust minimisation plan shall be reviewed at regular intervals during the construction phase to ensure the effectiveness of the procedures in place and to maintain the goal of minimisation of dust through the use of best practise and procedures.

8 Noise and Vibration Management

8.1 Noise

There is no published Irish guidance relating to the maximum permissible noise levels that may be generated during the construction phase of a project. Local authorities normally control construction activities by imposing limits on the hours of operation and consider at their discretion noise limits.

In the absence of specific noise limits, appropriate criteria relating to permissible construction noise levels for a development of this scale may be found in the National Roads Authority (NRA) publication Guidelines for the Treatment of Noise and Vibration in National Road Schemes, which indicate the following criteria and hours of operation. The majority of the construction activity is expected to occur during normal working hours.

Table 3: Maximum Permissible Noise Levels at Adjoining Properties during Construction

Schedule		**Total Noise Levels at Control Stations**		
Period	**Hours**	**Ambient Noise Level, Leq, measured on Site [dB(A)]**	**Period of Hours over which Leq, is applicable.**	**Maximum allowable Sound Level (see note (iv) below) on site [dB(A)]**
Mondays to Fridays	08.00hrs to 19.00hrs	75	1 hour	85
Mondays to Fridays	19.00hrs to 22.00hrs	60	1 hour	65
Saturdays	08.00hrs to 16.30hrs	70	1 hour	80
Sundays and Public Holidays*	09.30hrs to 16.00hrs	60	1 hour	65
All unattended plant outside normal working hours		50	18 hours	55

*Construction activity at these times, other than that required for emergency works, will normally require the explicit permission of the relevant local authority.

Notes:

(i) Noise levels relate to free field conditions. Where noise control stations are located 1 metre from facades of buildings, the permitted noise levels can be increased by 3dB(A).

(ii) The ambient noise level, L_{eq} is the total L_{eq} from all the noise sources in the vicinity over the specified period.

(iii) The existing ambient noise level L_{eq} at a control station is the total L_{eq} from all the noise sources in the vicinity over the specified period prior to the Commencement of the Works.

(iv) Maximum sound level is the highest value indicated on a sound level meter which meets the requirements of BS EN 61672 Type 1 or 2 set to SLOW response, and frequency weighting A.

(v) Throughout the contract, the supervision of the Works will include ensuring compliance with the limits set out in the above table using the methods set out in BS 5228. At all other times the sound level of 48dB(A) L_{eq} (12hr) and a maximum noise level of 53dB(A) at any adjoining property may only be exceeded if the existing ambient noise levels are themselves higher. In such cases the ambient noise level can be exceeded by a maximum of 5 dB(A).

8.2 Vibration

There are two varieties of criteria for vibration: those dealing with human comfort and those dealing with cosmetic or structural damage to buildings. In all instances, it is appropriate to consider the magnitude of vibration in terms of Peak Particle Velocity (PPV).

It is acknowledged that humans are particularly sensitive to vibration stimuli and that any perception of vibration may lead to concern. Given the site location the major concern being fear of damage to the building or its contents. In the case of road traffic, vibration is perceptible at 0.5 mm/s and may become disturbing or annoying at higher magnitudes. However, higher levels of vibration are typically tolerated for single events or events of short duration.

Guidance relevant to acceptable vibration within buildings is contained in the following documents:

- British Standard BS 7385 -2:1993: Evaluation and measurement for vibration in buildings. Guide to damage levels from ground borne vibration;
- British Standard BS 5228-2:2009: Code of practice for noise and vibration control on construction and open sites; and
- BS 7385 -2:1993 states that there should typically be no cosmetic damage if transient vibration does not exceed 15 mm/s at low frequencies rising to 20 mm/s at 15 Hz and 50 mm/s at 40 Hz and above. These guidelines relate to relatively modern buildings and should be reduced to 50% or less for more critical buildings.

8.3 Noise and Vibration Mitigating Measures

With regard to construction activities, reference will be made to BS 5228-1:2009: Noise control on construction and open sites, which offers detailed guidance on the control of noise and vibration from demolition and construction activities. In particular, it is proposed that various practices be adopted during construction, including:

- limiting the hours during which site activities likely to create high levels of noise or vibration are permitted;
- establishing channels of communication between the contractor/developer, Local Authority and other adjoining land owners;
- appointing a site representative responsible for matters relating to noise and vibration;
- monitoring typical levels of noise and vibration during critical periods and at sensitive locations;
- all site access roads will be kept even, to mitigate the potential for vibration from lorries;

It is recommended that vibration from construction activities be limited to a peak value of 5mm/sec. This limit is considered to be a very conservative upper limit and well below the levels that would be likely to cause cosmetic/structural damage to any neighbouring buildings or to cause disturbance for neighbours.

9 Conclusions

This report was prepared in accordance with the best practice guidelines and principles for the avoidance, minimisation and control of adverse environmental impacts associated with the proposed restructuring and renovation of the Carnegie Library.

This OCEMP will be developed further and/or amended where necessary to take account of site-specific requirements and any information which may be available arising from the planning process.

This OCEMP will form part of the main construction works contract. The contractor will be required to take account of the contents, methods and requirements contained within the various sections of this OCEMP as part of their contractual responsibilities and update in further detail.