

Malachy Walsh and Partners

Consulting Engineers

Cork | Tralee | Limerick | London

PART 8 PLANNING REPORT

ARDMORE BEACH COAST PROTECTION

PART 8 PLANNING REPORT

FOR

WATERFORD CITY AND COUNTY COUNCIL

July 2017

Project No.:

18156

Document No.:

6001 A

PROJECT TITLE: Ardmore Beach Coast Protection

DOCUMENT TITLE: Part 8 Planning Report

DOCUMENT No.: 18156-6001A

CLIENT: Waterford City and County Council

PROJECT LOCATION: Ardmore Beach, Ardmore County Waterford

Rev	Date	Issue Description			By	Checked	Approved
A	6/07/17	Issued for Information			PP	EL	PP
This Document Comprises of:		DCS	TOC	Text	Tables	Figures	Appendices

DOCUMENT ISSUED FOR:

<input checked="" type="checkbox"/>	Entire Document Issued this Revision	<input type="checkbox"/>	In-House Review	<input type="checkbox"/>	Tender
<input type="checkbox"/>	Revised Pages Only Issued this Revision	<input checked="" type="checkbox"/>	Information Only	<input type="checkbox"/>	Construction
		<input type="checkbox"/>	Client Comment	<input type="checkbox"/>	Final Issue

Notice:

This document has been produced by Malachy Walsh & Partners for Dun Laoghaire Rathdown County Council solely in relation to the Corbawn Lane Beach Access in Shankill, County Dublin. It may not be used by any person for any other purpose other than that specified without the express written permission of Malachy Walsh & Partners. Any liability arising out of use by a third party of this document for purposes not wholly connected with the above shall be the responsibility of that party who shall indemnify Malachy Walsh & Partners against all claims costs damages and losses arising out of such use.

TABLE OF CONTENTS

1.0	INTRODUCTION	1
1.1	PROJECT BACKGROUND.....	1
1.2	SCOPE OF REPORT	1
2.0	DESIGN SOLUTION	2
2.1	GENERAL	2
2.2	DESIGN.....	2
3.0	MATERIALS.....	3
3.1	GENERAL	3
3.2	MATERIALS.....	3
4.0	CONSTRUCTION METHODOLOGY.....	4
4.1	GENERAL	4
4.2	CONCRETE WALL.....	4
4.3	ROCK ARMOUR REVETMENT.....	4
5.0	CONSTRUCTION PROGRAMME	5

APPENDICES

APPENDIX A Part 8 Planning Drawings

APPENDIX B Appropriate Assessment Screening

1.0 INTRODUCTION

This report is the part 8 planning report relating to proposed coast protection measures along Ardmore Beach. The works are to extend along the coastal frontage from the car park at the southern end of the beach to the existing rock armour protection towards the northern end of the beach.

The purpose of this report is to describe the proposed coastal protection works. Together with the planning drawings and a screening for Appropriate Assessment it forms the planning documentation relating to the project. The proposed works is the preferred option following the assessment of a number of options.

The proposed works include the removal of existing timber sleepers and its replacement with a concrete retaining wall fronting the caravan park; and with a rock armour revetment to the north to join with existing rock armour works.

The works will extend over approximately 715m of frontage, 425m of concrete wall and 290mm of rock armour.

1.1 PROJECT BACKGROUND

As part of a survey and assessment of coastal protection along the Waterford Coastline undertaken in 2015 for Waterford City and County Council a number of critical areas were identified. One of these areas related to the beach at Ardmore.

The assessment indicated that works are required to refurbish and enhance the beach coastal protection over the full beach frontage. It was also concluded that the southernmost 200m of timber sleepers at the back of the beach in Ardmore are in very poor condition and should be replaced as soon as possible .

This report presents the preferred option for the works and gives a construction timeline. Part 8 Planning Drawings are presented in Appendix A and a screening for Appropriate Assessment is included as Appendix B.

1.2 SCOPE OF REPORT

This report relates to the planning phase and consists of

- Description of design
- Materials and Construction Methodology
- Construction programme for the proposed works
- Planning drawings

In addition the report includes the screening for Appropriate Assessment relating to the project.

2.0 DESIGN SOLUTION

2.1 GENERAL

This section discusses the design necessary to protect the back beach area at Ardmore.

2.2 DESIGN

The preferred options for coastal protection works along the beach at Ardmore are considered to be works that satisfy a number of requirements:

- Prevent erosion of the immediate back beach frontage which consists of a clay embankment sloping up to higher ground fronting the caravan park; and a clay embankment fronting a lower lying hinterland along the frontage between the caravan park and the car park to the north of the beach;
- The works should be in keeping with existing structures and beach use. This means that over the southern half of the beach works should encroach as little as possible onto the beach area and preferably mimic the shape of the existing sleeper protection. To the north it was felt that rock armour could be used as it would be similar to the protection towards the northern end of the beach.
- Works should limit overtopping while at the same time interfering as little as possible with the overall appearance of the beach. This requirement limits the elevation of the crest of the protection to similar to that which exists at present.
- Works need to be able to withstand wave action and beach lowering during storms. Hence wall and armour toe levels are approximately 1 to 1.5m below summer beach levels, and in addition armour protection is provided behind the wall, and the revetment consists of large 2.5T primary armour.

3.0 MATERIALS

3.1 GENERAL

The following sections detail the required materials to undertake the works.

3.2 MATERIALS

Concrete

The wall is made of concrete as this is a strong, durable material, suitable for use in a marine environment. There will be fill placed behind the wall and this fill and the embankment slope near the wall will be protected using small rock armour (0.3T). This armour provides protection to the base of the embankment slope in this area from waves that overtop the wall during storms.

Rock armour revetment

The coast protection towards the northern end will consist of a rock revetment, constructed using strong and durable uniformly sized rock in the range 2 to 3Tonnes. The rock will be placed in two layers on a prepared slope, lain with geotextile to prevent the loss of material through the structure.

Approximate quantities of materials are presented in Table 3.1 below.

Table 3.1 Ardmore Beach Coast Protection Works Key Quantities - Summary

Item	Unit	Quantity
Concrete wall 380m		
Excavation	m ³	1,900
Concrete	m ³	1,050
Small rock armour behind wall - 0.3T	m ³	1,300
Rock armour revetment 320m		
Excavation	m ³	2,400
Rock Armour- Primary	m ³	4,400
Rock Armour – Geotextile	m ²	3,700

4.0 CONSTRUCTION METHODOLOGY

4.1 GENERAL

A brief description of construction methodology, equipment and timescale is given below for the works.

4.2 CONCRETE WALL

The wall works include the removal off site of existing sleepers and some of the builders rubble behind the existing sleepers ; and the excavation of the foundation and area behind to facilitate casting of the wall base and stem. Once constructed the area behind the wall will be filled with granular material, a geotextile placed on top, and small rock armour placed on the geotextile.

Equipment

Excavator, Truck, Concrete truck, Formwork, Vibro compactor, Personnel.

Timescale

It is estimated that concrete wall could be constructed within 12 weeks. A shorter timeline could be achieved depending on the number of gangs working on different sections of the wall. Wall works can be undertaken in parallel with rock armour revetment works.

4.3 ROCK ARMOUR REVETMENT

The proposed revetment consists of primary armour (2.5T), and a geotextile layer over fill.

The toe of the revetment will be excavated to some 1.5m below the summer beach level and the ground behind sloped at 2H to 1 V. The slope will be prepared either by excavating to the required slope or by grading either imported fill or granular material excavated from the revetment toe.

A high specification geotextile will be laid on top of the fill under the armour layers to protect it from loss of fines. The primary rock armour consisting of 2.5T rock will sit on top of the geotextile in two layers with a thickness of approximately 2.0m. Selected larger rocks of 4.0T will be placed at the front of the revetment toe.

Equipment

Large excavator 20T or equivalent, personnel for placing geotextile, tractor/trailer for delivery of materials.

Timescale

Rock material would be brought to site via the road network and along the beach. It is anticipated that the revetment works would take 10 to 12 weeks to complete. The rock revetment works can be undertaken in parallel with the concrete wall works. Therefore the overall works can be undertaken within a 12 week period.

5.0 CONSTRUCTION PROGRAMME

The construction programme is given below and includes a timeline for Permissions (planning) , Detailed Design, Tendering and Contract Award, Construction, and Final Handover.

Permissions	3 months
Detailed design	1 month
Tendering Period	1 month
Tender assessment and award	1 month
Construction	3 months
Defects liability period	12 months

APPENDIX A PART 8 PLANNING DRAWINGS

DRAWING LIST

- | | |
|-------------------|---|
| 16519-5001 | CONCRETE RETAINING WALL: SITE LOCATION, EXISTING LAYOUT, PROPOSED LAYOUT PLAN AND SECTION |
| 16519-5002 | ROCK ARMOUR REVETMENT: SITE LOCATION, EXISTING LAYOUT, PROPOSED LAYOUT PLAN AND SECTION: CONCRETE WALL |

APPENDIX B SCREENING FOR APPROPRIATE ASSESSMENT