



Galway County Council

Clifden Town Centre Enhancement

Structural Condition Inspection for Quay Wall



Clifden Town Centre Enhancement

Structural Condition Inspection for Quay Wall

Document Control Sheet	
Document Reference	RP01
Report Status	Final
Report Date	April 2022
Current Revision	A
Client:	Galway County Council
Client Address:	Prospect Hill, Galway, H91H6KX
Project Number	11252

Galway Office Fairgreen House, Fairgreen Road, Galway, H91 AXK8, Ireland. Tel: +353 (0)91 565 211	Dublin Office Block 10-4, Blanchardstown Corporate Park, Dublin 15, D15 X98N, Ireland. Tel: +353 (0)1 803 0406	Castlebar Office Market Square, Castlebar, Mayo, F23 Y427, Ireland. Tel: +353 (0)94 902 1401
---	--	--

Revision	Description	Author:	Date	Reviewed By:	Date	Authorised by:	Date
A	First Issue	DM	03/04/2022	POC	07/04/2022	JN	07/04/2022
B	Updated for planning submission	POC	14/11/2023	DM	14/11/2023	JN	14/11/2023

TOBIN Consulting Engineers

Disclaimer

This Document is Copyright of TOBIN Consulting Engineers Limited. This document and its contents have been prepared for the sole use of our Client. No liability is accepted by TOBIN Consulting Engineers Limited for the use of this report, or its contents for any other use than for which it was prepared.



ACEI ASSOCIATION OF
CONSULTING ENGINEERS
OF IRELAND



TABLE OF CONTENTS

1.0	Project Background.....	1
1.1	Introduction.....	1
1.2	Location.....	1
2.0	Inspection Findings and Consideration of the Proposed Scheme.....	2
2.1	Description of the Pier.....	2
2.2	Findings of Structural Inspection.....	2
2.3	Proposed Public Realm Works.....	4
3.0	Conclusion and Recommendation.....	4

APPENDICES

Appendix 1 - Images



1.0 Project Background

1.1 Introduction

Tobin Consulting Engineers were commissioned by Galway County Council to carry out an inspection of the Pier at Clifden and comment on its condition.

The client is carrying out public realm works in the area along Beach Quay Road and as part of the works they are looking for ways to rehabilitate the area and to retain the quay wall as part of the scheme. The quay wall is a listed structure.

An inspection was carried out by Denis Maher, BE CEng., MIEI, MStructE, Senior Structural Engineer with Tobin Consulting Engineers on Wednesday 23rd March 2022.

1.2 Location

The pier is located on the Beach Road on the northern side of Clifden Bay. Clifden bay is located to the west of Clifden town centre. A location plan is shown in Figure 1 below.

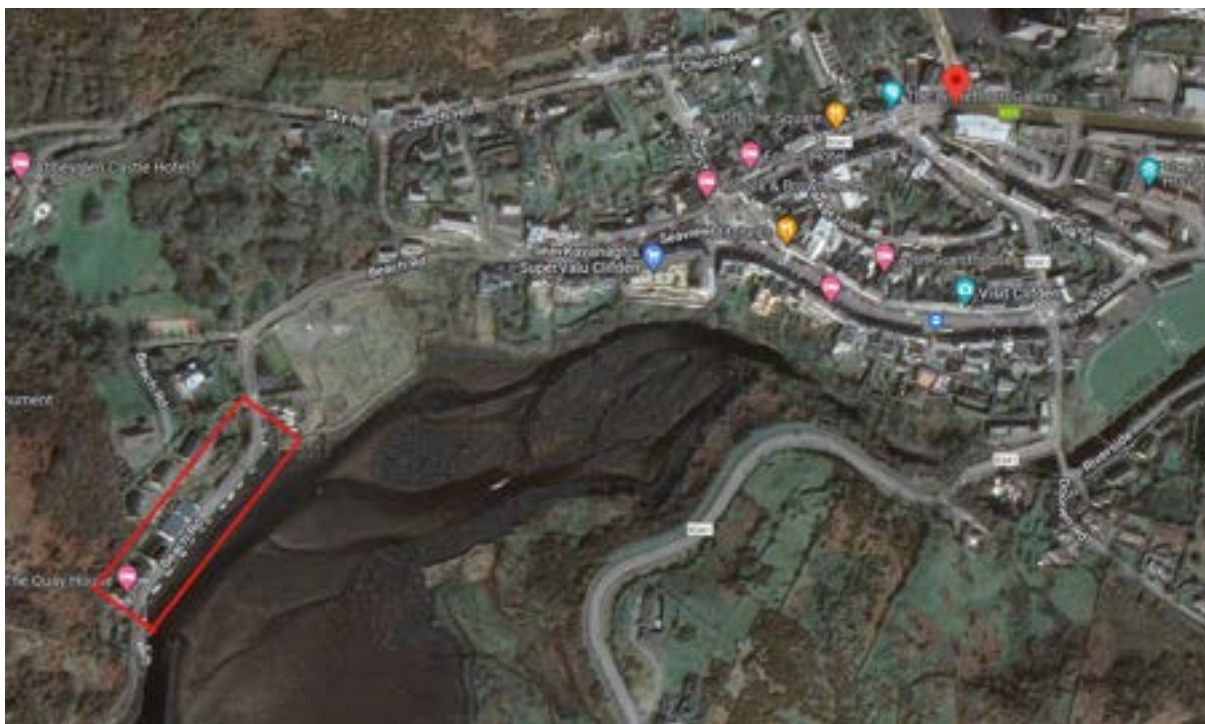


Figure 1 - Site Location

1.3 Scope of work

The purpose of the inspection is to provide comment on the overall structural integrity of the wall and provide comment on the impact which the proposed scheme will have on the wall.

The inspection was of a visual nature only and undertaken from on land only. No opening up works, or intrusive investigations were carried out.

The inspection focused on the structural elements of the wall only and non-structural items such as kerbing, street furniture or the road carriageway were not inspected or commented upon, except where defects in this items was directly related to structural defects.

2.0 Inspection Findings and Consideration of the Proposed Scheme

2.1 Description of the Pier

The pier is located on the Beach Road on the northern side of Clifden Bay and is about 200m in length and is about 2.5m high. It is constructed from mainly large rocks placed side by side with some smaller rocks in between. The pier is capped by flat rock slabs, which provides an even surface to the top of the pier. The pier wall is not linear and forms a wavering line. There is not much by way of pointing between the rocks forming the pier

There is a grass verge some 3m wide between the top of the pier and the Beach Road over most of the length of the wall with the exception of one area where there is a concrete pavement adjacent to the wall. There are conical shaped concrete stumps, a number of which are broken close to the roadside in this grass verge. These are about 3m apart and are joined by a chain which sags down to the ground between the stumps.

It is not considered that these concrete stumps are intended to be moorings and are not designed as such, but it appears that in the absence of proper mooring points they have been used for this purpose. A least one of these stumps has been pulled out of the ground.

The pier seems to be used mainly by small leisure craft and yachts. There was a fishing vessel close to the concreted area, and this area would appear to be used by fishermen. There were no larger vessels present on the day of the inspection.

The pier is of poor design because in addition to not having proper moorings or faced stone walls, there is little or no depth of water adjacent to it. There is a scant number of ladders or steps to aid disembarking.

2.2 Findings of Structural Inspection

Notwithstanding its shortcomings as outlined above, there is no evidence of significant movement, settlement or distortion of the wall. Some of the facing stones have become dislodged and fallen into the sea. Some of the capping pavement stones have been pulled out of position, it seems because mooring lines have on occasions got into gaps between the pavement stones and caused them to move as the boats moved in the wind and tides.



Figure 2 - Capping stones dislodge by mooring lines



Figure 3 - Vegetation and stonework dislodged

It was not possible to inspect for scouring of the wall due to the tidal level at the time of the inspection.

2.3 Proposed Public Realm Works

The proposed landscaping drawings by Landuse show a new drainage channel along the road edge, then a transition between soft landscaping and new paving between the road and the existing quay wall.

Where the ground levels are currently sloped between the road and the quay wall, a series of intermittent steps are proposed to capture this change in level. Mooring points are shown directly behind the existing quay wall.

The current proposals avoid the risk of vehicles parking or travelling immediately behind the quay wall and in so doing, remove the risk of additional surcharge on the quay wall.

The mooring points, as currently shown, will require ground anchors installed under the paved areas to prevent forces being exerted on the quay wall through the soil which the quay wall would not normally be subject too.

3.0 Conclusion and Recommendation

Based on our inspection, we find the current structural integrity of the wall to be sound. However, we do have concerns that the capping stones can be dislodged by mooring lines and this could lead to deterioration of the walls structural integrity.

We would recommend the following remedial works to ensure the continued structural integrity of the wall:

- Any stones that have become dislodged from the pier wall should be reset. The stones should fit tightly alongside each other, and this may require new cut stones to suit the wall.
- Vegetation should be removed and the stonework in the wall should be pointed in so far as it can.
- Mortar should be place between the capping stones to prevent mooring lines from snagging in them and pulling the stones out of position.

In consideration of the proposed public realm works, if proper mooring points are introduced, these would need to be properly design and may require ground anchors to ensure they are not unduly surcharging the wall from behind. The current arrangement, which allows for pedestrian access to the qual wall, will not have any detrimental effect on the quay wall structure.

Appendix 1 - Images



IMG_1852_1.0



IMG_1853_1.0



IMG_1854_1.0



IMG_1855_1.0



IMG_1856_1.0



IMG_1857_1.0



IMG_1858_1.0



IMG_1859_1.0

www.tobin.ie



TOBIN Consulting Engineers



@tobinengineers

Galway

Fairgreen House,
Fairgreen Road,
Galway,
H91 AXK8,
Ireland.

Tel: +353 (0)91 565 211

Dublin

Block 10-4,
Blanchardstown Corporate Park,
Dublin 15,
D15 X98N,
Ireland.

Tel: +353 (0)1 803 0406

Castlebar

Market Square,
Castlebar,
Mayo,
F23 Y427,
Ireland.

Tel: +353 (0)94 902 1401