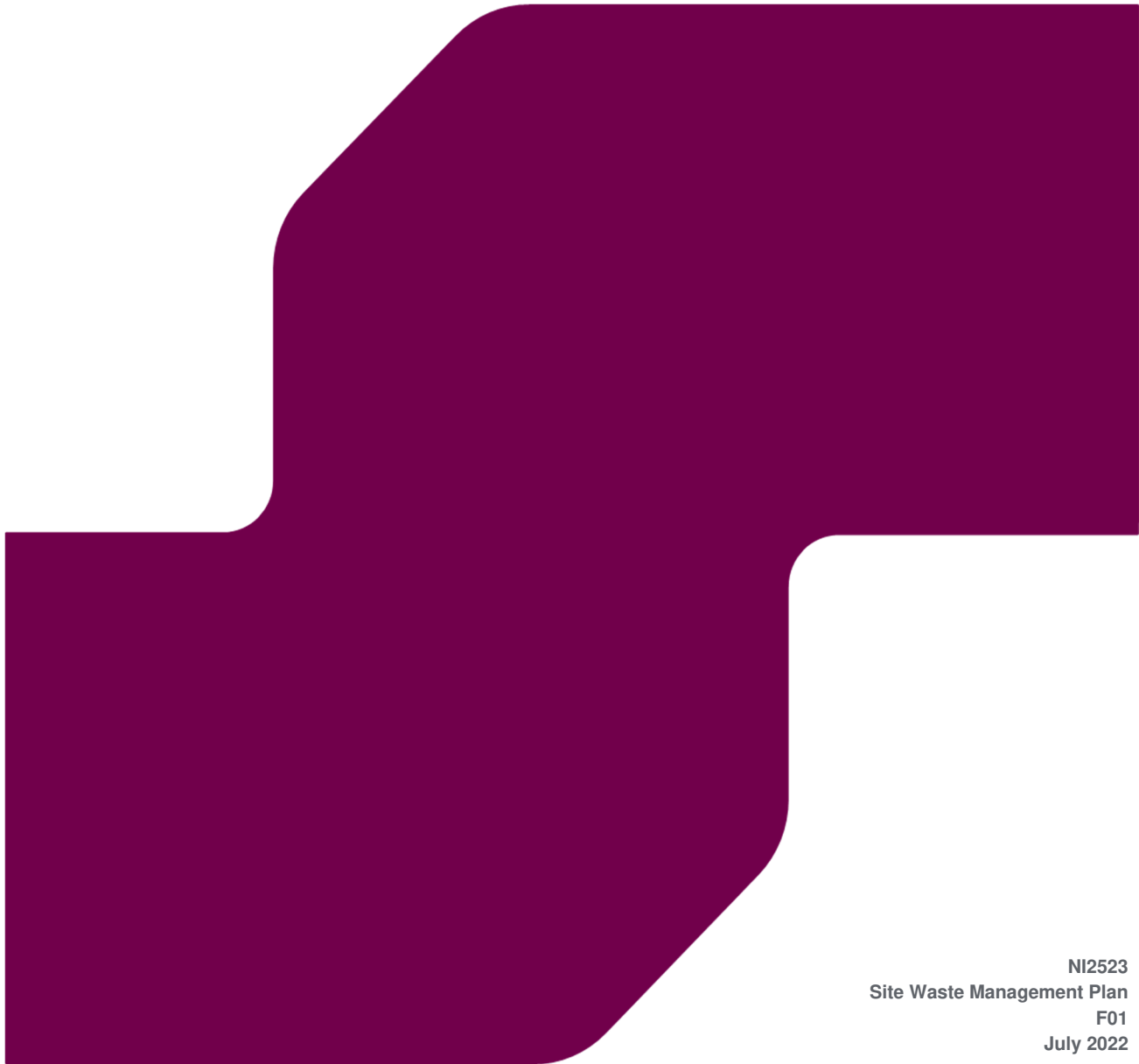


REPLACEMENT SEAWALL, LARGS BAY

Site Waste Management Plan



NI2523
Site Waste Management Plan
F01
July 2022

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
D01	Draft for initial review	EM	SM	SM	April 2022
F01	Final	EM	SM	SM	July 2022

Approval for issue

Stephen McAfee

21 July 2022

The report has been prepared for the exclusive use and benefit of our client and solely for the purpose for which it is provided. Unless otherwise agreed in writing by RPS Group Plc, any of its subsidiaries, or a related entity (collectively 'RPS') no part of this report should be reproduced, distributed or communicated to any third party. RPS does not accept any liability if this report is used for an alternative purpose from which it is intended, nor to any third party in respect of this report. The report does not account for any changes relating to the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report.

The report has been prepared using the information provided to RPS by its client, or others on behalf of its client. To the fullest extent permitted by law, RPS shall not be liable for any loss or damage suffered by the client arising from fraud, misrepresentation, withholding of information material relevant to the report or required by RPS, or other default relating to such information, whether on the client's part or that of the other information sources, unless such fraud, misrepresentation, withholding or such other default is evident to RPS without further enquiry. It is expressly stated that no independent verification of any documents or information supplied by the client or others on behalf of the client has been made. The report shall be used for general information only.

Prepared by:

RPS

Elmwood House
74 Boucher Road, Belfast
Co. Antrim BT12 6RZ

Prepared for:

North Ayrshire Council

Contents

1	INTRODUCTION	1
1.1	Site Location.....	1
2	SITE WASTE MANAGEMENT PLAN IN CONTEXT	2
2.1	General.....	2
2.2	Preliminary SWMP Objectives	3
2.3	Legislative Background	3
2.3.1	European	3
2.3.2	Scottish Waste Management Law	3
2.3.3	Local Waste Management	4
2.4	Reference Documents	4
3	PROJECT DESCRIPTION	5
3.1	The Existing Seawall Structure	5
3.2	Proposed Seawall Replacement Works	6
3.3	Proposed Construction Methodology	8
3.3.1	Demolition / Site Clearance / Site Set Up	8
3.3.2	Protection Works for the Existing Seawall structure	8
3.3.3	Excavation	8
3.3.4	Seawall Installation	8
3.3.5	Surfacing.....	9
3.3.6	Street furniture and Beach Access	9
4	ROLES AND RESPONSIBILITIES.....	10
5	PROPOSED APPROACH	12
5.1	Site Set-Up & Management	12
5.1.1	General Approach.....	12
5.1.2	Site Compound	12
5.1.3	Bunded Fuel Storage	12
5.1.4	Designated Waste Storage area.....	13
5.2	Waste Minimisation	13
5.2.1	Re-Use, Recycle, Recovery and Management of Waste	13
6	WASTE MANAGEMENT PROCEDURES.....	15
6.1	Waste Hierarchy.....	15
6.2	Waste Arisings	15
6.3	Waste Handling	16
6.4	Hazardous Waste Management.....	16
6.5	Waste Segregation.....	17
6.6	Storage of Waste	17
6.7	Waste Removal	17
6.7.1	General Approach.....	17
6.7.2	Exclusion from the Legislation for Excavated Material Refused at a Construction Site	18
7	SITE MANAGEMENT PROCEDURES.....	19
7.1	General.....	19
7.2	Training	19
7.3	Waste Contractors	19
7.4	Record Keeping Procedures	19
7.5	Waste Auditing Protocols	19

Figures

Figure 1: Location of Proposed Replacement of Existing Seawall, Largs Bay	1
Figure 2: Waste Management Hierarchy	2
Figure 3: Southern end of the Existing Seawall	5
Figure 4: Northern end of the Existing Seawall	5
Figure 5: Example of Proposed Precast Seawall Units	6
Figure 6: Proposed section for Northern and Southern Section of Seawall	7
Figure 7: Proposed section for middle section of proposed Seawall	7

Tables

Table 1: Role, Company, Named Contact & Contact Details	11
Table 2: EWC Waste Codes	14
Table 3: Typical Breakdown of Wastes	15
Table 4: Estimated Quantities of Bulk Wastes from Demolition	16

1 INTRODUCTION

RPS have been commissioned by North Ayrshire Council to prepare a Site Waste Management Plan (SWMP) for the proposed replacement seawall at Largs Bay.

1.1 Site Location

The Largs Promenade extends from Largs Harbour at the south to the mouth of the Noddsdale Water at the north, with a wall along the seaward length of the promenade transitioning to a sea wall from the RNLI slipway for approximately 300m north. Largs is a coastal town, which is located due west of Glasgow, within North Ayrshire Council area. The general location of the proposed works is shown below, in Figure 1.

Figure 1: Location of Proposed Replacement of Existing Seawall, Largs Bay



2 SITE WASTE MANAGEMENT PLAN IN CONTEXT

2.1 General

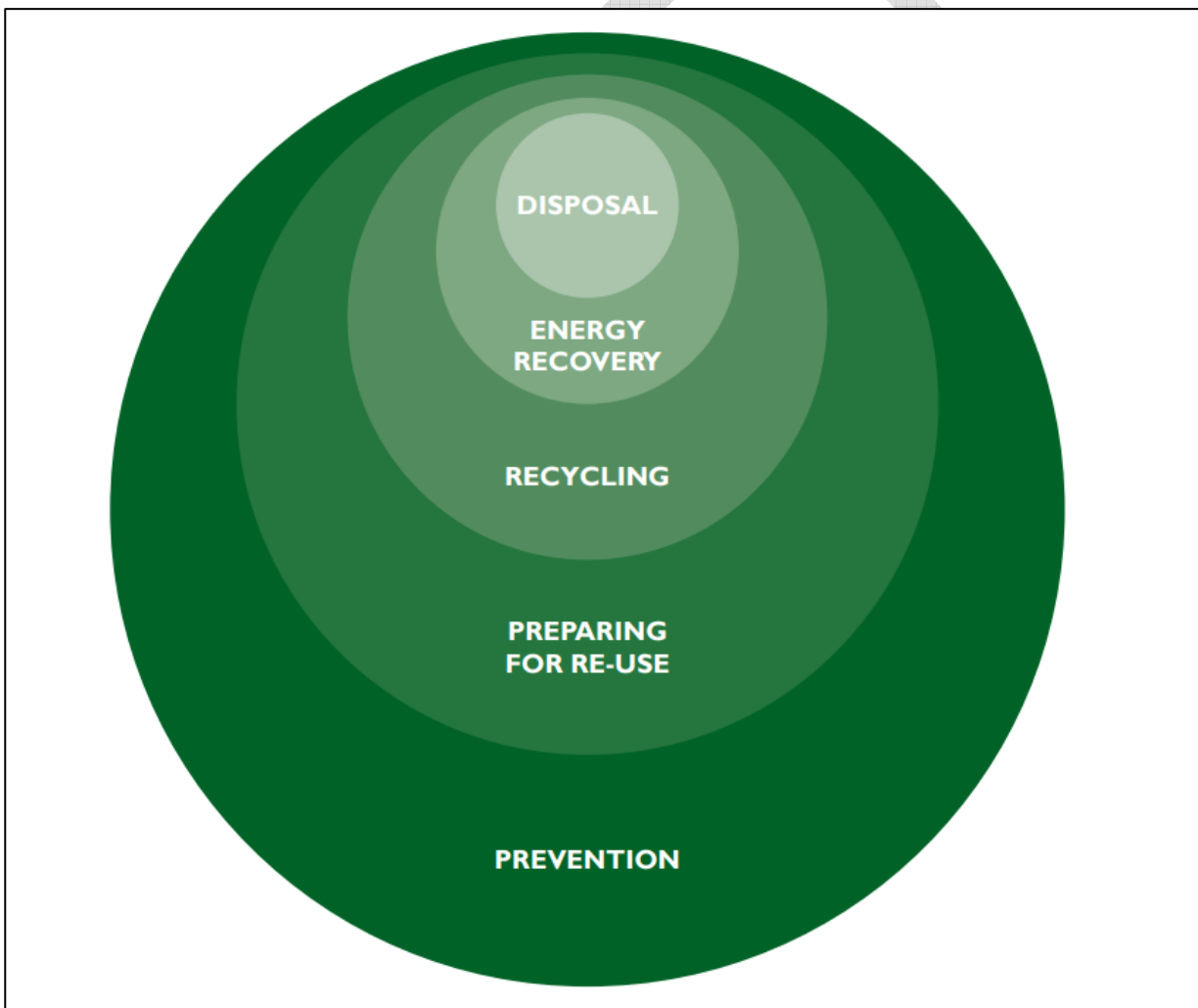
A Site Waste Management Plan (SWMP) is a live framework for delivering how resources will be managed and waste controlled across all stages of a construction project. It is intended to be a working document from project inception to conclusion that aims to manage and reduce waste, increase profit and maximise resource efficiency.

This plan has been prepared with a view to outlining the procedures to be adopted on site with respect to waste management for all waste streams of demolition and construction produced at the proposed construction site for the relevant phase of the project.

The Principal Contractor (when appointed) will be obliged to prepare a detailed SWMP as part of the construction project, the Contractors SWMP will be based on the principles and procedures outlined in this preliminary SWMP.

The general principles of the waste hierarchy (as set out below in Figure 2) have been applied in the production of this plan.

Figure 2: Waste Management Hierarchy



Main themes covered by this preliminary plan include waste management procedures such as; waste arisings, waste segregation, prevention of waste generation through material management, waste storage and waste actions as well as site management procedures including roles & responsibilities, waste contractors, waste traceability/disposal and record keeping.

2.2 Preliminary SWMP Objectives

The main objectives of this preliminary SWMP are as follows:

- to ensure that a framework exists in the project to enable and audit the implementation of Scottish Waste Management legislation;
- to promote an assimilated approach to waste management throughout the project;
- to set out responsibilities in regard to waste management throughout the project; and,
- to provide a framework for the designers and the Principal Contractor that they will build upon and implement within their SWMP.

2.3 Legislative Background

2.3.1 European

Waste framework legislation establishes the legal structure for the prevention and management of waste. Legislation also governs reporting on general waste, waste treatment and waste capacity as sets out mandatory waste targets which can be targets for diversion, collection or treatment. The European Commission has prepared waste framework legislation to govern the broad approach and principles for meeting waste across all member states. The principal European framework legislation is:

- European Directive (2008/98/EC) on Waste (Waste Framework Directive);
- Council Decision (200/532/EC) establishing a list of wastes; and,
- Regulation (1013/2006) on the shipments of waste.

2.3.2 Scottish Waste Management Law

The Principal Contractor will be required to ensure that Scottish Waste Management Law is adhered to in relation to the transport and disposal of wastes.

2.3.2.1 Scottish Government's Special Waste Regulations (1996)

Some types of waste are harmful to human health, or to the environment, either immediately or over an extended period of time. These are called 'hazardous wastes', and they are defined by Article 3 (2) in the Waste Framework Directive (European Directive 2006/12/EC, as amended by Directive (2008/98/EC) (of which Annex II was replaced in December 2014 by Commission Regulation No 1357/2014) as 'waste which displays one or more of the hazardous properties listed in Annex III' of the revised directive. In Scotland these wastes are referred to as 'special waste', as defined in the Scottish Government's Special Waste Regulations (1996). These regulations make provision for the handling of such waste and for implementing European Council Directive 91/689/EEC on hazardous waste.

As detailed in the Waste Framework Directive, certain specified waste shall cease to be a waste, when it has undergone a recovery (including recycling) operation and applies with specific criteria to be developed in accordance with the following conditions:

- 'The substance or object is commonly used for specific purposes;
- A market or demand exists for such a substance or object;
- The substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products; and
- The use of the substance or object will not lead to overall adverse environmental or human health impacts.'

2.3.2.2 Scotland's Zero Waste Plan (2010)

Scotland's Zero Waste Plan (Scottish Government 2010) outlines a strategy for a zero-waste society which in turn will help to achieve the targets set out in the Climate Change (Scotland) Act (2009) of reducing Scotland's (GHG) greenhouse gas emissions by 42% by 2020 and 80% by 2050.

The Plan's objectives relative to materials and waste have been summarised below:

- Eliminating the unnecessary use of primary materials, leading to further reductions in GHG emissions in areas such as mining of raw materials, manufacturing, and transport. Financial savings are also made through recycling and recovering value from materials.
- Producing energy savings from the manufacture of products from recycled materials in preference to raw materials.
- Construction and demolition waste are highlighted as an area in which future policy can be developed to support higher targets and recovery levels in this area. This is proposed to be achieved through the collection of more robust data on these waste types, their composition and their waste management methods.

2.3.3 Local Waste Management

2.3.3.1 North Ayrshire Working Towards Zero Waste, Waste Strategy 2018-2022

Non-municipal waste is a broad category that includes industrial waste, construction and demolition waste, and waste from agriculture, fishing and forestry. These waste streams are the largest source of waste within the country, construction and demolition wastes account for around half of the waste managed in Scotland.

North Ayrshire Council are subscribed to the Zero Waste Scotland 'Construction Commitment: Halving Waste to Landfill', which included building in mandatory waste prevention, minimisation, re-use and recycling requirements through standard contract terms and conditions including performance reporting requirements when procuring construction works.

2.4 Reference Documents

This document has been prepared with reference to the following Resource Efficient Scotland guidance documents:

- Best Practice Guide to Improving Waste Management on Construction Sites; and
- Maximising Re-use of Materials on Site.

On commencement of the project the appointed contractor will be responsible for the management of wastes during the course of the project. The waste material considered within this Outline (or Preliminary) SWMP covers the waste generated by the proposed project.

3 PROJECT DESCRIPTION

3.1 The Existing Seawall Structure

The existing seawall at Largs retains the promenade and protects the shore side buildings and infrastructure from wave action and coastal erosion. It is c.300m in length, with the height varying along its length following the profile of the beach below. The retained height varies from approx. 1.0m to 4.0 m, and the top level of the seawall is approx. +5.16mCD along the full length. The public have access to the seawall and the beach below when the tide allows.

It was constructed from reinforced concrete in the 1970s as a replacement facing for the old seawall. This 1970s facing was covered in a gunite (sprayed concrete) facing in more recent years, but this has since failed and become detached from the 1970s concrete wall. The gunite was partially removed in 2018.

The images in Figure 3 and Figure 4 show the existing seawall, and the different profiles along its length.

Figure 3: Southern end of the Existing Seawall



Figure 4: Northern end of the Existing Seawall



Recent surveys have indicated that the existing seawall structure is deteriorating in several ways:

- **Concrete Deterioration:** There is clear deterioration of the gunite facing concrete, where it remains attached to the existing wall face. There are high levels of corrosion of the existing wall reinforcement, with patches of exposed reinforcement visible throughout the length of the wall. High levels of chloride ingress to the existing concrete wall have also been identified.
- **Undermining:** The seawall is undermined along a section of wall (approx. 12m in length) where the toe is exposed, and no sheet piles were installed. This undermining is the likely cause of loss of material and subsidence of the promenade surface in recent years.
- **Steps:** There are three sets of steps ranging in height from 1.8m to 3.1m located along the length of the seawall. These are unsafe for use and are currently fenced off.

3.2 Proposed Seawall Replacement Works

The proposed seawall replacement scheme comprises the replacement/encapsulation of the existing 300m long seawall. It consists of the following main elements:

- Controlled removal of existing steps which are unsafe for use.
- Installation of precast concrete caissons along the front of the existing seawall to act as a foundation to facilitate the placement of precast concrete seawall units.
- Placement of granular infill in the concrete caisson units,
- The precast caisson base unit will be filled with granular material. The base will be topped with a mortar layer, with the concrete seawall units then installed (Example of proposed seawall units shown in Figure 5). The precast units will be shaped for them to interlock, then grouted and sealed to both sides, thus avoiding the requirement for dowels or protruding reinforcement
- Placing of granular backfill between the front face of the existing seawall structure, and the rear face of the new precast structure. Suitable drainage to be provided within the backfill. Surfacing of backfill with concrete or asphalt pavement to tie into existing promenade. New / reinstatement of handrail along the promenade.
- Placement of rock armour scour protection in front of the new precast concrete seawall units to prevent undermining of the toe of the new structure.
- Installation of steps at required intervals along seawall structure.

The form of foundation and structure varies along the length of the seawall to account for the varying profiles of the existing seawall structure. The preliminary sketches in Figure 6 and Figure 7 show indicative cross sections of the proposed construction¹.

Figure 5: Example of Proposed Precast Seawall Units



¹ It should be noted that these designs are at a preliminary design stage only and will be subject to detailed design pending results of further investigation works.

SITE WASTE MANAGEMENT PLAN

Figure 6: Proposed section for Northern and Southern Section of Seawall

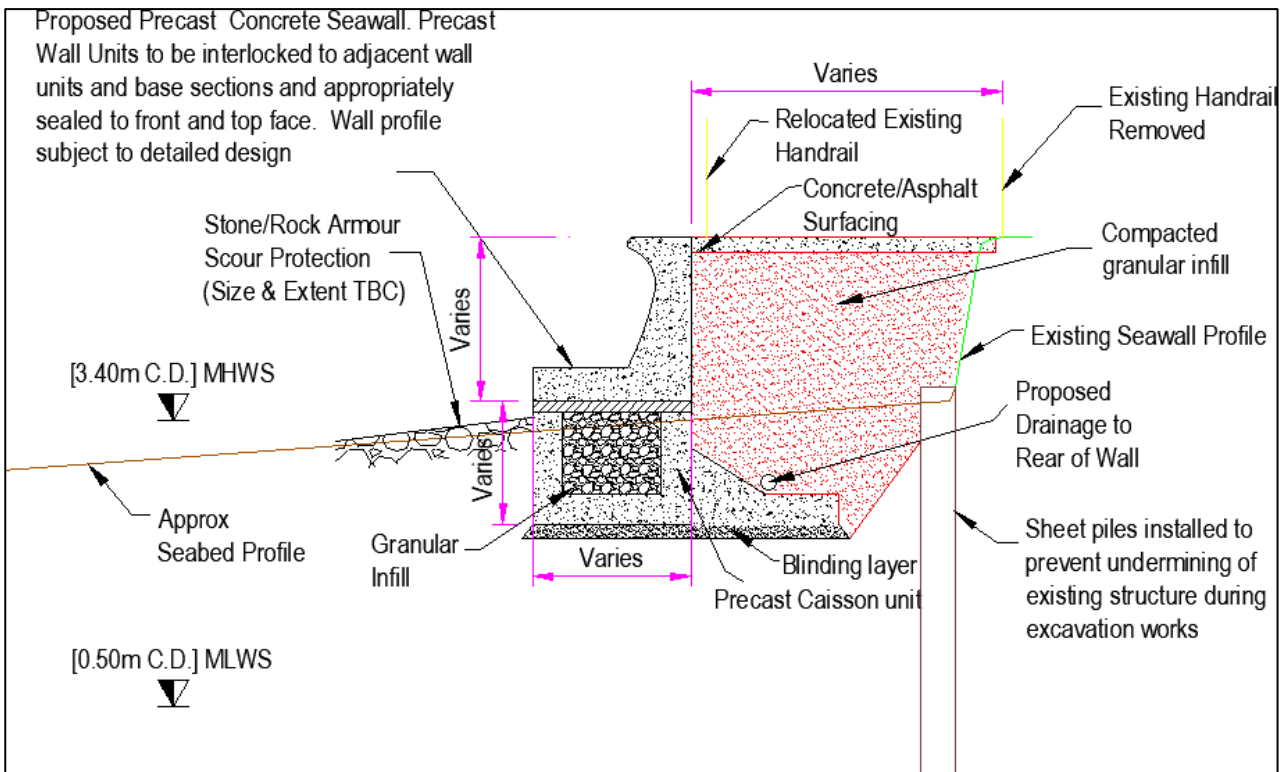
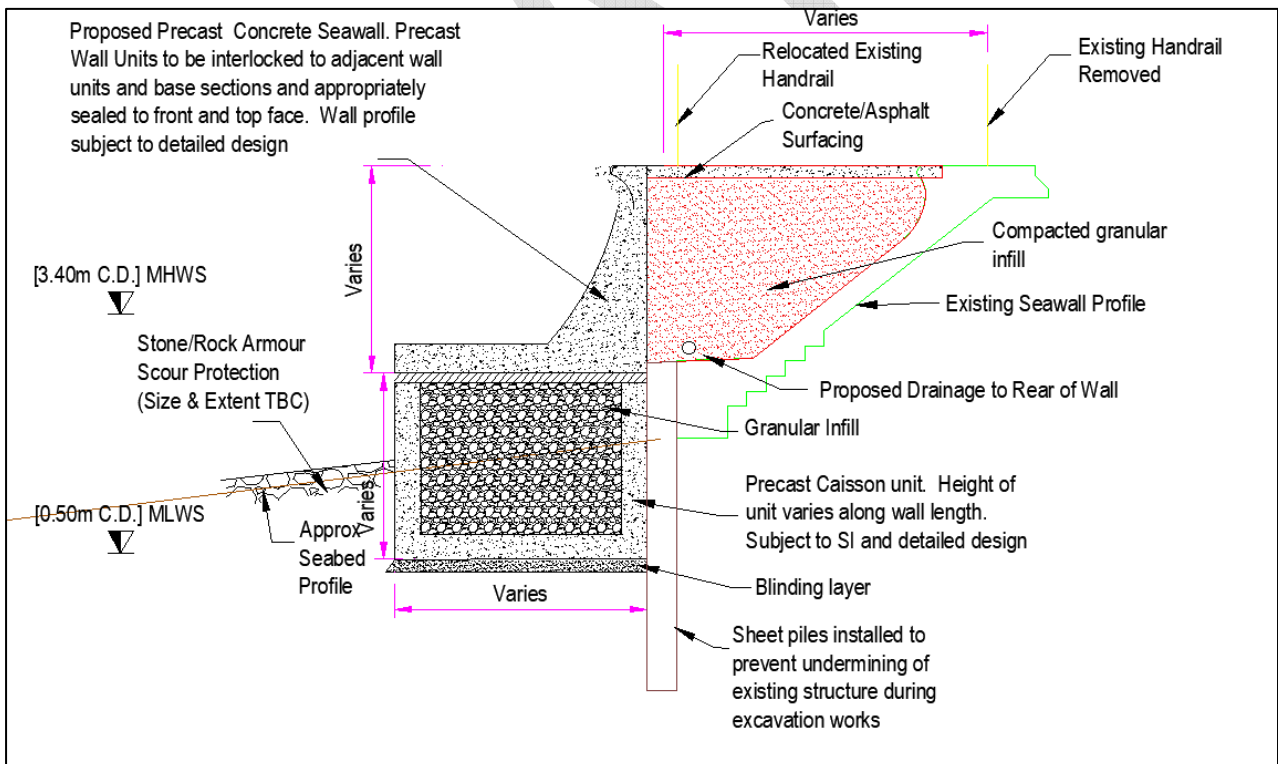


Figure 7: Proposed section for middle section of proposed Seawall



The height of the replacement seawall structure will be as per the existing seawall. The length of the proposed seawall will be 300m, and the footprint of the structure covers 0.24ha / 2400 sqm.

The red line boundary of the proposed works totals 0.3ha in area. The area of proposed terrestrial works above the Mean Low Water Springs (MLWS) is c.0.297ha, and the area of proposed marine works below the Mean High-Water Springs (MHWS) is c.0.227ha.

3.3 Proposed Construction Methodology

A summary of the likely project phases is set out below².

3.3.1 Demolition / Site Clearance / Site Set Up

There will be a temporary site compound in the immediate vicinity of the site to support the proposed development during the construction period. The location of this has not yet been determined, however one option may be at the northern end of the seawall close to Aubrey Crescent. The area of works along the promenade and beach will be fenced off, and initial works will see the partial removal of the existing concrete steps with a rock breaker mounted on small excavator working from the beach. The existing handrail along the promenade will be removed and stored for reuse. This phase is likely to take approx. 3 weeks.

It is anticipated that the beach and the promenade will be closed for the duration of the construction work to ensure public safety, however there may be opportunities to open sections of the beach and promenade early if site security and safety measures allow. RNLI access including parking will be maintained at all times. Storage of materials on the promenade may be considered where off site storage is not feasible.

It is planned to retain a walkway along the edge of the site, creating a temporary walkway on the grassed area between Greenock Road and the promenade. Construction access to the beach is expected to be via a temporary access ramp constructed to the side of the RNLI slipway.

3.3.2 Protection Works for the Existing Seawall structure

Sheet piles will be installed to the front edge of the toe along the length of the existing wall to provide temporary protection against undermining whilst excavations are being carried out. These will be installed using a vibratory hammer where possible. It is expected that due to the nature of the ground conditions to the south of the site an impact hammer may be required to install the piles. It is conservatively estimated that 150 m of the 300 m anticipated length of piling may be driven by means of impact piling. This phase is likely to take approx. 6 weeks and would run concurrent to removal of the steps.

3.3.3 Excavation

Beach material will be excavated to facilitate the installation of the concrete caisson units using a small excavator working from the beach to prevent settlement into the sand. The material is likely to be taken offsite for disposal to a licenced facility or beneficially re-used (subject to testing to confirm suitability of material, and identification of a suitable receptor). This phase is likely to take c.9 weeks.

3.3.4 Seawall Installation

The toe of the proposed replacement wall will be excavated to low water level with a small excavator working from the beach, and bedding material added (lean mix concrete). The caisson units will be installed on top of the material by a crane or telehandler on the promenade or beach and filled with granular material. The precast concrete seawall unit will be placed on top and grouted into place. The space between the replacement seawall unit and the face of the existing seawall will be backfilled and compacted by an excavator working from the promenade, then surfaced with asphalt to tie into the existing promenade. The existing handrail will be removed. The precast installation is likely to take c.9 weeks, with the backfilling and surfacing works taking c.8 weeks.

Scour protection will be installed with suitably sized/graded rock placed in layers on the beach surface to the front of the precast concrete seawall, by an excavator working on the beach area. The timing of each phase of works will be subject to tidal restrictions on working.

² Note, this is based on the preliminary design and subject to change following the results of the site investigations.

3.3.5 Surfacing

Asphalt surfacing will be placed on the newly constructed section of promenade and resurfacing works to the existing promenade will also be carried out at this time. All areas of surfacing will include a rolled asphalt surface course containing 14mm red coated chippings. All benches, bollards, movable planters and litter bins will be removed prior to the promenade resurfacing and reinstated upon completion.

3.3.6 Street furniture and Beach Access

It is proposed to install a new handrail along the length of the new seawall. Access to the beach will be provided to the north and south ends of the beach, with ramp access at the Aubrey Crescent end of the seawall. Steps will be installed at an intermediate point along the wall. These will be precast concrete steps and have a gate to the top edge and railings that tie in with the proposed new handrail along the crest of the new seawall.

DRAFT

4 ROLES AND RESPONSIBILITIES

4.1 Principal Contractor

The role of the Principal Contractor is to appoint a competent demolition contractor, competent and authorised waste management contractors and to appoint a Waste Manager. The Principal Contractor is responsible for the demolition/construction phase progression from outline and implementation of the construction and demolition site waste management plan.

The Principal Contractor is directly responsible to the Client for the successful execution of the project. The principal duties and responsibilities of this position will include:

- To report to the Client on the on-going performance of the SWMP;
- To discharge his/her responsibilities as outlined in the SWMP; and,
- Ensuring that the requirements of the SWMP are developed and are implemented and adhered to with respect to waste requirements;
- To ensure that advice, guidance and instruction on all SWMP matters are provided to all their managers, employees, construction contractors and visitors on site;
- Liaison with statutory and non-statutory bodies and third parties with a waste/recycling interest in the development;
- Monitoring and completing the waste register (in conjunction with the waste manager) and ensuring the correct waste management procedures are implemented;
- Ensuring correct procedures are followed in the event of environmental incidents (in conjunction with appropriate environmental specialist);
- To support and augment the Waste Manager & Design Team through the provision of adequate resources and facilities in the implementation of the SWMP.

4.2 Waste Manager

The Waste Manager will be responsible for, but not limited to, the following activities:

- Ensure the objectives of the outline construction and demolition waste management plan and the site waste management plan area implemented;
- Responsible for waste characterisation of waste streams;
- Responsible for document control;
- Responsible for ensuring duty of care is implemented;
- Responsible for site operative waste management training;
- Responsible for audits, and;
- Responsible for corrective action execution.

4.3 Site Supervisors

Site Supervisors are required to:

- Promote a Health & Safety culture on site, to read, understand and implement the SWMP;
- Know the broad requirements of the relevant law in waste matters and take whatever action is necessary to achieve compliance;
- Ensure that waste management are taken into account when considering Contractors' construction methods and materials at all stages;
- Be aware of any potential waste risks relating to the site, plant or materials to be used on the premises and bring these to the notice of the appropriate management;

SITE WASTE MANAGEMENT PLAN

- Co-ordinate environmental planning of all construction activities to comply with environmental authorities' requirements and with minimum risk to the environment. Give Contractors precise instructions as to their responsibility to ensure correct working methods where risk of environmental damage exists;
- Where appropriate, ensure Contractor's method statements include correct waste disposal methods;
- Be aware of any potential environmental risks relating to the Contractors and bring these to the notice of the appropriate management; and,
- Ensure materials/waste register is completed as appropriate.

4.4 Sub-Contractors

All Contractors, and other site personnel, on the project will adhere to the following principal duties and responsibilities:

- Comply with the SWMP and with the Principal Contractor's Site Waste Management Plan.
- To co-operate fully with the Principal Contractor and the Waste Manager in the implementation and development of the SWMP at the site;
- To conduct all their activities in a manner consistent with regulatory and best environmental/waste management practice; and,
- Adhere fully to the requirements of the site waste rules.

4.5 Team Structure & Distribution List

All personnel working on the project will be responsible for the waste control of their own work and will perform their duties in accordance with the requirements of the SWMP (as updated) and in compliance with the controls referenced therein.

A distribution list for the SWMP should be developed when all contact names and companies are known. The purpose of the distribution list is to establish communication channels that will enable more effective control of environmental-related issues. The distribution list should identify individuals and organizations that have received or will receive a copy of the construction stage SWMP for implementation.

The distribution list will be established prior to commencement of construction by the appointed/principal contractor. Prior to commencement of construction (including demolition), all roles and responsibilities should be confirmed in the SWMP as updated. Table 1 below shows a template for project roles and responsibilities and can act as a template for the distribution list for the SWMP.

Table 1: Role, Company, Named Contact & Contact Details

Role	Company	Named Contact	Contact Details
North Ayrshire Council contact	North Ayrshire Council	TBC	TBC
Principal Contractor	TBC	TBC	TBC
Waste Manager	TBC	TBC	TBC
Site Supervisors	TBC	TBC	TBC
Sub-Contractors	TBC	TBC	TBC
Health & Safety Representative	TBC	TBC	TBC
Other specialists as required (e.g., geotechnical, drainage/civil engineer)	TBC	TBC	TBC

The Principal Contractor as appointed has ultimate responsibility for the successful waste performance of the proposed development through appointment and management of subcontractors and specialists.

5 PROPOSED APPROACH

5.1 Site Set-Up & Management

5.1.1 General Approach

The works associated with the proposed development will involve the following main elements (please refer to section 3.2 and 3.3 for further details):

- Partial removal of the existing concrete steps with a rock breaker mounted on small excavator working from the beach.
- The existing handrail along the promenade will be removed and stored for reuse.
- Sheet piles will be installed to the front edge of the toe along the length of the existing wall to provide temporary protection against undermining whilst excavations are being carried out. These will be installed using a vibratory hammer where possible. It is expected that due to the nature of the ground conditions to the south of the site an impact hammer may be required to install the piles. It is conservatively estimated that 150 m of the 300 m anticipated length of piling may be driven by means of impact piling.
- Beach material will be excavated to facilitate the installation of the concrete caisson units using a small excavator working from the beach to prevent settlement into the sand.
- The toe of the proposed replacement wall will be excavated to low water level with a small excavator working from the beach, and bedding material added (lean mix concrete).
- The caisson units will be installed on top of the material by a crane or telehandler on the promenade or beach and filled with granular material.
- The precast concrete seawall unit will be placed on top and grouted into place.
- The space between the replacement seawall unit and the face of the existing seawall will be backfilled and compacted by an excavator working from the promenade, then surfaced with asphalt / paving to tie into the existing promenade, with the existing handrail reinstated.
- Steps and a new handrail to be installed.
- Scour protection will be installed with suitably sized/graded rock placed in layers on the beach surface to the front of the precast concrete seawall, by an excavator working on the beach area.
- Asphalt surfacing will be placed on the newly constructed section of promenade and resurfacing works to the existing promenade will also be carried out at this time. All areas of surfacing will include a rolled asphalt surface course containing 14mm red coated chippings. All benches, bollards, movable planters and litter bins will be removed prior to the promenade resurfacing and reinstated upon completion.
- It is proposed to install a new handrail along the length of the new seawall. Access to the beach will be provided to the north and south ends of the beach, with ramp access at the Aubrey Crescent end of the seawall. Steps will be installed at an intermediate point along the wall. These will be precast concrete steps and have a gate to the top edge and railings that tie in with the proposed new handrail along the crest of the new seawall.

5.1.2 Site Compound

There will be a temporary site compound in the immediate vicinity of the site to support the proposed development during the construction period. The location of this has not yet been determined, however one option may be at the northern end of the seawall close to Aubrey Crescent.

5.1.3 Bunded Fuel Storage

Bunded fuel containers will also be sited within the secured compound area. On completion of the works all construction materials will be removed from the compounds and landscaping completed.

5.1.4 Designated Waste Storage area

The construction site will be provided with a designated waste storage area to be identified by the Principal Contractor. This area will securely house designated skips and bins and other necessary facilities for the storage and separation of site sourced waste material. Steps will be taken to ensure the area will be secure from vandalism, vermin and pests and that it will be environmentally hygienic.

5.2 Waste Minimisation

The following waste minimisation measures will be implemented during the course of the construction works;

- Facilitate recycling and appropriate disposal by on site segregation of all waste materials generated during construction into appropriate categories, including:
 - Gravel hard-core;
 - Concrete, bricks, tile, ceramics, plasterboard;
 - Asphalt, tar and tar products;
 - Metals; and,
 - Dry Recyclables e.g. cardboard, plastic, timber
- All waste assessed by the Waste Manager as 'not suitable for reuse' will be stored in skips or other suitable receptacles in a designated area of the site, to prevent cross contamination between waste streams;
- Wherever possible, leftover materials and any suitable demolition materials will be reused on-site.
- Uncontaminated excavation material will be segregated, stockpile and re-used on site in preference to importation of clean fill, where possible; and
- Where possible, the Waste Manager will ensure that all waste leaving site will be covered.

5.2.1 Re-Use, Recycle, Recovery and Management of Waste

It is required that a duty of care in relation to the disposal of waste is executed. Waste management activities in Scotland are regulated by Scottish Environment Protection Agency (SEPA) to prevent pollution and to prevent harm to human health. SEPA regulates these activities through Waste Management Licences (WMLs) and Pollution Prevention and Control permits (PPCs).

All operators holding a WML and some site operators holding a PPC are required to submit waste data returns to SEPA on a quarterly or annual basis.

The EU Waste Code System is used for the consistent identification, classification and reporting of all wastes generated in the EU and forms the basis of both national and international waste reporting obligations. Accordingly, it is reflected in EPA licences and in permits, in waste movement/tracking systems and in official documents such as the EPA's annual National Waste Reports.

Waste generated on this construction site will be identified as hazardous, non-hazardous or inert and segregated according to its category as described in the European Waste Catalogue (EWC Codes).

Table 2 below lists some typical construction and demolition waste codes. This will require designated storage areas for waste to be established for eventual reuse / recycling / disposal at appropriate licensed facilities.

SITE WASTE MANAGEMENT PLAN

Table 2: EWC Waste Codes

Waste	EWC Code
Concrete, bricks, tiles, ceramics	17 01 01-03 & 07
Wood, glass and plastic	17 02 01-03
Bituminous mixtures, coal tar and tarred products	17 03 02
Metals (including their alloys)	17 04 01-07
Soil and stones	17 05 04
Gypsum-based construction material	17 08 02
Paper and cardboard	20 01 01
Mixed C&D waste	17 09 04
Green waste	20 02 01
Batteries and accumulators	20 01 33 & 34
Liquid fuels	13 07 01-03
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13, 19, 27-30

Suitably sized and secure containers for each waste stream will be provided by the Principal Contractor and monitored by the Waste Co-ordinator/Manager. These will be clearly identifiable by colour and signage.

The number and size of the containers required for segregation will be agreed with waste collectors prior to commencement and reviewed during the course of the project. The principle of segregation of wastes at source is fundamental and results in managed waste streams which in turn lead to cost savings and environmental benefits. In addition the diversion of waste from landfill will create savings in the avoidance of landfill tax levy.

Waste may only be treated or disposed of at appropriately licensed facilities. The appointed contractor will be required to keep records of all waste movements. Every waste movement off site will require a waste transfer triplicate docket form with one copy to be retained on site, a copy for the transporter and a copy for the receiving facility.

The contractor will also be required to carry out spot checks on waste collectors and disposal sites. These records will be forwarded to the client on completion of the works for inclusion within the Safety File. The Waste Co-ordinator is obliged to ensure that all vehicles transferring waste for a particular haulier are listed on the NWCPOL licence. For this reason it is good practice that a daily list of lorries entering and leaving and their registrations are recorded.

In order to prevent and minimise the generation of wastes, the contractor will be required to ensure that materials are ordered so that the timing of deliveries and storage of same is not conducive to the creation of unnecessary waste.

The contractor will be required to in conjunction with the Works Programme, show estimated delivery dates and quantities for each specific material associated with each element of the works. The contractor will review the C&D Waste Management Plan at regular site meetings at which the Waste Co-ordinator will report.

6 WASTE MANAGEMENT PROCEDURES

6.1 Waste Hierarchy

Besides the requirements that the off-site handling of waste generated by this project are subject to the required statutory authorisations, there is also a necessity that it conforms to the Waste Hierarchy.

The Waste Hierarchy only applies to material that is defined as “waste”. This means that it does not apply to the proportion of the spoil that is handled on-site in conformity with the statutory exclusions.

The Waste Management Hierarchy will become activated for any material which does not satisfy the exclusions; in this regard the contract documents for the detailed design/construction project will clearly set out the staged approach which the contractor will be required to adhere to through the use of the Waste Hierarchy.

In order of priority, the hierarchy sets out the most desirable approaches to Waste management as comprising:

- (a) Prevention;
- (b) Preparing for re-use;
- (c) Recycling;
- (d) Other recovery (including energy recovery); and,
- (e) Disposal.

6.2 Waste Arisings

Given the nature of the project it is envisaged that the main waste types will be demolition wastes and general construction wastes. There will be non-hazardous and inert wastes such as concrete, wood, steel, blocks, bricks, plasterboard, plastics, packaging etc. and some hazardous wastes e.g. asbestos containing materials, oils, paints and adhesives.

Subject to waste acceptance classification analysis the topsoil /subsoils at the site may be classed as inert, hazardous or non-hazardous. There will be small amounts of green waste.

Table 3 below shows the typical breakdown of C&D waste types produced.

Table 3: Typical Breakdown of Wastes

Waste Types	Percentage
TBC	33%
TBC	28%
TBC	10%
TBC	8%
TBC	6%
TBC	15%
<i>Total</i>	<i>100%</i>

The appointed demolition contractor will be required to prepare a detailed demolition management plan and prepare estimates of all demolition wastes. The Principal Contractor will prepare the Construction Waste Management Plan including estimates of waste streams on completion of the construction drawings.

Table 4: Estimated Quantities of Bulk Wastes from Demolition

Waste Types	Assumptions	Volume (m3)	Conversion Factor	Metric Tonnes	%age of Total Waste Volume %	Disposal Route
Timber						Recovery
Building Stone						Recovery
Slates						Recovery
Soils			TBC			Recovery for inert, landfill for non-hazardous hazardous
Concrete, brick ceramic and tiles						Recovery/ Recycle
Glass						Recycle
Total						

The above table does not calculate waste volumes of metal, plasterboard or green wastes. It is thought that the quantities of these arising will be much lower than the bulk waste streams above, with the exception of glass. This table will be completed for the Final SWMP estimates are not know at this early stage of the project.

6.3 Waste Handling

During the construction phase of the proposed project the appointed contractor will have responsibility for the development and management of appropriate waste handling procedures in accordance with the relevant legislation. This will involve the identification and segregation of waste arisings encountered into their appropriate categories and designating waste storage areas³ within the proposed project for the storage of waste prior to transport for recovery/disposal at suitably licensed/permitted facilities.

An overview of the methods envisaged to handle the expected waste arisings are outlined in the following sections.

6.4 Hazardous Waste Management

There are currently no known hotspots where hazardous waste arisings have been identified within the site. However localised areas of contamination may be identified during the excavation process. Hazardous waste

³ This preliminary report refers to a potential waste compound/waste storage area for the project – as the potential waste compound/waste storage areas may not be on the site of waste production this may require authorisation from North Ayrshire Council Environmental Department for storage of waste. This should be detailed in the final SWMP.

may also be encountered in the following site clearance/ demolition works. Other hazardous waste arisings that are likely to arise during the construction phase include:

- Vehicle batteries;
- Containers with residues of resins, latex, plasticizers, glues, adhesives, wood preservatives;
- Mineral oils or oily substances; and
- Wastewater from site facilities.

All hazardous waste encountered will be removed from site by a specialist waste contractor with a waste collection permit.

Hazardous waste facilities are licenced by the SEPA. The WMC will ensure that the hazardous waste contractor provides a copy of the licence for the facility to which the hazardous waste is being brought.

6.5 Waste Segregation

Within the site, facilities will be available for waste segregation; these will include labelled bins and skips for the various waste streams identified for the site. Putrescible food waste from the site compound will be placed in specially designated brown wheelie bins for composting. Light packaging, non-biodegradable waste from the site compound as well as litter will be stored on site in wheelie bins for onward disposal by a licensed contractor.

Recyclable waste will be stored on site in skips for collection by a licensed contractor approved by North Ayrshire Council.

6.6 Storage of Waste

The site will be provided with a dedicated bin and waste sorting and storage area to be identified by the appointed contractor. This area will provide for the storage of recyclable waste and waste for disposal in appropriate receptacles.

The waste storage area will generally be used to store the recyclable material for collection by the waste contractors.

Any hazardous waste arising should be stored in a secure area to minimise the likelihood of interference by vandals. All hazardous waste should be covered and clearly marked as hazardous waste. They should be away from working areas and areas where vehicles could accidentally strike them. The standing time on site from generation of the hazardous waste to removal off site should be kept to a minimum.

Liquid wastes should be kept in clearly marked banded containers.

Waste storage areas shall be selected so that they are set back from watercourses, ecological sensitive areas, areas of extreme vulnerability, and away from potential floodplain areas and areas containing invasive species. They shall also be selected to ensure that it is accessible from roads that can cater for predicted volumes of site traffic and has connectivity to a main sewer for treatment of wastewater.

6.7 Waste Removal

6.7.1 General Approach

Any removal of waste material from the site shall be done so in accordance with the relevant legislation. It shall undergo a comprehensive waste assessment and classification by a suitably qualified person, in accordance with the relevant legislation and shall be disposed of/treated in a suitably licensed facility.

Waste arisings generated will only be treated at facilities that are authorised to carry out the appropriate waste treatment activity for the specific waste stream. Records of all waste movements and associated documentation shall be maintained on-site such as waste facility authorisation number, expiry date, class of waste accepted, treatment methods for each waste stream accepted i.e., backfilling, crushing, screening, etc.

Where waste generated is not reusable on-site, samples will be taken, and waste acceptance criteria (WAC) laboratory testing will be undertaken on the excavated material. The results of the laboratory testing will be used to determine whether a waste as inert, non-hazardous or hazardous. Authorised waste facilities will be contacted to establish what their waste acceptance criteria requirements are. The excavated waste from the

proposed project will be compared with the facility waste acceptance criteria and sent to the waste facilities which are authorised to accept the material in line with the waste acceptance criteria. Where practical, the closest suitable facilities to the proposed development will be selected to reduce impacts associated with vehicle movement such as air emissions.

6.7.1.1 Implications of Brexit and use of Waste Facilities in Scotland

Most aspects of EU waste management law have been transposed into domestic legislation in the UK.

In the event that the UK participates in the EEA most EU waste management legislation will continue to apply. Outside of the EEA the UK Government and devolved administrations would not be bound by EU legislation and would be able to amend or repeal domestic legislation that implements EU waste law should they wish. Given the devolved nature of most aspects of waste policy, different governments within the UK could choose to adopt or develop different approaches to waste management.

The IEEP note the impact that the single market has on EU waste management law and in relation to the impact that legislation has on product quality and producer responsibility suggest that 'Access to the single market is dependent upon these requirements being implemented.' and these requirements are likely to be continue if the UK seeks to be part of the single market.

On the issue of developing a circular economy the Scottish Government has already developed its own circular economy strategy and this reflects a number of areas that the EU have been exploring as part of their work on circular economy issues.

6.7.2 Exclusion from the Legislation for Excavated Material Refused at a Construction Site

The Waste Framework Directive contains a number of exclusions which make clear that certain materials are not subject to its requirements. A key exclusion affecting construction projects such as this development is set down in Article 2(1) (c).

This states that the requirements of the EU legislation do not apply to includes uncontaminated soil and other naturally occurring material excavated during construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated.

Should materials generated by construction activities fall within this provision, they are not then subject to the other requirements of the EU or national waste legislation. This means that, for example, such materials are not defined as "waste", do not need to be handled by duly authorised waste collectors and do not need to pass to disposal or recovery facilities that are subject to waste licences or other equivalent form of statutory authorisation.

By-product notifications (under Article 27 of the EC Waste Directive Regulations 2011) provide an opportunity for reuse of surplus clean soil & stone material arising from construction activity. This applies to locations other than authorised recovery facilities e.g. quarries operating under planning permission or other developments such as road schemes requiring earthworks and importation of clean soil & stone. By-product status means that the material is approved for use at a location that falls outside of the reach of waste legislation.

As outlined in Article 27, Part 3 of EC Waste Directive Regulations 2011, a substance or object, resulting from a production process, the primary aim of which is not the production of that item, may be regarded as not being waste but as being a by-product only if the following conditions are met:

- a. Further use of the substance or object is certain;
- b. The substance or object can be used directly without any further processing other than normal industrial practice;
- c. The substance or object is produced as an integral part of a production process; and
- d. Further use is lawful in that the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.

If the appointed contractor proposes to crush or reuse waste material on site during the construction phase – the appointed contractor would require waste authorisation from North Ayrshire Council Environmental Department. Similarly if the appointed contractor were to reuse crushed material on site (for example filling/capping layer of a road), the appointed contractor would also require authorisation. The reuse option, where appropriate, can bring significant economic benefits.

7 SITE MANAGEMENT PROCEDURES

7.1 General

In order to emphasise to staff and visitors the importance of waste management within the proposed site it is intended that this SWMP will be finalised by the appointed contractor and circulated to all sub-contractors employed on the works. A register of those contractors that have signed up to this for the works will be maintained. Signing up to this register will be mandatory.

7.2 Training

Copies of the SWMP⁴ will be made available to all personnel on site, so everyone working on the project knows where to find it.

All site personnel and sub-contractors will be instructed about the objectives of the SWMP and the measures to achieve same. They will be trained in how to implement the above measures and their responsibilities during site induction and reminders during tool box talks. Topics to be covered will include;

- Distinguish re-usable materials from materials suitable for recycling;
- Ensure maximum segregation at source;
- Co-operate with site manager on best locations for stockpiling;
- Separate materials for recovery;
- Appropriate protection/coverage of waste areas e.g. covered skips, double wrapped asbestos containing materials (by appropriately trained staff).

Site notices will be erected throughout the site identifying waste storage areas and reinforcing waste hierarchy message.

7.3 Waste Contractors

It will be required that all waste contractors involved in the site will be in adherence with the legislation referred to in this preliminary plan.

To this end the Principal Contractor will ensure that all contractors engaged to collect and dispose of waste will be licensed contractors approved by North Ayrshire Council.

This will include those who collect recyclable material, general waste, hazardous waste and miscellaneous waste. It will be the policy to verify that all contractors are licensed and are approved by North Ayrshire Council.

7.4 Record Keeping Procedures

The contractor shall develop a record keeping system that will ensure that details of all arising's including movement and treatment of C&D waste are recorded. All materials being transferred from the site, whether for recycling or disposal, shall be subject to a documented tracking system which can be verified and validated.

7.5 Waste Auditing Protocols

Waste auditing protocols shall be the responsibility of the WMC who shall carry out auditing in accordance with an Audit Plan for the project to be included in the developed SWMP.

The audit will cover the following elements:

- A systematic study of all waste management practices which have been adopted on-site;

⁴ Training should be incorporated into the SWMP and cover the bullet points listed. Training helps to ensure that all workers are aware of their responsibilities in relation to waste, waste segregation and recycling.

SITE WASTE MANAGEMENT PLAN

- Special attention will be dedicated to obvious opportunities for waste reduction, but all areas and stages within the project will be reviewed;
- Details of raw material inputs and the quantity, type and composition of all waste from the site will be identified;
- The audit findings will highlight corrective actions that may be taken in relation to management policies or site practices in order to bring about further waste reductions; and
- A tracking system shall be stipulated to determine the success or failure of corrective actions.

Regular summary audit reports outlining types, quantities of waste arisings and their final treatment method shall be sent to the Principal Contractor.

DRAFT